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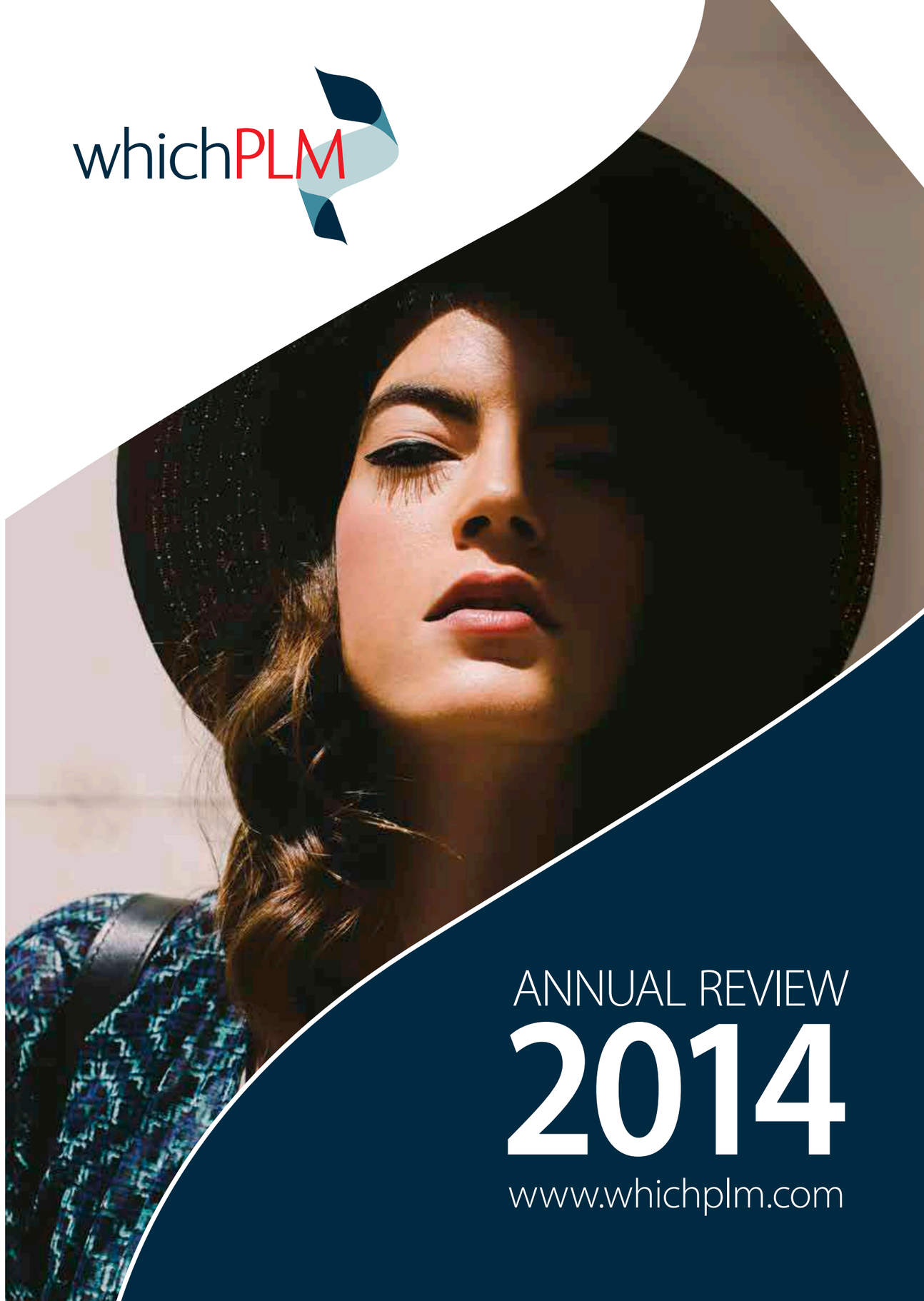

# ANNUAL REVIEW 2014

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# Welcome

## to the WhichPLM Annual Review 2014

**I'm thrilled to be able to present the WhichPLM Annual Review 2014 - the culmination of extensive research, writing and analytical work undertaken by our team, and a reflection of the industry's hard-won progress over the course of the last twelve months.**

WhichPLM has now produced four print publications (three Annual Reviews, and our original Customer Survey Report) and each, judging from my own experience of advising brands from around the world, has come at a pivotal time for the PLM industry for retail, footwear and apparel.

In 2010, I was routinely approached by businesses seeking something new, spurred on by the progress they had seen being made by early adopters of product development technologies, but unsure of what steps to take next. These companies would almost invariably then want to compare the PLM market on the basis of raw functionality, since at that time support for core processes varied wildly between solutions.

Two years on, core competencies began to approach a kind of parity between major vendors, and customers on the whole appeared more educated on the essential nature of PLM. Attention turned then to extended PLM (this being the year we coined the term "E-PLM") and our first Annual Review was created to provide the right information and insight to retailers and brands, who were beginning to consider PLM's place in their broader I.T. environment.

In 2013, vendors who realised that feature and function comparisons could only carry them so far began to place a new emphasis on the qualitative aspects of shortlisting, selecting and implementing PLM. Not only core processes, but implementation expertise, international industry experience, and business intelligence – the essential components of picking not just a software provider, but a long-term partner for the future.

And so we come to 2014, a time when PLM has been elevated from essentially a "Tech Pack management" solution, to one of the major pillars of an industry-wide digital transformation project, affecting everything from how we develop products to how we engage with consumers – physically and virtually.

In light of this, our end user survey – which has been the centrepiece of every Annual Review – has become perhaps even more important than it was four years ago. True, retailers, brands and manufacturers may not be comparing technical details the way they once did, but the sheer and unprecedented growth our industry has undergone means that more businesses than ever before are seeking to learn from the experiences of their peers.

Always designed as a platform for end users, PLM project managers, and even CEOs to share their unvarnished thoughts on the "truth" of working with PLM, this year's survey results paint a spin-free but nevertheless extremely positive picture of the steady, incremental improvements made by the industry since 2010, when we first enlisted the voice of the customer. All who took part in this year's data gathering exercise – our biggest to date – should know that every one of the industry's leading software vendors will take their opinions on board.

And survey respondents were by no means the only people who sought to make their voices heard this year: we have twenty all-new and exclusive features from a wonderful roster of contributors, as well as carefully-selected profiles of what we consider to be the apparel industry's key PLM vendors at every level of the market.

Before I delve too far into the content of this year's Annual Review, though, I'd like to take readers back a little further than just the past four years, and provide a potted history that I hope will explain why I believe PLM for fashion is such an exciting industry today. WhichPLM has come on a long journey, and it's important for prospective and existing customers of PLM to remember that they – like us – are in this for the long haul.

PLM for the retail, footwear and apparel industry began in the late 1980s, when Product Data Management (PDM) platforms were promoted – some extremely successfully – to brands looking for a more effective way to manage their essential product information. From there, the late 1990s saw a brief transition enabled by the expansion of international connectivity, to what became known as Collaborative Product Management (CPM), which in turn was superseded in quite short order by the first fully-fledged apparel PLM solutions shortly after the turn of the millennium.

Although these early solutions shared an acronym with the products you'll find listed in this year's Vendor Profiles, at that time implementations were handled in the main via a "toolbox" approach, creating highly bespoke installations that could cost tens of millions of dollars and potentially take several years to complete.

Needless to say, the current environment you will find detailed in this year's Market Analysis looks dramatically different from the one we might have analysed had WhichPLM been present in the market when PLM was in its infancy. Today, PLM sales have increased exponentially to the mid and lower ends of the market, as well as to the "super tier" multinational retailers and brands who continue to test its limits year on year. These sales have been driven, at least in part, by the maturation of what we call "out of the box" (OOTB) solutions – packages that can have their core functionality installed in a matter of months rather than years.

Getting the most of PLM, though – even today, as our survey respondents will tell you – is a long continuous journey of self-discovery, and one that I believe should still take years to plan, implement and execute. But as I'm sure our readers know, there are no easy routes to true value, and like anything in life, retailers, brands and manufacturers will only get out what they are prepared to put in.

Looking back at its history, we can see just how far PLM has come. It may have taken the industry a little while to get there – with growing pains along the way – but today I firmly believe that PLM, properly chosen and implemented can fulfil all of the promises the industry made in those early days of PDM and CPM. We do still find ourselves acting as mediators from time to time when a vendor leans towards exaggeration, but on balance PLM software and the vendors who create it have approached a level of maturity of which the industry as a whole should be extremely proud.

It's this maturity that's enabling 360-degree "concept to consumer" design and development environments – taking in everything from storyboards to mobile applications - to be created by some of the world's leading brands and retailers.

And on the consumer end of that spectrum, new forces are emerging that will make their impact felt in the PLM industry sooner rather than later, and potentially transform the entire landscape of the industry again. The confluence of fashion and technology arrives this year in the form of "wearables", attached to the ubiquitous connectivity that various industries have dubbed the "internet of things", and brand ethics and sustainability have both rapidly shot to the top of the list where both vendor development priorities and consumer brand loyalty metrics are concerned.

Fortunately, our contributors dive into both of those topics – amongst others – in this year's publication, with no fewer than six articles tackling the hottest topics in ethical and environmental compliance, and a detailed exclusive looking at the impact of wearable technology on the future of the product lifecycle.

If I can characterise this year's WhichPLM Annual Review, the watchword would be "more". We have more contributors, more vendor information, extended and deepened market intelligence, new consultancy listings, and more customers taking part in our PLM survey than ever before.

And the industry itself has given more in 2013/14, too: last year we estimated market growth potential overall at 15%, when in fact this year's data reveals that from sales made by key vendors alone, the market grew by more than 19%. When we take into account those PLM suppliers who were not included in the criteria for this year's profiles and analysis, I believe the actual figure may be nearer to the 25% mark.

Certainly the PLM industry for retail, footwear and apparel has grown, matured and expanded, but nevertheless there remains a tremendous amount of newness and excitement to it – even today. An explosion of new customers around the world adopting modern solutions; new territories with new domestic brands facing their own unique challenges; the potential tipping point for PLM's mass market penetration; new potential in the forms of integration, E-PLM, and the extended product lifecycle.

It's fitting, then, that everything in these pages is also new and exclusive, and that everything contained in this year's publication has been informed by hands-on experience - being there for the creation of PLM, and remaining wholeheartedly invested in its future.

Before I outline my favourite items in these pages, I'd like to take this final opportunity to thank each and every contributor who has helped to make the 2014 Annual Review such a great success: the survey respondents, PLM vendors, thought leadership authors, and of course my own team at WhichPLM, for helping to assemble the most accurate report of the state of PLM for the global apparel industry.

MARK HARROP
*CEO*

# CEO's Picks

**Full of exclusive, informed content, these are just some of my highlights from our biggest Annual Review to date.**

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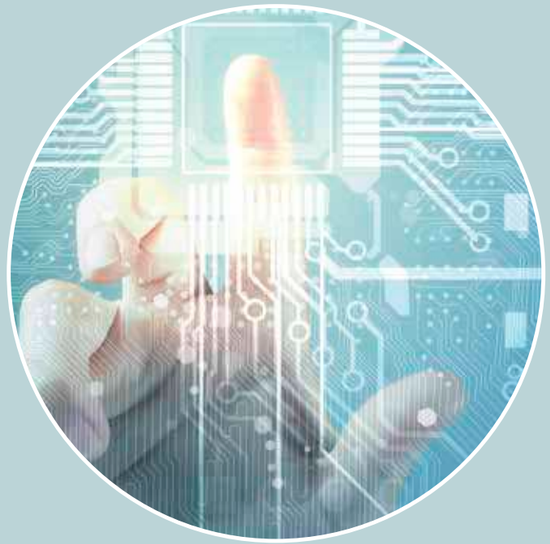










# Selecting PLM

*by*
ADAM
COTGREAVE

**Adam Cotgreave served as the project lead during the PLM selection and implementation process at Cornish brand, Seasalt. A recipient of the Queen's Awards for Enterprise, Seasalt went to great lengths to identify the right PLM system for their specific needs. In this exclusive article, Adam warns of the pitfalls of an inadequate selection process, as well as the benefits of getting it right.**

**It almost goes without saying that a PLM project requires you to select a solution, doesn't it? After all, you can't very well implement "PLM" in a general sense. You must first pick the product that best fits your needs, choosing from the tens of potential candidates who might have come knocking on your door since you announced your intention to adopt PLM.**

But how important is it to undergo a thorough selection process? For many people, the selection can feel like a formality, rather than an integral part of the project itself. Because the project really starts once the contract is signed, the software is in-hand, and the project team convenes around a table to get things underway, right?

You could certainly be forgiven for thinking of that stage as the beginning of the project: team members will be slapping one another on the back, and high-fiving their neighbours, thrilled to be getting underway with the "real work" now that the trifling matter of actually choosing a solution is out of the way.

Little do they know, the real work should have in fact begun several months prior, with a rigorous selection project informed by potentially years' worth of preparatory work and introspection. And by assuming that selection was a short exercise (often with a foregone conclusion) this hypothetical team may very easily have made the wrong choice – one that will condemn them to spiralling costs and a product development environment that just isn't fit for purpose.

To me, the benefits of undertaking a proper selection project seem obvious, and the costs of not doing so even more apparent. So why is it that so many retailers and brands skip lightly through this vital stage? Why might you, as a prospective customer of PLM, not go the right way about selecting PLM?

The simplest explanations are usually the most obvious. Maybe you just don't have the time or the people to set aside, and you need to install a system right away? Maybe your CEO heard that PLM was the latest buzzword, and came home with the mandate that you adopt the solution everyone else is using? Perhaps your team attended a software conference and met a salesman who seemed to understand their pain perfectly, and offered the perfect solution – at a 10% discount to boot?

These suggestions might sound flippant, but they are more likely than I suspect any of us would care to admit. The sad reality is that, whatever the cause, a growing number of PLM systems are selected and implemented before any real analysis is done to ascertain their suitability.

As a PLM project lead myself, I find this unacceptable. As I'm sure you know, consumer demand is growing rapidly, and the modern shoppers' expectation is perfection. They want products of the highest quality for the best price, and they want them at the touch of a button, original and stylish at the same time. The slightest dip in productivity or the tiniest slip from trend can be enough to turn consumers away. It's this constant pressure that can push retailers and brands into making rash choices, but this article will delve into the justifications for taking the time nevertheless to select PLM properly, since the consequences of not doing so can be even more profound.

There are a few analogies I'd like to use to drive the point home, and I'm going to start with one you probably face several times per week. You come home and find yourself hungry; the cupboard is bare, so you decide to visit the supermarket and grab some dinner.

In that instant, you have (consciously or subconsciously) identified a need, and taken steps to obtain a solution. But the odds are that your thought process doesn't stop there. In this scenario, very few of us would simply reach for the best promotion, or pick up the ingredients the man stood next to us in line happened to be buying. Instead, we would more than likely make some value judgements: how hungry we are; what style of cuisine our palate might be craving; how the nutritional information of a given meal stacks up against our diet; how the flavours might go with the bottle of wine we have waiting in the fridge at home.

Without necessarily realising it, we have just undertaken a very basic selection process in our personal lives, and arrived at a result that, in all probability, met our needs. So, shouldn't the same principles come into play at work, when we come to selecting an enterprise solution like a PLM? What steps can we take to make sure that common sense doesn't get neglected?

First of all, you might consider using an experienced (and unbiased) PLM consultancy to advise you on which solution you should choose. After all, most consultants claim to know essentially all of the systems on the market, so it should be relatively simple for them to identify your needs and point you in the right direction.

We're certainly on the right track now, but unfortunately choosing a consultant can become a selection project in its own right. Good, third-party consultants will be able to demonstrate their knowledge of the vendors, but without influencing you towards one system or another to suit their own interests. A good advisor will have an ear to the ground and know of any upcoming mergers and acquisitions in the PLM space; they will know which PLM projects failed because of inadequate preparation, and they will know which projects under-delivered against expectations and why.

That being said, your advisors should be just that: advisors. You must trust them implicitly, but you should not be transferring the entire burden of selection onto them because, when all is said and done, the choice is ultimately yours to make.

Why would you not trust an expert advisor to simply reach the conclusion for you? Explaining this brings me to the second of my analogies, drawing another parallel between the kinds of value judgements we make in our personal and professional lives.

Let us pretend, for a moment, that you have been offered a new job in another county or state, and will be required to relocate. Would you trust your mother-in-law to choose your new house, and put down the deposit blind?

**No? Why not?**

After all, your partner speaks to his or her mother every day, and it's fair to assume she has as good an understanding as anyone of what you and your family need in a house. And, as luck would have it, she's also a former economics professor with some incredibly sound insight into market conditions, resale value and so on – not to mention the obligation you feel since you originally asked for her advice.

In this situation, does it make sense to listen to your mother-in-law's advice, weigh it against your own understanding, and factor it into your decision? Certainly. As we've already said, she knows perfectly well that you require a three-bed property with a garden and a garage. She also knows you and your partner both drive, so you're going to need a suitable driveway. And this is in addition to the house being just the right distance from a good school, and within your budget.

I'm going to dub these our "high level requirements" – the kinds of factors that are absolutely non-negotiable when it comes to making a final decision. Back in the real world for a moment, it is absolutely vital that both you and your advisors understand these requirements, and that they shape the broad scope of your PLM selection project.

Should we, though, make a large and long-term investment on the basis of high level requirements alone? Do they cover all of our bases, or will something still be missing? And if it is missing, how important is it? So, to return to our analogy, let's look at what our mother-in-law might not know about buying a house, and how influential those factors might be.

Her understanding of the high level requirements doesn't extend to knowing, for example, that you and your partner are planning a further grandchild for her in a year's time, necessitating another bedroom to support your future expansion plans. Similarly, she won't know (or perhaps won't admit) that your partner snores incredibly loudly, necessitating a pull-out bed in the study.

When we stop and think, there is actually a potentially endless list of things that she doesn't know, because they are things that only you can know - and things that must be considered as part of the selection process if you're to get the best possible return on your investment.

I call these low level requirements, and although snoring typically isn't a factor in anyone's PLM decision-making, their analogues are every bit as important as their high level equivalents when it comes to selecting PLM.

I would like to dispel the notion that you will find the "perfect system" for your needs – the same way you're unlikely to find the perfect house.

Just like our hypothetical relocation, having a strong idea of your own wants and needs as



well as a good understanding of what a "perfect" PLM system would be can allow you to make sensible and considered concessions for the greater good.

Surely it's better to know, after all, what you are willing to sacrifice in order to make things work ahead of time, rather than suddenly realising your sofa won't fit through the door, or that your design software does not integrate properly to your chosen solution. My comparisons might be a little tongue-in-cheek, but in both of those cases you barely have a foot in the door and you're already spending additional money you didn't budget for.

So when it comes to shortlisting and selecting PLM, understanding exactly what the business requirements are and exactly how the different systems you are looking at can or can't meet them is fundamental. The gap (or sometimes the chasm) between the two defines is what allows you to understand the degree to which you might be forced to compromise should you select solution A, B or C.

**And those compromises can soon start to add up.**

They might take the form of a process change, a cultural change or a change of process ownership, or an unexpected investment required to deal with an unforeseen eventuality. Whatever shape they take, these are things you want to manage and control as early as possible in your PLM project, not things you want to blind-side you and send you or an unfortunate nominee running to the Board asking for more time (money), people (money), technology (money), or perhaps just more money.

**Making a move of this magnitude is always a matter of compromise, but compromise is something that must always be approached from a position of understanding and experience.**

Hopefully you can begin to see why selection should not just be given equal weight to the rest of the PLM project, but considered part of the project to begin with. Now I want to look briefly at how you might actually approach a more thorough selection.

The first stage of selection is something I call Realisation. The right reason to begin investigating new technologies like PLM is because your teams have identified bottlenecks in their work, or raised issues and concerns with you that you realise – after careful analysis - need to be remedied through investment in technology. At this stage, networking, industry events and publications and a Google search are the typical starting points when it comes to seeking out a new system.



Combined with your knowledge of the issues you've been made aware of, you should quite quickly arrive at the conclusion as to what system you need to be going for - whether it's PLM, ERP, an advanced planning solution or any specific best of breed tool.

For our purposes, we're going to assume you chose PLM, although much of this advice is applicable to any enterprise-level system, and my carefully-crafted analogies are just as valid there, too.

At this stage, depending on the maturity of the business and existing skills/experience, you might decide to bring in some external support – someone who has good knowledge of the type of system in question, as well as how it's used within your specific industry. Now you want to begin scoping out your high level requirements, and widening that scope where necessary if your chosen solution offers additional benefits than those that were identified in the early stages.

About this time you may wish to start raising awareness at the Board level, preparing them for the investment that may be required, and putting together a business case ready to be deployed in the near future.

As with any business case, making the argument for PLM adoption requires you to translate the challenges and benefits you've already identified into a concrete, scientific return on investment analysis.

I want to return briefly to our house-buying analogy to talk about the solid, quantitative measures that go into an ROI analysis, and the more ineffable ones that must also be factored into your recommendations. For every measurable benefit – reducing the iterations of costly samples, or consolidating data held in thousands of Excel spreadsheets – there will be more strategic, ephemeral things that are much harder to quantify. For example, your investment in PLM might free your designers' time up and enable greater creativity, or provide your garment technicians with more time to work on quality and fit. The benefits of these metrics will not be immediately or measurably felt, but nevertheless they remain vital to a proper PLM selection because they, along with other high level requirements, will give you the perspective to later determine whether your project was a success – and to what degree.

Assuming your business case, and your new PLM project, is approved by the Board you might think now is the time to approach the market and start asking "which PLM?"

The answer is no. By now you understand your high level requirements and have a budget and a timescale within which to deliver your project, but your understanding of your requirements is still limited to the macro level – the equivalent of allowing your mother-in-law to start approaching estate agents before you're ready.

**Your requirements will not be the same as everyone else's, and a thorough selection project requires that you acknowledge this before even thinking about approaching a PLM vendor.**

You now need to document your existing business processes and begin to truly understand your business requirements, as well as how they differ from others. We hear the phrase 'standard business practice' a lot in the IT world, and whilst I understand the principle, I don't like it – particularly when it comes to something as personal and all-encompassing as selecting an enterprise solution. Every business is unique, and it's that individual identity that separates you from your competitors. The same way you wouldn't choose to buy the same house as your best friend blind, neither should you assume that the process or product that fit your closest competitor is going to work for you.

I won't lie, if done properly this phase of your selection process will be painstaking and laborious. You'll need to assemble a core project team - your best and brightest from each functional area - organise and facilitate multiple process mapping workshops, write up the process flow documents and record the good and the bad in each process. Building bedrock is always going to be arduous work, but it goes without saying that there never was a successful project (or a stable house) built on shaky foundations.

With this meticulously-researched information in-hand, your selection process can then become much more standardised, and begin to benefit from some best practice work pioneered by your peers or advisors. Starting now, you'll look to develop a request for information (RFI) document, refine your prospective vendor list further, and in turn develop a detailed refer for proposal (RFP). You should take care to ensure that the responses you receive to both are directly applicable to your situation, demonstrating that the vendor in question has given the same amount of care to your project as you have.

Whether you used consultants to help you with your business case and process introspection or not, I would suggest that you'll need to bring in some external support at this stage. With their unbiased insight, your high level requirements can be used to very quickly cross a number of potential vendors off the list right away.

Experienced consultants will also have comprehensive RFP templates and proven demonstration methodologies that might otherwise take you weeks to develop, and these can help to cut your selection process time down considerably – getting your team to those back-slaps, high fives and "real work" I mentioned earlier on even sooner.

And lest we forget, it's those team members who will have the greatest insight into what you ought to be doing in the first place. If the point of a thorough selection process is to get beneath the skin of your business and understand what makes it tick (and how it can run more smoothly in the future) then who better to give you the unvarnished truth?

You might not listen to your mother-in-law when it comes time to choose a house, but I'd suggest you pay close attention to the people who live with you, day-in and day-out. You'll find that with the right methods and the right support, they can help unlock value you'd never even considered.



**As with any business case, making the argument for PLM adoption requires you to translate the challenges and benefits you've already identified into a concrete, scientific return on investment analysis.**

# Getting ahead of the curve



*by*
CHRIS MCCANN

**A long-time advisor to the WhichPLM team, Chris McCann has spent fifteen years working to drive sustainability and responsible sourcing programs for Fortune 500 companies, the United Nations, national governments and multi-stakeholder initiatives. Few people in the retail, footwear and apparel industry share Chris's breadth or depth of experience, and in his first exclusive article for WhichPLM, he explains how you can leverage PLM to get ahead of the curve and survive in a volatile age.**

**...the first challenge to overcome when addressing change is in recognising that there is in fact a need for change**



**'The Longest Day'. Released in 1962, nominated for five Oscars (the film won two), with a stellar cast including John Wayne, Robert Mitchum, Richard Burton, and Sean Connery. A black and white film, but one that even 50 years on is invariably included in listings of the top 100 movies of all time. If you want a sense of the colossal forces brought to bear in the closing years of WW2, this is the film for you. I also believe it has a lesson to teach the readers of this publication.**

There's a scene, maybe two hours into the movie, where a black-bearded, more than eccentric Capt. Colin Maud (played by Kenneth Moore) is on Normandy's Sword beach, shillelagh in one hand and the leash of his bulldog Winston in the other. As Beach Master, he is to guide the massive supply lines from ship to shore, helpfully pointing out "the war's that way!" as the camera pans out to include the thousands of tanks, trucks, jeeps and men that are making their way deeper into occupied France.

It was W. Edwards Deming, one of the great post-war management consultants, who pointed out that the first challenge to overcome when addressing change is in recognising that there is in fact a need for change – something tangible that we can strive toward ("The war's that way!"). Deming's theories are as relevant today as they were when Wayne and company set out to recreate the D-Day landings. Organisations still often fail because of an over-emphasis on achieving short-term profit (one of Deming's '7 Deadly Diseases'), or because they neglect long-range planning (his 'Lesser Category of Obstacles'). And in an increasingly complex world, short-sightedness or a failure to be aware of one's environment can be fatal.

During my career I've worked for and witnessed the collapse of two major UK retail companies - both over a century old - each of which failed to understand that their reality was changing and that they too needed to change to remain relevant. First class travel, expansive expenses, silver service and deep pile carpets at HQ - none of this guaranteed survival, or survived the inevitable fall.

70 years on from D-Day, it seems that we in the 21st Century are witnessing global challenges and trends that will demand an equally colossal focus of energy and resource if they are to be effectively met. Most notably, these include Population Growth (9.5 billion people by 2050, compared to 7.1 billion today and 3.4 billion in 1967, the year of my birth), Climate Change (it's happening, whether you're in the man-made camp or not), Resource Depletion (including fossil fuels), and threats to Food Security (in part arising from pressures created by the preceding three horsemen).

Scaremongering? Maybe there is greater danger in refusing to acknowledge a changing landscape and its implications. Although it's true that some will capitalise on these themes for their own ends (sometimes distorting the message in the process), more and more voices support the view that the research and the analysis are sound. Apocalyptic? It depends, I think, on the degree to which action is taken. I'm reminded of Deming's words, when he said:

"It is not necessary to change. Survival is not mandatory."

And he spoke with some experience: many in Japan credit Deming as the inspiration for what has become known as the post-war Japanese economic miracle.

There have been reams of books, articles and theses written dealing with the subjects at hand. In June 2010 I was asked to peer review a White Paper, jointly produced by Lloyd's 360 Risk Insight Program and Chatham House, entitled "Sustainable Energy Security: Strategic Risks and Opportunities for Business". Contributors included Alstom, Anglo American plc, BP, E.ON-UK, Gaz de France, Shell, and Statoil amongst others, and it was a sobering experience. The four years that have since passed have not lessened its impact, nor its message. As Richard Ward, Lloyd's CEO, outlined in his foreword,

"...we have entered a period of deep uncertainty in how we will source energy for power, heat and mobility, and how much we will have to pay for it. Is this any different from the normal volatility of the oil or gas markets? Yes, it is. Today, a number of pressures are combining: constraints on 'easy to access' oil; the environmental and political urgency of reducing carbon dioxide emissions; and a sharp rise in energy demand from the Asian economies, particularly China. All of this means that the current generation of business leaders – and their successors – are going to have to find a new energy paradigm...we can expect dramatic changes: prices are likely to rise, with some commentators suggesting oil may reach $200 a barrel."

The subject matter expertise of the contributors, the seniority of the paper's sponsors, and the conclusions reached in the report should give any reader pause for thought. In short, authors Froggatt and Lahn state:

- **We are heading towards a global oil supply crunch and price spike.**

The business that accepts there are real risks to be addressed - and real opportunities to be sought - is already ahead of the curve.

- **Businesses which prepare for and take advantage of the new energy reality will prosper - failure to do so could be catastrophic.**
- **Market dynamics and environmental factors mean business can no longer rely on low cost traditional energy sources.**
- **Businesses must address energy-related risks to supply chains and the increasing vulnerability of 'just-in-time' models.**

Ultra-deepwater drilling (witness the disaster that was Deepwater Horizon), the controversial practice of hydraulic fracturing ('fracking'), the suggestion that the Ukraine (a natural gas chokepoint) is the latest pawn in a new version of The Great Game - the casual observer should ask whether there is a relationship between these activities and the uncertainty that Richard Ward has voiced, and note the prescience of Froggatt and Lahn's words.

But how does this apply to us? In practice, the very nature of modern retailing anchors us tightly to global shifts such as Froggatt and Lahn describe. In an environment where demand for improved margin brands is increasing, retailers are continuing to migrate their supply chains to low cost countries, which can bring associated risks. All too often we have seen the results of using low cost production sites, employing low cost resources, and of cutting corners in ways that result in disasters for the workforce and for the local population. Witness the 2012 Tazreen Fashion tragedy, where 117 workers died, and which led to thousands of workers demanding improvements in health and safety practices. Consider also the impact that unsustainable practices have had on the Aral Sea in Central Asia, which is now almost empty as a direct result of intense cotton production under the former Soviet Union, and has become a poster child for the negative environmental and social impacts of blinkered commercial activity.

All of the above points to the fact that businesses do not operate in a vacuum - the reality faced by consumers, employees and society at large sooner or later becomes a reality to be faced by corporate interests. What are the implications, then, for Product Lifecycle Management (PLM) projects, users and vendors? A word of caution here- as Niels Bohr famously said:

*"Prediction is very difficult, especially if it's about the future"*

A host of stakeholders are increasingly demanding that business organisations address a range of issues that traditionally may not have been viewed as within their sphere of influence. From product safety to human rights in supply chains. From establishing collection, recycling and recovery targets for electrical goods, to ensuring that animal rights are respected in the production of clothing. And aside from the drive to meet societal expectations, organisations are increasingly becoming aware that there are often persuasive commercial arguments for operating responsibly. As we saw earlier, for retailers operating on razor thin margins and utilising extended supply chains, the prospect of oil prices doubling over the next few years is enough to make any trader contemplate 'sustainability' in a different light. The business that accepts there are real risks to be addressed - and real opportunities to be sought - is already ahead of the curve. Whether change comes incrementally or as short, sharp corrections may be immaterial - it is the direction of travel that is key, or to put it differently, "the war's that way".

PLM tools may offer opportunities to retailers, brands, vendors and factories alike who seek to build greater resilience into their products, their supply chains and their business overall. Since PLM can track the product from concept to ex-factory delivery it is well-suited, not only for collating a growing and varied mass of certifications and compliance requirements, but also for initiating and coordinating those requirements through the use of workflow lifecycle status updates and messaging. Critical regulatory requirements can be linked to a product category, type, age or size range that can then trigger processes that will help to avoid unnecessary non-compliance risk to the business or its supply chain partners. The Higg Index (apparel and footwear), REACH (chemicals), WEEE (electric and electronic equipment), product safety (such as CPSIA), and others - what may be a plethora of unrelated data points are, through PLM, structured such that they become valuable information delivered in a timely fashion.

Beyond tracking compliance, however, PLM has the potential to offer a great deal more. Since not only the product but the components



of that product form the basis of the PLM package, it should be possible to use PLM as a primary tool for driving implementation of a range of sustainability initiatives. For example, consider the value in understanding not only a product's cost breakdown, but also the geographical origin of its component parts, raw inputs (energy, water), distances travelled and so on. Such data would provide an organisation with greater flexibility in making decisions that support external carbon reduction commitments, or assist in driving sourcing and product development strategies geared to minimising costs in an environment of rising energy costs. Data collection, root cause analysis, impact assessments- all become possible, and significantly augment human rights, environmental and other such programs because PLM is concerned with the details surrounding a product, and knowledge of detail facilitates change.

Improvement initiatives are often multi-stakeholder, of course, and as such effective collaboration is imperative. Brands, retailers, agents, vendors, factories, raw material suppliers, label & packaging, testing companies, auditors - PLM enables partners to share dynamic data, 24/7. Supply chain partners can agree and measure key performance indicators, eliminating silos and enhancing creativity. Business processes may be improved, supply chains reengineered - sustainability programs no longer an 'add on' managed by a separate team of Corporate Social Responsibility specialists, but a business program benefiting multiple stakeholders.

Through all this, PLM also becomes an effective tool for training and communication, and for creating those stories that enable all parties to understand where progress is being made, and then to communicate this to consumers whose expectations are becoming increasingly stringent with each passing year. Properly chosen and implemented, PLM becomes a 'one stop shop', a vehicle for change that increases an organisation's ability to effectively address a wider set of stakeholder expectations, including those outside the supply chain (e.g. consumers, investors, regulatory bodies, NGO groups and so on). Indeed PLM eventually allows the organisation to partner with trusted stakeholders, conceivably even those who are the beneficiaries of improvement initiatives, providing them with the means to actively participate in and create their own successes.

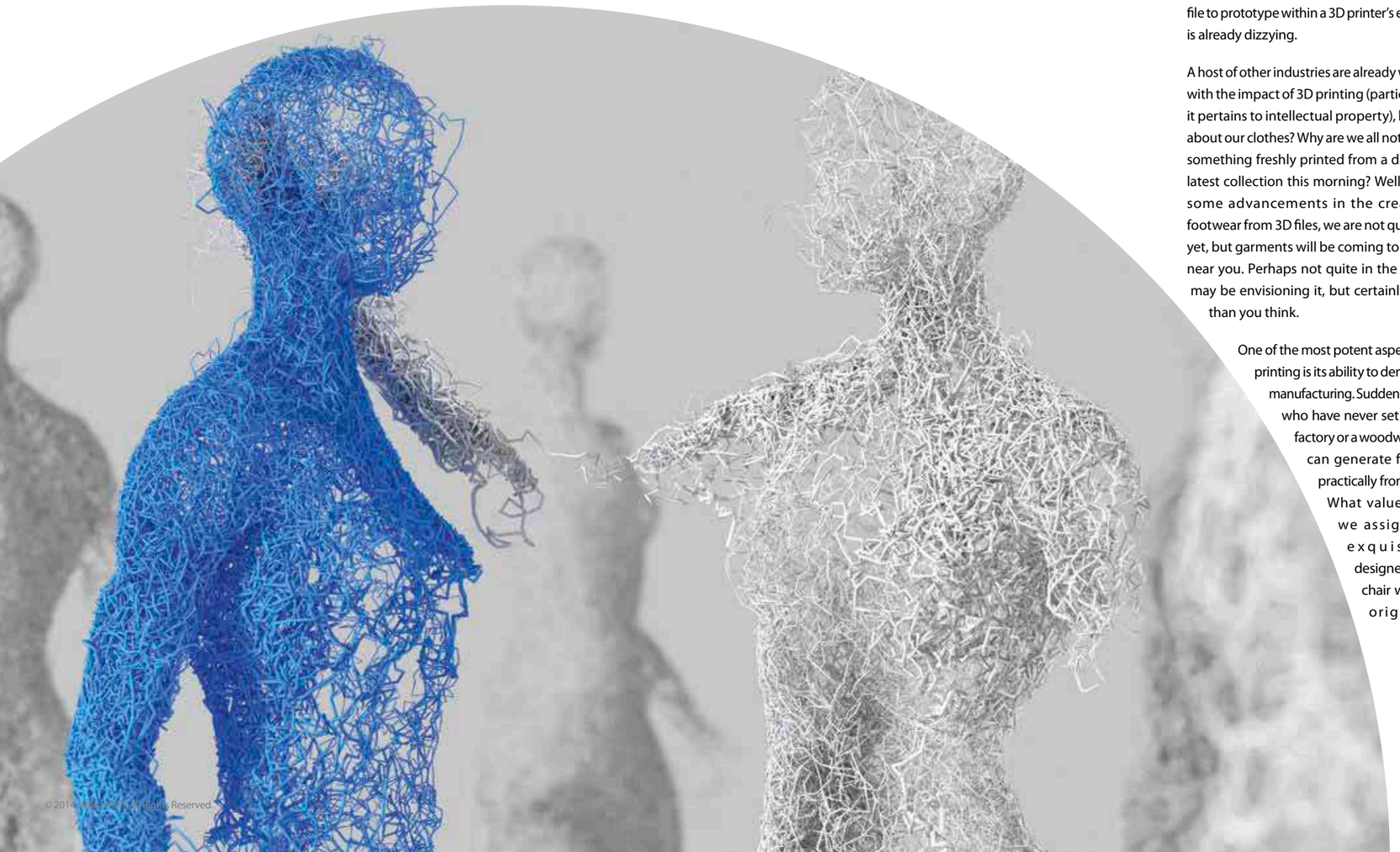
Product Lifecycle Management has much to offer those who would weather the changes that risk sweeping away the unprepared. And indeed, it seems to me that PLM offers a real opportunity to its adherents to get ahead of the curve.

All too often we have seen the results of using low cost production sites, employing low cost resources, and of cutting corners in ways that result in disasters for the workforce and for the local population.

# 3D Printing and the Future of the Apparel Market

*by*
KILARA LE

**Business process expert Kilara Le is one of WhichPLM's most prolific and popular contributors. Her features have previously covered the extended PLM environment and process transformation, but for this year's Annual Review she chose to tackle two entirely new topics. This exclusive article looks at the rise of 3D printing, and its implications for intellectual property and the future of the apparel industry.**





**By now, most of us will have heard of 3D printing. Initially something of a novelty, the process of additive manufacturing - its technical name - has taken on a life of its own over the past few years. For the uninitiated, the principle is the transformation of three-dimensional computer models into physical objects, achieved through progressive layering of a range of different materials by an incredibly precise (but increasingly cheap) 3D printer.**

The transition from a hobbyist interest to an industry has been amazing and rapid, as have the advances in the things that can be made using 3D printing. It's not just plastic novelties and resin sculptures anymore; actual products, from artificial limbs to engine parts are prototyped and some are even manufactured using 3D printing techniques. Today, the technology can work with metals, thermoplastics, porcelain, rubber, silicone, and a host of other materials – the list of objects that can potentially make the leap from design file to prototype within a 3D printer's enclosure is already dizzying.

A host of other industries are already wrestling with the impact of 3D printing (particularly as it pertains to intellectual property), but what about our clothes? Why are we all not wearing something freshly printed from a designer's latest collection this morning? Well, despite some advancements in the creation of footwear from 3D files, we are not quite there yet, but garments will be coming to a printer near you. Perhaps not quite in the way you may be envisioning it, but certainly sooner than you think.

One of the most potent aspects of 3D printing is its ability to democratise manufacturing. Suddenly, people who have never set foot in a factory or a woodwork shop can generate furniture practically from thin air. What value should we assign to an exquisitely-designed Eames chair when the original 3D specifications find their way into the public domain, and we can create another one at a fraction of the cost? What happens, generally, when people outside of an industry find a way to effectively recreate its products, using new technology? Disruption.

**Garments will be coming to a 3D printer near you. Perhaps not quite in the way you may be envisioning it, but certainly sooner than you think.**

As we have observed from other commodities industries that have undergone painful digital transitions - think photos, music, television - some of the traditional methods or processes associated with them have fallen by the wayside during the upheaval. Music is rapidly switching to a license / subscription model; television is being forced to re-examine the concepts of "live" and "serialised" in the face of consumer behaviour and rampant piracy. And as for photography, ask yourself when the last time was you saw a darkroom on the high street.

Could this kind of thing happen in the apparel industry? What will be the impact to our traditional paradigm of design and manufacture when 3D printing becomes ubiquitous? One could argue that something roughly equivalent has already happened multiple times: during the Industrial Revolution, for example, when the scale of manufacture was greatly increased and power was put into the hands of the people. I want to leave you with that thought while we examine the actual 3D printing process in a little more detail, and consider how it might be used in practical terms to actually help the retail, footwear and apparel industry.

In the interests of clarity, there are already several companies who manufacture "full garment knitting machines" that also fall under the additive manufacturing umbrella. Although it's used as shorthand for 3D printing, additive manufacturing is actually quite a broad term describing products that are made by adding material (think pottery and knitting a sweater), versus subtracting it from a larger piece (think woodworking and cutting patterns from a piece of fabric). Some of the already-established benefits of full garment knitting are lower material waste, increased technical construction capabilities, and a much broader range of design possibilities for apparel products. Full garment knitting has been available for many years now, although I personally think that it's been underutilised by the industry as a whole.

This kind of additive manufacture is not quite the same as 3D printing, however, and it's this distinction between the two that's crucial when it comes to considering their relative impacts on the way we work. Manufacturing using full garment knitting machines requires inventory of available yarn in pre-dyed colors, in a range of sizes and raw materials. 3D printing requires only the raw materials- a substantial difference.

Fortunately for the industry at large, a polymer yarn is much more complex than just extruding a melted strand or layer of plastic or powder, which is the current option available for polymer materials in 3D printing. That means you'll have some time to adjust your business model before all hell breaks loose! I hope I'm just kidding there, but those previous industry examples certainly provide food for thought.

Due to their inherent structures, metals and hardline goods are currently better suited to 3D printing. Anything with reliable rigidity is a target for three-dimensional prototyping and all the potential that comes with, but it's the inherent flexibility, drape, hand and so on that make a garment actually wearable. Is this something we expect to be able to recreate with 3D printing in the near future?

Unforeseen advancements aside, I do not personally believe that the 3D printing of soft garments is likely any time soon. Working with the kinds of materials we currently use to create clothes is just too complex – particularly since we currently struggle to create accurate computer simulations of drape and material behaviours and virtually fit clothes onto soft body 'mannequins'.

So if 3D printing of garments comprised of fabrics and yarns remains in the realm of science fiction for the time being, what prompted me to write this article? I believe we should be asking ourselves whether printing garments is the logical next step, or whether the industry should instead look at 3D printing as a new way to create fabrics as a precursor to doing the same with finished garments.

Currently, 3D printing extrusion capabilities involve just one primary polymer material. Many can extrude multi-coloured objects, but only a small number of companies boast the ability to mix multiple polymer materials together. For example, harder plastics mixed with more rubbery ones, or matte finishes with shiny ones. But even this functionality lacks a great deal in the way of flexible micro-structural complexities – the kinds of things inherent in our fabrics.

Current attempts at flexibility have focused on creating chainmail-type structures with closed loops that link into one another - a far cry from both the long flexible yarns crossing at 90 degree angles in woven fabrics, and those used to create more open, connected loops in knitting. A yarn's very nature makes it flexible across more of the width of the fabric, and more capable of flexing and folding with the movements of the wearer. But as improvements to printer heads and extrusion techniques continue to allow for smaller and more precise structures, as well as the capability of switching rapidly between types of materials, I believe some exciting possibilities are going to open up.

After all, existing synthetic yarns are made from polymers, which are in effect long chains comprised of crystalline and amorphous segments. Today's polymer yarns are made using extrusion anyway, albeit with a much more controlled and rigorous process which often incorporates mechanical elements as well. But as printers become more precise and the structures get smaller, the possibilities for taking apparel manufacture to a new level become much more persuasive.

As 3D printing methods and technologies advance, it's going to be interesting to see how existing yarns and textiles are both interpreted and reinterpreted, and how current fashion tools will work with the results. The question remains as to how much consumers are willing to sacrifice comfort for convenience, and if this will even be an issue.

When people like the Creative Director of 3D printing powerhouse 3D Systems, Janne Kyttanen, start imagining a simple, hassle-free future of world travel with no luggage and printed apparel waiting for you when you arrive (in a video available on YouTube) you know the world is preparing to change drastically in the future. Either that, or we have to do a better job of explaining how complicated our industry really is!

I realise I've already explained that 3D printing of complete garments is unlikely in the near future, but there will be people who disagree with me, and technological advancements have a tendency of sneaking up on us. So let's consider what the future of our industry might be if 3D printing does become a viable option – and even whether our current model of manufacture needs to be as complicated as we all know it is.

If we take the growth of omnichannel retailing, pop-up stores and increasing Internet purchases into account, it doesn't take a huge leap of imagination to consider a "make to order" model, with lower inventory costs and only the raw materials for each product held in stock. Could the supply chain be forever changed by that method of customer delivery and, potentially, customisation?

And the impact of this kind of transformation would go far beyond the consumer. Consider your current product development environment, and imagine where the product information required for that make to order model might reside. In PLM, of course.

**As 3D printing methods and technologies advance, it's going to be interesting to see how existing yarns and textiles are both interpreted and reinterpreted…**

As I mentioned earlier, we are likely going to see new methods of construction coming into use in conjunction with new materials, mathematical models, and software solutions. Many apparel companies already use PLM to store product information that can be securely accessed globally – a kind of one-stop-shop for material and colour configurations, pattern files, technical specifications and so on. While this is obviously a good starting point for our hypothetical future, it does of course mean that some new functionalities will need to be added, and system integrations will be required to extend PLM's core functionality out into this area.

If the "make to order" scenario does become reality, those retailers and brands who already have a single location for their vital product data will be at a significant advantage. Direct-to-consumer kiosks could leverage this information for both online orders and in-store shoppers, and use grading rules stored within PLM to fit the chosen garment to the customer's 3D body scan. Multiple CAD software providers already have made-to-measure functionality that can adjust base patterns to better fit individuals' measurements, so this is not at all beyond the realms of possibility. The trick will be merging the pattern and garment construction together into one coherent rendering that is ultimately printable.

Following customer approval, a custom garment could then be made right then and there, or shipped from a local industrial printer direct to their address. I can even envision a scenario in which users are able to save their own versions of clothing they have bought (or customised) to share with others with similar body shapes and proportions, starting us down the process of truly democratising certain key stages of the product lifecycle.

So, are we looking at a 'makers' revolution that will enable customers to either print or contract with a local 3D printer to make a 3D design they licensed into a physical object? In 10 years will artisan websites like Etsy be full of makers promising vintage construction with a needle and thread and real woven or knitted fabric? I very much doubt that, but the apparel industry should definitely be paying attention to what is happening in 3D printing and how it might affect our existing ways of working – things we take for granted but that in reality could be superseded very quickly.

If we run with that idea to its logical conclusion, we can easily conceive of a future where consumers design (or purchase licensed designs) and print their own clothing at home without ever having to step foot in a retail outlet ever again. This would truly be a tectonic shift for retail, sending high street stores the way of film development shops, travel agents and CD sellers. A worrying proposition, but one that, if we prepare, our industry can surely overcome and potentially embrace by properly considering the real and future impact of 3D printing, and our place in a transforming world.






# The Application Marketplace: Change is Inevitable

*by*
CRAIG CRAWFORD

**A former senior executive at Burberry, Craig Crawford now operates his own boutique consulting firm in London, drawing on his experiences with the digital transformation of brands. In this exclusive article for WhichPLM, Craig makes a passionate case for digital mobility, social collaboration, and the need for enterprises to think in terms of agile applications if they're to weather the rapid changes that characterise the fashion and retail industry.**

**Are we, as retailers and brands, in trouble if our workforce expects technology at work to be as advanced and as usable as what they are used to at home?**

**Fact: Our workforce will choose off-the-shelf tools if not provided with tools that are as easy and intuitive to use as those found on their app store of choice.**

Nothing beats a mobile phone when it comes to capturing product inspiration and innovation. A smartphone is compact, powerful and is almost always with you. The convenience of smartphone capture makes collaboration as simple as sharing photo streams or using Polyvore. Proprietary end-to-end solutions and networks may have sounded like terrific ideas half a decade ago, but when cities like New York and London offer WiFi under and over-ground, consumer-grade tools can easily and comprehensively replace their outdated enterprise alternatives. And should you find yourself in a metropolis without free city-wide WiFi, a coffee shop, bar, or retail environment is never far away.

I'm old enough to remember a time when the technology we had at the office was so much better than what we had at home. In fact, I'm also old enough to remember when we had no technology at home at all – something I share with a lot of I.T. executives! But times have changed, and expectations have shifted.

For me, the first major piece of technology to arrive in the workplace was the electric typewriter. This was followed by the copier, the fax, and the mainframe computer. Last of all came the PC and the Mac – the latter of which is still misunderstood today by most I.T. departments and many technology suppliers. It wasn't too long ago that I had a PC-based technology vendor tell me we should convert our predominantly Mac-based company to PCs. The I.T. department eventually had to install

Windows onto every Mac as the only solution for supporting legacy PC software--hardly a shining example of rolling with the changes.

**Why do we insist on complicating the simple?**

**Fact: Simplicity is the ultimate competitive weapon. It never fails. But being simple is not simple.**

Today, most (if not all) of these systems work on my smartphone: a mobile device that belongs to me, not my I.T. department. Arguably, things perform better, are easier to use and have the added functionality of a camera, a phone, instant messaging, and geo location services, all integrated in a meaningful way.

For the past three years I have almost exclusively worked from my iPhone, and this is something I undertook for one major reason: a belief that the technology I, as an individual, was comfortable with and already owned was indeed better than what I was provided with professionally.

What we call I.T. "consumerisation" isn't coming; it's here. People like me can and do work everywhere and anytime digitally, enabled by dramatic improvements in consumer software and hardware that have in many ways eclipsed the pace of development of enterprise solutions.

**Is your organisation mobile first, or is your workforce still tethered to a desk, a PC and a desk phone?**

**Fact: PLM systems that are not truly mobile are likely to either go underused or be viewed as laborious data hungry systems that add no value (despite what it says "on the tin.")**

This conversation is one that makes our I.T. departments and many of our legacy technology suppliers nervous; linear thinking about technology is now an old fashioned mentality, and brands that share this way of thinking do not progress. Eventually, ill-equipped to handle the changes that the market has thrown at them, these brands stagnate and disappear.

The same is true for technology, and particularly PLM.

End-to-end vendor solutions often sound nice on paper – although perhaps more so to I.T. departments than they do to end users. But it's the users, after all, that make technology their own and help to drive adoptions amongst other users. And as you no doubt understand, adoption is key to sustainable success.

The creative process is fluid and may not always take place in the office environment. And when you think about it, the same can be true for manufacturing and selling. Therefore, the technology to support these activities must also be fluid, seamless, and facilitate change.

No system is going to help a designer make up her/his mind, but it should allow her/him to change it as often as necessary to create the best product possible for the best possible price in an environment that accommodates their demands and expectations, including mobility.

**Does your technology facilitate social collaboration to solve problems at work? Is a social collaborative dashboard part of your application ecosystem?**

**Fact: Companies that do not embrace social collaboration will no longer remain competitive.**

Just as they are not necessarily made in the office, creative decisions are not made in silos. Products require input from a variety of sources, but also require an I.T. environment that can collect and catalogue those inputs, keeping everyone informed on trials, successes and failures in real time – wherever they may be.

Next generation enterprise dashboards allow organizations to rapidly innovate and socially collaborate.

The future as I see it is based on an application marketplace, where we can plug modules or apps into a central dashboard, and replace them as quickly as we subscribed to them when they are no longer useful.

Everyone agrees that technology has a shelf life. But do we all actually realise how short this shelf life has become? Gone are the days of eighteen-month implementations and several-year cycles; consumer experiences have created the expectation that we can be hands-on within weeks of a reveal.

**How is your I.T. department handling this disruption? Do you have a Product Architect?**

**Fact: Today's enterprise environment is about digital mobility, integration and collaboration. An experienced, forward-thinking Product Architect is needed to design an enterprise worthy ecosystem that embraces these principles.**

Investment in I.T. leadership is shifting. If technology like email can be outsourced, why shouldn't we outsource it? The keys to the kingdom have now passed from the hands of Email Administrators and DBAs into the hands of our I.T. Architects.

The role of the I.T. Product Architect is not to administer solutions, but rather to design a holistic ecosystem that can deliver results in a meaningful way for the workforce and the executive. This environment is absolutely vital for creating and maintaining brand momentum and growth.

And neither should data maintenance be the preserve of I.T. Although the overall strategy will dictate which systems should act as the single source of product data, the actual creation and administration of that data should fall into the hands of the individuals who create and own it.

**Are you digital on the inside as well as the outside?**

**Fact: We live in a culture of participation. Tomorrow's workforce thinks in digital terms about everything.**

Recent digital transformation has focused on the consumer: the retail experience, the online experience, and the blurring of the physical and the digital. Perhaps this is because the immediacy of transactions is the simplest area in which to demonstrate and understand the value of a new approach.

But let us not underestimate the value of a truly digital workforce – one that uses digital tools to capture and collaborate on decisions as they are made. A workforce that uses multi-screen technology in meetings, so that the data that is relevant to each worker is pushed to her/him as she leaves, creating a focus on intuitive follow-through.

This is a far cry from downloading and uploading spreadsheets into internal systems or across supplier boundaries in order to maintain "one version of the truth."

Recently I had the pleasure of interviewing the 2014 Apps for Good award nominees. For those not familiar with this non-profit organisation, Apps for Good provides a school curriculum and expert volunteers for 10-18 year olds who are asked to identify and then solve a problem using technology.

I laughed out loud when one of the 17 year olds started his sales pitch with, "You know how you can't remember which cloud service you stored your files in?" This team have developed an app called "Accumulus" that allows you to search across your multiple cloud accounts in one go for any file you are seeking.

I explained my amusement to the group of teenagers, "You're solving a problem you have now that corporations are going to have in less than 5 years, and the corporations don't even know it yet. I know this because I spend a lot of time explaining to executives three times your age that they need to be looking at cloud storage now."

Seventeen year-olds have multiple cloud accounts, and they understand precisely what that means and have identified a common problem: disconnected data storage. What storage do you provide to your workforce, and more importantly, what storage do they have that you don't even know about?

**Where are you on the road to this transformation?**

**Fact: Digital transformation is a journey. It is not an accomplishment, but an evolution.**

This transformation to enterprise strength, robust, innovative and agile technology isn't easy, but it's not as hard as you might be imagining. In fact, making the move from static solutions to a dynamic, user-centric environment is something that can be very exciting and fun!

But, if what I've written has made you afraid now, just wait until those forward-thinking seventeen year-olds enter your workforce in the next three to four years. The weight of expectation and the willingness to turn to intuitive off-the-shelf solutions will only get stronger as time goes by.

And we all know that time (and the march of technology) waits for no one.



**The future as I see it is based on an application marketplace, where we can plug modules or apps into a central dashboard, and replace them as quickly as we subscribed to them when they are no longer useful.**

Some images provided by Sam McCarthy-Little. Follow Craig Crawford on Twitter: @getamobilelife and through his blog on www.crawfordit.cc

# Supply chain transparency: the modern metric

*Interviewee*
YUSSEF BICTASH

**Yussef Bictash is Operations Manager for UK high street brand REISS, and a vocal proponent of ethically and environmentally sound sourcing and supply chain practices. In this exclusive interview, Yussef and Ben Hanson discuss how rapidly compliance, transparency and sustainability have become the metrics by which retailers and brands are measured in an interconnected world.**

**Ben Hanson: Speaking as a representative of a well-known and premium apparel brand, how important is supply chain management? I have personally referred to it more than once as the yardstick by which retailers and brands are going to be measured.**

**Yussef Bictash:** As you know, with what has happened around the world in the past year, the emphasis has definitely shifted in the way any retailer regards their supply chain. The "supply chain", to a modern retailer or brand, is no longer just about tracking the order lifecycle of a product; we are now bringing what I call the 'secondary' supply chain – setting the actual work into a broader context - to the forefront of our methods.

Let me explain that point. If you'd asked me 5 years ago what the supply chain meant to me, you would have received a very different answer to the one I'm giving today. At that time, I'd have told you it was entirely focused on logistical matters like gold seal fabrication, trim orders, approvals, transit times and freight haulage.

Today the emphasis is different. Those things are still as vital as ever, but the elements that have come to the fore have been the factories (and other suppliers) we work with, and the way they treat their employees – the context within which the logistical aspects take place. This includes working conditions, living wages, public holidays, reasonable capacity, and much more.

And while this side of things is definitely a work in progress for most of the retailers and brands I know, we as an industry are doing our utmost to move in the right direction.

**BH: How much of that work do you feel the average customer is aware of? It seems to me that consumers are increasingly factoring the ethical and practical aspects of retailers' and brands' global operations into their purchasing decisions. They shop with a conscience, in effect, and expect you to make products with a conscience, too.**

**YB:** You'll always find a mix, I believe. There will always be consumers who care and consumers who don't, but what's certain is that the more we become engulfed in the social media frenzy, the more the shopper becomes aware of his or her own social responsibility when it comes to the retailers and the brands they engage with.

You only have to look at the way the press have reported on certain retailers' involvement with recent disasters to see the way that supply chain practices are coming to mainstream attention. For example, the public perception of Angora changed entirely when PETA aired a video showing the cruelty with which rabbits were treated by a Chinese supplier. And likewise, look at the issues Northface were faced with when it became apparent that some of their down had been sourced without their knowledge and in contravention of their published standards.

These companies were judged in the public arena against aspects of their business that, even a few years ago, would have remained entirely private. So in that sense, yes, I do believe consumers on the whole are beginning to factor these kinds of things into their purchasing decisions.

**I think 2015 will be the year of compliance.**

**BH: Taking account of the complexities of international working, if a shopper does want to know where and by whom the products they like were made, how easy is it for a retailer or brand to reliably source and present that information?**

**YB:** At the moment, retailers and brands keep track of consumer perception using customer services and social media. Plenty of companies already collect this information for trend analysis purposes, but an increasing number are realising that it can be equally useful for providing them with insight into how their sourcing and manufacturing processes are thought of by the general public.

When it comes to actually collecting the right sort of information about suppliers, this is something retail (particularly apparel) has been building towards since the industry went global and offshore manufacturing became the norm. For a retailer who trades in multiple territories and manufactures in many more, true supply chain transparency is a must-have. Today it's not enough for retailers to know where their supply chain partners are based – they have to know their true capacities, and understand to an exacting level of detail their ethical and environmental standards.

But while that sort of insight, as we've said, is really a necessity for any company in the public arena, we have a gulf between expectation and reality – because not everybody has the tools to get at the required information. This has created a differentiating point for those who do – retailers and brands who advertise on their websites and in other marketing materials that they are "responsible" and "sustainable".

**BH: What barriers might stand in your way when it comes to getting hold of the data that would allow you to claim to be "brand responsible"? The most immediate one that I can think of is sub-contracting; I might commission products from one factory, and be none the wiser that they are in fact getting another, non-compliant operation to handle the work.**

**YB:** That is a big issue. But it's related to the broader problem of trying to ensure that your supplier is accurately responding to your requests for information, and in sufficient detail.

In the past, I've found that a generalised fear exists amongst suppliers. They worry that by providing too much information and being too transparent, they may find themselves out of work. This isn't limited to the factories themselves, either. You have to remember that a lot of factories are represented by agents who have a great deal to lose if they're found to be non-compliant themselves, or to be working with factories that fall short of standards

Some companies also trust suppliers and agents to self-audit, and you can imagine the difficulties this brings with it. Sub-contractor relationships might be ignored, and the information provided may be unreliable or sugar-coated so that the agent in question stands a better chance of holding onto your business.

Even if you decide you can trust that kind of information, getting it into a usable state can be a different matter entirely. Some would be written in local languages without translations, making it difficult for a UK or US retailer, for example, to make use of the data in any meaningful way.

This is becoming less prevalent today, though, and more and more factories are volunteering to undergo external audits. And in cases where they are found to be lacking, these factories are working with their customers (the retailers and brands) to meet the standards required by their due diligence and the public's expectations.

This is an interesting dynamic, because it's intended to build genuine trust in place of the misinformed and perhaps naïve hope that has characterised both sides of the relationship up until recently.

**BH: As you said earlier, there are a number of large companies (as well as smaller or boutique brands) who use that kind of informed trust to their advantage. With complete insight into their factories and**

**sourcing practices, brands can trade with confidence and sometimes startling transparency. Is this something you see becoming more prominent in the future?**

**YB:** Yes, definitely. Take a look at the websites of big brands and smaller organisations alike, and you'll find that most have corporate responsibility or ethical statements designed to show consumers that they take transparency seriously.

**BH: Beyond just putting it on their website, what steps can a retailer or brand take to reach that level, where they can actually claim true supply chain transparency? It can't be as simple as a routine factory audit – even a trustworthy one.**

**YB:** No, but it can definitely begin with one. The best method is to look at the work of retailers who have started their own ethical think-tanks to properly target the issue. Most of these will work in some capacity with organisations like Made-by, Unchosen, The Ethical Fashion Forum, Labour Behind The Label, or Segura Systems – all of which are designed to help retailers and brands set the agenda, and demonstrate through practice how it can be sustained through new ways of working and technology.

**BH: This all goes beyond the court of public opinion and advisory councils, of course. Regulatory bodies and guidance like REACH, OHSA, and the Higg Index (from the Sustainable Apparel Coalition) have been created to either mandate or encourage supply chain transparency and compliance. Do you think legislation like this will continue to grow? And if so, how will those companies who are prepared stand to benefit?**

**YB:** I think 2015 will be the year of compliance. New European laws are going to require businesses to report on their policies regarding social, financial and environmental supply chain risks.

I recently read a quote from Jerome Chaplier (coordinator of the European Coaltion for Corporate Justice), where he explained the cross-industry impact of legislation and specifically mentioned the apparel industry: "A large oil company will [soon] have to report on its oil spills and the health risks from gas flaring […] or a listed clothing retailer will have to consider the risks in its supply chain."

Once this kind of regulation becomes a reality, it will change the view that the industry as a whole has of compliance. It won't just be seen as a point of differentiation for those who care, but rather an absolute necessity for every organisation involved in the retail industry.

**BH: If I, as a sourcing or supply chain manager, did discover that one of my supply chain partners had breached our ethical policy in some way, what would be the right thing to do about it? My gut reaction might be to cease working with that factory to avoid damaging my reputation, but Walmart, for example, have a policy of working with supply chain partners instead, to bring them up to standard.**

**YB:** I could see why you might react that way, and even I'd be tempted to say "yes, let's stop working with them immediately". But how will the factory owners and agents ever change? Won't a less scrupulous brand than yours simply come along and work with them regardless?

The media spotlight is resting firmly on us as public-facing companies, and although the pressure is certainly on to stop working with suppliers who are deemed unethical, I believe that if we simply walk away, those suppliers' conditions will never change. If anything, a retailer or brand's responsibility is to promote change both internally and externally.

**BH: How important do you feel technology is when it comes to achieving the level of insight and transparency that today's consumers and regulators demand?**

**YB:** For me, technology is the key. I believe that in the very near future we'll see an increase in the number of production tracking technologies being deployed alongside (and integrated with) the enterprise-level tools of ERP and PLM.

**BH: Finally, we've talked about this from a business perspective on more than one occasion, but I'm interested to get your personal opinion as well. Do you feel as though it's practical and desirable for retailers and brands to make sure their entire extended supply chain is environmentally sustainable and paying a living wage?**

**YB:** My personal feeling is that this is a difficult project to tackle for an organisation of any size, and one fraught with problems. I believe that building a strong working relationship with a specialist third-party is needed if we are to obtain the kind of insight we need in order to claim true transparency.

I also fear for the smaller retailer, who doesn't have the buying power of a competitor with 200+ stores. These businesses don't have the luxury of "demanding" information from their suppliers, which is what has led to the poorly-founded notion of "trust" in a lot of cases.

I recently saw another great quote that read: "content builds relationships; relationships are built on trust; and trust drives revenue". I believe this really sums the issue up: retailers are beginning to realise the power of the information they can glean from their partners - and promote via social media and the press - and the smartest ones are using this to create open supply chain visibility, empower their consumers, and reinforce their brands.

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# Intrinsically igniting your PLM team

*by*
NANCY
WINSLOW

**Nancy Winslow is a freelance writer and software consultant, with experience of implementing a host of different PLM solutions in retail and brand environments. Writing from her hometown of New York City, where she is currently spearheading an implementation, Nancy's exclusive article looks at tried and tested methods for inspiring passion and commitment in your PLM project team.**

**A motivated team is absolutely essential to the success of a PLM implementation rollout. Like any enterprise level commitment, the longer a PLM project takes the harder it is to keep everyone engaged and focused on a goal that may still seem an insurmountable distance away. So how do project managers inspire their teams to stay positive and productive throughout the multi-year course of their projects? The answers vary on a case by case basis, but the methods that are the most impactful might just surprise you.**

Anyone who has been involved with just one software deployment knows how difficult it can get. Even with an effective selection project completed, a well-planned project roadmap, and a skilled team raring to go, implementing PLM is never easy. If at any point the team loses sight of the end goal, that team could begin to erode and lose their incentive to keep on the proper course.

Many companies offer a bonus to team members if the project comes in on-time and on-budget, but is that enough? In a recent Gallup poll where roughly 180 million employees from 142 countries were surveyed, the result was astonishing. Only 13% of employees worldwide are actively engaged at work – meaning psychologically committed to their job – leaving a staggering 87% of workers floundering without clear near and long-term goals, and their employers suffering as a result. The United States came in slightly higher at 29%.[1], but this still leaves a significant majority of team members chronically unmotivated.

So how do successful managers motivate their team members to stay focused? Science has proven over and over again that those extrinsic motivators, such as bonuses, pay raises, and special privileges are not nearly as effective as intrinsic motivators that include praise and outward appreciation.[2]. This is not to say we don't need to get paid. Everyone needs to get a fair wage, but the important thing to consider is that paying someone what is expected based on experience and market demands takes the

subject of money off the table, and frees project managers up to focus on the more effective incentives.

Intrinsic motivation – which we will call the "heart" rather than the "head" for our purposes - is motivation to do things because we love doing them. This motivation comes from within. On the other hand extrinsic motivation - the proverbial carrot and the stick - include rewards like bonuses, a steady paycheck, or even the fear of losing something should we fail. Extrinsic motivation originates from outside of our selves. Although the carrot and the stick is effective to a certain point (after all, none of us work for free) the problem with extrinsic motivators is two-fold: they are controlled by external forces, and, surprisingly, they don't actually appear to support long term motivation particularly well.[2].

Intrinsic motivation, as stated in Daniel Pink's book entitled "Drive", is based on three elements: Autonomy, Mastery, and Purpose. Autonomy is the freedom to choose the best way to accomplish something; Mastery is getting better and better at it; and Purpose is about doing something that is bigger than ourselves. Pink boldly proclaims that these are the basic elements of a brand new operating system for business – one that shuns the performance to financial reward equation that has typified business motivation for decades.[2].

And it has been decades. For more than forty years, management techniques have remained relatively static – in short, business has changed, while management has not.[2]. Project Managers may have begun applying better methods for creating and managing cohesive teams, but these types of methods are not being used to manage employees on a day to day basis the way they should.

**Intrinsic motivation – which we will call the "heart" rather than the "head" for our purposes - is motivation to do things because we love doing them. This motivation comes from within.**

For workers performing duties as part of an organisation - producing a service or a product - as well as for those working together on a project, it is essential to share the purpose or objectives of their efforts. With PLM teams specifically, where normally members have been involved with the project from the start, it is highly effective to have the team, together with management and representatives from the business, understand why the project is important. That purpose needs to involve more than just the bottom line - it needs to link back to the people performing the work as well as its customers. It can be easy for executives to find motivation in margins and profitability, but much less so for project team members whose concerns are more immediate, and whose own sense of satisfaction is not as closely coupled to the success of the business strategy as a whole.

Certainly the team should understand how its efforts will help the company to save money but that alone is not enough. Beyond the KPIs of profit building lies a deep and more impactful message that binds not only the team deploying the application, but also the end users. Those who will work with the new PLM system day in and day out must understand and share in a vision for how the proposed improvement(s) to their process(es) will help them create a more robust and sustainable partnership with both their internal and external customers.

When a PLM project is successful, it will allow for better quality products to be created in a shorter amount of time, making them more likely to be market-right and profitable for external customers. But that is not all; enterprise solutions need to work from the start of the process to the point where it hands off to another solution, such as an ERP or CRM system. When there is a cohesive purpose that is shared with the stakeholders, there will be a greater respect for both the processes and systems, as well as for the people involved.

So, understanding clearly the objectives of the project is important but that is not enough to sustain an intrinsically motivated team. Intrinsic motivators, at their best, should allow teams to self-manage and self-sustain, without having to be reminded of their purpose. Once they are clear on what they are trying to accomplish and why, letting them decide how it's going to get done is what develops a sense of ownership. Remember that your team was put in place because they had experience, knowledge, and education, making them experts in at least some aspect of the project. So why not trust in them to know how to get to your shared destination?

Today software development teams routinely reference the framework of "Agile"[3] and a methodology, known as Scrum.[4]. Scrum is not an acronym: it is based on the practice found in the game of rugby, where teams huddle together to create a strategy to overcome the

opponent. As a Certified Scrum Master myself (in the office, not on the rugby field), I understand the power of using methods that mimic basic human behavior. Referring back to the elements of intrinsic motivation, autonomy (as in that of the team), is self-directing. If your team members know what they need to do, and each has expertise in a relevant area of the process, this will ensure motivation for contributing to the overall efforts of the team, since both long and short-term goals are naturally shared.

Another element taken from Scrum is a meeting that takes place after each project phase or "Sprint" called "The Retrospective".[5]. This is a meeting that is held as part of the project, designed to discover what worked and what didn't, for the purpose of helping the team understand clearly what they do well and what still needs improvement. This supports the second aspect of intrinsic motivation: mastery. This practice is what keeps the fire burning within long after the sprint is over and we've all regained our collective strength.

Mastery, for a team, means more than just mastering skills - it's also about learning to work together as an entity to improve communication and trust. When team members are working in this type of an environment, they naturally show more respect and patience with those outside the team. With PLM projects, attitudes vary, and I often find that each team member's approach and mindset is closely informed by their specific role in the product development process – something very few other people on the project team share. However, I have found that when approaching even the most difficult of users with patience and respect, they become more open and relaxed. Teams with members that are confident, feel respected, empowered, and are able to leverage their experience will be more patient and respectful of others - ultimately benefiting the entire organisation.

Allowing a team to self-manage ensures that each member contributes to meeting its objectives and shares that all-important common purpose. Having a sense of meaningfulness in what we do, both individually and within a group, rewards us, and that feeling of self-respect cannot be taken away unless we allow it. Teams that can share the planning, execution, and management of their work, including the problem solving activities, will not only stay focused and engaged, but will continue to improve as a team, grow as individuals, and share a more



**As with any business case, making the argument for PLM adoption requires you to translate the challenges and benefits you've already identified into a concrete, scientific return on investment analysis.**

supportive approach to working with those their efforts serve.

It's important to remember, though, that while every team is made up of individual members, teams do not act in a vacuum. Teams operate within an environment, like planets in a solar system, and their effect on that environment can affect other teams either positively or negatively. Therefore it is essential to recognise the efforts of the team as well as the individuals. In order for this process to work well, upper management needs to be engaged and supportive of the actual work involved in reaching milestones, rather than just the milestones themselves. Indeed, an early Gallup study found that 69% of employees prefer praise from management over and above financial incentives.[6].

To put it bluntly, team leaders, if they don't already, need to say thank you and say it often. And senior management is not exempt. Recognition from the big boss can be one of the highest forms of motivation given to any employee but, unfortunately, it is rarely used.

Jack Welch, known for his turn-around of General Electric was known to often walk the factory floors. His approach for managing absolutely tapped into the intrinsic needs of his employees. One of Mr. Welch's lessons, as shared in an article entitled "Twelve lessons from Jack Welch's leadership style" supports his belief of the importance to inspire creativity and free flow thinking. He believed management should "never lead by intimidation" and should "always let others know exactly how their efforts are helping the organisation."[7].

Teams and team members need feedback, not just from their peers and not just at the end of a multi-year project. Building a feedback mechanism into the PLM deployment process is essential, since it can ensure that regular conversations take place, linking sometimes arduous and difficult tasks to a sense of broader achievement and the longer-term strategic goals of the business.

Intrinsic motivation, then, is essential to productivity and creativity in the workplace and beyond, but applying it takes practice, and a genuinely caring and respectful attitude.

While self-managed teams can be highly effective, each member needs a certain amount of autonomy to do their work. PLM projects require a high level of creativity and for team members to perform this type of work it demands cognitive thinking. Once cognitive thinking is required, extrinsic motivators negatively impact performance.

While each member needs autonomy to reach his or her highest potential, teams also need to be cohesive. If there is an element of me versus us, it needs to be addressed. Each member, while having his or her own role, must understand and believe the whole is greater than the part. Keeping in mind the elements of intrinsic behavior, remember that being a part of something bigger than oneself gives us purpose.

Finally, we all know PLM projects can be challenging, and the longer they take to complete the greater the chance the cohesiveness of the team will deteriorate. We know the work must get done, the team will get tired, and focus will likely waiver but, if the environment is right and the motivation is intrinsic, the work can be fun. To quote the great Yankee Team Captain, Derek Jeter; "You gotta have fun. Regardless of how you look at it, we're playing a game. It's a business, it's our job, but I don't think you can do well unless you're having fun."[8].

Notes and References:

1. Data taken from "Worldwide, 13% of Employees are Engaged at Work", October 8, 2013 regarding the Gallup poll entitled State of the Global Workplace.

2. These descriptions and beliefs are taken from the book "Drive" written by Daniel Pink and referenced throughout the book and on various videos found on You Tube regarding motivation in the workplace.

3. Reference to "Agile" is based on the methodology known best in software development and can be referenced at http://agilemethodology.org/

4. Reference to "Scrum" is based on a specific Agile methodology developed for software development and can be referenced at http://www.scrumalliance.org/

5. Element found in the Scrum framework developed for Software development and can be referenced at http://www.scrumalliance.org/

6. Referenced from the article entitled "Building better performance through intrinsic motivation" written by James Adonis, Engagement Expert and Motivational Speaker

7. Referenced from the article entitled "Twelve lessons from Jack Welch's leadership style" written by Jack Welch found on Vietnamworks http://advice.vietnamworks.com/en/hiring/effective-management/twelve-lessons-jack-welch-s-leadership-style.html-0; with notation of original source: The Welch Way

8. Taken from a collection of quotes by Derek Jeter and about him and found on the site Baseball Almanac that is located at http://www.baseball-almanac.com/quotes/derek_jeter_quotes.shtml

# PLM, Helping to Reduce Your Carbon Footprint

*by*
MARK
HARROP

**With more than three decades' experience to his name, Mark Harrop is a true apparel industry veteran. Drawing on a career that included senior roles within many of the leading PDM and PLM vendors, Mark's articles examine both the technical aspects and the broader business consequences of PLM. This topical feature considers PLM's role in helping retailers, brands and manufacturers manage their net impact on our environment.**

**On a personal level, our style and methods of living determine the amount of greenhouse gases we contribute to the global environment. Discounting natural sources and focusing on the carbon dioxide we produce through transport, food, fuel, services and so on allows to calculate what's commonly referred to as our "carbon footprint".**

Whether we like to dwell on the fact or not, the choices we make and the habits we fall into – whether we bike to work; whether we consumer locally-produced meat - have a major environmental impact. This is an equation plenty of us have wrestled with in our personal lives, where small changes like our modes of personal transport can make a big difference – but the 'we' I want to address in this article are the multinationals, small businesses, departments and divisions who, through their daily activities, create a net negative effect on our climate.

Irrespective of your stance on whether climate change is man-made or naturally occurring, the consensus amongst shoppers – your harshest critics – is that the brands they love should act sustainably. This is a loaded term, and one you'll find covered from a multitude of different angles in this publication, but for the purposes of this article I want to talk about how you can act to reduce your carbon footprint through careful and considered investments in technology.

**And the time to act is now.**
What I don't plan to explore here are the more "managerial" ways in which a company might reduce its carbon footprint; company bicycles, recycling, car pooling and so on are all outside the scope of this article. Great ideas though they may be, I want to look specifically at how adopting PLM might help to mitigate your impact on the environment.

At WhichPLM, we have routinely made our case for the business benefits of PLM – efficiency, cost savings, data cleansing and centralisation, to cite just a few – but the following are examples of what we consider to be the kind of added value that often goes overlooked when organisations consider PLM. These are the top four ways in which I believe PLM, properly selected and implemented, can have a positive effect on your carbon footprint.

**1. 3D Virtual Sampling**
The world's leading retailers and brands request thousands, and in some cases even millions, of samples per year to support their product design and development activities.

Recently, I overheard a senior executive from a sports company explaining to a colleague that their European operations go through a staggering 3 million iterative samples per year – many of which are air-freighted from suppliers in Asia back to their headquarters. It doesn't require a calculator to figure out that this adds up to a great deal of jet fuel burnt in an average twelve-month cycle.

But is that kind of large-scale sampling strictly necessary? Today, 3D virtual sampling solutions have the ability to simulate a range of products, from apparel to accessories, in ways that can be almost indistinguishable from reality. More rigid products like footwear tend to fare better in a virtual sampling environment, but broadly speaking a large percentage of physical sampling could easily be replaced with virtual prototyping, which products only moving to the physical sample stage once they have met with initial approval in their virtual form.

The best 3D sampling solutions can translate 2D DXF pattern files from the majority of CAD/CAM systems high-resolution images, allowing designers and garment technicians to fully assess the detail requirements of the finished product. In addition to this, a collaborative 3D sampling environment allows vendors to question requirements through an online portal, using collaborative whiteboards and screen-sharing. All of which can contribute to a dramatic fall in costly iterative sampling, as well as a significant reduction in airfreight costs – both to you and to mother Earth.

**By thinking differently, not only are we reducing our carbon footprint using a digital fabric printing process, but we are also reducing the cycle time of design and sampling by a factor of potentially 25:1**

**2. Fabric Sampling**
The next logical step in the typical production process, once design silhouettes have been approved, is to obtain physical fabric samples from your sourcing partners – again shipping them between continents.

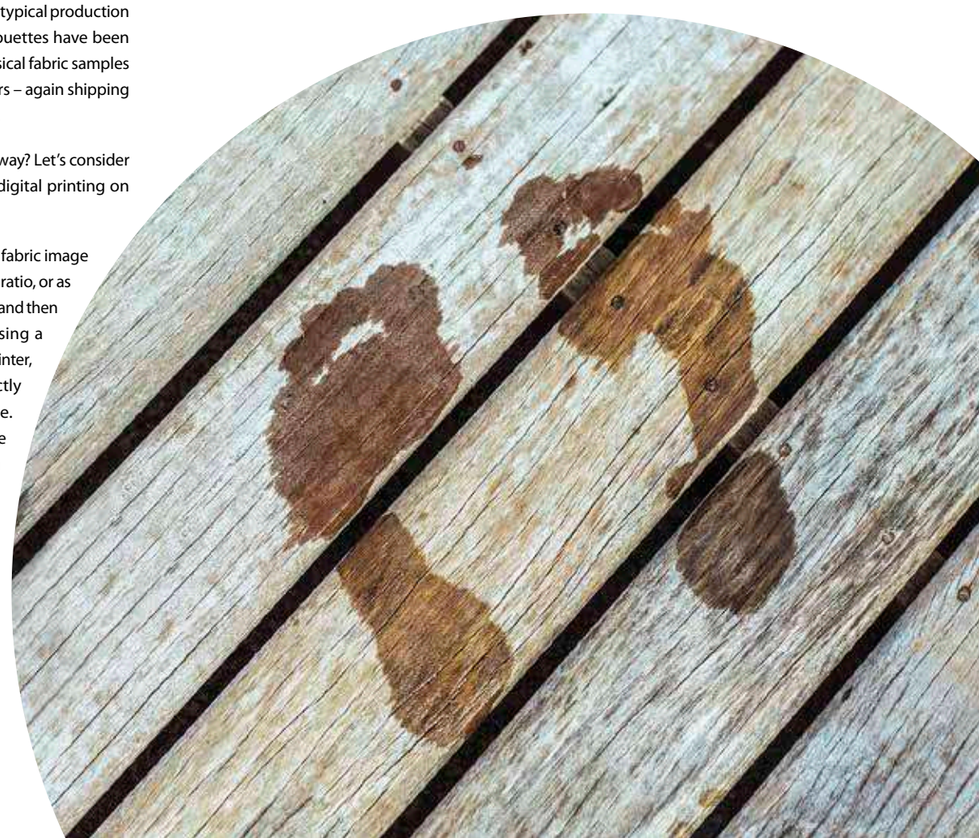
But does it have to be this way? Let's consider an alternative approach: digital printing on fabric substrates.

This process takes a digital fabric image from a CAD system (at a 1:1 ratio, or as a tiled or repeating pattern) and then prints this information using a reactive dye based inkjet printer, applying the results directly onto the fabric substrate. The end result is a 1x1 metre sample length that can in turn be used to create physical garment samples. Unlike the standard method, which requires fabric samples to be flown from country to country, this process can be completed in a matter of hours as opposed to weeks.

By thinking differently, not only are we reducing our carbon footprint using a digital fabric printing process, but we are also reducing the cycle time of design and sampling by a factor of potentially 25:1. And as we all know, in the time of the demanding, socially-connected consumer, up-to-the-minute trend is king.

**3. Colour Management**
The scope of sampling extends beyond the fabric and garment level. Colour management is another key target for carbon footprint reduction, since physical colour samples – like their fabric counterparts – are often shipped around the world in order to complete the approval process.

This can again result in thousands (or millions) of samples travelling from their points of origin to your headquarters, depending on the size of your organisation. Whereas, if the colour management process can be converted into a digital format, with online approvals issued to the originating supplier's colour management system, we could see a huge reduction in the environmental and monetary cost of colour sampling.



**4. Collaboration**
As you can tell from the previous three suggestions, when it comes to leveraging PLM and extended-PLM to reduce your carbon footprint, it's all about joining the dots!

Collaboration is something of a buzzword in modern PLM, but generally we find that people see it as a one-way stream leading from their offices to their vendors and manufacturers. In reality, this is only a small part of the overall puzzle. If you want to address your environmental impact holistically, you need to look at the entire extended supply chain, and that means raw materials suppliers for fabrics, linings, components etc.

All of this can be digitised to enable the early sampling process, using images rather than physical samples, and resulting in fewer deliveries via road, sea or air. As well as helping to make us more environmentally sound, this might also give rise to more efficient processes, leading to shorter cycle times, and products landing on store shelves closer to trend than ever before.

There are certain to be countless other ways that investing in PLM and extended-PLM technologies could help to reduce your organisation's carbon footprint, which is something any socially responsible company should consider when evaluating the added value potential of their current or shortlisted PLM solution(s).

# Why Fit Matters, And How Technology Can Help

*by*
KILARA LE

**Business process expert Kilara Le is one of WhichPLM's most prolific and popular contributors. Her features have previously covered the extended PLM environment and process transformation, but for this year's Annual Review she chose to tackle two entirely new topics. In this article, she makes a case for the importance of proper and consistent fit when it comes to securing consumer loyalty.**

**The right fit is a huge part of what makes clothing look good beyond the hanger and on the customer. The right size, shape and colour combine to achieve a certain "je ne sais quoi" that makes a person feel good about her or his appearance. It's an aesthetic yet quasi-physiological amalgamation of visual appearance and comfort – all brought about by wearing something as simple as an article of clothing.**

But how do we define fit? The right, or "good" fit can allow for fluid range of motion in the case of athletic wear, or conversely constrict movement in the case of a corset, reigning in those lumps and bumps to give the wearer a better shape. Both are defined as "well-fitting" but could hardly have more different aims. Fit, like art, is in the eye of the beholder, or wearer as the case may be. Even though we've only covered its extremes, in more practical terms this subjective definition means that some people like loose fitting clothes, some prefer tighter fitting, longer, shorter… so even the right "fit" in the eyes of a pattern maker or technical designer might be the "wrong" fit in the eyes of the customer.

As has happened to most, if not all of us, you've seen a beautiful garment on a mannequin in a store and thought, "I love that, I bet it would look great on me". However, after rushing to the fitting room to try it on, shock sets in when the garment that looked great on the hanger makes you look like a shapeless blob or a strangely angled new species without the ability to lift its arms. Don't worry: even though this is disconcerting and sometimes downright frightening, it's not you who's to blame - it's the fit.

And the trick is to remember that the right fit is entirely subjective.

One of the best ways to mitigate this inevitable issue of fit preference is to make fit internally consistent, which is to say reliable at a brand level. This, in tandem with desirable products, establishes a level of familiarity and reliability between the brand and the customer. It means that the customer can purchase additional products with a higher level of confidence on return visits to a store, or via a brand's other retail channels. And with large retailers reporting significantly higher sales from repeat omnichannel customers, there is a lot to gain by delivering a consistent product and meeting customer expectations every time they make a purchase, regardless of whether they try-on before they buy.

The first step in this journey to define fit is figuring out who the customer is by analysing more than just the typical metrics of age and style – you must also understand their body shapes and their measurements. The next step is using tools and technology to create guidelines that will be used at the earliest stages of garment fit, during design and development. Subsequently, control must be maintained over these measurements and guidelines for the duration of the development process, at every stage of the extended supply chain.

**Fitting Your Target Market**

Once the target market is determined, how do brands and retailers go about figuring out their customer's measurements in order to achieve consistent fit? The answer used to be trial and error, in tandem with measuring customers with a trusty tape measure at defined body measurement points. As many technical designers are well aware, the tape measure is always reliable, but the person using it to take measurements might not be so consistent.

In the past, companies have also turned to datasets such as the US army and other governmental sizing information captured using these manual measurement techniques to help determine fit. These were simply the widest-ranging sets of measurements available. And in that same environment, many authors of patternmaking books created their own rules and guidelines based on their own experiences.

In the last decade, though, 3D body scanning technology has revolutionised the industry and given brands the ability to view, analyse and make much more sense of anthropometric (human body) data.

**…with large retailers reporting significantly higher sales from repeat omnichannel customers, there is a lot to gain by delivering a consistent product and meeting customer expectations every time they make a purchase.**

Population scanning projects such as the SizeUSA, SizeUK, SizeThailand, and SizeMexico initiatives have given us an unprecedented view into the actual and accurate body measurements of individuals and demographic groups within these countries. And at least some of these advances came from consumer-grade hardware: Microsoft's first generation Kinect sensor – released in 2010 - made it easier than ever to "scan" and capture the body measurements of individuals without necessarily resorting to heavier-duty, dedicated solutions.

These new techniques have also revealed what manual measuring could not: the volumetric and proportional differences between different body shapes and sizes – allowing the operators of these projects to create visual representations of the sometimes-dramatic variations in sizing in different markets.

It's important to recognise, though, that 3D scanning produces body measurements, which are different from the finished garment target measurements that are typically sent to factories making products. There is another layer of translation needed to incorporate the body measurements into the pattern blocks and files to take into account ease and styling.

This is the role of patternmaker and grader.

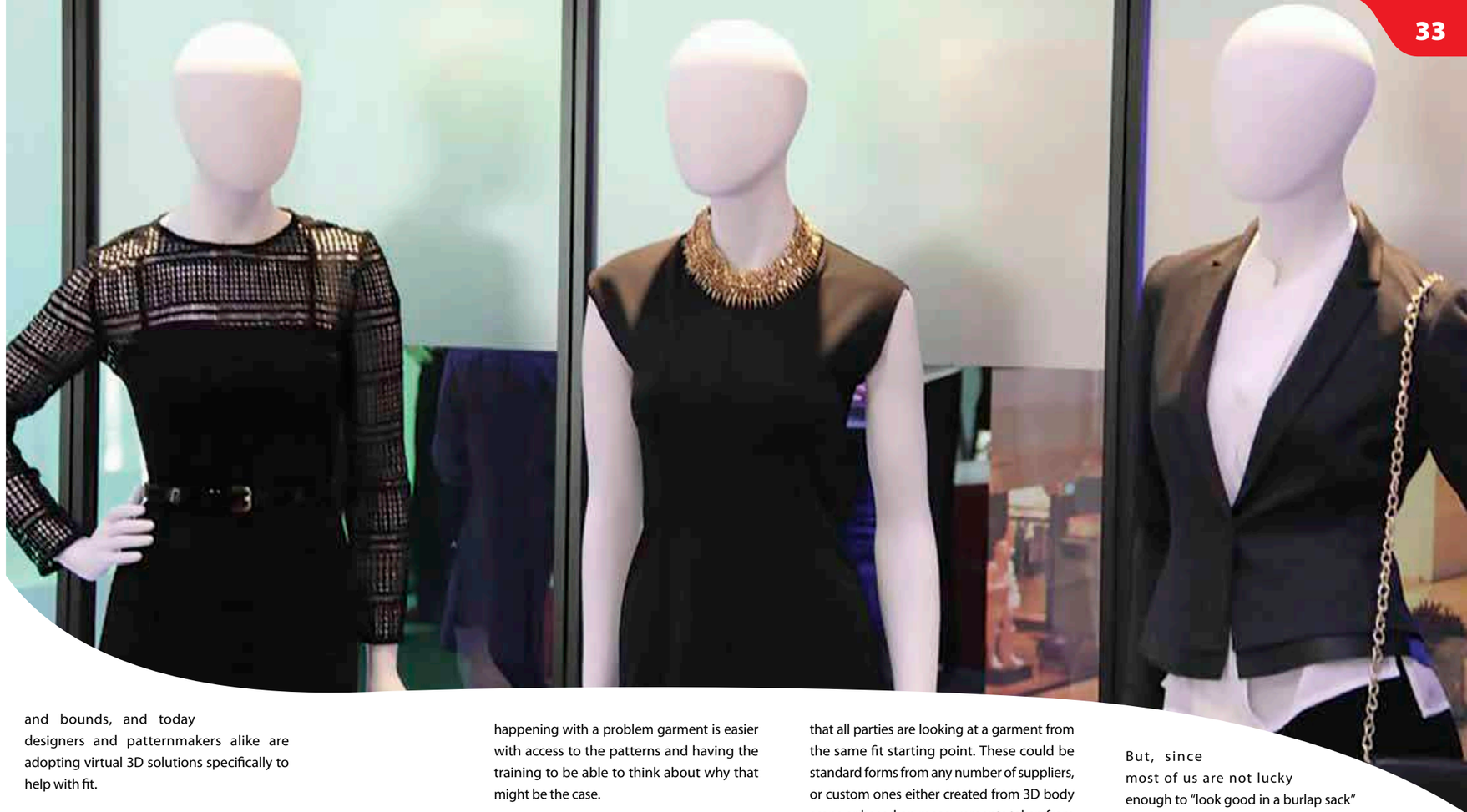
Once target body shape and dimensions have been determined, grading - or change from size to size to fit the optimum range of customers - can be figured out. This type of information is used to form the basis of standard grading rules across typical product types and fits - a handy shorthand way of transforming a single size into a garment that fits across multiple sizes.

However, analysis of this kind of far-reaching body scan data also revealed that standard grade rule increments do not always correlate with actual body measurements, and variations from the expected linear grading can be quite significant. Rather than treat this as a stumbling block, though, the opportunity exists to gain a great deal of fit and grading knowledge by analysing the whole body data of subjects within a target market.

**Many brands have carefully studied their fit consistency to make sure they are actually catering to the majority of their customers. Many have not or may have had a shift in their customer base.**

**I've worked with one company that has customers aged 35-45 who aspire to look like their core customers (ages 18-25) despite significant and obvious disparities in shape and size, as well as other brands whose core customer base (45-75) was starting to buy fewer and fewer nice clothes on the assumption that nothing would fit their changing shape.**

**So what do we, as customers, do? Do we change brands or do the brands we love change with us?**



As you might have guessed from the fact that a number of regional surveys have been conducted, analysis of the right demographic is important as fit can easily differ between two people who technically have the same measurements. Depending on how their body is shaped and proportioned they may look totally different but wear the same size.

Picture two photographs of female celebrities in fashion publications – the kind where they are wearing the exact same dress, but one looks great and the other is labelled a fashion faux pas. Likewise, between ethnic groups body shape and structure can be quite different, and a dress that fits a young professional in Thailand might not look anywhere near as good on her North American counterpart.

In addition, our bodies change as we age and go through events such as pregnancy or illness. But despite all of these factors, we still need clothes that fit us – whoever and wherever we are, and at every stage of our lives.

Companies such as [TC]², Alvanon and Human Solutions offer consulting services to help their customers home in on what the actual measurements of their target consumers are, and show them how to maximise patterns to capture the greatest number of subjects without sacrificing the fit.

…analysis of the right demographic is important as fit can easily differ between two people who technically have the same measurements. Depending on how their body is shaped and proportioned they may look totally different but wear the same size.

Creating these kinds of standards and ideals is great, of course, but as with any great idea, the real measure of success is in the execution. And smart use of apparel design and management technology is one of the best ways to maintain control over the ideal fit once you've found it, and deliver it to your target market.

**Using Technology to Manage Fit Information**

2D CAD (Computer Aided Design) pattern software has been around for many years. It's now the standard for pattern making and sharing. And the current-generation of this technology - 3D CAD software that utilizes the 2D pattern wrapped around a three-dimensional form - is finally starting to see wide adoption.

There are quite a few companies that sell this technology specifically to the apparel market - companies such as Optitex, Lectra, Tukatech, Assyst Bullmer, Browzwear, and others. Exactflat's CAD software works a bit differently by starting with a 3D form and then flattening it to 2D, and while not apparel specific yet it's often mentioned in the same breath as the others.

There are a myriad reasons for graduating to 3D CAD, including the potential for improved fit, quick visualization of design concepts, and virtual show rooming of collections. These 3D files and other files can of course be emailed for sharing and collaboration purposes, but anyone who's read my previous articles for WhichPLM will know that they are far better managed in a shared database system that is accessible to the developers and manufacturers working on the style. A system like PLM.

3D patternmaking technology by itself already offers opportunities for sample cost reductions. For example, Adidas recently issued a statement that they have avoided the need to make more than one million samples over the last three years, due entirely to the success of their 3D modelling initiatives.

Aside from saving physical resources, there is, of course, time saved in ordering, logging, fitting, discussing, shipping and storing these un-needed samples- both by workers at factories and those at the brand. Decreasing sample submits and indeed number of items designed and sampled versus those actually put into production has been a hot industry topic for a number of years now, and the combination of a fit-first approach and three-dimensional working appears to be one of the most promising methods of achieving this goal.

As 3D CAD technology continues to improve it will be easier to view "sample" garments virtually to see if they meet design team expectations from the start. Changes can be made in minutes to virtual garments, giving them a better chance of hitting the right fit if they are subsequently requested as actual samples. Simulation of movement and fabric properties on virtual models continues to improve, too, allowing for more confidence in the accuracy of the virtual garment.

Like any new technology, since 3D patternmaking was first introduced to the industry, the capabilities of each company's software has increased by leaps and bounds, and today designers and patternmakers alike are adopting virtual 3D solutions specifically to help with fit.

Customers also stand to benefit through better fit today, and eventually virtual trying-on of garments – but that's a topic for the future.

**Controlling Fit from Development to Production**

As many retailers and brands have shifted production to overseas factories and agents, they've essentially relinquished control over their fit. During this transition many have also outsourced patternmaking, or even if this is not the case, never even get to see their production patterns. They don't, in fact, know if the patterns are being made from an original block they provided, or if they are even consistent between manufacturing facilities.

Being able to view and analyse all versions of pattern information is a key component of achieving and maintaining consistent fit. As this task falls on the shoulders of technical designers, its essential that they have training to fill in any knowledge gaps, understand the production construction process and be able to ask the right questions. Access to markers, if possible, also helps to ensure that what is actually cut is in the correct dimensions. It's all too easy to shear off pattern pieces to increase fabric utilisation. Understanding what is happening with a problem garment is easier with access to the patterns and having the training to be able to think about why that might be the case.

While 3D pattern solutions can help to draw attention to fit and design intent and the desired pattern at the start of the development process, there is still a definite need for a physical sample eventually - whether garments are being produced just up the street or thousands of kilometres away. Though many retailers and brands are moving toward having agents or overseas offices appointed to approve fit, as we know, communicating detailed changes and comments across long distances and language barriers can be a challenge. Fast Fit 360 is an interesting fit-focused solution that provides clients with a standard yet simple photo studio setup and cloud based image storage. Their software aligns with PLM systems, and provides a social platform to showcase and comment on fit images and videos, specifically designed for teams working in different locations.

As I said, however detailed the 3D model, there is still the eventual need to make physical samples, whether they are shipped across continents or viewed virtually using a solution like Fast Fit 360 or an equivalent.

Once a physical sample does exist, standardised mannequins are a very useful tool to ensure that all parties are looking at a garment from the same fit starting point. These could be standard forms from any number of suppliers, or custom ones either created from 3D body scans or based on measurements taken from fit models. Designating standard or customised forms from one supplier allows vendors to order them as well, but ensuring that those vendors actually use the forms to fit garments is another matter entirely. Before going down this path, an important question for retailers and brands to ask themselves is: "Does our fit model actually resemble our target market?" And if it doesn't, they must find one that does.

And finally, if QC does not actually check shipped production garments in the warehouse, otherwise-successful fit processes can be undone at the final hurdle. Giving quality departments access to essential measurement specifications and perhaps even fit comments via a system such as PLM is another layer of assurance that all of that hard work at the front end will pay off in the form of a great and well fitting range of garments.

The ubiquity of spandex in just about every category of women's clothing is a testament to the challenge of getting fit right. "If we can't make it fit everyone, make it stretch", is a kind of logic that not many companies would own up to, but one that's more prevalent than many people realise.

But, since most of us are not lucky enough to "look good in a burlap sack" as the saying goes, there is a lot of potential to make customers happier, better dressed, and more loyal without resorting to malleable materials. With a good process in place to maintain the right fit consistency, customers can purchase more confidently.

And confident customers are a retailer or brand's dream: a group of loyal fans eager to be connected with you, keen to live your product lifestyle, and open to education about which items will make them look their best.

Whatever their size.

As many retailers and brands have shifted production to overseas factories and agents, they've essentially relinquished control over their fit.

# NRF 2014
## the WhichPLM Report



*by*
BEN HANSON


**In an era when retail itself is on increasingly unsteady footing, lumbered with the task of resurrecting economies the world over, the National Retail Federation's conference and expo has carried on strong.**

**Every January, WhichPLM visits New York City to meet with technology vendors, explore the Big Apple's latest retail innovations, and experience everything the National Retail Federation's "big show" has to offer. Reproduced in our Annual Review for the third consecutive year, Ben Hanson's yearly reports help to keep our readers' collective fingers on the pulse of the fashion and retail industry.**

While retail has withered, bloomed, withered and bloomed again in recent years, the sheer scope and bombast of its "big show" have remained consistent. Every January, retailers, brands and hopeful technology vendors flock to New York City, descend on Hell's Kitchen, and prepare for the biggest, brashest, most feverish celebration their industry knows.

In an era when retail itself is on increasingly unsteady footing, lumbered with the task of resurrecting economies the world over, the National Retail Federation's conference and expo has carried on strong. And at a time when non-essential expenditure like international flights and convention tickets are being culled in the name of austerity, the Javits Centre manages time and again to draw more than 30,000 delegates away from the pressing business of remaining afloat in a turbulent retail environment.

With a deafening opening ceremony by the New York Sticks drum troupe, the theatricality that's defined the NRF show over previous years was present and correct in 2014, too. As I took my seat at one of the tables closest to the stage, though, I realised that this year all the pomp and pageantry actually dovetailed neatly with one of the show's common themes. If - as keynote speakers and vendors alike proclaimed - retail is about creating memorable experiences, then every retail channel is in its own way a stage. They may not play host to blistering military drumbeats, but each medium of consumer engagement represents an opportunity for the most forward-thinking and commanding retail players to draw adulation – as well as for the quieter and more traditional actors to fade into obscurity.

It may sound strange for me to be drawing parallels between the proscenium arch and the shop floor, but at this year's show I was by no means alone in doing so. From speakers like Twitter chairman Jack Dorsey, to ERP salesmen drumming up enthusiasm for their products in the clamour of the expo hall, NRF was abuzz with the concept of the consumer experience – that ineffable part of selling and buying that elevates good retail from the transactional to the theatrical.

And if retail is to be judged by that metric – as it seems it will, if flagship stores from the likes of Burberry are anything to go by – then it's little wonder that the 103rd NRF Bacchanalia remained such a major attraction. As NRF Chairman Stephen Sadove (also CEO of Saks Incorporated) put it in his opening address, movies have Hollywood; retail has New York. And if Hollywood has the Oscars; retail has NRF.

He may not necessarily have meant them this way, but Sadove's comments cut to the quick of what I believe retailers and industry analysts alike mean when they talk about that ephemeral consumer experience. New York City does not do things by halves: skyscrapers go up; neighbourhoods reinvent themselves before our eyes; and most importantly, visitors leave with a sense of having touched, seen, and been surrounded by something they couldn't have experienced anywhere else.

New York brands itself extremely well. Every time you've seen somebody wearing an "I Love NY" t-shirt, you've seen a new convert to the five boroughs experience – someone who came to New York, left satisfied, and is prepared to tell others about it.

If retailers can capture that, then I believe they will have tied down the essential nature of the modern consumer experience. More than money, they will have pocketed mindshare.

On that note, it's been a recurring theme for the past few NRF shows that retail is inextricably tied to the global economy, and carries a heavy responsibility as a result. As a collective, retail provides jobs to a significant segment of the global population, putting more than a million people to work in the United States alone. The money that changes hands in retail channels – online or off – has the potential to underpin the viability of its host markets and transform the lives of its workers. But what the 2014 big show really drove home was retail's potential to foster communities – to take the essential building blocks of commerce and use them to restore the point of sale to its rightful place at the centre of the human experience.

He may not have said it directly, but Sadove's opening address - and the bustling surroundings of his hometown – effectively encapsulated the new retail mantra.

Win hearts, and the wallets attached to them will follow.

That might sound a little cynical, but in practice it's anything but. Yes, retailers have to turn a profit, and of course they measure their success


at the rawest level in terms of units sold. But from the keynotes to the expo floor, I found at this year's show a genuine commitment from retail professionals to living up to their industry's potential – to recognising that although they shift SKUs, retailers are actually trading in so much more.

I may be about to risk losing the CFOs in the audience, but when it comes to being successful in 2014, the central currency of retail isn't dollars or yen; euros or baht. It's empowerment. The power to set up shop, open your doors, and actually change the essential character of a street. The ability to skip traditional channels and sell direct to consumers, responding in near-real-time to their demands. The ability to imbue your customers with a sense of pride in where they live, where they spend time, and with whom they spend money. And finally, the power to transcend the cash register or the online payment gateway and deliver a more complete experience that cuts to the very heart of human society – an experience that in turn creates enduring loyalty and profitability.

**No, people don't just need to shop. People like to shop.**

To demonstrate that I'm not entirely insane – or at the very least not alone in it - this reductive approach to retail was also central to a fascinating keynote presentation delivered by Rick Caruso of Caruso Affiliated, and a lively panel discussion that followed. Caruso's company developed and owns a number of retail "properties", the largest of which might be more properly referred to as standalone urban environments in their own right. His presentation highlighted two of these properties in particular: The Grove in Los Angeles, and The Americana At Brand in Southern California. Both were designed to create an idyllic retail environment, founded on the principles of community and the power of the shopping experience. Both are amongst the highest-grossing retail environments in the United States. Neither are what you typically think of when you hear the term "shopping centre". And both embody the kind of next-generation thinking it takes to deliver a truly modern, transformative retail experience, as well as showcasing a demonstrable appreciation and understanding of its history.

In the more theoretical part of his presentation, Caruso was careful not to attempt to put his properties on the same level as locations like the Marrakech souk or the Champs Elysees, but rather sought to explore why it is that those places endure – and why, throughout some of the most difficult periods in our financial and social history, people have continued to shop.

It can't just be because people need to shop, Caruso argued, otherwise mega-malls and department stores, with their sheer convenience, would be in the ascendancy, rather than sliding slowly into irrelevancy. No, people don't just need to shop. People like to shop. So when we take account of the economic and, for want of a better word, spiritual aspects of retail, we come to understand that "the marketplace enriches us all", as Caruso puts it. In more ways than just the literal.

This is why the Champs Elysees does more than just endure, and this is why the most prestigious retail locations are venerated as tourist attractions even in the age of e-commerce. Tellingly, this is one of the major reasons consumers come to New York, and remains a tremendous contributing factor in the NRF's decision to continue to host its annual event in the Big Apple.

Most importantly, what Caruso and his team are building is exactly what a host of exhibitors set out their stalls this year to convince retailers they could help to provide: a transformative, unified, and truly modern consumer experience.





**New York brands itself extremely well. Every time you've seen somebody wearing an "I Love NY" t-shirt, you've seen a new convert to the five boroughs experience – someone who came to New York, left satisfied, and is prepared to tell others about it.**


Sadove also touched on this in his welcoming remarks, acknowledging retail's status as a breeding ground for innovation, and if my extensive tour of the adjacent expo floor was anything to go by, innovation was certainly not in short supply this time around. But unlike previous years, that innovation did appear to be clustered around a common theme, with even small point solution vendors eager to explain how their products fit into the cohesive, interoperable future.

The experience trumps all, then, whether it's the direct consumer experience or the seamless staff experience of working with a unified or integrated suite of back-end solutions. As Blake Nordstrom (CEO of American retailer Nordstrom) highlighted during the panel discussion on which Caruso also sat, to the end consumer it doesn't matter whether your head office or your supply chain partner is to blame for a delayed or unfulfilled delivery. To that customer, the individual systems that conspired to create the failure are irrelevant - it's the inconsistency in the expected experience that counts, and the way in which it detracts from what modern, hyper-connected retail should be.

In lot of ways, as I've already suggested, this philosophy shaped the exhibition styles of virtually every vendor on this year's expo floor. From PLM to ERP and everything in between, suppliers were keen to talk up their seamless concept-to-consumer capabilities. This also extended to traditional ERP vendors claiming some degree of PLM functionality, as well as PLM mainstays improving the way they articulated their solutions' place at the centre of the new consumer and software paradigm.

From a PLM perspective, almost every major vendor was present: PTC, TXT, Infor, Yunique Solutions, ecVision, SAP, TradeStone, Dassault, CGS and more. Notable in their absence this year were NGC, Centric and Lectra. To the best of my knowledge these companies have not exhibited at NRF in previous years, either, but I do believe each of them shares the same willingness as their counterparts who did exhibit to talk about the unified, omni-channel development and retail environments that analysts seem to agree will come to define our industry's near-term future.

The phrase "omni-channel" itself, though, has become a troublesome one in very short order – not to mention one that could see you shooed away from certain exhibition stands. On the lips of everyone from IBM to Oracle last year, "omni-channel" is now widely considered to have been one buzzword too many – the straw that broke the camel's back when it came to compartmentalising and branding concepts that many people considered to have been simple common sense.

For several key speakers at NRF 2014 – including Build A Bear CIO Dave Finnegan – "omni-channel" has become an entirely unnecessary term, since

**The experience trumps all, then, whether it's the direct consumer experience or the seamless staff experience of working with a unified or integrated suite of back-end solutions.**

the concepts it was designed to articulate are now ubiquitous enough that they can more simply and accurately be called "modern retail".

For example, as part of the same CIO Council roundtable that Finnegan led, Etienne de Verdelhan of L'Occitane en Provence explained that the concept of channels is irrelevant to the customer. For the executive, phrases like "channel blurring" and "unified intelligence" are commonplace, but the consumer simply wants a consistent experience whether they shop online, in-store, or via a mobile device. And, de Verdelhan said, that consistent experience should be the driving force behind retailers' investments in technology at every level.

This was a sentiment echoed by Janet Sherlock of Carter's Incorporated (another CIO Council member), who explained her belief that technologies from EPOS to e-commerce are converging around the goal of delivering a consistent, central transaction and communication platform, where a consumer can begin their interest in a product on one medium, and finalise it on another.

And for Allan Smith, CIO of Lululemon Athletica, and the final member of Monday's CIO Council panel, the holy grail has always been "one guest experience" irrespective of channel or platform, and enabled by quietly integrating technologies that have hitherto been disconnected.

The impact of this might escape the speed-readers amongst you, so I'd like to emphasise it. These are some of the retail industry's most senior information technology professionals – people whose entire careers were forged at the intersection of silicon and commerce - arguing the case that technology should always be subservient to the consumer experience.

**On the lips of everyone from IBM to Oracle last year, "omni-channel" is now widely considered to have been one buzzword too many – the straw that broke the camel's back when it came to compartmentalising and branding concepts that many people considered to have been simple common sense.**

As Smith put it, remaining competitive in today's retail and brand environment relies on your "having the flexibility to add new parts to your unified ecosystem". And whether they're talking about a point solution of limited scope or an enterprise-spanning implementation, those in the know are convinced that the true value in technology rests in its ability to disappear and become a seamless part of a coherent whole.

This is a message we've long preached here at WhichPLM, and one that has underpinned the strategies of some phenomenally successful retailers and brands. Where PLM is concerned, in particular, the words of Smith, Sherlock and de Verdelhan are incredibly timely: along with the explosion in functionality and adoption has come the realisation that a broader range of people than ever before are working either directly or indirectly with PLM. By extension, this has created a proliferation of stakeholders – from the designer to the executive – and shifted the perception of PLM away from being the preserve of the CIO and his or her team.

Today, technology for retail, footwear and apparel is properly seen as a whole-business initiative, and its selection must by necessity take account of the needs of a host of different users and processes – some operating across multiple continents. As a result, the success of PLM in the fashion and retail environment (and certainly on the expo floor, as evidenced by most vendors' approaches this year) is contingent upon it delivering value to the business as a whole, rather than to one or several isolated processes.

While its implementation is and always will be a technological discipline, the potential to understand, select and work with PLM is now within everyone's grasp - driven by improvements in education, accessibility and the user experience. And while every business needs to become technologically minded in order to deliver against consumer expectations, the work put in by vendors over the past few years means that not everyone on their payroll need become a technologist.

The strapline for this year's NRF show was "perspective elevated", which followed 2013's stark "NEXT" in the grand tradition of vague but portentous-sounding exclamations. The 2014 tagline, though, had a kind of substance to it – one underlined by the paradigm shift I've just highlighted in the way retail and enterprise technology is marketed, sold and consumed. Whether they dealt in graphical point of sale solutions enriched by assets from a digital store, or traded in a long-proven and monolithic ERP platform, the 550 vendors and solution providers who thronged the Javits Centre expo hall were, like the retailers jousting for position on 5th Avenue, selling parts of a dream. The dream of an interconnected and interoperable environment that can elevate retailers and brands beyond the raw technology level, and empower them with a new perspective on the consumer experience as well as their own.

WhichPLM has long extolled the virtues of using PLM to consolidate and centralise previous-cleansed "master data", since this is the quickest and most effective way of reducing data redundancy, data duplication, versioning conflicts, and poor visibility. The best PLM vendors, too, have always placed these kinds of capabilities high on their feature lists, enabling their customers to create the fabled "single version of the facts", accessible from anywhere. And that accessibility may just prove to be PLM's trump card as more retailers and brands begin to seek out ways to solidify their grand designs for an interconnected future.

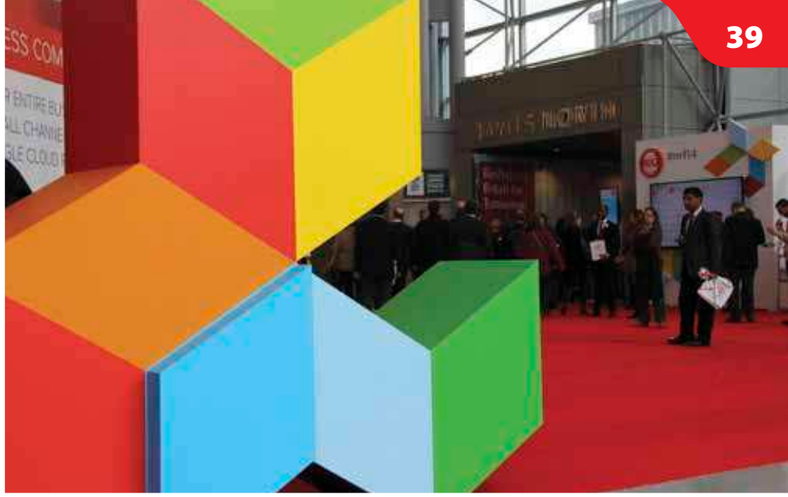
Indeed, this year's expo floor was characterised by demonstrations – from Microsoft to Motorola - of how a single source of product information can be used to enrich everything from in-store touchscreen experiences and smart shelves, to three-dimensional store planning inter-continental materials management.

That last line is a reminder that, while NRF does cover a host of verticals, apparel, footwear and accessories remain perhaps the most potent distillation of the retail experience. It's within these most approachable of consumer-facing businesses that the most exciting technological developments take place. It's for this reason that the veil between retail and technology is at its thinnest in the apparel industry. And it's little wonder, then, that consumer electronics giant Apple poached CEO Angela Ahrendts from Burberry to head up its retail division – something I go on to cover later in this publication.

**And while every business needs to become technologically minded in order to deliver against consumer expectations, the work put in by vendors over the past few years means that not everyone on their payroll need become a technologist.**

That co-mingling of fashion and technology is something noted trend forecaster David Wolfe highlighted in his presentation and on-stage interview, arguing that technological trends will soon become more closely mirrored in style trends. Indeed, Ahrendts' hiring to such a prominent position within what many would argue is the world's foremost digital lifestyle brand certainly suggests that wearable technologies and truly transformative in-store experiences (like those found at Burberry's digital-first Regent Street location) will no longer be the preserve of either the technology or fashion industries.

In fact, Apple's recent release of iBeacons – small and very specific geo-aware tags designed to alert shoppers to deals and other context-sensitive information – and the slew of rumours suggesting the company will soon embrace the "smartwatch" or "smart band" wearable computing concept certainly suggest that talent will not be the only commodity exchanged between different retail verticals in the near future.



In many ways, this cross-pollination of executives and ethos is mirrored in the coming-together of consumer-facing names and back-end technology that keeps NRF feeling fresh, year-on-year. Although at first blush it's easy to draw a line between the different kinds of exhibitors that make their homes on the expo floor, in fact the annual big show, by placing point of sale solutions adjacent to PLM vendors, underlines just how much they have in common. New York might be a Mecca for retail of all shapes and sizes, but the NRF show floor is where technology has the chance to shine, revealing its collective potential to bring together designers, material vendors, marketing departments and sales associates, and united them on a common platform, serving a common experience.

That surface duality and underlying complexity is something that was perhaps best captured by Jack Dorsey, whose keynote presentation on the show's final morning examined the missed consumer engagement opportunity that is the paper receipt. More generally, though, Dorsey (who is also CEO of mobile payment processing company Square, in addition to his role with social media juggernaut Twitter) talked about what he called "the tangibility of technology".


**New York might be a Mecca for retail of all shapes and sizes, but the NRF show floor is where technology has the chance to shine**

As Dorsey put it, technology is a tool – a great tool, but nothing more. And while modern innovations like mobile devices and cloud computing are often hailed as "disruptive", he prefers to think of them as "radical". Technology to Dorsey – things like Square's ingenious-but-struggling iPad point of sale hardware – has the potential to transform outmoded ways of thinking, but it should always be deployed with an end goal in sight, rather than simply heralding change for change's sake. In this case, Dorsey said, "cohesion" is the watchword.

Similarly to Caruso's keynote, Dorsey, a consummate executive and a surprisingly humble presenter, also discussed the innately human experience of commerce. Square was founded on the principle that human beings were trading goods and services before we developed language, but that today whole segments of the commercial sector are excluded from selling and engaging because they do not fit into the traditional mould.

By democratising payment processing, Square (and now the Square Wallet application) sought to put tools into the hands of merchants that would place them back on the frontlines of the consumer experience, becoming "merchants" and finding their closest historic analogue in the old-time shopkeeper.

In a very important way, then, Square serves as something of a model for retail technology. Discrete and democratic. Cohesive and connected. Mobile and memorable. Like Dorsey himself, Square (and many of the other numerous solutions that glittered from the Javits Centre booths) is a kind of Trojan Horse – an approachable face on the cold, hard fact that "retail's big show" might for all intents and purposes now been called "technology's big show", so intertwined have the two become.

As Dorsey would tell you, "the best tools are the ones you build for yourself". And as the CIO Council and the phalanx of vendors who set out their stalls from January 12th to January 13th would say, if people need retail, then people need technology.

It's that essential truth that has kept NRF's banner flying high, and it will be that same maxim that ensures retail continues to thrive in the face of adversity – particularly in partnership with technology. After all, those two seemingly-disconnected disciplines might have drawn together originally out of necessity or convenience, but today they're actively uniting around a common commercial goal.

And I'm certain that at NRF 2015 and beyond, the two will continue to grow symbiotically, and be deployed together in a way that serves a growing number of essential human needs. The need to make. The need to buy. And the need to live and work together.





# PLM in a Multi-Brand, Multi-Product Environment

*by*
ELLE THOMPSON

**In her role as VP of PLM and Special Project Operations at Marc by Marc Jacobs, Elle Thompson has overseen both PLM pilot programmes and full-scale implementations. Her experience of managing product lifecycles across multiple brands and product categories has given Elle a unique perspective on technology investments and change management, and made her something of a mainstay on the retail technology speaking circuit. This exclusive is her first article for WhichPLM.**

**When I was first approached to write an article for WhichPLM, I jumped at the opportunity. I've known the team on a personal and professional level for several years, and I couldn't wait to get my teeth into writing something that captured some or all of what I've learned about PLM over the course of my career.**

Unfortunately, I had to wait. Each and every morning for a period of several weeks, I sat down at the start of my daily two-hour commute, opened my laptop, and writer's block set in. Really, for me, it was a kind of writer's paralysis. I would stare at the blinking cursor as the New York cityscape flicked by the window beside me, and wonder how on earth I was ever going to encapsulate something as complicated and all-encompassing as real PLM for retail in two thousand words.

As it happens, I found the perfect solution. Instead of writing, I would take my iPhone out of my bag and play solitaire instead, reasoning that I'd hit upon the right starting point tomorrow or the day after.

I'm sure everyone reading this has played solitaire, but just to remind you: a game of solitaire begins with you (or in my case your smartphone) shuffling a standard deck of cards, after which you're tasked with sorting them, one by one, into suits and numerical order according to the rules of the game.

**Most data was managed in Excel spreadsheets, and virtually nothing was connected.**

The more I tried to write, and the more solitaire I played as a consequence, I began to see parallels emerging between the act of turning a chaotic pile of cards into an orderly hand - taking things one step at a time, and working backwards logically from a clear end goal – and the ongoing role that a PLM project plays in a multi-product and multi-brand organisation.

The more I thought about this, the more sense it made. Within a multi-brand business, each brand could be thought of as a suit – sharing an affinity for those other cards like it, with the sole common denominator between it and the other suits being the logo printed on their reverse – in this case the company or group name under which each brand operates.

Within those suits, each individual card, whether it's a diamond or a spade, has its own role: the king (the designer), the queen (the merchandiser), and the jack (the marketer). When these cards are stacked in a logical, ascending order, the process of getting information from one to another should be seamless. When they are arranged out of order, or fragmented and scattered, their priorities becoming hijacked by other suits, that process breaks down, leaving you (as the PLM project lead) with an organisational hill to climb.

So what, you might reasonably ask, makes me such an expert on PLM in a multi-brand environment, and what's the point of drawing parallels between that and a hand of solitaire? Well, while I don't consider myself an expert, I do control PLM from a business perspective at a well-known multi-brand, multi-product company where we make full collections of footwear, ready-to-wear and accessories.

And as my introduction to this article suggests, I've played a lot of solitaire lately.

At the turn of the millennium, I worked as a technical designer in a ready-to-wear and footwear startup. We had no dedicated I.T. department to speak of, so it also fell to me to manage their PDM system during the early years. Between 2005 and 2007 the company's accessory business exploded in popularity, and we found ourselves coping with unprecedented growth. At that time, only small portions of the business had made the transition to using clear systems; most data was managed in Excel spreadsheets, and virtually nothing was connected. As a result, the company split into silos as a result of its growth. Different processes, different working environments, different technologies, and yes, different personalities. All of these conspired to create a situation that technology alone could never really hope to change.

**So, while I don't claim to have all the answers, I can give you some indication of how I played things this time around, and what I learned along the way.**

So when, in 2010, my career shifted gears and I came to oversee PLM full-time, I really didn't know what I was letting myself in for. With so many disconnected systems, spreadsheets, and methods, my new high-level overview of the company looked for all the world like the beginnings of a game of solitaire, with brands, data repositories, product lines and people figuratively scattered like a deck of cards thrown to the wind.

Between then and now, we have taken steps to try and close those gaps, unite the suits, and put our house into order. Building upon that, 2014 became a big transitional year as we worked to roll out a new Enterprise Resource Planning solution, as well as rolling out a new PLM pilot scheme to one division, with plans to extend to ten further divisions in the near future.

In reality, ours was as unique a starting position as yours will be. Every business – multi-brand or not – is different, and the situation you are faced with when you come to adopt PLM may be dramatically different to mine. There are an almost infinite number of permutations that govern how the cards will fall in your particular circumstances. So, while I don't claim to have all the answers, I can give you some indication of how I played things this time around, and what I learned along the way.

The most important lesson this year taught me was that PLM in a multi-brand, multi-product environment cannot follow the "one size fits all" rule. No matter how helpful it would be to have footwear following the exact same processes as accessories, we have to remember that while each suit plays by the same rules, their essential nature is what makes them effective as a unit – and this will always be different to the character of other brands or product categories.

So while we were able to align most of our internal "language" – the common rules by which everybody plays – during this year's technological transformation, we realised along the way that we needed to retain flexibility and adaptability if were to have any hope of getting our hand in order.

The most obvious example of this was our need to have fields and descriptions vary within PLM according to the product. Jewellery, for instance, requires a measurement field for "drop type" (what is shipped on the chain of a necklace), while accessories need a measurement field for "drop", or the distance between the inside handbag handle to the opening where the customer deposits his or her belongings.

As you can see, we couldn't simply call one field "drop" and have it suffice for the needs of every product category – and we certainly couldn't do so across brands, where these similar wordings may mean something else entirely.

The hardest question a multi-product, multi-brand business must ask itself when considering a PLM project is just how feasible it might be to accommodate these kinds of concerns in the environment they already have. Just like solitaire, the urge to keep playing the hand you were dealt is strong – and it's something I, too, considered in depth when it came to meeting the needs of our business in 2014. Perhaps we can make some compromises to our ways of working? Maybe we can customise the solution again? What if some product categories were handled in another system entirely?

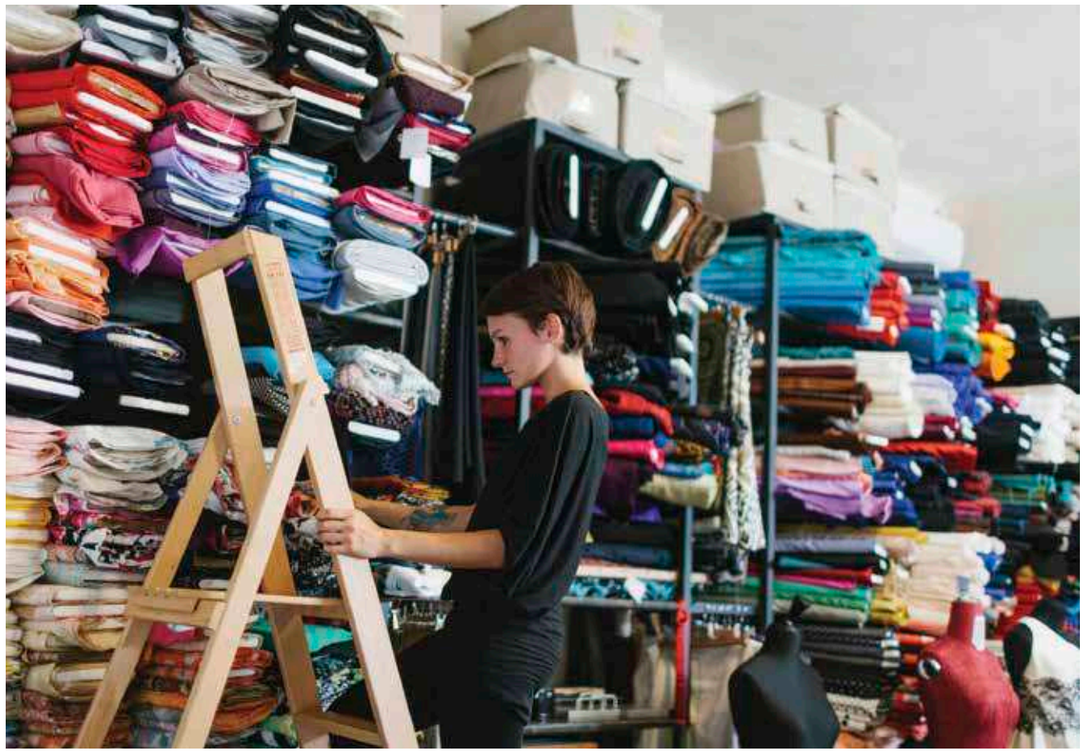
**Just like solitaire, the urge to keep playing the hand you were dealt is strong.**

It can be unpleasant to consider, but those kinds of questions will all almost inevitably lead to one outcome: a new beginning. No business should compromise its ways of working (although it should use this project as an opportunity to re-examine them and adopt best practices where suitable), and neither is re-customisation a valid avenue of exploration when most pre-existing PDM or PLM solutions already underwent extensive and irreversible customisation when they were first adopted. And I know that the WhichPLM team will agree with me when I say that taking work outside the system should not be considered – even as a stopgap solution.

So the question for the multi-product, multi-brand with scattered cards to organise becomes: how should we start over? What does a fresh hand look like to us, and what guidelines should we follow to play it right and avoid winding up here again?

I should be upfront here and say that it may be that PLM cannot be "solved" the way a hand of solitaire can. While a shuffled deck of cards has an end-game, the very nature of product lifecycle management is cyclical and ever-evolving. For me, a PLM project only "ends" when there is no more value to be wrung from the current environment – when best practices have been adopted across the entire extended supply chain, and collaboration, communication and cycle times have been optimised to the nth degree. But with the constantly changing nature of fashion and consumer behaviour, reaching this stage and feeling satisfied that you can do no more is an extremely unlikely outcome.

Again, your disorderly hand of cards will not look the same as mine. Your challenges, opportunities, and milestones will be unique to you, so the question of what your fresh start will look like is not one I can answer. I can, though, use my hindsight to help steer you in the right direction.



I've already mentioned the concept of a changing industry, but it's something that should be absolutely instrumental to any multi-brand organisation's PLM strategy. Demand, sustainability, geopolitics, trend, technology – all of these things are liable to change at a season's notice, meaning that what worked for us yesterday may be ineffective tomorrow. But given the sheer inertia involved in a project like a PLM implementation, surely we can't be expected to change our tools equally often, just to keep pace?

Luckily, done right, PLM is the kind of project that can weather change. In our case, we placed a great deal of emphasis on selecting a solution (and a vendor partner) that was both flexible and future-safe in terms of functionality, deployment, support and roadmap. We recognised that unpredictability is inherent in our industry, and that – just like the one card at a time nature of solitaire – we needed to stay agile, able to adapt within reason to whatever the market can throw at us.

Think of it this way: a lack of flexibility is probably already one of the reasons your existing solution has not seen wider adoption across product categories and brands. The ebbs and flows of this hectic industry may have already surpassed the flexibility of the environment you have. If this is the case, what happens in five years' time when market demand or financial pressures drive you to try something different: new product categories, more regular seasons, capsule collections, a fast fashion model, and so on?

If you think ordering your suits is a daunting prospect now, try considering it when someone else spills another few packs of cards onto the table. An interesting prospect, sure, but one that only the brave – or those with the right environment – will want to tackle.

**If you think ordering your suits is a daunting prospect now, try considering it when someone else spills another few packs of cards onto the table.**

Finally, any multi-brand, multi-product business will want to ask themselves the same question we did: who within the company actually drives and shapes PLM? Who are you taking the orders from (or giving them to) when you play one card after another? Your I.T. department? Your business teams?

The common wisdom used to be that PDM / PLM was an I.T. project. It involved software, for one thing, and required intimate knowledge of the existing order of things (systems, processes, individual cards) to be successful. Today, the emphasis has shifted, and I absolutely believe that the business as a whole should own any PLM project. This isn't to say that PLM can be implemented without the support of I.T., because it can't, but rather that a delicate balancing act needs to take place if every level of need is to be taken into account.

To revisit the analogy that started this entire thought process, a logically-ordered stack of cards has to be led from the front, but it's equally vital that the suit move forward as a collective, unified not just by the rules that govern their behaviour, but by a goal towards which they can strive as group.

Without that, you may find your multi-brand, multi-product PLM project stalling, with a strategically important card eluding you or trapped beneath a pile of other responsibilities at just the wrong moment. And starting again won't be as simple as idly tapping your phone on the journey home.





# Making a True Commitment to Compliance

*by*
ANNEKE
MAGENDANS

**In her first exclusive feature for WhichPLM, Anneke Magendans brings years' worth of experience in sourcing and supply chain management complemented with a master's degree in Corporate Social Responsibility, and a real and demonstrable passion for her adoptive home of Bangladesh to bear on the difficult subject of "lip service" and "risk management" where compliance – and lives – are concerned. Viewed through the lens of the Rana Plaza collapse and Tazreen fire disaster, Anneke's article is essential reading for any retailer or brand for whom transparency is currently just a buzzword.**

**The textile and clothing industry has played an important role in the world's industrialisation and development process. The industry has one of the largest and most complex supply chains, ranging from cotton farming and chemical production of fibres to manufacturing and selling of finished products. As products from each part of this value chain can easily be exported, it makes the sector trade-intensive.**

This has provided an excellent foundation for export-oriented industrialisation, where a country's industry is upgraded by exporting goods for which it has a comparative advantage. The race to the bottom, the always ongoing search for the cheapest source of labour and the lowest production costs, has initiated globalisation. This has been fuelled by the liberalisation of world trade. With trade barriers falling away, decreasing import and export tariffs, and the disappearing costs of international financial transactions, it became much easier for companies to operate on a global scale. And this has resulted in the wide dissemination of the textile and apparel industry in Asia as we know it today.

Globalisation, too, has created an imbalanced power relation between global brands and their suppliers in developing countries. Factories and their workers in Asia are contracted by modern retailers and brands because they straddle a fine line between capacity and cheapness – the ideal supply chain partner being one who can produce the quantities required, to the quality standards that will pass muster, more cheaply than a counterpart elsewhere in the world. The onus to live up to these criteria is (and long has been) on the part of the factory, since a host of geopolitical

**Given the sheer weight of competition within the manufacturing industries in Bangladesh, it is not difficult to see how additional pressures might prove counter-intuitive when the stated aim of any compliance regulation is to elevate common standards.**

conditions have conspired to create a situation where, should they fail to deliver against any of these metrics, a supplier can quickly and easily be replaced.

At the same time, though, the enormous power that brands wield over industry in emerging markets has made them vulnerable, too. They are under the constant surveillance of 'global civil society', and being publicly scrutinised for corporate negligence poses serious risks to their corporate image and brand reputation. This led to the implementation of voluntary codes of conduct to demonstrate responsible business behaviour, indicating to consumers that their products were made under decent working conditions. Social audits were conducted to monitor compliance with these codes. A next step in managing social compliance was the establishment of multi stakeholder initiatives in which the business community cooperates with unions, environmental and human rights organisations; joint codes of conduct were drafted and proper – third party - monitoring ensured.

Most codes of conduct draw on important international labour standards that protect workers' rights such as International Labour Organization (ILO) conventions, declarations of the United Nations (UN) as well as guidelines of the Organization for Economic Co-operation and Development (OECD), including the Ruggie Framework.

On the 24th of April 2013, an eight floor building collapsed in Savar, on the outskirts of Dhaka, Bangladesh. The Rana Plaza building housed a bank, shops and several residential apartments but also, although the edifice had not been constructed for this purpose, several garment factories. The collapse killed over 1,100 people, and more than 2,000 people were injured. Even though many companies operating in Bangladesh have a corporate code of conduct, aiming to improve working conditions, these numerous voluntary efforts could not prevent this disastrous accident from happening. It now became apparent that cooperation on a much larger, global, scale, involving international brands and retailers, (international) unions, NGO's and governments was called for. This resulted in the development of the Accord on Fire and Building Safety: an unambiguous, comprehensive and unified legally binding agreement, which was signed in May 2013.

The Accord is not unique; a group of North American apparel companies have initiated the Alliance for Bangladesh worker safety. Following the Tazreen Fire in November 2012, the Bangladeshi government has launched the National Tripartite Plan of Action (NTAP) on Fire Safety for the Ready-Made Garment Sector in Bangladesh. The plan aims, besides other objectives, to provide a platform for cooperation for stakeholders wishing to initiate fire safety promotion activities. Initially the NTAP was to prevent fire related accidents. Only after the Rana Plaza collapse was building safety included. To ensure an integrated approach the government has asked ILO to play a coordinating role in its implementation.

The aim was cooperation between all initiatives, but reality has turned out quite differently, as some fundamental differences and a lack of trust between the Accord and the Alliance seriously detracted from this effort. The Accord criticizes the Alliance for lack of transparency, since they do not make their safety inspection reports publicly available. This leads to the Accord questioning the quality of the safety inspections performed by the Alliance, doubting that they will meet the Accord's safety standards.

**At the same time, though, the enormous power that brands wield over industry in emerging markets has made them vulnerable, too.**

In fact, common safety standards already exist in a seventy-two page document, largely based on the Bangladesh National Building Code (BNBC), and were mutually agreed upon by all parties involved after seven month's negotiations last year. Unlike the Accord, where signatories are obliged to ensure necessary funds to cover the costs of renovations and ensure continuation of workers' salary payments in case of factory closure, under the Alliance these obligations are voluntary. This leads to confusion and frustration, especially in cases where signatories from both initiatives source from the same factory.

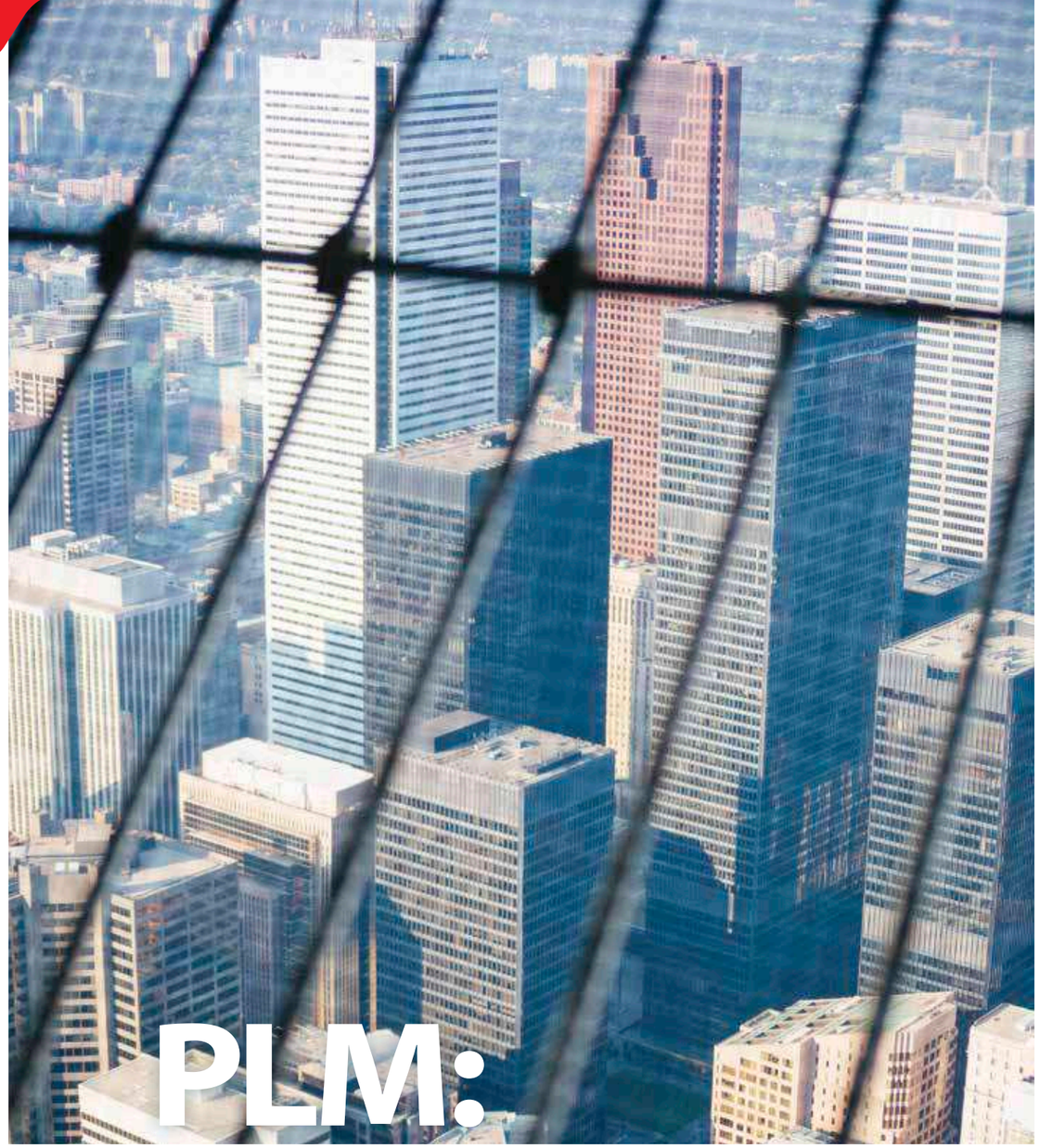
The Alliance is designed and governed by corporations with no involvement from independent worker representatives. Not surprisingly, unions and labor activists target the Alliance with scathing criticism, accusing it of being meaningless. The Accord is developed in cooperation with both Bangladeshi and global unions, and labor rights NGOs, and is jointly governed by companies and worker representatives. Alliance supporters, in turn, therefore accuse the Accord of using their initiative merely as a stepping stone for establishing power.

This is just one example amongst many of a total lack of cooperation between different initiatives aiming to improve social, environmental and safety standards. Many international buyers adhere to many different management systems, such as BSCI, WRAP, ETI etc. The variation in standards, audit processes and methodology prevents buying companies from recognising and accepting the various audit reports. This, again, puts enormous pressure on the suppliers as they have to undergo many different audits each year, often also bearing the costs.

This of course applies to the garment industry on a global scale. However, with all eyes on Bangladesh after the Rana Plaza collapse, it is particularly tough on the Bangladeshi suppliers. Without a doubt, trust is one of the main critical success factors when multiple parties are involved in the realisation of a joint goal. The involvement of multiple actors leads to complexity, uncertainty and ambiguity due to a difference in individual perceptions and conflicts of interest.

In Bangladesh, all the different actors have the same objective: a structural improvement of safe working conditions in the RMG sector; yet, all players have their own – commercial - interests to consider as well. But if international buyers and retailers are really committed to improving the lives of the Bangladeshi garment workers it is high time that they start to cooperate and be transparent instead of just talking about it. Where they have not done so already, these organisations should consider the adoption of PLM (in conjunction with appropriate extended solutions designed to manage transparency and traceability) to house and manage the kinds of complex data, methods and practices that go into achieving effective supply chain transparency, and promoting and nurturing brand standards across their entire global network.

Without the oft-cited crutch of poor data visibility to lean on, the only arguments for non-compliance then become commercial or moral in nature. And in either case, I (and the modern consumer) would argue that the time has come to change from a pure risk and brand management approach to one that showcases true commitment to evolving us as an industry and as a species.



# PLM: What's Next?

*by*
ANDREA
PIRAS

**In his role as Global Sourcing and Technical Division VP at United Colors of Benetton, Andrea Piras relies on his experience of process reengineering, change management, and technology to maintain Benetton's status as a leader in sourcing and supply chain processes. In this exclusive feature, Andrea draws on that same experience to project into the future, and look at what he believes is coming next for PLM.**





**It is easy to think of PLM as a finished product. But as everybody within the apparel industry recognises, the changing nature of our business means that no technology can really afford to remain static.**

Benetton has worked with PLM for many years, and in my role within the company I am exposed to the latest developments in extended PLM solutions. These are things that I believe will soon make their way into more and more product development processes, until they eventually become considered part of PLM – or what comes after PLM.

By far the most active of these new technologies – and the one I find the most promising – is the area of virtual simulation. This covers four different types of technology that I expect will sooner or later transform the NPD (new product development) process across the apparel, footwear, accessories, textile and retail industries.

As I mentioned, virtual simulation currently covers four main types of technology:

- **3D CAD (design tools that operate in three dimensions).**
- **Fabric behaviour simulation (including drape, weight and other characteristics).**
- **Colour and texture simulation (incorporating standard colour and material libraries).**
- **Rendering and dynamic simulations, using avatars.**

It is interesting to note that all of these technologies are already in use within other industries, and are now being adapted to best serve the needs of fashion. Avatars and dynamic rendering solutions are migrating from the movie and entertainment industry, while 3D CAD and colour / texture simulations previous served the aerospace and automotive sectors. Draping and textile behaviour simulation technologies, on the other hand, originate in academic fields, since accurate simulation of a range of materials requires significant computational power. This type of technology is, though, already in use within the aerospace industry.

As you may have guessed from reading this list, all of these technologies are focused around creating, manipulating, and utilising three-dimensional duplicates of products that either do not exist yet – for the purposes of prototyping and sampling – or that do exist, but that it may be simpler, quicker and cheaper to work with in digital form than physical.

For all of those purposes, we need to be able to rely on virtual 3D garments, footwear, and accessories that so closely mimic the appearance and behaviour of their physical equivalent that they can be used across various stages of the product lifecycle. This might include early product development, sales, marketing, e-commerce, supply chain processes, customer interaction… the number of possibilities is unbelievable, and I believe we are soon going to see a new revolution in the fashion field.

In order to reach this stage, these 3D product models will have to also maintain extremely close links with the brass tacks of product development data: technical specifications, 2D patterns, accessories, textures and colours.

This view of the industry-wide transition I see from 2D to virtual 3D working is one that also highlights other opportunities for these new technologies. At the moment, for example, there are specific "moments" in the NPD workflow which serve the change the "status" of a collection or product, such as:

**It is interesting to note that all of these technologies are already in use within other industries, and are now being adapted to best serve the needs of fashion.**

- **The product brief becoming ready.**
- **The product brief being frozen.**
- **Fabric and materials reviews being completed.**
- **Colour palette review being completed.**
- **Design review being completed.**
- **Prototype review being completed.**

I am sure you would be able to list many more that you have memorised. Today, though, each of these steps (at least up until the prototype review stage) involves only a limited number of people / stakeholders, since visualising a final garment from just the product brief is an acquired skill.

Imagine how this might change with effective simulations becoming possible at every "moment" in the NPD workflow. Sales, marketing, and even consumers could potentially be brought on board to make "decisions" or influence future product direction prior to a physical sample even existing. Of course it will be important to make sure that these new, dynamic interactions with 3D product simulations are effective and positive in terms of product value, but the potential is extremely exciting.

As readers of WhichPLM will no doubt know, PLM – the technical evolution of PDM software – has emerged as perhaps the most effective tool for managing product data and NPD workflows. The right PLM solution can support existing company internal processes and product data management, whilst also laying the groundwork for new and emerging technologies.

Just like our example, where 3D simulated models could potentially bring many new players in the NPD process, truly modern PLM solutions are already leveraging web technologies to place a strong focus on collaboration. Workflow and data management can today be shared across a wide range of different roles – from internal company departments to suppliers at the first and second level – all using a common platform.

In the very near future, I see the kind of retailers and brands that use dynamic 3D virtual simulation beginning to build on that existing collaboration. Perhaps more importantly, I see a near-term demand for PLM vendors to support this kind of enhanced collaboration in their solutions.

In essence, I believe that next-generation PLM solutions will need to support a selection of new roles that go beyond managing pure product data and take on the task of truly managing the asset value of a product.

The entire product development process could then be completely re-tooled according to the new opportunities this approach would present, and centred around the concept of managing information that maximises asset value. Under this new model, each product could have potentially multiple "times to market" according to the decisions and influences of stakeholders during the early phases of development, rather than just the commercial introduction date we see today.

For me, the future of PLM lives in its evolution from Product Lifecycle Management to Product Asset Management.

# Production tracking:

## Compliance and ethics

*by*
PETER NEEDLE

**Peter Needle serves as Managing Director for Segura Systems, where he leverages his experience of helping retailers and brands achieve true supply chain transparency. In this exclusive feature, Peter examines the financial damage, loss of life, brand tarnishing, and other catastrophic outcomes that can stem from a lack of insight into our complex global supply chains.**

**April 24th 2014 marked one year since the Rana Plaza factory building in Dhaka collapsed, killing more than 1,100 workers and sending shockwaves through the global garment industry. Many of the headlines written on this unhappy anniversary focused on a perceived absence of genuine change and the slow rate of progress in Bangladesh - workers still vulnerable, authorities not brought to account, victims' families insufficiently compensated.**

Of course, the process of repairing the damage done by Rana Plaza is far from complete. When reporters returned to the scene of the disaster earlier this year, they found that the site remains a pile of rubble and twisted wreckage - a powerful reminder that the work required to right this wrong has only just begun. However, some great strides have been made in the short period since that tragic day in 2013.

For the families of those killed or badly injured in the incident, we know that no financial or regulatory victory can compensate their loss. But there can be little doubt that Rana Plaza will come to be remembered as a major turning point. We've already seen signs of real progress, from the success of global initiatives like the inaugural Fashion Revolution Day to the growing realisation among clothing brands that achieving real and lasting change will mean moving beyond the compliance-led mentality to embrace a truly ethical way of doing business.

Many observers have recognised the growing relationship between compliance, ethical sourcing and PLM. Another tool that garment retailers now have at their disposal is the production tracking platform. While not strictly a PLM solution, it addresses many similar requirements - production visibility, supply chain transparency and the ability to provide retailers with "a single version of the truth" about their products.

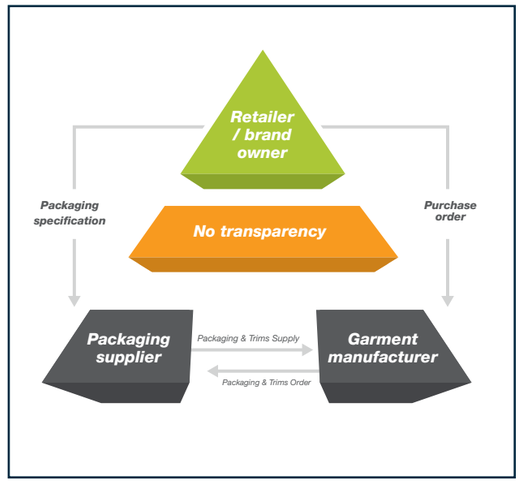
The campaigners behind Fashion Revolution Day and the #insideout social media campaign have stated that one of their goals is to "reconnect the broken links in the supply chain". A production tracking solution strives for the same thing. It is designed to ensure that apparel brands maintain the quality - and retain control - of every link in their supply chain.

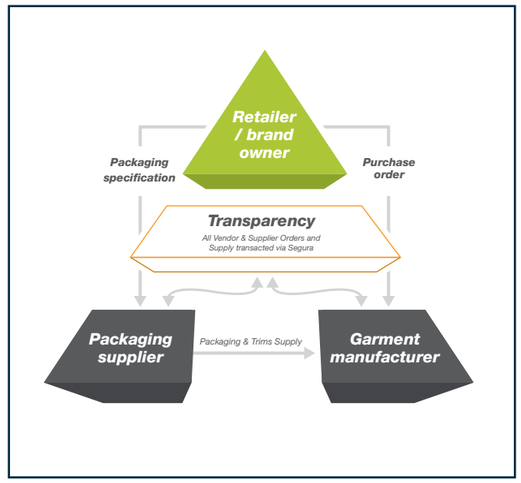
The collapse of Rana Plaza had a seismic impact on the garment trade not only because of its scale (it is considered the worst industrial disaster of modern times), but because the story surrounding the tragedy - the events that immediately preceded and followed the accident itself - provided a grim encapsulation of the industry's shortcomings.

Several distressing sub-plots emerged from the rubble. Among them was the realisation that many western brands lacked an understanding of exactly how their supply chain networks intersected with the eight-storey factory complex. Primark was the first to admit responsibility and begin the process of compensating victims, but another 27 brands were linked with the building. Few others proved willing to come forward - partly due to reluctance about stepping into the glare of media and public outrage, but partly because they simply did not know whether clothes bearing their brand were being made at Rana Plaza.








To a fashion industry outsider, the idea that a high-end brand or high-street retailer would lack knowledge of where its clothes are produced may be shocking. Sadly, it's a common scenario when complex supply chains extend into developing countries. Brands typically have access to a vast network of factories, and choose which locations to bring on-stream based on the incentives they can offer in terms of price and turnaround time. For manufacturers looking to stretch margins by taking on more work from demanding western brands, the urge to subcontract parts of an order to another supplier is often too great to resist. Furthermore, the increased use of agents has brought an additional layer of complexity to traditional supply chain relationships, weakening the link between retailers and the factories producing their goods.

**To a fashion industry outsider, the idea that a high-end brand or high-street retailer would lack knowledge of where its clothes are produced may be shocking. Sadly, it's a common scenario when complex supply chains extend into developing countries.**

Production tracking technology can restore this link. Furthermore, it has the ability to shine a light into every corner of a retailer's supply chain, removing the conditions that enable - or tacitly encourage - unwanted and unauthorised subcontracting.

Ernst & Young's report, *Human Rights and Professional Wrongs*, published earlier this year, explored the adequacy of corporate social compliance in the wake of the Rana Plaza disaster and fatal garment factory fires in Pakistan. In a section entitled 'What needs to change?', E&Y recommended that retailers tighten procurement systems to prevent orders being placed with unaudited factories and make a concerted effort to bring "agents and intermediaries" in line with the expectations of retailers.

These goals are certainly achievable. To reach them, garment retailers must nurture transparency throughout their supply chain relationships (see diagram). In many existing supply chains, the retailer/brand owner works with a garment manufacturer and a packaging supplier to produce its clothes (as mentioned, an agent may also be employed as the link between retailer and manufacturer/supplier). Once purchase orders are logged and packaging specifications sent to the respective parties, the retailer is always at risk of being left out of the loop in terms of exactly how, where and when the items that make up a particular garment are produced.

A retailer may regularly audit the factory where the cloth is cut and stitched, but what about the secondary supply chain - the zips, buttons, labels and packaging that are added to create the final product? Can the retailer verify that each item was produced in a safe and compliant factory, by workers earning a fair wage? If not, the retailer's supply chain poses a risk. And if some parts of the garment are produced in a factory that fails its next audit or falls victim to an industrial accident, the potential outcome is not only disruption, but a huge amount of negative publicity and reputational damage.

How can this scenario be prevented? By enforcing greater visibility and transparency at the heart of the triangular relationship. Just as PLM functions as a window into a product's entire lifecycle, production tracking systems are created to provide a complete view of the retail supply chain. Non-approved parties are excluded from entry, as all orders must be placed with a legitimate supplier that features on the retailer's approved database.

All order data is then processed via the tracking platform, which means a retailer is immediately alerted if any part of an order is completed by an unauthorised supplier. Manufacturers cannot deliberately over or underestimate orders as a way to increase margins, while greater transparency also means that inefficient and unreliable suppliers can be removed from the supply chain.

Of course, it will take more than production tracking to remove all opportunities for abuse from garment supply chains. If the tragedy of Rana Plaza is to have a positive legacy, encouraging behavioural and cultural change at the top of the industry is just as vital as technical advances. The shift from a compliance mindset to an ethical mentality will be crucial in the coming years. However, we believe this process should start by enabling retailers to root out unauthorised supply once and for all. In doing so, we can challenge the tick-box approach that allows unethical sourcing to continue beneath the surface, unnoticed and unpunished.

# Wearable Technology and the Future of the Product Lifecycle

*by*
BEN HANSON

**In this exclusive article, Ben Hanson considers the intersection of fashion and technology that is rapidly emerging in the form of "wearables" – function-led devices that bear all the hallmarks of desirable accessories. Examining the trend of fashion executives migrating to Silicon Valley, Ben's article also looks at the business aspects of this convergence, and sets out some of the potential implications for the future of the product lifecycle.**

**It's getting harder to tell where fashion ends and technology begins. And I don't just mean for bleary-eyed members of a PLM project team on their fifth flat white of the day.**

This very topic – the intersection of silicon and style – has occupied the minds of board members and industry analysts for more than a year now, and from a business perspective at least, the crossovers are numerous and well-documented. Former Burberry CEO Angela Ahrendts began a new role as Senior VP of Retail at lifestyle technology giants Apple in May 2014, who in the past year have also poached Patrick Pruniaux (VP of Global Sales and Retail for Tag Heuer) and former Yves Saint Laurent CEO Paul Deneve.

Google, too, have driven a stake in the ground in the burgeoning hiring war, bringing on board Ivy Ross, a marketing expert who has previously managed the identities of Calvin Klein, Gap, and Coach.

The average shopper has also implicitly become part of the convergence – choosing their technologies on the basis of personal style.

Today, you and I buy into technological ecosystems the same way we do brands. "I'm an Apple man through and through" becoming just as viable a brand allegiance statement as "I love J. Crew". We made a conscious decision somewhere along the way to throw our lot in with Google or Apple, and that choice has come to define us in the exact same sense that our choices of knitwear, boots, handbags or tailoring do.

Almost without anybody noticing, the technology industry has been doing an extremely thorough and clandestine job of aping the early stages of the fashion business model – something that goes beyond just hiring their big names.

Think of it this way. New phones, tablets and laptops are released on a seasonal basis, and people tune in to the Apple's WWDC or Google's I/O (despite both being ostensibly conferences for developers) the same way they might stream a catwalk show, scanning the stage for hints of what's to come next.

And those products are driven by design and a "newness" that really goes beyond pure functional clout – and even beyond aesthetics. Time was, you could add a camera or a touchscreen to a phone and call it revolutionary, but today the points of differentiation between household technology names are just like those that separate clothing brands. Nuanced and stylistic.

There's even a chance that, without realising it, you've become better acquainted with technology's "rockstars" than you have with fashion's. Do you know who was responsible for Maison Kitsune's fall collection? I had to look it up. Ask me who designed the latest iMac, or Android's upcoming "material design" language, though, and I can reel off the names Jony Ive and Matias Duarte without a moment's hesitation.

**Today, you and I buy into technological ecosystems the same way we do brands.**

Perhaps that just makes me unfashionable. That's certainly a possibility, as I prepare to become a father for the first time at the tail end of 2014, and sweat pants and a t-shirt start to look like acceptable workwear. But I suspect it's indicative of something larger at work – a force that's quietly but very purposefully drawing together the folds of fashion and technology, and manifesting them in the first instance as "wearables".

And I think it's time we considered what that means for us. As consumers as well as technologists on the other side of the equation.

Before we get too deep, though, I'd like to start by talking about some wearable technologies you might have heard of.

Google Glass is the likeliest candidate. A piece of eyewear incorporating small independent processing capacity, and able to produce an optical display as unobtrusively as possible in the user's field of vision. Glass is operated via voice (with some simple touch commands) and duplicates much of the functionality you might find in a smartphone. Not quite popular enough to be considered truly disruptive, Glass nevertheless – at least in concept - threw a lot of our social mores into sharp relief: it asked big questions, and did so simply by transposing functions like picture taking, video recording, Tweeting and searching from a confined device to something more personal.

As a society we should have been confronting the concepts of ubiquitous recording technology and an almost unfettered access to the sum total of the world's knowledge, and considering their implications for our lives. After all, these are quandaries that have obsessed futurists for decades, and all of a sudden we can mount that kind of technology on the bridges of our noses? What of privacy? What of personal identity?

But these questions never really got asked, and that's down to more than just slow adoption rates. As it turns out, the more pertinent question – and indeed the sneakiest method of fomenting widespread desire and, eventually, adoption – is to ask what of personal style? Companies like Google, in their race to define what wearable technology means, are banking on a strategic secret the fashion industry has guarded for a very long time: that identity and style are just two words for the same thing.

So Google did a clever thing with Glass. They came straight out of the gate with the assumption that we all wanted the sum total of the world's knowledge perched on our faces, so that side of things wasn't worth talking about. Instead, they focused on the intensely personal effect that kind of technology can have on our individual lives.

With Glass, nobody asked whether we wanted it. They showed us instead how it would fit our lives, and asked what size and what style we wanted it in.

Sound familiar? Selling a personalised piece of a lifestyle is something the fashion industry has done incredibly well for generations.

The best designers don't allow consumer the luxury of asking themselves questions like, "plaid, hmmmm…. is that for me?". In their place, they throw the full weight of their marketing and aspirational lifestyle tools at us, never wavering from the conviction that, yes, of course plaid is where it's at this year. Just like with Glass, the pertinent question becomes something else entirely: what kind of plaid do you want, and how do you want to wear it? Because like it or not, that choice is going to define you come

**The bi-product of all that tracking, analysing, inputting and uploading is reams upon reams of usage data – the kind of information analysts, healthcare professionals, and brand executives would kill (not literally) to get their hands on.**

winter, and speak for you when you enter a room, radiating a set of assumptions that friends, colleagues and potential partners can make about you.

And as we saw from the hiring of Ahrendts, Pruniaux, Deneve and Ross, technology companies aren't shy about hiring the people who know how to make that happen. Luxury marketing is an art, after all: crafting a lifestyle image just so, constraining supply just the right amount; fostering the right kind of celebrity partnerships, and knowing how to avoid the wrong ones.

While it falls a little outside the definition that most people would accept for "wearable technology", Apple's recent acquisition of the Beats Electronics headphone brand quite neatly encapsulates what I'm driving at. Apple as a company is perfectly capable of designing stylish audio gear - with its typically high margins too, no doubt – but what it bought with Beats was not headphones. It bought a beeline straight to the hearts and minds of young, fashion-conscious consumers the world over – a kind of backdoor through which technology can continue its steady infiltration of the fashion industry. Not to mention also netting two extremely savvy marketers in Jimmy Iovine and Andre Romelle "Dr. Dre" Young.

But hiring and acquiring isn't always the solution. Google recently tasked New York fashion icon Diane von Furstenburg with creating a line of eyewear specifically designed to complement Glass, and the technology mammoth made its New York Fashion Week debut at DvF's spring 2013 show. You'll find some examples of her work dotting these pages – and more online – and although I don't think the designs quite do enough to overcome the quintessentially "techie" nature of Glass, this is certainly a further step in a rather obvious direction.

I don't, however, want to give the impression that this revolution is limited to – or even particularly galvanised by – Google Glass. If anything, Glass is an outlier, a device that perhaps one or two people in a crowd of thousands might be bold enough to actually wear.

The real salvos in the wearable war will begin with the launch of Android Wear and, presumably in late 2014 or 2015, Apple's response. Both are widely predicted to take the form of "smartwatches" – small devices worn on the wrist, and tethered to the smartphone in your pocket, delivering timely information to the wearer in a more convenient and less intrusive manner than grabbing a phone from your jeans pocket or handbag. [On 9th September 2014, shortly before going to press, Apple indeed announced the personalised, customisable, fashion-forward Apple Watch for a 2015 release.]

Google has partnered with Motorola and Samsung for the initial launch hardware of Android Wear, but given the design nous visible in the Motorola 360 smartwatch, I doubt that further collaborations with fashion designers can be far behind.

Rather than just copying the form and fashion of existing devices, though, wearables can also take the form of more abstract-looking and utilitarian devices. Fitness trackers like Nike's FuelBand are becoming increasingly popular, adorning the wrists of the health-conscious the world over. And yes, they come in multiple colourways.

The fitness band category also includes the impeccably-designed UP24 bracelet from Jawbone, which features the clean lines of designer Yves Behar – yet another name I didn't need to look up.

Indeed, fitness trackers are possibly the most interesting wearable from the perspective of a retailer or brand looking to push their consumer engagement to its logical conclusion, and to draw performance, location, satisfaction and other information back into their cyclical product development efforts.

Fitness trackers typically work by counting and analysing movements – like a sensitive pedometer – but also, in wireless partnership with a smartphone, by pushing reminders to the user to get out there and take a brisk walk, go swimming, drink their eight glasses of water a day, see the world, and get a restful night's sleep.

In that sense, wearable devices like the Nike FuelBand might well be good for you and me, but they're certainly good for Nike. The bi-product of all that tracking, analysing, inputting and uploading is reams upon reams of usage data – the kind of information analysts, healthcare professionals, and brand executives would kill (not literally) to get their hands on.

How long until that sort of extended product lifecycle information can come from even less intrusive devices, or even from our garments themselves?

And what could you, as a brand, do with it? If you knew not just where your products were being sold, but where they were being worn? If you had the data in-hand to show which of your own and which of your competitor's products your garment was being paired with? If it was being sold on or thrown away? How about if you knew, through a voluntary exchange of information, what kind of lifestyle the people wearing it led – right down to the social hangouts they visited, and where else they shopped? What if you could offer discounts or loyalty rewards organically, tied not to a particular device or arbitrary account, but driven by your customer's continued choice to affiliate themselves with your brand, and walk into a retail location wearing your technology?





**With Glass, nobody asked whether we wanted it. They showed us instead how it would fit our lives, and asked what size and what style we wanted it in.**

There's a great deal of talk at the moment around the "internet of things", which is an old label that has been brought back to the fore now that the world has caught up with the initial heady vision – an interconnected vision not unlike the one I've just described.

**Once we commit to wearing our technology like an accessory, and agree to take part in the ecosystem and the lifestyle that comes with it, the only way is up.**

The potential is startling to consider. And, if we're entirely honest, a little scary. Connectivity to that degree raises the same ethical questions that Glass should technically have thrown into the public arena, and although there are huge opportunities here, the potential for abuse is equally potent.

Either way, though, the brands who do wearables right will find themselves not just at the forefront of a whole new market, but potentially an entirely new paradigm of consumer interaction.

I don't believe, then, that smartwatches and fitness trackers are necessarily the heralds of a new era in and of themselves. And neither do I particularly want one of the former, although I will admit to being a card-carrying owner of one of the latter. But let me be unambiguous and say that they are the start of one.

Once we commit to wearing our technology like an accessory, and agree to take part in the ecosystem and the lifestyle that comes with it, the only way is up.

I believe that there are still hurdles to overcome from the consumer's point of view. Acceptance of this kind of ubiquitous technology may be rocky, and the need currently remains to have a smartphone and a wearable device – neither Glass nor Android Wear can operate independently. But I believe the decision from a business point of view has already been made, and the hiring we've already seen this year will soon start to go both ways, with brands beginning to poach the technology industry's savviest designers and marketers.

Because, whether it's next year or in five years' time, Silicon Valley and Savile Row will find themselves competing for the same customers, sparking competition of an entirely different kind.

Wearable technology, at least for me, is not something that's coming soon; as an industry, we are already irreversibly far down the road to convergence. Predictions suggest that 250 million wearable devices will be in use by 2018. And that's based solely on the products available this year, without factoring in the potential for something truly disruptive – an iPhone-level event for the fashion technology industry.

Choices do remain, though, and luckily they happen to be ones you're already well-equipped to make.

How will you use this rich source of consumer interaction to inform the future direction of your brand? And which of your favourite technology companies are you ready to wear like a heart on your sleeve?

Press images provided by their respective copyright holders: Google, Motorola, and Jawbone.

# The 1-2-3 of PLM

*by*
BRION
CARROLL II

**In this, his second exclusive feature for WhichPLM, PLM integration and implementation consultant Brion Carroll II introduces retailers, brands and manufacturers to the tentative preparatory steps that follow their selection of a PLM solution. With multiple implementations to his name, Brion draws upon his experience to set out what he calls the "1-2-3" of PLM.**

**You did it! You took the plunge. Made the leap. After educating yourself on the ins and outs of PLM, listening to seminars and webinars, searching the likes of WhichPLM for information, advocating for your department at conferences, you made your selection and took the first step on your PLM journey.**

But now what? After all the time and effort spent on quantifying your need for PLM, and discovering the right software and long-term partner for your business, you have your figurative bags packed and are ready to begin marching towards your PLM goals in earnest, but you may not know quite where to begin.

Once the selection is made, there are a series of best practice preparatory steps that retailers and brands can take to get what I call the "1-2-3" of their business ready for PLM. Step 1 refers to the business itself, step 2 references the full scope of business data, and step 3 concerns that organisation's system architecture.

Typically, these steps will be followed in a situation where a business is moving from a non-PLM environment (potentially from PDM, or from mountains of Excel spreadsheets) but it's important to note early on that they are as applicable to the extension of an existing system as they are to the implementation of a new one. The unifying thread between both projects is the desire to take a practical and sustainable approach to what will be a significant and far-reaching business transformation.

Just like a child unwrapping that prized present at Christmas time, with a PLM solution chosen, everyone wants to purchase and install their new software right away. But it can be easy to forget that the project team who have worked diligently on the process of mapping, shortlisting and selection are not the entire PLM team. So rather than focus on getting that new user interface up and running as rapidly as possible, these first tentative steps into PLM should be taken as an opportunity to bring all business participants together – turning a small occasion for showing off into a rallying cry for new business processes.

Exploring step 1 a little further, the intention is to prepare the business as a whole for the change that is about to come everyone's way; whether they work directly with the new solution or not, virtually every job role will be touched in some way by the implementation. By obtaining cross-departmental buy-in at the earliest possible stage, an implementation is much more likely to retain its forward momentum into the later stages of the project, and achieve what experts call "continual phased improvement".

It is also a good idea to appoint an executive champion that is just as passionate about the initiative as your project team lead had to be in order to get things off the ground. This figurehead can then help to communicate to departmental champions, ensuring that everyone from the designer to the CIO possesses a good understanding of the vision for the project, as well as how it affects their day to day role. By establishing this sense of direction and ownership, a business can also create departmental focus groups for the purposes of surveying and tracking acceptance and adoption.

Internal expertise and education, however, can only take us so far. To help reduce your exposure to risk during your PLM project, it's advisable to bring in a knowledgeable PLM subject matter expert – somehow who is unbiased, and intimately familiar with your chosen vendor's quirks and capabilities – as early as possible. The right independent expert can help to ensure that your business is able to leverage as many of your PLM solution's out of the box capabilities as possible, helping to reduce or eliminate roadblocks later on.

I once worked with a large European designer brand, where a very competent and multi-disciplinary PLM project team had been put in place before I arrived. I was invited in as the PLM subject matter expert (SME), and began working with a group that included everyone from the IT Director to departmental Line Managers.

**Just like a child unwrapping that prized present at Christmas time, with a PLM solution chosen, everyone wants to purchase and install their new software right away.**

The first thing that struck me was just how invested each and every team member was in the vision of the project. Unlike some large project teams, where in-fighting and conflicting priorities can actually work against the end goals, everyone in this team was united behind a desire to shorten cycle time and improve the process of producing and communicating tech packs.

Because of the sheer number of different interests represented in that project team – and them all having been educated on the strategic objectives of the project – we discovered through our meetings that creating costing and materials information for vendors was having a significant impact on the development calendar. Initially the assumption had been that the workflow between the designer and technical designer was to blame, so had our project group not included the VP of Sourcing (who was also a project champion) we would have been ignorant of a vital piece of information which ended up delivering a major cycle time and cost improvement – one that was not even contained in the original PLM scope.

Given this example, it is clear to see how any PLM implementation is bound to impact multiple areas of that company's infrastructure, and why champions from within those areas can add so much value to these initial stages – the (1) in our 1-2-3 of PLM.

Almost invariably, the goals of any PLM implementation are to moderate product costs, reduce cycle times, minimise supply risks, and safeguard quality and compliance. All of this scope is baked right into the name: product lifecycle management. And needless to say, it will by definition affect various divisions and departments. Let's just take line planning and product development functionality as an example. For this, the project goal would be to share illustrations, patterns and samples so that designers, technical designers, line managers etc. can achieve a standard process and leverage the same information at different stages of the design and development lifecycle. Input once; use many times. This example alone shows how a seemingly simple and self-limiting goal can in fact touch many areas of the business, which is why the second entry in our 1-2-3 requires the organisation to take stock and inventory of its business and application environments.

Prior to embarking on a PLM project proper, it is always wise to understand the topology of the existing systems that are in place, as well as what needs they currently fulfil for the business. Sometimes this assessment - or "as-is" - process is a meticulous and time-consuming effort, but it remains vital for practically every implementation, since it allows the organisation in question to get at fundamental information such as: which systems support which process functions; what information or data is stored in each system and for how long; how accessible the information is, and how complex the data structure is.

In order to build an understanding of this second step, a team will typically design a map or flow diagram encompassing the full scope of business data, and documenting the layout of every application in use within the extended enterprise. These applications can range from the seemingly-trivial and non-connected right through to the cloud-based and offsite. Without this understanding of where business-critical data resides, it can be extremely difficult to try and understand where PLM fits in context, what redundant applications it is capable of replacing, and how it will communicate with those solutions that are retained, and that now need to be integrated into a cohesive whole.

I conducted one of these second step processes on behalf of a multi-brand fashion designer that had purchased PLM with only one specific product development target in mind. Whilst we were mapping their business environment – specifically with the goal of on-boarding material libraries in a phased deployment – we discovered that central product data was, in its current state, stored in a host of different, disconnected systems – often in duplicate. Even more importantly, this state of affairs was not limited to material libraries: digital images, colourways, vendor information and so on was all similarly fragmented.

We realised at this point that a complete data cleansing and staging effort was required. We coded an Extraction Transformation and Loading (ETL) tool in Java that allowed us to capture other areas of business data more effectively, and to repeat the data cleansing results we had by then seen in material libraries. In the end, all brands within the organisation used the same ETL to achieve organisational readiness and map out the true extent of their second step on the PLM journey.

I mentioned the concept of "phased deployments" in a previous paragraph, and I want to add a little more context to that. Implementation professionals will typically talk about "phased" or "big bang" approaches to putting PLM in place: the first refers to a gradual and segmented roll-out offering potentially greater control, while the second is a more aggressive strategy, aimed at getting as many (if not all) departments as possible on board in one fell swoop.

The choice of phased or big bang approaches must take a number of different factors into account: company size, business drivers, resource capacity to name just a few. Steps (1) and (2) on the journey should help any retailer or brand to accurately determine which approach will best suit their needs – I have personally seen both be effective – and the experience and competency of your project team (as a team and as individuals) will ultimately secure the success of your project.

With your business challenges understood, and the scope of your business data determined, the final in our series of three initial steps lies in understanding how PLM should be integrated to your existing business technology framework.

As we covered in step (2), PLM will always be implemented in context: very rarely will the implementation of a new system coincide with the effective re-engineering of every business

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function, and nor will it typically be able to replace the functionality of every other enterprise system. With this being the case, integrating your new PLM solution to your broader business environment is a sensible step, and one that can bring together the many different facets of your product lifecycles in a common enterprise framework – the third step on our PLM journey.

Integrations can take a huge number of different forms, and will be dictated by the specifics of your business environment. Generally speaking, though, the most common integration methods are based on web services allowing a "just-in-time" collaboration between PLM and contributing systems. And while some organisations will balk at the idea of "customising" their new PLM environment so early in the process, integrations of this type are both commonplace and effective, allowing the right extended-PLM solutions to continue serving as the arteries that feed the heart of product lifecycle management: PLM itself.

Once the concept of integration has been broached, the specifics can then be explored. In the case of CAD integrations, design teams can be certain that they are always working with the latest file revisions, with workflow automation allowing them to modify attributes in existing designs – and these attributes then being pushed to the technical teams – without compromising security.

From a technical perspective, various mapping solutions will offer combined network mapping to provide real-time views and performance monitoring of all services, systems and traffic patterns. Using a combination of exposed vendor API's and IT resources, these types of architectures are much simpler to implement than they might sound, and can deliver potentially significant results across the extended enterprise.

**Throughout this article, I have treated PLM adoption as something that can be handled (and handled well) through simple, piecemeal steps, but it is important to remember that selecting and implementing PLM is a huge undertaking and an overall leap that should not be taken lightly.**

Throughout this article, I have treated PLM adoption as something that can be handled (and handled well) through simple, piecemeal steps, but it is important to remember that selecting and implementing PLM is a huge undertaking and an overall leap that should not be taken lightly.

A motivated and engaged team is certainly a terrific asset, but actually assembling the right champions can prove difficult if any number of departments do not understand how PLM might benefit them. Similarly, carving out a home for PLM amongst your extended and integrated systems architecture is best practice, but the actual development of middleware (not to mention the audit required to understand its scope) is something typically best handled by an experienced third party.

Whether it's in these initial preparatory steps or later in the implementation, the adoption of PLM will take a considerable amount of effort. But with the correct foundations in place, the journey can have an extremely worthwhile endpoint – assuming you begin by following logical and proven methods from the beginning.





# A New Generation

## of PLM User Experience

*by* PETER BAMBRIDGE

**Peter Bambridge is an Independent Industry Analyst and Consultant, who has worked for 30 years creating, selling and implementing software and services solutions for the retail and consumer goods industry. In this exclusive article, Peter examines the growing importance of the user experience in PLM, and looks at how software vendors should go about improving this crucial aspect of their solutions.**

**For the retail, footwear and apparel industry, many PDM solutions were initially developed in a DOS world, and later migrated to a Windows environment. As a result the user interface (UI) was often clunky and, certainly by today's standards, somewhat ugly.**

The introduction of PLM systems coincided roughly with the introduction of web-browser-based UI, which significantly enhanced the experience for the average user, translating interface and design lessons from smaller web applications to the enterprise environment.

Recent developments in user interfaces, and the development of the concept of user experience ("UX") have begun what I believe is another major paradigm shift in user interface design. As a result, there is now a new generation of applications arriving on the market that, instead of being driven purely by technological improvements, are the outcome of years of refinement to the user experience.

So many of us interact with intuitive software and applications (although we probably call them "apps") in our personal lives, that, irrespective of whether we now access our enterprise environments directly through a standard web browser, through a smart client, or even a mobile device, UX has become one of our top priorities – consciously or subconsciously.

PLM solution vendors need to be aware of this shift in expectations, and understand that prospective customers are no longer going to be satisfied with purely "functional" or utilitarian solutions. Companies looking at acquiring a PLM solution are already assessing far more than just the functional capability of a solution against their requirements. Ease of use, a rewarding daily environment, simplified training, simplification of processes and enhanced productivity are all rapidly becoming a key part of standard requirements.

Given this change in priorities, this article will look at some different approaches to user experience, examine how UX can be enhanced, and provides some illustrations of where and how these benefits can be realised.

First of all, it is important to define what, precisely, we mean by "user experience" and how this is distinct from "user interface".

"User Experience" is defined by Wikipedia as involving a person's behaviours, attitudes and emotions about using a particular product, system or service. In the context of PLM for RFA, that comes down to how users can work with the software, their reaction to it, and how easy and efficient it is to use on a daily basis.

**As a result, there is now a new generation of applications arriving on the market that, instead of being driven purely by technological improvements, are the outcome of years of refinement to the user experience.**

From a vendor perspective, it is encapsulated in the need for a refined user interface design, but goes beyond the immediate goal of simply creating something better looking. For a vendor to truly consider their user experience rather than just their user interface, they must look at system behaviour, user reaction and overall productivity.

Creating an environment that a prospective customer considers attractive is one thing, but winning a potential client over by considering their entire experience is another thing entirely – and one that I predict will very soon become a critical objective for PLM vendors.

The benefits of this work, though, will be felt by vendors and end users alike. UX-driven productivity enhancements can help to mitigate some of today's increased pressures on workloads and staff numbers. Ask any brand today, and they will tell you that the days of dealing with a single style at a time, accessed through an extensive structural tree, are long since passed. A truly modern product development environment must support mass updates, additions, and actions.

As I mentioned earlier, the younger end of today's workforce has grown up in a world where smartphones and tablet computers are the norm, and this has lead to increased expectations for ease of use and simplicity that extend to the tools they are provided with at work. It has also helped to set expectations for high levels of availability, and swift response times, which are two further aspects of UX that a purely interface-led approach would not necessarily consider.

As PLM solutions continue to mature, the functional capabilities to deliver the required core business processes become better understood, and today can be addressed with a broad array of solutions. While I hesitate to use the phrase "feature parity", we are approaching a point where most successful PLM vendors will offer support for a common set of key processes in their basic offerings. This is leading to an increased need to differentiate, and UX is becoming one of the most important areas where this differentiation can be achieved.

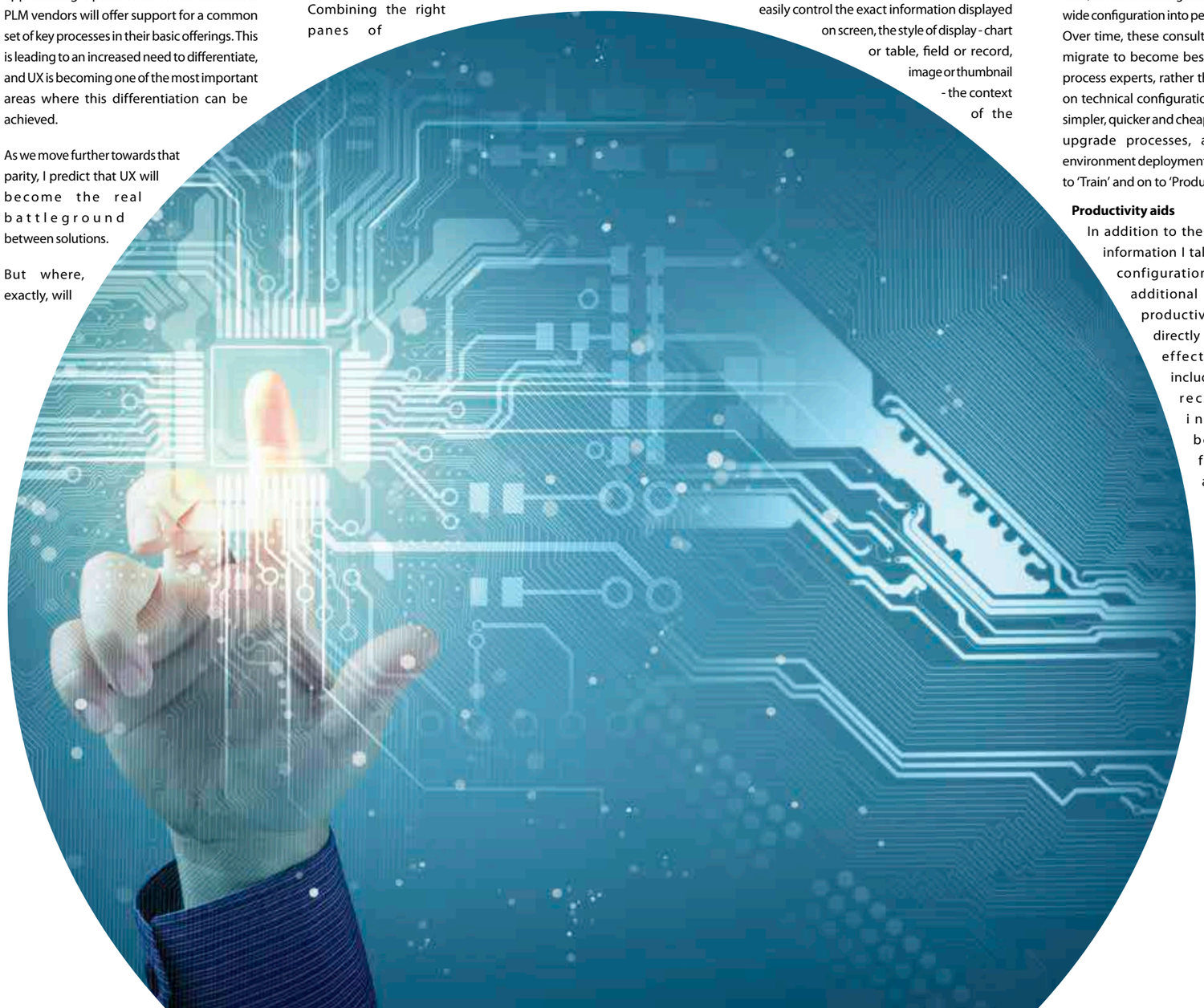
As we move further towards that parity, I predict that UX will become the real battleground between solutions.

But where, exactly, will the skirmishes be fought? How can PLM vendors prioritise their UX improvements in ways that meet the current and future needs of their customers?

For the remainder of this article, I want to set out what I believe to be the most sensible areas for UX improvement, informed by end user priorities.

**Navigation through the application**

Rather than navigation up and down organisational structures, a series of synchronised panes can provide immediate access to related products, groups, selections of data and also task progress. This approach of contextual visibility can allow rapid navigation, as well as combining data, information and progress into one environment. Combining the right panes of information can significantly reduce the need for user navigation and directly deliver click reduction.



**Flexible screen configuration and personal view management**

Most PLM systems currently have a series of predefined screen layouts that are typically tailored as part of the configuration of the application by the implementation team. Specific business processes are usually enabled by working through a predefined series of such screens.

A few of the more flexible PLM solutions allow the end user to edit these screen layouts (through flexible configuration) and save collections of them as personal views or saved views. Using these personal views, the user can easily control the exact information displayed on screen, the style of display - chart or table, field or record, image or thumbnail - the context of the information, and the flow of information through the desired business process.

The ability to define screen layouts and tables of data has traditionally been retained as a system administrator task, or handled by the implementation team/vendor services. Flexible screen layouts can now allow end users to refine the views of information in the way they want to look at them, and make the configuration as easy as spreadsheet editing by drag & drop, add & delete columns / rows as well as filter and sort control.

While this may not be good news for some implementation consultants – it certainly detracts from work they have typically handled - it will help to limit the implementation costs and timescales from the customer's point of view, as well as shifting some work from system-wide configuration into personal configuration. Over time, these consultants will be able to migrate to become best practice business process experts, rather than focusing purely on technical configurations. This will lead to simpler, quicker and cheaper software version upgrade processes, and also simpler environment deployment processes (i.e. 'Test' to 'Train' and on to 'Production').

**Productivity aids**

In addition to the flexible panes of information I talked about in user configuration, there are also additional series of specific productivity aids that can directly enhance end user effectiveness. These include rapid access to recently edited information, bookmarks and favourites. In addition, there are also groups or sets of selected information - such as a group of styles - that might then be worked on as a logical group.

**Interface role alignment**

Aligning the style of interface with the type of role is also an important aspect of delivering an effective user experience. Users can relate best to the solution if it presents the primary sources of information in an appropriate style. Designers are interested in the relevant images, sketches, and design components, for instance; whereas Sourcing managers need more of a spreadsheet-like data interface, Technical designers, on the other hand, require more of a style detail view with BOM details and access to all the libraries of detailed supporting information. More senior managers, too, have their own unique requirements: their personalised interface might incorporate high-level dashboards, status summaries and graphical dynamic reports.

**Drag & drop association**

The use of drag & drop capabilities to associate elements of information together is a powerful and easy to use method – one that can address the challenges of tasks that require multiple assignments. Examples include assigning multiple images to a specific style, assigning multiple colours to a style and assigning multiple styles into groups. Drag & drop can also add ease of use to potentially complex areas such as workflow management and critical path. Drag & drop is a key element in the delivery of click reduction, which, as we have seen, is one of the most important metrics by which user experience is measured.

**Mass additions, updates, and actions**

Many PDM systems and some early PLM systems adopted a "single item at a time" approach to how items could be interacted with. This caused significant navigational workarounds to be needed, reduced the overall effectiveness of the process, and was also prone to causing errors where those manual repetitions were performed.

Most users are familiar with spreadsheets as a working tool, and editing across a selected/filtered table of records can be far more productive than having to tackle one task at a time. This can potentially be handled either

**While I hesitate to use the phrase "feature parity", we are approaching a point where most successful PLM vendors will offer support for a common set of key processes in their basic offerings.**

through direct editing or through cut and paste. Solutions that do provide a spreadsheet style interface are typically more efficient, and easier to relate to, with reduced training requirements as a result.

Providing the ability to selectively copy information from related styles can also accelerate the definition process. Some PLM solutions offer an automated approach through user-defined batch update processes, which then have the advantage of being stored and can be repeated when needed. Groups of actions can also be automated, such as generating multiple sample requests from a selection of styles, or creating multiple styles, fabrics and trims.

**Hovering information and images**

Another feature that can help to significantly reduce the number of steps in navigation is the use of hover information: rather than clicking on an item to discover more detailed information about it, simply hovering the cursor over that item would display an informative summary. This can take the form of a pop up image as the pointer floats above a style, or a bubble of information about the product concerned (such as its development status, available options, key materials/fabric/trim). This approach can also be used to set up task assignments swiftly and simply.

**Integral comment threads**

Managing all relevant information in one place is one of the underlying objectives of any PLM solution, so anything that reduces the need to hunt across volumes of emails can enhance the completeness and reliability of information. Utilising comment threads inside PLM can all but eliminate the need for emails to be used inside the process, and help to ensure that the full history of the context is available at all times. Restricting visibility of some comments between internal and external users may be required for reasons of confidentiality. Comment threads can be relevant to all aspects of a PLM system, not just associated with styles.

**Workflow, critical path and task management**

Early PDM / PLM solutions adopted a simple list approach to task management and the anticipated duration and completion dates. Without an understanding of task precedence, this approach did little to support effective decision making, as real-world aspects continually change and impact the ideal timeline. Also, without an understanding of the overall corporate calendar (and recognised holidays) within which each critical path needs to reside, the credibility of any such plan can be questioned.

The latest approach to this area combines transparency with drag and drop interaction on a Gantt chart, and the ability to control precedence between activities, as well as being tightly integrated into the notification system. The scope is not necessarily limited to the business processes incorporated within the PLM solution, but can incorporate and monitor progress in other systems (such as ERP). Done right, the opportunity is there to replace traditional project management tools, with a simple to use, easy to understand, but comprehensive visual approach.

**Notification Management**

Many desktop operating systems provide a notification service as a standard capability. Applying notification logic to the full scope of PLM can help to keep a broad community of users informed and aware of changes, through on-screen pop-up notifications, or cross platform alerts, or even by email.

However, notifications need to be balanced in their approach and controlled in their quantity. Better to have one notification that 100 styles have been updated, than to have useful information lost among a blizzard of noise.

Embedding links directly to the item behind the notification can save time, and allow immediate and secure access to the full context behind the notification. Notifications triggered automatically by stages in the workflow can help to alert users to changes in information and status, however their use needs to be controlled to ensure efficacy.

**Social Integration**

There are two main approaches to social integration; either integrating leading social tools into the PLM solution, or adopting social capabilities into the PLM platform. Integrating a tool such as Salesforce's Chatter into the PLM platform can be used to facilitate messaging and notifications by leveraging the Salesforce1 platform. Microsoft's Yammer could also be used to facilitate a company private social network. However, integrating any external service into the PLM platform requires careful consideration of the scope and purpose, as well as the reliability, scalability and security of access. Alternatively, adopting the social approach into the core PLM platform could be used to deliver similar capabilities, and extend them throughout the enterprise on a secure, integrated platform.

**Conclusions**

Overall, while it is unlikely that a single PLM solution will address all of these areas for potentially enhanced UX, it is clear that some solutions are starting to take advantage of these sorts of capabilities, and are gradually adopting them into their core solutions. As this happens, the scope of the typical PLM community of users will grow to include more commercial roles, as well as the traditional creative and technical roles. Agility, speed and ease of use will become increasingly important.

**It is important to understand that there is more to the UX of a PLM solution than just the efficiency or the attractiveness of a system in the eyes of the end user.**

It is important to understand that there is more to the UX of a PLM solution than just the efficiency or the attractiveness of a system in the eyes of the end user. The opportunity exists to move the user community from a burdensome, repetitive exercise to a streamlined, efficient, agile and productive business process. This can then enable the creative aspects of product innovation to be fostered, for fun to be reintroduced, and for time to be invested in adding value to the overall process rather than completing repetitive administrative tasks.

As a strategic direction, the adoption of 'Responsive Design' would appear to be the ideal cross platform approach, with the use of fluid proportion based grids and flexible images to deliver an optimal experience across smart phones, tablets and desktop screens. To date, PLM vendors have not adopted responsive design, however this will have to change as flexibility across multiple platforms becomes expected rather than a design ideal, and the adoption of a 'Cloud' based architecture becomes a pre-requisite.

A few vendors have already begun to grasp this major shift in UX approach. Some vendors, on the other hand, have a long way to go before being able to take advantage of what the latest technologies can now provide.

Those that listen, and chose to respond, to this growing demand will in the future be well positioned to accommodate the needs of the next generation of PLM customers. Those that do not, will find it increasingly difficult to compete in a marketplace within which they simply do not measure up to expectations.





# Levels 1 to 5

## the transition from PDM to PLM

*by*
MARK HARROP

**With more than three decades' experience to his name, Mark Harrop is a true apparel industry veteran. Drawing on a career that included senior roles within many of the leading PDM and PLM vendors, Mark's articles examine both the technical aspects and the broader business consequences of PLM. This feature explains the distinction between buying PLM and using it to its full potential.**

**As regular readers of WhichPLM will know, the acronym PDM (product data management) fell out of favour within the software industry and was superseded by PLM (product lifecycle management).**

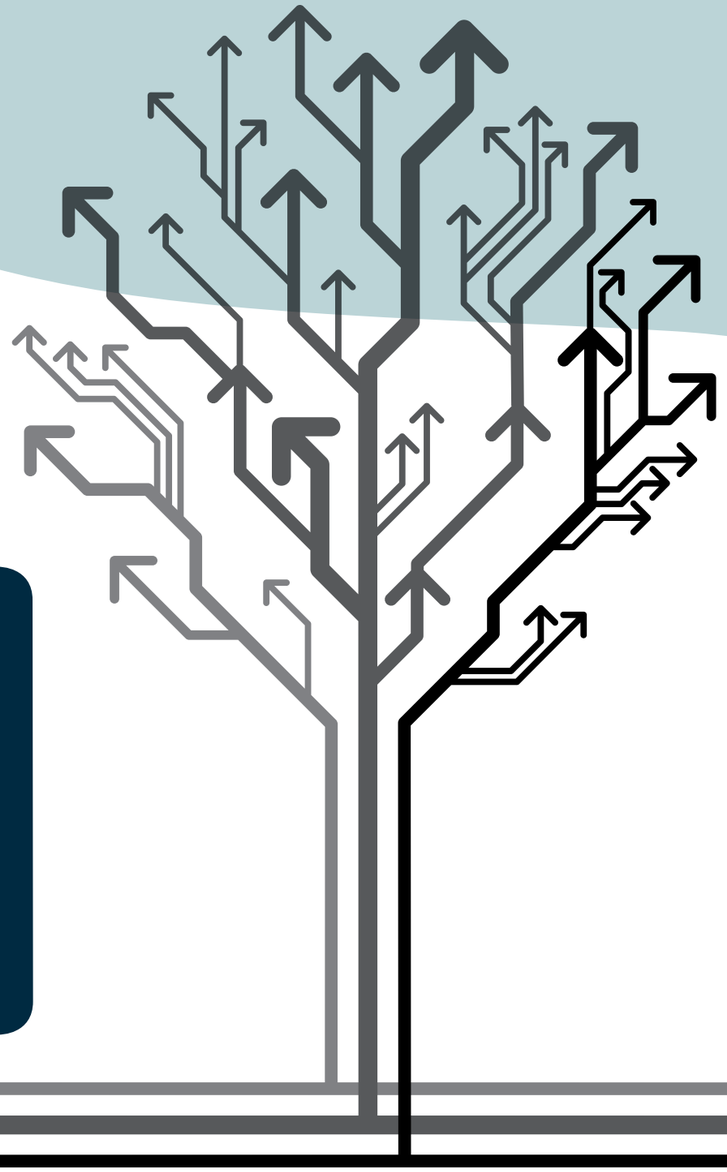
This was not just a case of swapping one three-letter descriptor for another: product lifecycle management solutions offer considerably broader, deeper and farther-reaching features and functions than even the best PDM solutions ever did. Even the most popular PDM platform is now on an official retirement plan, as its vendor begins to move customers onto its significantly more advanced PLM platform.

In effect, then, PDM is no longer actively sold within the major markets that WhichPLM covers. In every situation, PLM is considered to be a much better fit for retailers, brands and manufacturers whatever their size, and good proportion of new PLM sales in recent years have been to customers upgrading from a PDM environment.

And yet, we still find ourselves using the acronym PDM, because the unfortunate reality is that many of those PLM sales will only ever reach the capability level of much older PDM systems because of the ways they are selected, implemented, managed and maintained.

In our advisory practice, we refer to this as "buying PLM and implementing PDM", and so prevalent has it become that we analysed these occurrences (as well as the data from our customer surveys in 2010, 2012 and 2013) to arrive at what we now refer to as the five levels of PLM implementation and adoption maturity.

I'm sure it will not come as a surprise that "PDM" is considered to be the first level, but it is my hope that by making these maturity levels as clear as possible, more organisations will understand how to leverage the true scope of PLM, rather than settling for a feature set that might have been acceptable a decade ago, but that today puts them at a disadvantage compared to better-equipped competitors.



**…the unfortunate reality is that many of those PLM sales will only ever reach the capability level of much older PDM systems because of the ways they are selected, implemented, managed and maintained.**

**Level 1 (Tech-Pack - PDM):**
The focus during the initial stages of selection and implementation should rightly be on baseline functionality.

The need to handle essential processes (like the distribution of a technical specification or "tech pack" via PDF output) in a supportive and well-documented environment is a standard requirement for any retailer, brand or manufacturer, and it is logical that most implementations start at this level.

Level 1 implementations will see the solution put into place according to a narrow scope, where the technical specifications pull from product data, external image files (CAD files and Adobe Illustrator images, for example), and libraries for core data types. These libraries might include colour, materials, components, packaging, images, measurements, grade increments, testing data, and supplier listings.

At this stage, the implementation could be said to be functional, since it allows the organisation to achieve some of the core aims of modern digital working. When contrasted with the further potential of a more complete PLM implementation, however, we can begin to see its limitations.

**Level 2 (PLM – Workflow & Critical Path):**
At this level, an organisation is taking full advantage of the PDM aspects of its solution, but is still having to manually push data between internal departments, satellite offices, and supply chain partners.

Once those core capabilities are working effectively, a company should then define a set of critical paths (or CPs) for each product type, which are based on detailed introspection and analysis of their existing ways of working, and geared towards improving them to the standards of current best practices.

Following on from this, the next level of maturity is the inclusion of C.P. and workflow automation. Once the new C.P. milestone targets have been established, it's time to link each milestone to the product lifecycle status updates (approval process and automation triggering); once complete the business will then have progressed to what we might call a pull-push level of maturity – something far more representative of PLM than PDM.





Looking at things in this reductive sort of way, we can draw up an equation that may prove useful for any business wishing to understand whether it has truly implemented PLM. PDM + Critical Path + Workflow = PLM.

Advancing to this second level of maturity will bring most organisations to the stage where they begin to realise a notable return on investment (ROI). More efficient and automated ways of working can potentially improve product administration time by 15-25%, which is potentially a quarter less time wasted searching for and manually sharing product development data.

**Level 3 (Extended-PLM – Merchandise Planning, Creative, Technical):**
Although level 2 can certainly be said to be PLM, organisations who advance to the second level are those where we see PLM's true scope beginning to be explored. Rather than settling for core processes, level 3 businesses will seek out the added value operating processes that their new environment can enable.

In order to do this, though, the organisation must continue developing new processes and refining existing ones, placing an emphasis on merchandise planning and creative design execution. With the right mindset and approach, we expect businesses at this level to be uploading merchandise planning objectives to their PLM environment, and building bi-directional integration between their creative CAD tools - typically the Adobe Creative Suite - and PLM.

At this stage, each organisation will of course have its own way of operating, but broadly speaking all will following a similar process and share a common objective. That objective will almost invariably be a vision that includes all of the processes that PLM can possibly touch: merchandise planning; trend analysis; creative design; marketing; product development; supplier management; compliance; testing… the list goes on!

In essence, the distinction between maturity levels 2 and 3 lies in the organisation's considering and mapping the potential of PLM against its enterprise-wide process re-engineering goals.

**Level 4 (Enterprise PLM– dynamically used throughout the supply-chain):**
It's a common misconception that PLM, once it has been implemented enterprise-wide, from HQ to satellite offices, is "finished". In reality, the next level of maturity requires an organisation to consider and dynamically extend its PLM deployment across its entire global supply chain: brands, departments, offices, agents and sourcing partners.

An organisation at this level of maturity must start developing a truly holistic approach to PLM, ensuring maximum usage across all vertical and horizontal retail operations, brands, and locations; a focus on the entire enterprise here is critical to maximising overall efficiency and return on investment.

**Level 5 (Integrated-PLM – Part of a broader technology integration project):**
The final maturity stage represents what we consider to be the 'best in class', with the organisation demonstrating comprehensive and far-reaching adoption of PLM, leveraging each and every one of its core and added-value components as they stand in 2014/15.

These organisations have made the transition from basic PDM functionality to a fully operational Enterprise-level PLM solution, touching upon all of their re-engineered processes, from head office to the most distant factory partner.

A level 5 organisation will now be using B.I. (Business Intelligence) tools, developing comprehensive measurements and monitoring their PLM solution's continuous performance levels. And as the word "continuous" suggests, these businesses will have an internal team dedicated to the consistent optimisation of features and process across the entire global supply chain.

Although we at WhichPLM understand that every retailer and brand currently considering PLM will want to reach maturity level 5 as a matter of urgency, it's important to remember that any PLM journey is a multi-year endeavour. It will certainly be feasible for any business to reach "best in class" status, but this will not be an instantaneous process.

Similarly, an organisation looking to PLM to instantly improve its existing processes from level 1 to level 5 maturity will be in for a shock: it will only be through an effective mix of what we call the "three Ps" – people, products and processes – that they will truly enjoy what we consider to be the best that PLM has to offer.

**Although we at WhichPLM understand that every retailer and brand currently considering PLM will want to reach maturity level 5 as a matter of urgency, it's important to remember that any PLM journey is a multi-year endeavour.**

# Digitalisation: A Revolution in Three Dimensions

*by*
AVIHAY FELD

**As COO of 3D visualisation and design tool developers Browzwear, Avihay Feld has worked for a number of years creating innovative solutions for apparel and accessories, with an emphasis on realistic fabric simulation and human parametric avatars. In this exclusive article, Avihay explains his belief that 3D virtualisation should sit at the heart of any retailer or brand's broader digital transformation.**

**Digitalisation, as I see it, is one of the most important transformations our world has undergone since the industrial revolution. In every corner of the globe, industries from the consumer-facing to the purely B2B are making the transition to digital working – each at its own pace, and each following its own unique path, but all striving towards the same end goal.**

Today, the question around digitalisation is not *why* your business should make the transition, but how. And this gives rise to a difficult situation: enterprise leaders understand the drive for digital transformation, but find themselves tasked with making decisions that often fall outside their own area of expertise, and even beyond the core competencies of their organisations.

While I cannot claim to have the answers for every industry, my position does give me the experience to explain why I believe true-to-life 3D apparel visualisation should be a key element of the digital transition for any business in the garment industry.

**The challenge.**
Garment creation is a complex process, and one that is becoming even more complex over time. From the moment a garment is conceived to the time it is shipped, various professional departments, suppliers, agents, stakeholders and contractors, in different locations, will use a wide variety of different digital and physical tools to complete their tasks.

The sheer number of different people and processes that interact to create a single product make effective collaboration absolutely vital for any retailer or brand wishing to "go digital". And it's here – collaborative working throughout the design, development and marketing processes - that I believe fashion companies can achieve real value from 3D visualisation. Some of these benefits might include:

**Improve communication and visualisation.**
Apparel companies have a critical need to improve communication between decision makers around the world. In the early stages this communication is typically confined to text and numerical content, and images. But since product samples begin to be created halfway through the process, the need suddenly then exists for a method of accurately communicating something physical. Today, that kind of communication is handled via costly international shipping, but by examining just how we do things today, it should be easy to see how effective 3D visualisation of products before, during, and after the sample stage can be more efficient and cost effective.

Today, designers work with 2D design tools, then send the results to patternmakers who develop 2D patterns to match. The patterns then go to manufacturing where samples are created, often without the actual fabric required. The sample is then shipped back to the brand, where finally the designer and the marketing teams can provide reliable feedback. There is often a great deal of misunderstanding, excess cost, and frustration along the way, and this is one of the most potent examples of how digitalisation can transform established ways of working.

To enable all stakeholders to interact with the product at every stage, apparel companies can instead focus their energies on creating photo-realistic prototypes as early as possible in the process. 3D visualisation and a platform for sharing, annotating and collaborating on 3D designs and prototypes can have a major impact on not just methods of working, but logistics costs, design cycle times, product quality and more.

They say that a picture paints a thousand words. So it doesn't take a huge leap of imagination to consider the virtually limitless potential that 3D visualisation has to complement (and even replace) traditional methods of communication product inspirations, changes, and physical samples. Indeed, communicating garments using photorealistic 3D representation is second only to viewing the actual physical garment: it reduces the need for metadata, lengthy text explanations and guesswork; and it helps all the parties involved to be on the same page at any given moment, allowing them to make more educated decisions and achieve the required result when that first physical sample is actually constructed.

**Shorten product development cycles and reduce waste.**
The traditional paradigm of passing designs, patterns and samples back and forth around the world is a process prone to errors, rife with misunderstandings, and one that takes far longer than any business would like – particularly when we consider the demand for on-trend and "fast" fashion.

In its place, apparel companies undergoing a digital transformation need a shared platform for visualising designs, patterns and prototypes from the earliest possible stages. A solution that will enable them to shorten cycles, reduce errors, and communicate effectively throughout the product lifecycle.

This approach is already being pioneered by a number of forward-thinking brands: Adidas, for example, has invested heavily in three-dimensional working over the last few years, and has begun to achieve interesting results and a clear return on investment. According to sustainability figures published in April 2014, increasing their use of virtual sampling allowed Adidas to eliminate close to 1.5 million physical samples between 2010 and 2013.

When we consider the costs that would have been associated with making, shipping, revising and remaking those iterative physical samples, it becomes clear just how significant a part of the overall digitalisation of apparel 3D virtualisation can become.

Spurred on by Adidas's success, I hope that leaders within a much broader range of apparel companies will begin to see the value in leveraging 3D visualisation beyond sampling – using the same assets throughout design, development, marketing and sales, and progressing towards what I see as a holistic, three-dimensional, digital process.

**Increase creativity and innovation**
The apparel market is more competitive than ever, and companies need a constant stream of creativity and innovation in order to get consumer attention. Designers need to move beyond the restrictions of 2D tools that do not come close to capturing the realism of their designs, and do not give them the ability to visualise them being worn in the full variety of poses. They need the ability to quickly and cheaply experiment with many different samples, colors and fits in order to perfect their designs.

Pattern makers, garment technologists and designers alike all need the ability to accurately visualise the garment with true-to-life fabric and draping, on realistic human bodies, even when that fabric is not yet available. Marketers, too, need to be able to interact with designs and patterns from the earliest stages to see if

**"Imagination is everything. It is the preview of life's coming attractions."**

**Albert Einstein**

they speak to the consumer, and use that valuable data to actually shape the direction of products, lines and collections.

Without 3D visualisation and a true 3D design tool, none of this is possible.

**Improve marketing, merchandising and sales.**

Without samples or accurate 3D prototypes, it is difficult for marketing and sales to provide feedback on designs in development. To get distributor and consumer feedback early, to promote products on time, and to effectively communicate the look and feel of the products that are now in development, marketing teams should have access to realistic, compelling 3D models of apparel long before production is completed.

Adidas, again, defined 3D virtualisation as a strategic initiative in early 2004 with the goal of mitigating these marketing hurdles. Their target was to integrate 3D images of their products - which are accurate enough for decision making - into their sales engine. The success of this initiative lead to a complete digitalisation of Adidas's merchandising tools, reported in 2013 – one more step in that company's march towards a complete digital transformation.

**Simplify process management**

For apparel companies, managing a process with so many stakeholders and contractors is complex and high-risk. The way international collaboration, sampling, marketing and communications is handled today is both time and labour-intensive, and is often hamstrung by legacy systems.

Brands wishing to embrace the digital transition instead need solutions that will help them manage their modern workflow without stifling creativity, and without a big learning curve for any of the participants in the process. Photorealistic, true to life, 3D prototypes can be the centrepiece of such a solution; we have already seen how significant an impact they can have on everything from design to marketing, and as such I believe they should be afforded the highest priority when it comes to communicating and collaborating between stakeholders.

Some PLM vendors have already taken steps to allow 3D content to be embedded in their solutions, using it to enrich the usual "tech pack". This sort of integration should only be considered the beginning, however, despite the significant benefits it can offer to end users.

I would like to see a greater openness when it comes to providing seamless integration between different core PLM, extended PLM, and 3D design and virtualisation tools. It will only be by working together, after all, that vendors can offer the holistic digital environment that modern retailers, brands and consumers demand.

**Demand driven supply chain**

Photorealistic 3D technology can also play a part in sustainability initiatives, leading to reduced waste and a 'greener' industry. No physical prototypes will be needed to showcase designs for shoppers and brand loyalists. Instead, digital iterations can be created and demonstrated at no cost to the environment.

**Digital shopping experience**

Finally, understanding how 3D could transform the retail experience requires us to exercise our imaginations, but only a little. Picture a world where each shopper has a fully accurate, digital "avatar" available to them on any device - one that can "try on" virtually-created garments, mix and match these with styles you already own, and create and share outfits comprised of pieces that may not even exist yet in the physical world. The potential is limitless for consumers to engage with the lifestyle experiences and products of the brands they love, all underpinned by high fidelity 3D assets created during the early stages of product development.





# Integrating PLM to ERP

## a World of Choices

**Between them, Bill Isherwood and Chris Houghton have built bespoke integrations to practically all the major ERP systems in the retail, footwear and apparel market. A qualified Chartered Engineer and an ERP solutions expert respectively, Bill and Chris write with authority on the subject of integration and interoperability between PLM, ERP, and indeed the entire extended-PLM landscape.**

*by* BILL ISHERWOOD

*and* CHRIS HOUGHTON

**The ultimate objective for most businesses is a single consolidated and coordinated business system that integrates all activities and business processes from "catwalk to sidewalk", and allows the efficient and effective use of business information throughout the organisation. In this scenario, there would be the fabled "Single Version of The Truth", all information would be input once only and then, subject to strict control, made immediately available to all users across the enterprise and also to the organisation's extended supply chain – vendors, factories, material suppliers, testing companies, customers, carriers, and more.**

Increasingly, this end goal is being described with the catch-all term "digital transformation", which reflects its status as an all-encompassing project that can be extremely difficult – but not impossible – to manage.

More than 40% of companies will have twenty or more systems to include in any audit of their current business systems environment, and when you consider the volume and variety of data that can exist inside one system alone, you'll begin to realise the true context within which a rosy-sounding "digital transformation" is expected to take place.

We are all familiar with the analogy of "silos of information" – disparate applications between which information must be passed and which are universally criticised due to the inherent duplication of entry and associated errors and delays that can cripple an organisation. Individual "silos" can include social media, trend services, CAD, CAM, labour systems, PLM, ERP, sourcing solutions, tracking systems, CRM, EPOS, e-commerce, warehouse management, business intelligence and a myriad of third party systems.

Each of these may employ differing computing technologies, platforms, user interfaces, reporting and workflow mechanisms. All of which leads us to the inevitable conclusion that integration is both a necessity and a dizzying prospect to consider. We have personally

worked on a number of projects where the sheer quantity of systems in use makes mapping them a mind-boggling exercise – the connections between them becoming so numerous and intertwined that it starts to look more like a tangled ball of twine than anything resembling an organised systems environment.

For example, product records exist across the entire extended enterprise, as do their attributes:

- **Styles**
- **Colours**
- **Sizes**
- **Trend**
- **Storyboards**
- **Samples**
- **Costs and selling prices**
- **Images**
- **Bills of materials**
- **Manufacturing Instructions**

**Business requirements have changed fundamentally over the past few years, with an increasing rate of change in systems and processes; hence it is important that companies aren't constrained by technology**

And yet, this data should only be "integrated" when it reaches a pre-agreed status (for example BOM & cost approval), when it may then require input or default of additional information not generated in the originating "master" application. And the same applies to suppliers, customers, agreements, purchase orders, sales orders, shipments and so on - all need to be in-synch across multiple databases, and be available to manipulate from within any. This task is made doubly daunting because the appropriate master application for any particular data can differ by circumstance. Product data, for example, can be created first in ERP, or often in PDM. Customers may originate first in CRM, sometimes in ERP or PLM, or indeed elsewhere. And the integration between them may be triggered at different times for different organisations, as well as operating in multiple different directions.

Business requirements have changed fundamentally over the past few years, with an increasing rate of change in systems and processes; hence it is important that companies aren't constrained by technology in their ability to react to market demands, change to maintain competitiveness – or even to survive. A company's own changing business demands, the "shelf life" of business applications and the rise and fall of software suppliers results in integration requirements changing, too - shifting continuously as applications are added, reconfigured, upgraded or replaced. Roll-out of any change, but especially integrated software, is not a trivial job and requires significant time, experience, resource and careful management to undertake effectively.

With business processes subject to constant improvement – at an increasing rate – and components within the software stack changing continuously, that ball of tangled we described earlier might more accurately be represented as the proverbial "can of worms" - continuously writhing, defying any attempt to glean an accurate picture of their nature or number. The task and risk associated with managing configurations, applications and suppliers, and the implementation and ongoing refinement, improvement and management of them should not to be underestimated.

"Best in class" companies tend to have more complete integration, while "laggards" continue to use cut and paste or rekeying, with its associated delays, duplication, errors and inefficiencies.

The objective of software integration, as we mentioned in our introduction, is to get every software package in the extended supply chain to communicate up and down the line so effectively that it appears as a single, homogenised system. Unfortunately there isn't an Esperanto-style lingua franca available for this process - this would require a huge collaborative effort between all suppliers and developers involved, as well as an agreement on who "owns" the data.

Given the complexities involved with managing the same sort of collaboration within a single organisation, we believe it's safe to say this collaboration will never happen. Despite the proliferation of Electronic Data Interchange (EDI) standards, for instance, most integrations are still bespoke, requiring their own configuration and customisation. Furthermore, each business user is different in terms of their own processes and their unique combination of applications and stages of implementation. For example, whilst it may seem "obvious" that PLM is the owner-originator of all product related data, a client who has an existing ERP application but no PLM system may see things differently. For them, ERP has been the lead system for so long that it becomes nominated as the "owner" of all data without much consideration. There are no hard and fast rules in these cases, but in most instances, the decisions and timescales at least can be improved; business risks and costs reduced by enlisting a proven methodology, and scoping, justification, selection and planning undertaken prior to the project kick-off.

So, while that final destination of a unified and holistic business system isn't something we would urge you to forget, the purpose of this article is to remind anyone undertaking an enterprise-level project like PLM that integration cannot be taken lightly or considered a minor element of the initiative.

Any business that does find themselves weighing up their options where integration is concerned, though, will have a number of proven options and delivery methods to consider:

The most efficient (and therefore rarest) form of integration: Real Time integration occurs when committing a change within the "master" application automatically propagates across the Enterprise – no rekeying, no duplication, no delay, and no errors.

In the case of multiple systems, a preferred approach can include the use of another stage, or what's referred to as "middleware". This involves transfer to an interim area, allowing for the addition of default values and missing information, and providing an opportunity to manage the introduction point, formal validation and acceptance. This additional stage can result in some data discrepancies and delay, but greatly simplifies the management of different roll-out and upgrade of systems.

Many software suppliers provide limited import and export facilities for their systems, but that often isn't enough. Suppliers or partners provide "certified" export and import routines, and APIs which use predefined input and output formats such as CSV or XML. Use of these rather than bespoke links is recommended as they are:

**i) tested and proven in other client sites**

**ii) supported by the supplier's ongoing maintenance offering.**

However, it is each company's responsibility to check which APIs are available to suit their needs.

Some Suppliers provide tools to generate client specific APIs to cater for gaps in their clients' requirements. Use of these requires more technical competence and testing.

Integration tools and Applications can be used to create bespoke integration and interfaces. Use of these requires considerable knowledge of the applications to minimise risk, and the services of an experienced third party are often (and rightly) sought when this method is considered.

Many clients still use what we call "Microsoft Integration". This is data sent as email attachments or via intranet (or worse by fax) across the extended enterprise for future use, or alternatively rekeyed. This is by far the easiest strategy to implement from the point of view of resourcing and expertise, but is subject to considerable delay, inefficiency, duplication and error. Even so, it is often the only way to send information to supply chain partners who cannot integrate their systems. As in EDI, it is often the biggest organisation in the relationship that sets the standards for data transfers and their subordinate partners often rely on print and re-entry.

Despite the name – which is as innocuous sounding as they come – integration really can be anything but simple or intuitive. If we take the example of customer orders and updates, these could potentially arise in a number of different sources across the extended business systems environment – ERP, CRM, EPOS, mobile applications and more – and could initially consist of nothing more than header details and product order lines but can carry much more order and customer information and instructions. Satisfying this order might be considered a difficult task with just one application to consider, but this complexity becomes compounded when we need to keep several integrated applications in sync.

The same principles apply to the front end of creative product development, too: all supporting solutions must be kept in sync to avoid errors and timing issues.

This requirement has been recognised and addressed – at least to some degree - by some of the major solution providers. They now offer complete solutions with built-in integration - a kind of one-stop offering. However, these "complete" offerings often disappoint when examined closely: integrated offerings are often only labelled as such, and in fact are the result of the acquisition of suppliers of add-on products or plug-in modules, or partnerships with third parties. Often these points of integration are incomplete or ineffective, and since the original developer of the acquired application may no longer be in business, there is typically little hope that the interface will be improved.

**While a pre-defined and pre-packaged unified system might sound ideal, it is only through detailed and experienced questioning and challenging that the real situation can be exposed and evaluated.**

Here, as with all solution selection, the onus is firmly on the due diligence of the prospective customer. While a pre-defined and pre-packaged unified system might sound ideal, it is only through detailed and experienced questioning and challenging that the real situation can be exposed and evaluated. And more often than not, you will discover that there is still an integration initiative to run, despite the vendor's initial promises.

In the long term, Cloud technologies may prove be the integrator's answer to the perennial and thorny question of what integration approach to take. But there will not be a sustainable or complete option until data update and exchange standards are developed and employed. As technology develops we may achieve "one version of the truth" and the Cloud

**…integration is a complex and dynamic requirement – but one that is necessary to achieving the digital transformation vision that so many modern organisations share.**

crowd may make extravagant claims - but similar claims have appeared many times before in the form of PDM, PLM, MRP, ERP, Open Systems, Object Orientation and a host of other solutions and methodologies that initially promised more than they could deliver.

The Cloud certainly can offer significant benefits in terms of rapid system development, and almost certainly will seriously challenge traditional monolithic applications. But the ability to automatically integrate applications now (or in the near future) is something any prospective customer should challenge.

Just to add to your already voluminous list of concerns, there is also the challenge of system phasing or timing – where these activities fall in the lifecycle of an implementation project. Very few clients start from scratch and envision a "big bang" where all of their connected applications are implemented simultaneously, and integrated at the same time.

It is important that each company considers their entire extended organisation and the requirements of both their internal and external stakeholders – clearly establishing the "as-is" and the "to-be" situations to set priority and phasing.

Remember that can of worms we imagined so vividly earlier? New business partners, systems and upgrades will be regular occurrences, adding their own weight to the already convoluted systems environment we have worked so hard to untangle. User acceptance testing should be undertaken whenever software modules are upgraded or replaced, since simple changes can cause unpredictable results in other areas – particularly where those areas have been seamlessly integrated.

Prior to go-live of any component, systems and their integration must be tested thoroughly and this should be completed and signed off by the client in accord with detailed scripted scenarios and a formal test plan. Developers cannot be relied on to undertake integrated or volume testing, and it would be a considerable business risk not to thoroughly test new installations with "real world" transactions and volumes. Even using standard integration tools and APIs, business applications are so complex and so configurable that every project really is different. It is impossible for the system or integration authors to test every permutation of setting, system switch, parameter and run-time option. Similarly, business applications should always be tested prior to roll-out of upgrades; with the added complexity of integration, this is even more critical. Companies should utilise a reporting and data analysis tool which can access information from all of the integrated systems rather than rely on different tools for each application.

And now it gets complicated! Running a number of integrated systems, keeping them in synch and managing issues is significantly more challenging than working with a single system in isolation. Our goal of a truly unified "single version of the truth" must be built upon a formal, documented, robust strategy that can cater for the inevitable failure or disaster – be that hardware, communications, business application, integration component, operating system failure, or something more routine caused by deliberate or accidental user error. Processes must be in place to:

- **Alert all failures**
- **Establish which processes have updated which application (fully or partially)**
- **Determine whether to continue processing transactions or update other systems**
- **Catch up with the components or transactions which failed**
- **Resolve any resulting system incompatibilities or lack of integrity**
- **Identify serious issues to be addressed by domain experts**

Strong contractual commitment and service levels need to be established between the various suppliers, and lines of responsibility and delimitation drawn, so that when things go wrong (and they often do) the team responsible – although not necessarily to blame - is identified and tasked to rectify the situation. Even if the cause of the failure can be quickly resolved – e.g. failure of power or a communications link in the middle of an update - then responsibility needs to be unambiguous. In an integrated environment, the answers will need to be available in the short window of time it takes for errors to be noticed: you must find out who owns the problem, and take the required steps to ensure the data is recovered and system integrity and status is restored.

Many companies these days are outsourcing their systems management, which makes the above especially critical when we consider that the party responsible may operate on another timezone or in another language.

Similarly, documentation and rehearsals of disaster recovery procedures should be an integral part of a company's business strategy, yet very few companies actually rehearse at all, and rely instead on sheer effort and luck to carry the day.

As we hope this article has explained, integration is a complex and dynamic requirement – but one that is necessary to achieving the digital transformation vision that so many modern organisations share.

The majority of companies require external assistance to separate the technology from the business process: third parties who bring sector specific experience, tools and techniques to enable the design and delivery of a solution specifically relevant for their specific needs – as they are now and as they may be the future.

Integration can be a can of worms, certainly – but some of us have handled more than one such can in our time.



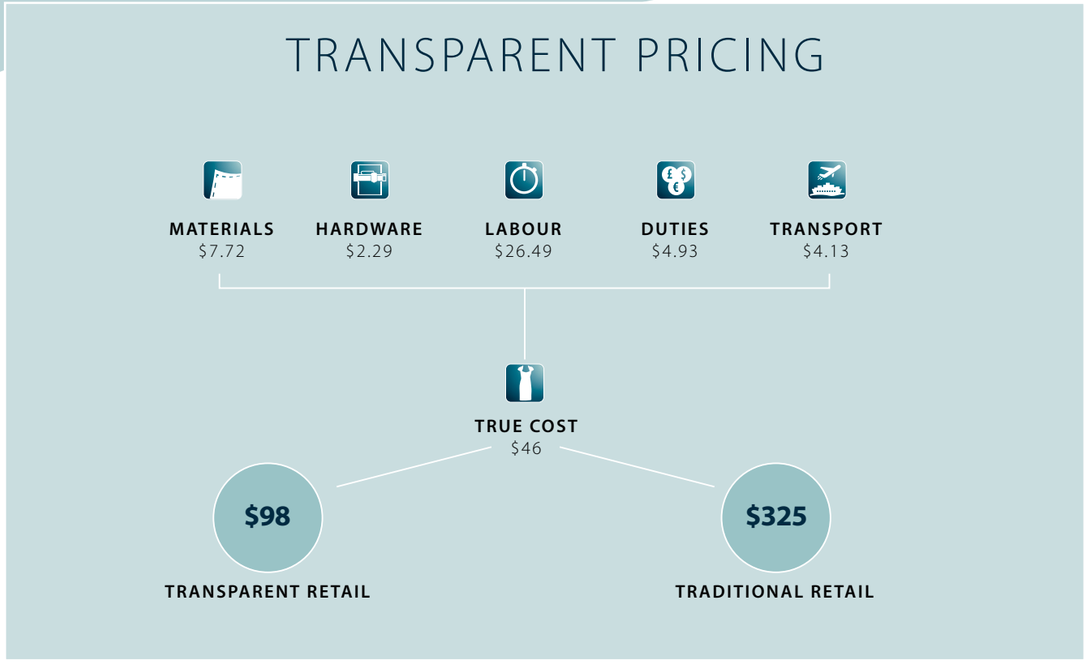


# Transparent Pricing

## Upping The Ante On Compliance

*by*
BEN HANSON

**In a publication already packed with expert-level insight into global supply chain and sourcing practices (and the regulations and brand management factors that affect them) Ben Hanson's final article highlights the possibility that current ethical and environmental standards may be far from the last word in compliance.**




**Make no mistake, though – these tactics require a great deal of work to achieve, and require a comprehensive customer engagement policy and absolute transparency.**

**Irrespective of what you make and where you make it, today's shoppers want to know what went into your products.**

Labour, materials, ecological impact - consumers in 2014 demand a great deal of insight into the products they buy. And although domestic manufacture is increasingly being touted as a selling point, this doesn't mean that offshoring – still the norm for most apparel retailers and brands – is going anywhere. Indeed, the current business models of some of the world's largest brands simply won't allow that paradigm to shift too suddenly.

A number of experts have analysed the kind of data that market forces (and increasingly legislation) require organisations to collect from the supply chain partners elsewhere in this publication, so I wanted instead to emphasise the fact that what we see today is far from the last word in compliance.

To demonstrate this, I'm going to refer to one particular brand – Everlane, based in San Francisco's Mission District – that is trying something even more radical. And although this kind of holistic transparency isn't widespread, this article should serve as food for thought for any retailer or brand who intends to continue working with supply chain partners and factories in emerging economies.

Everlane describe their concept as "radical transparency", and it can best be described as complete openness across the product lifecycle.

Virtually every style the company offers has its materials, labour, transport, hardware and duties (where applicable) individually itemised, then listed as the "true cost" right on its product page.

Everlane's markup is then shown, and contrasted against the much higher figures added by traditional retail channels. The differences can be stark. A gulf of $30 for a simple t-shirt, and $80 for a more complex jacket – all accounted for by low overheads, strong supplier partnerships, and relentless focus on a small collection of essential pieces.

The brand calls this "a new way of retail", and it's one that appears to be taking off. The bulk of Everlane's orders come from the retail Mecca of New York City, where shoppers are accustomed to looking at things a little differently, and where brands can live or die on the basis of word of mouth and consumer interaction.

Those latter factors are something Everlane – and a host of other brands – is acutely aware of. And although these companies' sourcing strategies are usually described as stemming from closely-held personal beliefs, we should remember that no business goes into business for itself alone. Every retailer or brand has the consumer firmly in mind.

Indeed, Everlane go out of their way to promote this concept with the Twitter hashtag #KnowYourFactories, and place "factories" as prominently in their e-commerce site's menu bar as they do "men" and "women".

The company also maintains a journal documenting its visits to supply chain partners and factories in the USA, Europe and Asia – a kind of assessment that goes beyond typical first or third-party inspections and actually invites the potential shopper or brand advocate to become a part of the auditing process.

And I use the word "invite" literally: Everlane recently welcomed a group of Instagram celebrities into its Los Angeles partner factory, allowing them free rein to document what they found. The result is a rich story, and the kind of publicity money can't buy. Instead of waiting for the court of public opinion to come to them, Everlane and brands like it are opening their doors in unique ways.

Make no mistake, though – these tactics require a great deal of work to achieve, and require a comprehensive customer engagement policy and absolute transparency, underpinned by consistent and contemporaneous access to bullet-proof supply chain data.

This approach works for Everlane – and indeed for smaller organisations like social media company Buffer, which made the headlines by publishing the salaries of all of its employees, right up to the C-level – primarily because they are a small, online-only brand, and one that trades in only a slim collection of products. But the principles are sound and, I believe, ripe for extrapolation to larger enterprises. And I predict the first multinational apparel retailer to really tackle the concept will realise significant value in doing so.

The shift in expectations when it comes to transparency is already being felt in other industries. McDonald's, for example, openly published a video of its Supply Chain Manager charting the journey from raw materials to products in the case of its Chicken McNuggets. The resulting footage, created to dispel rumours that the chain uses suspicious "mechanically recovered meat", has attracted 4.5 million views and won McDonald's plaudits for tackling an issue head-on that previously might have gone unacknowledged.

Done right, then, transparency can be an extremely compelling prospect for consumers and brands alike. Brand engagement opportunities are at an all-time high. Shoppers want to unite with their favourite companies on a multitude of different levels: share music tastes, like Instagram lookbooks and YouTube videos, and read editorials. Modern branding is more of a performance art than it's ever been before, and provided your products and practices are up to scratch, there's ample evidence to suggest that a little openness can go a very long way.

So imagine what complete transparency can do.

For the smaller, more agile business of today – and potentially the larger enterprise of tomorrow – confidence in the entire product lifecycle process, from design to disposal, can provide a wealth of information. All of which – properly catalogued and integrated across the business – can be used to generate an enormous amount of goodwill.

But that potential comes with some strong caveats, and no organisation considering a radical approach to transparency can hope to get by on incomplete information, or without the kinds of answers that consumers are going to seek. Remember, opening your doors in the way that Everlane has invites every armchair businessman or businesswoman into your previously-private processes, calling into question more than just the supply chain and sourcing practices that are currently covered by the phrase "compliance".

**Done right, then, transparency can be an extremely compelling prospect for consumers and brands alike. Brand engagement opportunities are at an all-time high.**

Today, the consumer makes a very binary buying decision. Whether something is worth what you're charging for it is a conclusion they reach primarily on the basis of whether they like it enough to pay the asking price.

Tomorrow, that same shopper might reject a garment because they believe the margin you, as the brand owner, took was too high compared to the wage you paid your factory workers. And they may in turn reject a different product because they believe shipping costs made up too large a portion of the overall RRP, whereas they are making a conscious effort to buy local. When they do buy local – because a brand proudly proclaimed its boots were made in the USA – the influencing factors might include the payment of a living wage to workers, as opposed to just a government-mandated minimum one.

The question, there, has become one of trust and integrity, rather than one of pure value.

Similarly, the discovery by consumers that they may have been paying subjectively "too much" for products all along is one they will find difficult to swallow – and one that businesses will struggle to address. This kind of transparency – without consistent ethical and financial practices to back it up – can very quickly invite criticism of the brand, its management, and potentially demolish confidence (and with it, share value) in very short order.

Nevertheless, I do believe the aspects of transparency and compliance that other contributors have documented and analysed so well in this year's WhichPLM Annual Review are just the tip of a potentially very disruptive iceberg.

For a long time, the "best" businesses (which I'll define as the most consistently profitable and enduring) were lauded in a way that was almost completely divorced from morality. A good CEO was one who kept profits up and costs down through any means necessary, steering the ship in one direction: making and then prudently investing money in furtherance of growth at any cost.

Today, the compass has swung back around with considerable momentum. The unscrupulous business is the one withering under the gaze of the public eye, when their strengths are discovered to have been built on foundations that simply do not pass scrutiny in an increasingly empathetic world. Metrics and concerns that were once the preserve of organisations like Greenpeace or UNICEF are now at the forefront of the public conscience, and firmly on the minds of everyone with a credit card.

So while transparency and compliance in the form we know them today are terrific things – and certainly initiatives that WhichPLM applauds – the businesses best poised to thrive in 2015 and beyond may just be those with the confidence to open theirs doors even further. To invite the consumer into every aspect of their product lifecycles, capturing invaluable brand allegiance in the process.

In order to do that, though, their product lifecycle management practices and technologies will need to be as impeccable as their moral standards.

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Read further into the concept of "radical transparency" by visiting https://www.everlane.com/factories or view the McDonald's video cited in Ben's article at https://www.youtube.com/watch?v=Ua5PaSqKD6k

And be sure to read this year's features from Chris McCann, Anneke Magendans, Yussef Bictash and Peter Needle for a variety of perspectives on compliance, and technology's place in it.

# PLM End User Survey

**With our whichPLM website now more popular than ever, we are accustomed to the fashion industry coming to us to learn about PLM. Once a year, though, we do things differently and conduct a far-reaching survey to contact retailers, brands and manufacturers around the world who we know have shortlisted, selected and implemented PLM, and whose employees are now working with a solution day in and day out, across all aspects of the product lifecycle.**

We contact these companies – and their numbers are growing, year on year - because each of them is in what, to many of our readers, is a privileged position. They have passed the finish line on a journey that growing numbers of other retailers, brands and manufacturers are only just embarking upon. And from their experience, they have gained the ability to provide us - and our readers - with a truly unvarnished idea of what it means in 2013/14 to look for, buy and to use PLM.

**…the aim of this end user survey was to build as complete and comprehensive a picture as possible of …the entire PLM market for retail, footwear and apparel, by highlighting the voice of the end user.**

So, over the course of the summer, our team opened a comprehensive online questionnaire to these pre-selected companies, before making it generally available to any fashion business that has completed a verified PLM implementation. The questionnaire was designed to gauge not just the participants' satisfaction with their chosen vendor - although this is reflected in abstract in the results that follow - but also to gain their insight and hindsight into the difficult task of actually quantifying their need for PLM and then selecting that vendor in the first place.

Although not all of the companies we initially invited were able to complete the questionnaire, those that did were safe in the knowledge that we would treat their responses within the same ethical framework as everything else that WhichPLM does. As such, their answers and the additional insight they provided will be presented anonymously and without any manipulation on our part over the coming pages.

Although we know which solution each respondent is using, and how long they've had it in place, the aim of this end user survey was not to create an arms race between suppliers or to single out any particular vendor for criticism or praise. It was, rather, to build as complete and comprehensive a picture as possible of the entire PLM market for retail, footwear and apparel, by highlighting the voice of the end user.

Why, you might wonder, would that kind of retrospective picture be helpful? Is there a tangible benefit to looking backwards in an industry that, if anything, started off running before it could walk and hasn't slowed down since?

The short answer is that the heady pace of the PLM industry for retail, footwear and apparel makes introspection and clarity even more vital than it might be in a more static market. In rushing ahead, it's all too easy to lose sight of where we've been, and since the future towards which everybody appears to be running becomes more complex over time, the only real tool the industry as a whole - and those retailers, brands and manufacturers who turn to it for help - has to learn from is the lessons of the past.

So, by collecting, collating and presenting the most honest picture we can assemble of that past - in financial-year increments - our goal is to further what has always been the driving force behind WhichPLM: to bring clarity and the benefit of experience to a crowded, confusing and complex market.

This isn't to condemn the suppliers themselves; crowding breeds competition, and we understand that vendors must by necessity move forward, differentiating themselves through progress and partnership potential unless they wish to be left behind. The difficulty for the consumer stems from the fact that the definition and marketing of PLM, to the uninitiated, has never remained static long enough for them to get a grip on what it is and what it does before the meaning of the acronym shifts again, leaving them floundering.

**At WhichPLM, we believe the average decision-maker's understanding of what, precisely, PLM is has improved considerably since we undertook this same initiative in 2012/13, but misconceptions are still rife.**

At WhichPLM, we believe the average decision-maker's understanding of what, precisely, PLM is has improved considerably since we undertook this same initiative in 2012/13, but misconceptions are still rife. As a result, selection and implementation projects are still falling short of their potential, and we firmly believe that the benefit of hindsight and experience – lessons from counterparts who have taken the plunge and lived to tell the tale – can still make a considerable difference to the overall potential of PLM.

The end user surveys that bring you this information have a several-year history, and one that reflects WhichPLM's own progression to today offering education, insight, news and direct advisory services online and off. Our first independent customer survey, which was handled much more traditionally than this year's online portal in winter of 2010, was the first time WhichPLM formally approached the market as a whole and solicited its feedback. We packaged and sold the resulting information as a management report, before arriving at the realisation that the sort of information we were collecting - the picture we were able to paint - deserved a much wider audience.

So, in 2012, we published the first WhichPLM Annual Review, which reached thousands of influential industry figures, brought our servers to their knees with traffic, and is still being read today. The 2012 Review was detailed, comprehensive and freely available - all of which conspired to make it a success. That success in turn enabled us to cast our nets even further in 2013, and inspired more vendors than ever before to encourage their own customer bases to participate in our survey, demonstrating real confidence in their software, customer relationships and support.

Certainly we added a great deal to the "customer survey" formula in the move from pure Customer Survey to Annual Review formats, bringing in market analysis, exclusive articles, vendor profiles and more - something we've built on even further in 2014. But the survey itself has remained the centrepiece of each year's Review, and occupies a similar position in this year's publication, as you will see from the carefully-analysed results that occupy pride of place in the following pages.

Following the cut-off date, which saw some high-profile brands scurrying to submit their answers in time, the WhichPLM team began to collate and analyse the responses we'd received, comparing them to equivalents that we saw in the 2013 Annual Review. We have maintained question consistency with our 2013 publication, but where the information we've requested does vary from last year's format, those questions do not benefit from comparison to previous results.

Where possible, then, you will find the results of this year's survey (which was completed by a comprehensive cross-section of the industry, taking in everything from luxury brands to bulk retailers and fast fashion) contrasted with their 2013 (and, where applicable, 2012) equivalents in the analysis that accompanies each infographic on the following pages. The graphics themselves display the raw results (calculated as percentages), while the accompanying text provides analysis, context, insight and advice, relative to each question.

The questions themselves are reproduced in their entirety, except where space constraints have mandated that they appear condensed from the form in which they were presented to the respondents.

Readers will note that these questions focus, for the majority, on the capabilities of what we refer to as "core" PLM solutions. While we have seen considerable uptake and integration of E-PLM (extended PLM) solutions, by their very nature - comprising such a wide range of different pieces of software, hardware and processes - it would have been extremely difficult for us to effectively compare such a diverse range of solutions.

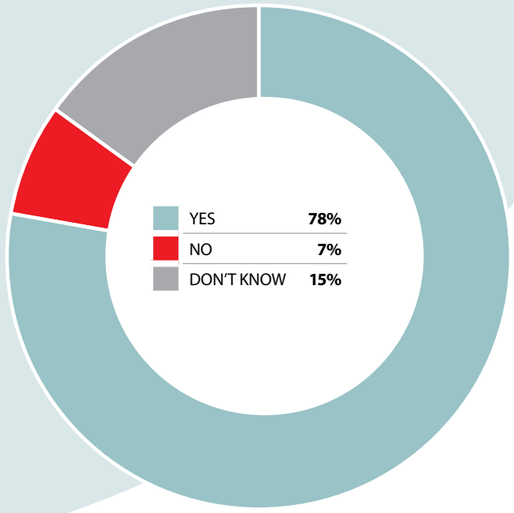
For that reason, we chose instead to retain this survey's focus on the core competencies of traditional PLM. This focus allows us to present results that, we believe, will act as a more effective guide for companies looking to replicate the successes of (and avoid the difficulties encountered by) this year's respondents, and to draw comparisons between these and their counterparts from previous years.

Drawing those comparisons is something the WhichPLM analysis accompanying each survey question will do, but we also hope that, should you find yourself beginning to investigate PLM, you'll turn to its equivalent in last year's publication, and to the insight on the WhichPLM website for guidance. As with everything we do, the insight in each of our three Annual Review surveys to date (and the respective pictures they paint of the industry at that time) is intended to make the processes of PLM selection, implementation, day-to-day use, and future expansion as clear and conducive to success as possible.

## SECTION 1 | PRE-SALES

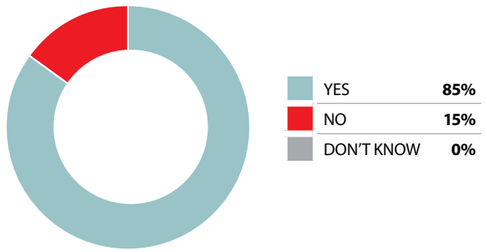
### 1a Did your business tailor its Request For Information (RFI/RFP) questionnaire to your unique/specific challenges?

**Analysis:** Although this year's results do demonstrate an improvement on the figures we saw in 2013, a combined 22% of respondents who either did not tailor their Request For Information, or who were uncertain how their RFI/RFP process had been completed, is still cause for concern. In these cases (which represent close to a quarter of all this year's surveyed PLM projects) the retailers and brands in question have essentially bought PLM with no real understanding of how it might meet their needs - something that we believe has a knock-on effect throughout this year's results.




*"We had a specific set of 'problems' we asked each potential solution provider to demo how they would solve in their application."*

### 1b Did you conduct an in-depth process examination, looking at your existing (as-is) processes and ways of working, then defining how you would like them to look (to-be) after the completion of your PLM project?

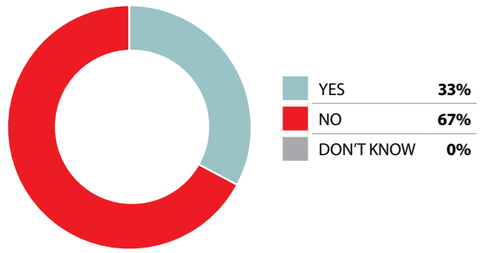



**Analysis:** It is encouraging to see that all of this year's respondents knew whether or not an in-depth process examination had taken place; close to 10% of 2013 respondents did not know. As is the case with a tailored RFI / RFP process, though, the 15% of retailers and brands who did not properly examine their "as-is" processes and map their "to be" destinations will have found their PLM project lacking direction, with few or no ways of prioritising process transformation, and no concrete foundations upon which to build a business case or Return on Investment analysis.

*"That process was done as the first step of the implementation project."*

*"We did at a very high level; it's important to identify where you are today and where you want to be in the future to ensure you choose a solution that can grow with your company's needs."*

### 1c Did you employ a third party consultant or advisor to help with this initial process improvement and re-engineering phase?



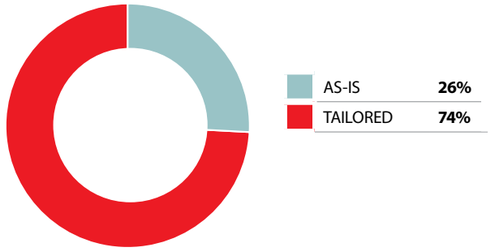

**Analysis:** As evidenced by the fact that nearly twice as many respondents employed the services or a third party advisor this year, it appears as though the growing complexity of PLM and the increasingly crowded market in which it is sold are conspiring to make PLM selection and implementation a daunting task for in-house teams alone. Specific feedback from this year's survey participants also highlighted the growing need for prospective customers to truly prepare themselves (including objective assessment from an unbiased third party) before approaching their PLM project.

*"Before we sent out an RFI, we hired a PLM consultant to review our current processes and advise us on what wins would be gained by implementing PLM. They also recommended 5 PLM vendors that would be suitable for our business and advised us on whether our business was ready to implement a PLM solution."*



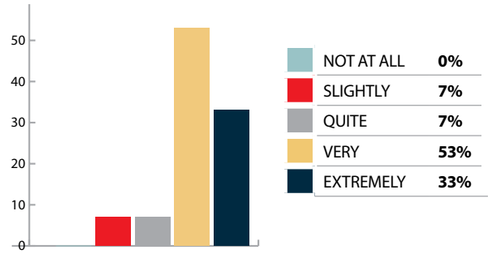


### 1d Once you had conducted your initial shortlisting exercise, did those vendors you invited demonstrate their solution on an "as-is" basis, or did they tailor their presentation to give you an idea of how a "day in the life" of your business might look, based upon the "to-be" objectives?

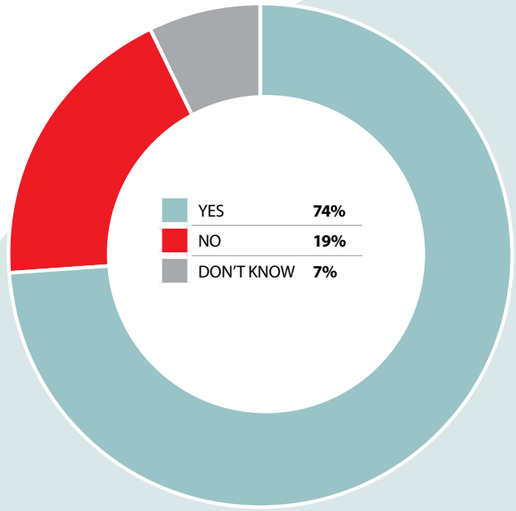



**Analysis:** The majority of PLM vendors in 2014 conducted demonstrations tailored to the needs of the customer at hand. Rather than adhering to a pre-defined static demo script, these "day in the life" demonstrations instead task the vendor with showing specifically how their solution can meet the unique needs of each particular customer. The benefits of this approach are clear, and are supported by the evidence that an additional 10% of demonstrations were conducted according to these standards at the behest of increasingly educated customers.

### 1e How important to you and your business was it that vendors had demonstrable deep fashion / apparel industry expertise, and qualified resources native to your region?




**Analysis:** Although an overwhelming majority (some 86%) of respondents revealed that demonstrable fashion industry experience had been a significant deciding factor in their choice of PLM vendor, this is actually a regression from the results we saw in 2013, when 100% of participants named domain expertise as a strong influence on their decision. This may betray a rise in the number of retailers and brands who consider PLM as a purely functional exercise, not realising the extent to which industry-specific processes and knowledge can influence the outcome of a PLM project.



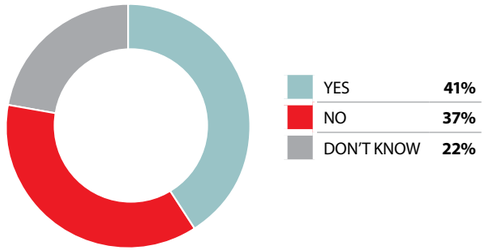

### 1f Did the pre-sales presentation team for the supplier you eventually selected demonstrate that kind of expertise?

**Analysis:** As was the case with overall vendor domain expertise last year, our 2013 respondents unanimously reported that the pre-sales presentation team of their chosen vendor had been able to demonstrate an intimate knowledge of the apparel industry. This is another area in which our 2014 survey participants appear to have taken a step back from last year's counterparts, with only 74% of them having selected a vendor whose demonstrations showed industry experience.

*"Perhaps more importantly, the vendor we selected demonstrated a genuine passion for the business and treated us as a valued potential customer rather than simply another business victory. We felt we could trust their team over their competitors."*

*"The best vendors came prepared to demonstrate high level capabilities, tailored their presentations to address individual use-case gaps, and brainstormed multiple ways to implement [these] into their platform."*

## 1g Did you conduct any customer reference site visits before making your final decision?



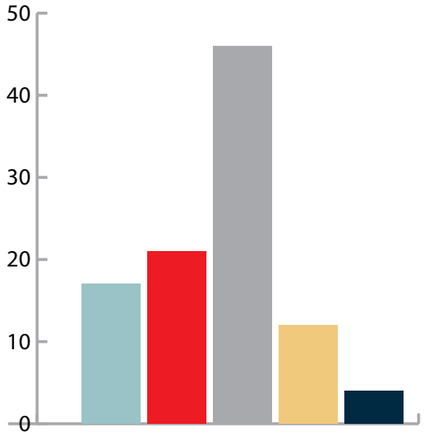

**Analysis:** Customer reference site visits (where a prospective customer is invited to attend the premises of an existing customer) present an opportunity for new customers to ascertain how the functionality and user experience they have seen in pre-sales demonstrations transfers to a real production environment, and to gauge end user satisfaction and realised value. This year, feedback indicates that many customers either spoke to vendor-nominated reference customers by phone - an approach we would not endorse - or conducted their own investigations, which can potentially yield far better results than accepting the references presented by vendors at face value.

***"We did talk to the vendor's clients who were in a similar business vertical."***

***"Only one on-site but lots of phone based reference calls for our finalists. We knew who their customers were and didn't ask for a list of references but contacted who we wanted so we could get a representative sample, not just the happiest customers."***

***"We visited customers of the shortlisted solutions, proposed by the vendors."***

## 1h How influential were those customer reference site visits when it came time to make your final decision?

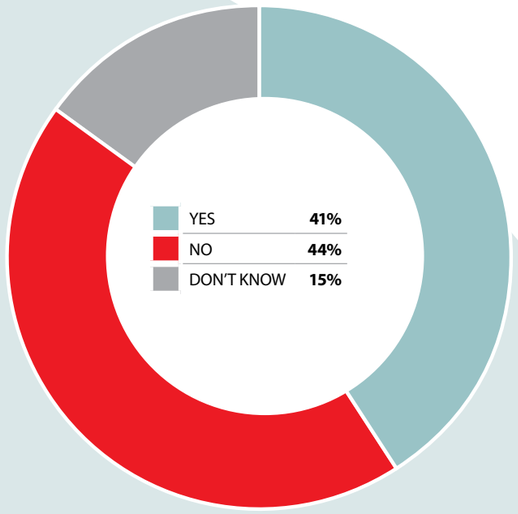



| | |
|---|---|
| NOT AT ALL | 17% |
| SLIGHTLY | 21% |
| QUITE | 46% |
| VERY | 12% |
| EXTREMELY | 4% |

**Analysis:** Although properly-conducted customer reference site visits have long been a key component of prospective PLM customers' due diligence, the reduced emphasis placed on them by this year's respondents suggests that vendor-agnostic educational services like WhichPLM (and certainly this annual end user survey) are supplementing and potentially even replacing what can be an extremely time-consuming process. However the value of meeting with real users, and gaining first hand insights without vendor influence should not be underestimated

## SECTION 2 | PRE-IMPLEMENTATION

## 2a Did you complete a detailed Return On Investment (ROI) analysis in advance of the implementation?




**Analysis:** Retailers, brands and manufacturers typically seek out PLM to deliver value in the form of either process or efficiency savings but, as previous years' statistics have shown, they do not always take the requisite steps to enable them to properly quantify that value. A Return on Investment (ROI) analysis is a scientific approach to defining and measuring value over the course of a project, providing the business in question with an objective assessment of the success of their implementation. Although our 2014 figures do represent an improvement on last year, still half of all participants in this year's survey will find it extremely difficult to prove whether their PLM project delivered against expectations.

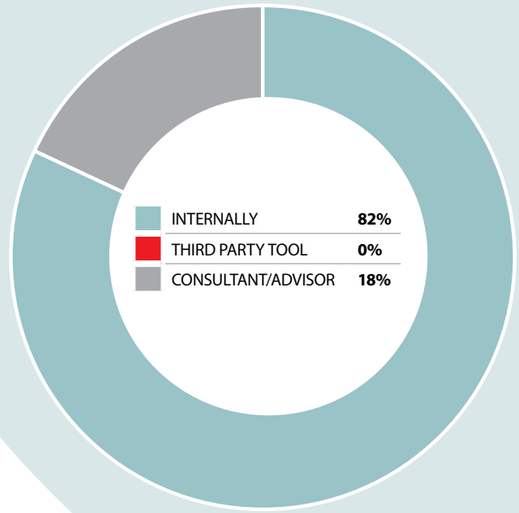
***"We conducted our own internal ROI on things we felt we could control and measure."***

***"We did a rough one but it wasn't in enough detail."***

***"We conducted a thorough ROI study on our own and with the vendors."***








## 2b If so, did you conduct this internally or using a third-party tool and / or consultant / advisor?

**Analysis:** An effective Return On Investment analysis requires both an intimate knowledge of the business, as well as proven, scientific methods of mapping value in both obvious and unforeseen areas. The absence of any third party ROI tools in this year's results indicates that this balance is better found in either a cross-disciplinary internal team, or the same project team, supported by the experience and best practice value-tracking methods of an independent third party advisor. Together, these teams will be properly equipped to prioritise those processes that will deliver the greatest return on investment in the immediate term and farther into the future.

***"The consultant who performed the business process review prepared one for us."***

## 2c If so, did you use that ROI analysis to define your implementation strategy?


**Analysis:** As we have seen in each of our previous surveys, a considerable number of this year's respondents appear to have chosen to produce a detailed ROI document - setting out the processes that they felt would deliver the best or most rapid return possible on their initial investment - but then neglected the additional step of prioritising those processes during their actual implementation. Properly conducted, an ROI analysis can help to shape every facet of a PLM implementation, and WhichPLM is concerned to see that more than 60% of our 2014 survey participants either limited its use or disregarded it entirely during their planning stages.

## 2d Did you conduct a series of process workshops in that time?

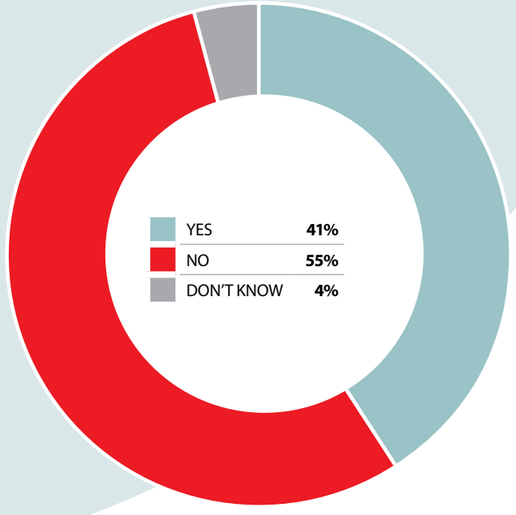

**Analysis:** Internal process workshops are designed to help identify how processes will be prioritised and targeted as the new system is implemented, and establish clear goals for their improvement. It is important that they also take account of the unique challenges facing the business, since this enables more accurate prioritisation at every stage of the extended supply chain – from concept to delivery. It is encouraging to see a large majority of this year's respondents conducting these workshops, but in order for them to be truly effective, the workshops themselves should be linked to ROI objectives and priorities.

***"Yes, [over the course of] a six-week period."***

***"We already knew which parts of the business were in the most need of help."***

## 2e Did you use any third-party consultants or advisors to help you plan your implementation? If so, who?

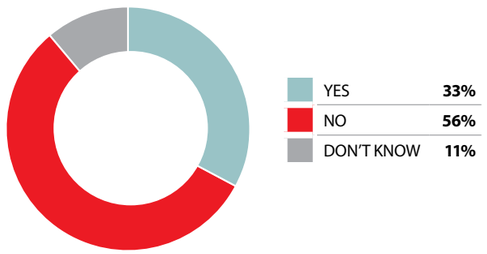
**Analysis:** As is the case with the number of PLM vendors catering to the retail, footwear and apparel industry, the quantity of third party consultants offering to assist retailers and brands with their shortlisting, selection and implementation has increased considerably since the industry was founded - particularly over the course of the last twelve months, with several multinational consulting firms debuting apparel PLM practices. The complexity of PLM, coupled with a growing recognition of just how many aspects of a business an implementation can touch, is likely to have been the primary catalyst behind twice as many participants in this year's survey employing the services of a third party than their counterparts in 2013.




*"Yes, but these were not PLM specialists."*

*"We are in the process of hiring a third-party consultant to help us implement the solution."*

## 2f Did you choose to integrate any third-party tools or expansions into the core PLM solution you selected? If so, which?



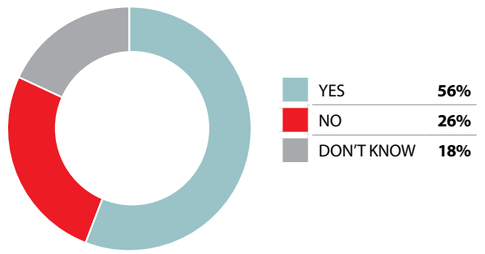

**Analysis:** Although extended PLM integrations are not always considered during the initial PLM project scope, they are an increasingly frequent occurrence in implementations of virtually all sizes. Our recent advisory work suggests that the number of disconnected solutions considered for integration can exceed 50 in larger enterprises, and most likely still numbers in the tens within small to medium businesses. As both new and existing PLM projects become considered part of a broader "digital transformation exercise", we expect to see a considerable increase in the number of solutions that are mapped for integration to PLM during the early stages of implementation.

*"Not as part of phase one but as soon as we were live we integrated our ERP solution."*

*"The Adobe Suite."*

*"While these efforts are on hold for now, there is a plan to integrate with a new ERP that has been selected but the project will not begin until later this year."*

## 2g Did the supplier you chose demonstrate a comprehensive and clear implementation methodology, explaining how it would apply to your unique implementation?




**Analysis:** Although the quotes accompanying this analysis suggest that at least some of this year's respondents were satisfied with their chosen vendor's implementation approach, in reality this year's statistics show a decrease of more than 20% in the number of retailers and brands who felt that their project was conducted according to clear and effective guidelines. Greater industry growth than even our highest predictions for 2013/14 may have contributed to a situation where PLM vendors and their third party partners are selling more solutions than they can effectively implement concurrently in line with best practices.

*"It was a well laid out plan that allowed us to iterate quite quickly and accurately, while gaining user acceptance at the same time."*

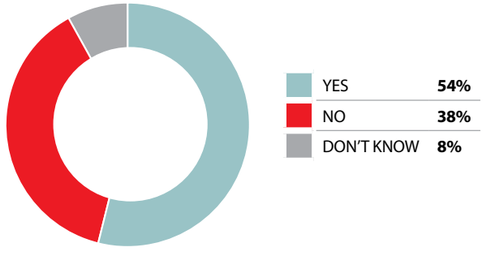
*"All objectives were laid out clearly, with weekly status meetings. We never encountered a "stop work" scenario."*







## 3a Did your supplier work with your nominated internal project team to run process maturity workshops?

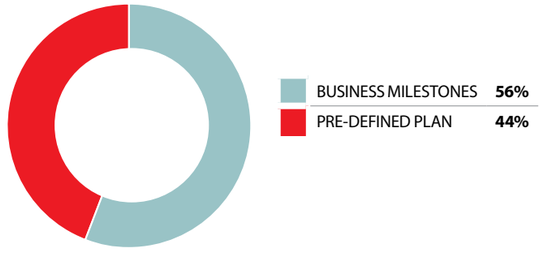



**Analysis:** Similar to the previous question, responses from our 2014 survey participants revealed a worrying trend with regard to process maturity workshops. Close to 20% fewer respondents than last year reported that their chosen PLM supplier (or that vendor's nominated third party) had operated process maturity workshops - an important tool for qualifying the progress of an implementation, and scrutinising the transition from the "as-is" to the "to-be". This, too, may be emblematic of overstretched supplier project teams coupled with inexperienced partners better suited to technical execution rather than business process maturity.

*"Our advisers did this on their behalf."*

*"We had identified our processes, and where we wanted to go. Our supplier sent in a team to validate our assumptions and ensure we were thinking along the right path now that we were going to have a new technology to support our processes."*

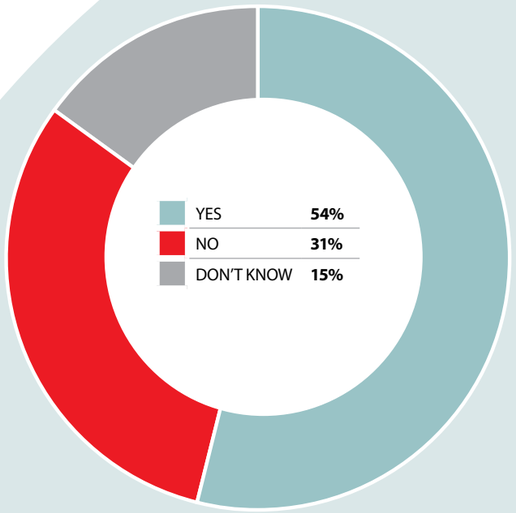
## 3b Did your implementation project milestones link to the processes that offered the greatest improvements and return on investment for the business, rather than simply following the supplier's pre-designed implementation plan?




**Analysis:** Implementation plans that are pre-defined by a PLM supplier, whilst typically taking account of some best practices, lack the flexibility that might allow the implementation team to tailor particular elements to better suit the requirements of the project at hand. In 2012, 90% of the PLM users we surveyed had instead chosen to work with their supplier and build a bespoke implementation plan to cater for their unique requirements. In 2013 this figure dropped to around 70%, and this year has seen a further slide to below 60% - a trend that suggests PLM customers are increasingly opting to use rigid implementation plans that may constrain the potential of their project.

*"We knew where we had the biggest pain points and where we would get the greatest return with an appropriate amount of effort. Our supplier worked with our plan and optimised it."*

## 3c If you required any customisation to the solution you chose, was that customisation conducted on time and to budget?

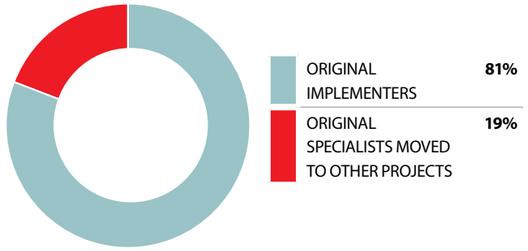



**Analysis:** The same introspection and process analysis that underpin a successful implementation have the added benefit of helping to avoid unforeseen changes later in the project. Customisation refers to such changes, other than configuration, made to the solution to accommodate a customer's unique requirements. While this year's responses do not indicate the average amount of customisation that was required, our figures do suggest that where such work was necessary, it was conducted satisfactorily in more cases than it was in 2013. It is an important lesson to ensure that any customisations are well defined, scoped and estimated, before implementation is commenced, ideally costed on a fixed price basis, with consideration for any future upgrade customisation.

*"Customisation for margin analysis and line planning."*

*"Many customisations, fixed price, but we could not agree on timing. At the end we were forced to cut off part of the project scope where the plan didn't match business needs."*

## 3d Did your supplier maintain their own original implementation team throughout the PLM project, or were specialists you expected to assist you assigned to other projects?

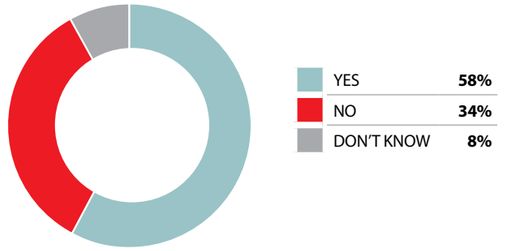



**Analysis:** Often, PLM customers make the assumption that the vendor team members present during the demonstrations and the initial stages of their implementation will remain constant throughout the project, but this is not always the case, with expert resources instead being allocated to help secure new projects. Taking account of the significant market growth seen in the financial year 2013/14, it is not surprising to see that almost 20% of respondents saw their original specialists diverted to other tasks - typically securing or safeguarding new business.

*"The contracts mandate that where possible, the suppliers are to maintain the same personnel throughout our project."*

*"We had the same stellar team the whole way through."*

## 3e Did the initial installation of your PLM solution go to plan?




**Analysis:** The assumption many customers make is that, since the core capabilities of PLM are so well-established, all PLM installations run smoothly - at least in the first stages. This is not always the case, and previous years' end user surveys have shown that between 13% and 36% of all implementations suffer one setback or another. This year's figures do not deviate significantly from the equivalents we saw in our 2013 Annual Review, illustrating an overall trend that we believe is likely to be linked to inadequate preparation on the part of both PLM customers and vendors whose resources are becoming increasingly constrained.

*"Yes - BUT we did have issues regarding ERP integration that needed to be resolved before the complete solution worked."*

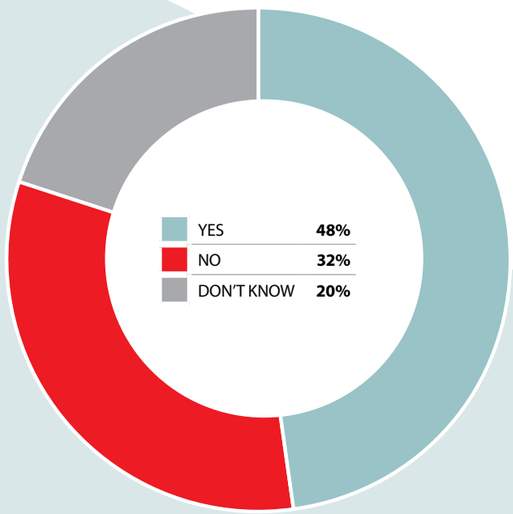
*"Better than planned. Under budget and on time. And no hiccups on go-live."*

## 3f Did you maintain the technical environment and hardware / network infrastructure that was identified at the pre-sales stage, or were upgrades necessary during implementation?

**Analysis:** In addition to the people conducting the implementation, and the software itself, the technical infrastructure is the third vital component of any PLM implementation. Generally speaking, this environment is agreed before implementation begins, but all too often the customer finds themselves obligated to make ad-hoc changes to their infrastructure during the implementation project. In 2013, almost 65% of survey participants had been able to adhere to their originally-specified hardware environment, but this figure has dropped to below half over the past twelve months, generating unforeseen costs.

*"Upgrades were necessary when moving to a new PLM version."*

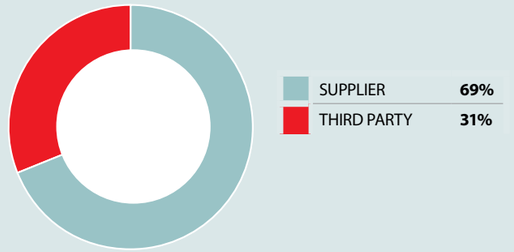
*"I believe we followed the initial pre-sales stage requirements. However, shortly into the next year we were required to upgrade to meet performance goals."*







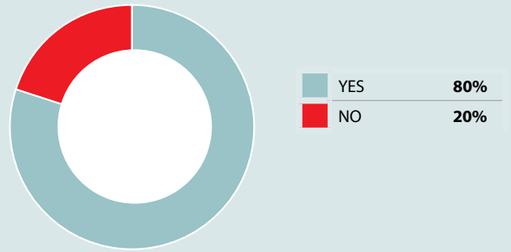

## 3g Did your supplier conduct the implementation themselves or contract it out to a third party?




**Analysis:** Another common assumption is that all PLM suppliers have sufficient regional resources to allow them to assign each of their implementation projects (often with several running concurrently) to an in-house team, when in fact the supplier may instead look to hand the implementation project over to a third-party consultancy. The increase - almost 20% on top of last year's figures - in third parties conducting implementations in 2013/14 is indicative of both PLM suppliers' needs to supplement their limited resources with third party support, and consulting practices' recognising that PLM for apparel is fertile ground for expansion.

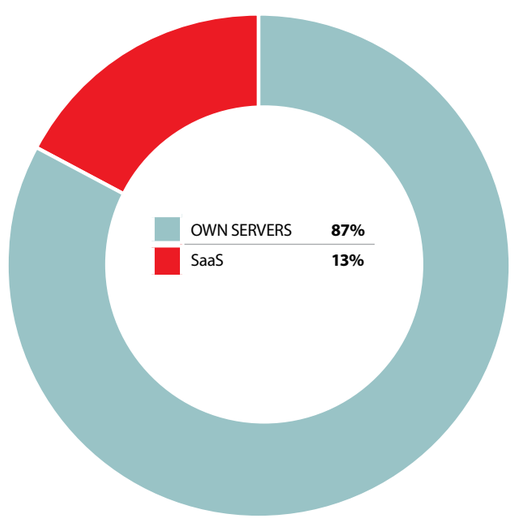
*"Their implementation team was all internal."*

## 3h If you answered "third party" to question 3g, were you made aware of the fact that a third party would be conducting your implementation




**Analysis:** The responses we received to our 2013 survey were encouraging, since they showed that 100% of retailers and brands who'd adopted PLM that year had been made aware ahead of time if a third party had been contracted to handle their implementation. While it is good to see that a majority of this year's respondents were given the same notice, a fifth of all implementations that were conducted by a third party will have been a surprise to the customer in question - each of whom may have felt let down to discover that a potentially unproven third party would be managing their project.

*"We elected to hire a third party implementation consultant that is an approved implementation partner for the solution selected."*




## 3i Did you install your PLM solution on your own servers or via a SaaS or managed services model?

**Analysis:** Although this year's figures show a reduction in the number of Software As A Service (SaaS), managed services and cloud deployments, at WhichPLM we firmly believe that these hosted methods will eventually become the norm for PLM projects. As of 2014, however, there are still only a small number of vendors that offer robust off-promise solutions, which may account for some of the reticence the market at large still has when it comes to adopting cloud solutions. This feeling may also arise from an enduring fear that many I.T. departments share of allowing their enterprise data to reside in systems that are "outside their control". When taking a hosted route, we advise splitting out hosting costs separate from the subscription license to use the software, in order to facilitate future flexibility.

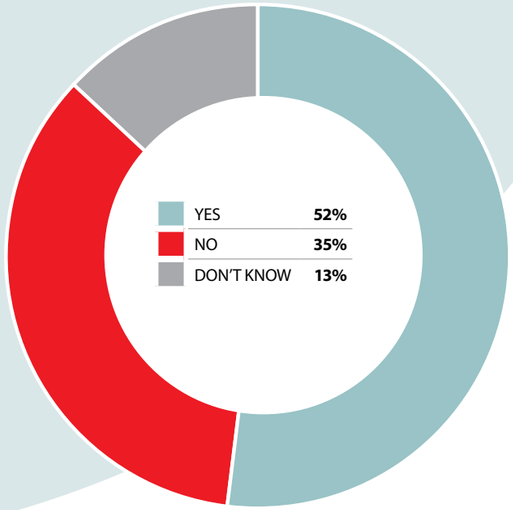
*"We started off on SaaS but switched to our own servers for flexibility and lower cost."*

## 3j Did your supplier complete the implementation on time and to budget?

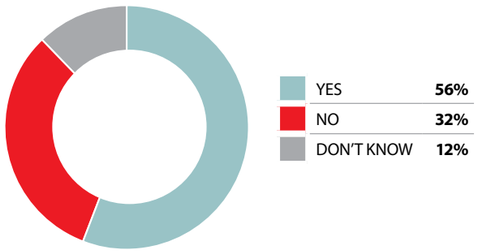
**Analysis:** It is heartening to see that a majority of PLM implementations are completed on time and within budgetary constraints, but for the third year running more than one third of all PLM projects exceeded their allocation of either time or money. This can potentially be ascribed to a mixture of suppliers struggling to cope with increased sales and the sheer number of concurrent implementations this year's growth has driven, and to the concerning downward trends we continue to see in the preparatory steps customers should be taking in order to ensure the smoothest possible implementation.

*"Yes for the most part, we are still cleaning up some of the roll out and adding more users that were not necessarily a known entity when the project began."*

*"On time and under budget."*




## 3k Did you require any additional process enhancements beyond those identified during the initial pre-implementation stages?




**Analysis:** Although the extent and impact of unforeseen process enhancements can be mitigated to a point through meticulous forward-planning and process definition at the earliest possible stages, it remains the rule rather than the exception that retailers and brands will require additional work during their implementations that was neither scoped nor budgeted for. This has not changed significantly since WhichPLM first ran a customer survey, and indeed our first-hand experience suggests that today some vendors purposefully withhold work they know to be necessary from the initial pre-implementation planning, fully intending to conduct it later as a separate project stage and with an additional cost.

*"Some hierarchy changes but our internal IT team did those."*

*"Re-manipulation of our costing/PO models as we changed our cost model shortly after implementation."*

## 3l If so, which of these common enhancements applied to your PLM implementation as additional processes?

| | | |
|---|---|---|
| ADVANCED PLANNING E.G. BUSINESS, PRODUCT, ATTRIBUTE, MATERIAL, TOP DOWN BOTTOM UP, COLOUR, STORE PLANNING, VIRTUAL PLANNING, EXTENDED COSTING SOLUTION | INTEGRATION TO ADOBE SUITE OF SOLUTIONS (ILLUSTRATOR – INDESIGN – PHOTOSHOP) | SAMPLE MANAGEMENT |
| IMAGE / FEATURE BASED COSTING | COLOUR MANAGEMENT | SAMPLE MANAGEMENT |
| INTERFACES TO EXISTING EXPANDED (E-PLM) BUSINESS SOLUTIONS CAD/CAM/ERP OTHERS | TESTING | |
| SOCIAL ECONOMIC COMPLIANCE | MOBILE DEVELOPMENT | |

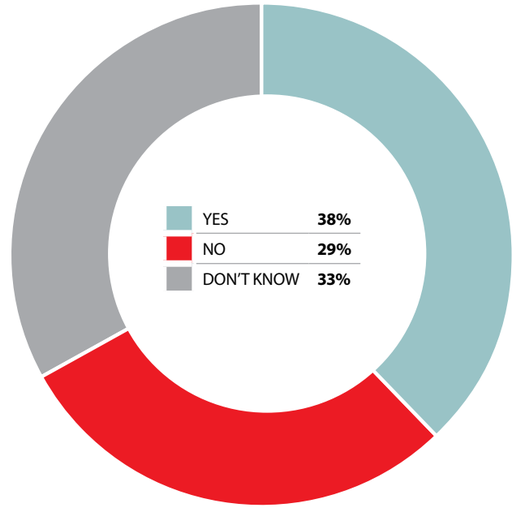






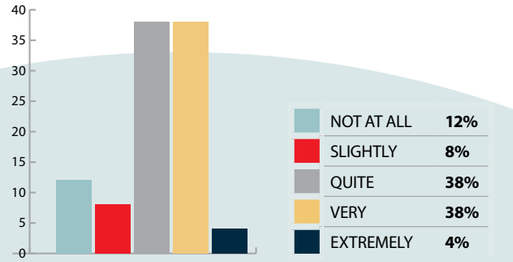
## 4a If your PLM solution has been in place long enough to draw conclusions, has the solution you chose realised the anticipated ROI (return on investment) within the expected timeframe?

**Analysis:** The results of our 2012 end user survey revealed that a considerable majority of PLM customers had been unable to quantify whether their solution had delivered an acceptable return on investment. This situation was reversed in 2013, when close to 70% of respondents reported that their solution had met their ROI objectives. This year we see a return to the pattern demonstrated in 2012, with 2/3 of respondents either being unable to state whether their ROI predictions had been met, or instead able to say with certainty that they had not. These figures could be the result of relatively new implementations, or the failure of the retailers and brands in question to conduct a thorough ROI analysis.



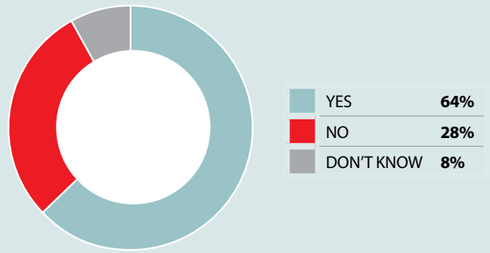

## 4b Overall, how satisfied are you with the PLM solution you chose?

**Analysis:** Beyond concrete financial benefits, end user satisfaction from the executive level to the designer is the gauge against which PLM implementations are measured. And although this year's figures do show a decrease in the number of respondents who were only "slightly" satisfied with their chosen PLM solution, our analysis also reveals a significant drop (close to 20%) in end users who were "extremely" satisfied with their PLM platform of choice. Constrained resources and unrealistic expectations can go some way to accounting for this change, but equally likely to be a contributing factor is the enduring trend of vendors "demonstrating" and selling functionality that is in reality not part of their GA release, and is in fact still in development - or is only available through paid-for customisation.




## 4c Are your teams using the solution as originally envisaged? If not, why not?

**Analysis:** Numerous cautionary tales (as well as our own first-hand experience) demonstrate that a lack of end user adoption, or ineffective change management, can effectively negate many benefits of an otherwise-successful PLM implementation. Where end users are not consulted during the initial stages of a project or communicated with before go-live, a well-intentioned choice of PLM may be scuppered by the fact that designers, garment technicians, sourcing managers, or any number of other possible job roles simply do not use the solution as expected - or at all. Fortunately, the majority of this year's respondents appear to have recognised this, although it is important to remember that incomplete software functionality can also influence adoption.

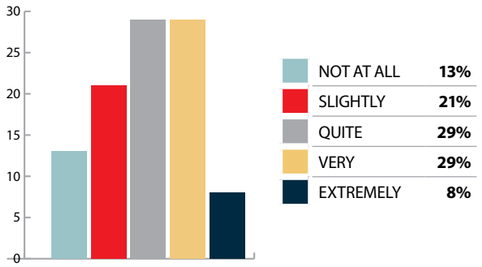



*"Certain capabilities that were not well designed and configured."*

*"We are rapidly expanding the solution to other areas because of the success of the Phase 1 implementation."*

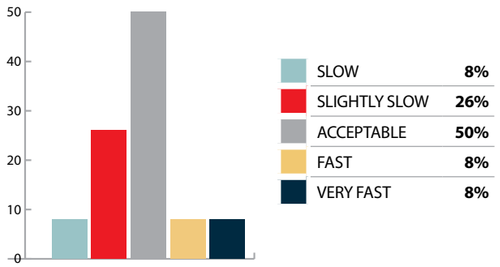
*"Part of the functionalities are still not used."*

## 4d Please rate the PLM solution you chose on the basis of how easy or intuitive it is to use.



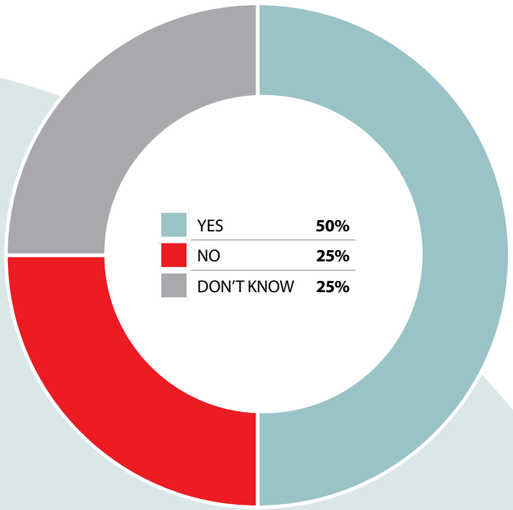

**Analysis:** Last year the majority of respondents found their solution "very" intutitive to use, whereas this year we see a more even split between "slightly", "quite" and "very", in addition to a two-fold increase in the number of respondents who found their chosen solution "not at all" easy to use. The most likely candidate for this downward trend is the shift in user experience (UX) expectations on the part of end users - something our contributors have written about in detail in our Features section.

## 4e Please rate the PLM solution you chose on the basis of its speed.




**Analysis:** Speed of use plays an important role in usability – particularly where large volumes of data (both visual and alphanumeric) are concerned. In previous years, the majority of our survey participants reported that their chosen PLM solution was either "fast" or "extremely fast", although both categories have seen significant drops in our 2014 results: more than 30% of respondents switched their answers from "fast" to "acceptable" this year. More than one third of the customers reported that the speed of their system was not acceptable. In addition to the broader swathe of user experience improvements that we believe are required to otherwise well-regarded PLM solutions, this year's results suggest that suppliers must also focus their efforts on improving speed.

## 4f Has your PLM solution delivered the value you expected in terms of delivering process efficiencies, eliminating data redundancy and streamlining everyday tasks? If so, approximately what percentage of efficiency savings have you realised on a quarterly and yearly basis?




**Analysis:** In addition to the pure return on investment, it is at this stage of a PLM project that the initial preparatory steps (assembling a bespoke RFI, conducting process introspection) become equally vital to quantifying the success of an implementation. Where those expected process efficiencies and desired ROI metrics have been recorded, it then becomes possible to accurately ascertain the real value delivered by PLM, both in terms of monetary savings and the optimisation of standard business processes and data administration. Although only half of our 2014 survey participants were able to say with any certainty that their PLM solution had delivered these kinds of savings, the qualitative data they provided suggests that where they have been achieved, the results of these efficiencies can be dramatic.

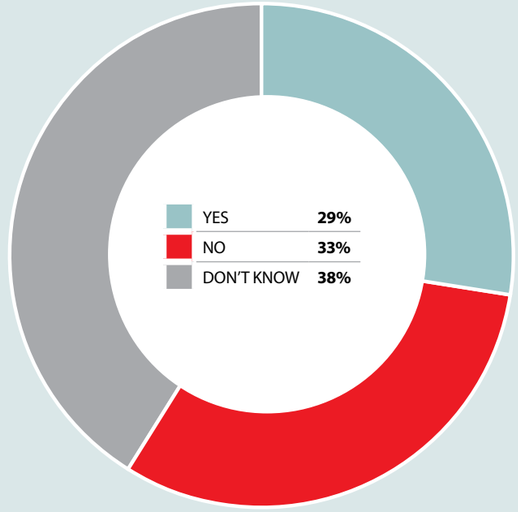
*"All our users use PLM and nothing else to manage their product data and processes. We have greatly increased the speed in which they can accomplish their tasks."*

*"Huge streamlining of data. reduced 40-50% redundancies from initial stage and continually increasing as we add new features released with each upgrade."*





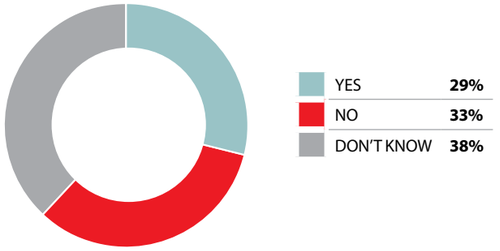
## 4g Has your PLM solution delivered the direct cost savings you expected by reducing the expenses incurred in, for example, creating samples or sourcing materials?




**Analysis:** By providing a centralised repository for master data, and enabling customers to better track the visual development of their products - from design through sampling – PLM can help to reduce the costs associated with typically separate, time-consuming processes. This year's survey responses suggest, however, that these competencies fall short of retailers' and brands' needs where sampling is concerned. As a key ROI metric, the fact that fewer than a third of all respondents failed to achieve these cost savings may either indicate that their implementations have failed to reach this aspect of the business, or that their chosen solution did not offer the potential to achieve these benefits.Perhaps as a result, there are a growing number of extended PLM solutions populating the market that are designed to dramatically reduce the cost of physical sampling through 3D working. Respondents who were not able to achieve their sampling goals through PLM alone may wish to consider adding one of these solutions to their integrated PLM environment.

*"We were pretty streamlined already in our sample process."*

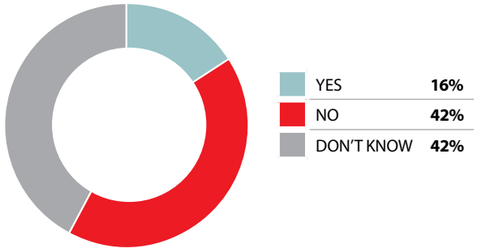
## 4h Has your PLM solution helped you to realise savings by eliminating or reducing the cost associated with handling anomalies or unexpected developments in the product development process?




**Analysis:** With end users and partners often distributed around the globe, the data visibility and intelligence that PLM (properly planned and implemented) provides can enable organisations to identify and mitigate the impact of errors, unexpected setbacks or socio-economic circumstances on their product development processes far earlier than might have been possible using more traditional methods. Although most of this year's respondents reported being too early in their PLM projects to know for sure whether these kinds of savings had been achieved, the qualitative data we received suggests that for some businesses they represented a significant component of their overall PLM benefits.

*"This is possibly the hugest benefit of PLM: because it delivers a consistent unified format of information with standardised costs, placement, etc via templates and such."*

## 4i Has your PLM solution enabled you to achieve increased sales and revenue by allowing you to position your product launches more effectively and by cutting product lifecycle times?



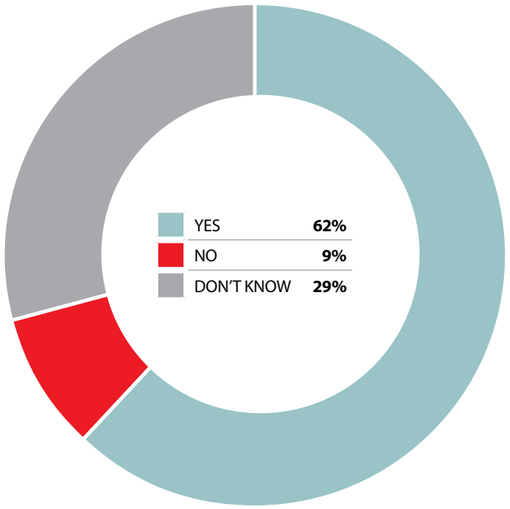

**Analysis:** For some, the ability to deliver garments to market "closer to trend" than ever before is an ancillary benefit of adopting a PLM solution; for others it is the driving force behind their decision to implement. Today's consumers have been well-versed in the benefits of fast fashion, and expect that catwalk designs will filter down into high street products more rapidly than ever before, transforming product positioning and cycle time optimisation at the forefront of many retailers' and brands' desires. As was the case with each of our previous surveys, the majority of our 2014 respondents either did not know whether their PLM project had met this goal, or knew with some level of certainty that it had not, although the qualitative data we received this year suggests that this may change as each participant's PLM project advances.

*"This is only the start of the second season and the last season was not completely developed within the new system."*

**4j** **Where they form part of your PLM solution, please prioritise the following process areas in terms of how far they have enabled you to realise the promised value of your solution – 1 being the highest, and 5 being the lowest.**

| | |
|---|---|
| 1 | TECHNICAL DEVELOPMENT AND ENGINEERING (SPECIFICATION DEVELOPMENT, DETAILED DESIGN, AND SAMPLE MANAGEMENT) |
| 2 | MATERIALS MANAGEMENT (MATERIAL DEVELOPMENT AND TESTING, COLOR DEVELOPMENT, ARTWORK DEVELOPMENT OR PACKAGING AND LABELING) |
| 3 | SOURCING (SUPPLIER MANAGEMENT, EARLY SOURCING, COSTING AND COMMITMENT MANAGEMENT) |
| 4 | MERCHANDISING AND DESIGN (CONCEPT PLANNING, LINE PLANNING AND CREATIVE DESIGN) |
| 5 | QUALITY MANAGEMENT (QUALITY AND COMPLIANCE MANAGEMENT) ;SUPPLY CHAIN (SUPPLY CHAIN COLLABORATION AND MANUFACTURING PROCESS) |

**4k** **Where your PLM solution has been integrated with another suite (whether ERP, B.I., CRM, SCM, EPOS, eComm or an alternative) have you been able to achieve savings through the interoperability of existing data rather than having to re-enter information?**




**Analysis:** Whatever the size of their business, most customers will seek (either at the point of implementation or afterwards) to integrate their PLM solution with one or more other enterprise systems. Typically, these other systems will have otherwise required data from PLM to be re-entered into another suite – often with conflicting fields and non-compatible standards - and the benefits of eliminating re-keying and redundancy can be significant and far-reaching. As with previous years' results, our 2014 data suggests that integration and interoperability continues to represent an important opportunity for retailers and brands to optimise their product development environment and ensure continuity past the point where they might think of PLM as typically "ending". Conversely, more than one third of all respondents - the total of those who either affirmed a negative or said they did not know for certain - have missed the chance to better accommodate PLM within the broader context of their extended enterprise.

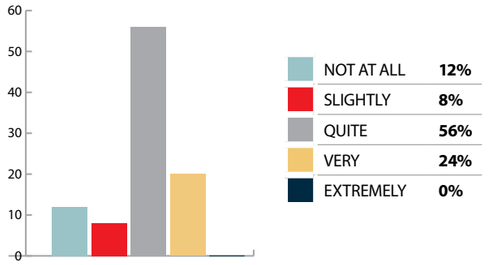
*"We make fewer mistakes when transferring our adopted lines into ERP. "*





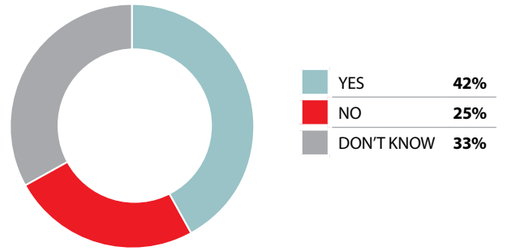
## SECTION 5 | CUSTOMER RELATIONS

**5a** **How satisfied were you with the technical support provided by your PLM supplier when you last contacted them?**




**Analysis:** The responses we received to this year's survey show a sharp decline in end user satisfaction with the service and technical support provided by PLM vendors. More than 25% fewer 2014 participants reported being "extremely" satisfied with their support experience, leaving that tier of satisfaction entirely empty. Indeed, the majority of 2014 survey participants were only "quite" satisfied, leaving considerable ground for software vendors to reclaim. In our opinion, the considerable growth in the apparel PLM market since 2012 is likely to have been the major contributing factor in this decline in satisfaction, since supplier support departments are unlikely to have grown at a similar pace. Taking account of this trend, should the industry see further expansion on a similar or greater scale, suppliers may find demand far outstripping supply where their technical support resources are concerned.

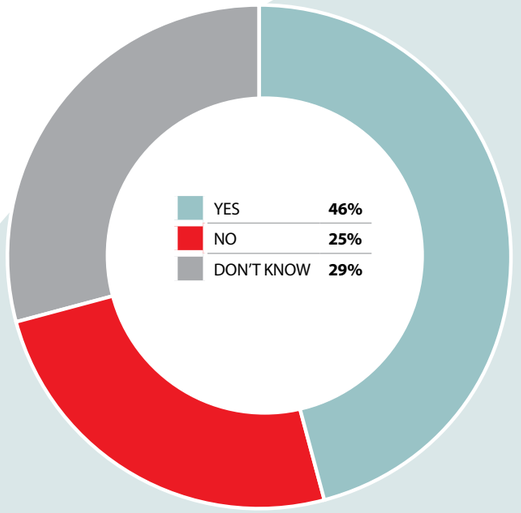
**5b** **Does your PLM supplier operate a Customer Advisory Board (CAB) or user group within your region, that provides your business with a voice that is listened to?**




**Analysis:** A Customer Advisory Board is a vendor driven initiative that encompasses a wide range of representative customers, providing direct interaction between the customer and supplier, and serving as a valuable tool for shaping the future direction of solution development as well as other long-term partnership opportunities. While this year's figures are certainly more encouraging than those we saw in 2013 (when only 18% of respondents were aware of a CAB operated by their chosen vendor) we should emphasise the importance of suppliers' operating advisory boards for each of their regional customer bases, since today North American CABs are often expected to serve a global pool of customers.

*"They do in the US, but not yet in Europe. I have to push really hard, and they may create it by the end of the year."*

*"We have a voice, but they do not execute as effectively as I would like them to."*




**5c** **Either way, do you feel as though your business would benefit from the existence of a truly independent CAB?**

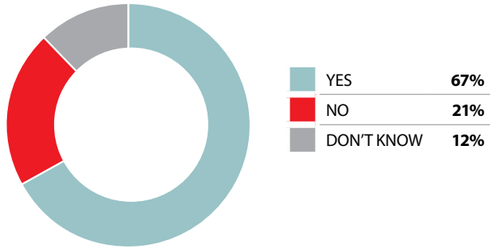
**Analysis:** This year we see a fairly significant reducation in the number of respondents who felt that a truly independent, vendor-agnostic CAB would benefit their business. Although the majority of our 2014 survey participants did see value in the concept, the qualitative data we received emphasised the importance of customer to vendor connections during advisory board meetings. Irrespective of whether a CAB is vendor-specific or supplier-agnostic, it is vital that clear channels of communication between end users and software suppliers are opened, providing customers at every level with a fair and balanced vote on new process introduction and functional development.

*"I too often feel like I am in a "them and us" situation with our software supplier. Having a group of others that could support the development of the offered solutions could only be beneficial for everyone."*

*"I think it needs to be connected to the software vendor so that they are aware of the need of the customers."*

*"Our CAB meetings include a free rein session where we brainstorm our own new features required by current business trends."*

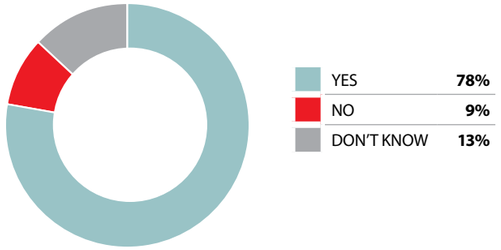
## 5d Does your PLM supplier have a clear policy in place for the provision of future enhancements to the solution?




**Analysis:** As is the case with any enduring partnership, the relationship between customer and supplier cannot remain static, and each and every vendor must grow their solution in line with the needs of their customer base - within reason. All suppliers dedicate a portion of their revenue to research and development (for more on this, see this year's vendor profiles), and the new functionality and enhancements that result from this will steadily find their way into updates and revisions to the customer's installed solution. It is encouraging to see that an overwhelming majority of respondents do believe their supplier to have a clear policy for the submission and management of requests for enhancement, but still one third of all 2014 survey participants are concerned with the prioritisation and execution of those enhancements.

*"We have a clear way to submit enhancements, but not a clear way to prioritize and execute them."*

## 5e Does your supplier listen to your requests for enhancements and / or changes?




**Analysis:** In addition to the CAB setting, customers often remain in contact with their supplier's support team, from whom they might request routine support or, in some cases, specific enhancements or changes to the solution itself. The supplier will need to factor these requests into their ongoing development – something that is often a less transparent and egalitarian process than customers may realise. Although a significant majority of this year's respondents do feel as though their requests are taken into consideration, our first-hand experience suggests that enhancement requests from small-to-medium members of a given vendor's customer base are often relegated in favour of development priorities originating from larger or more lucrative customers.

*"Yes but not all requests are considered."*

*"They are excellent at taking feedback and incorporating it into the roadmap."*

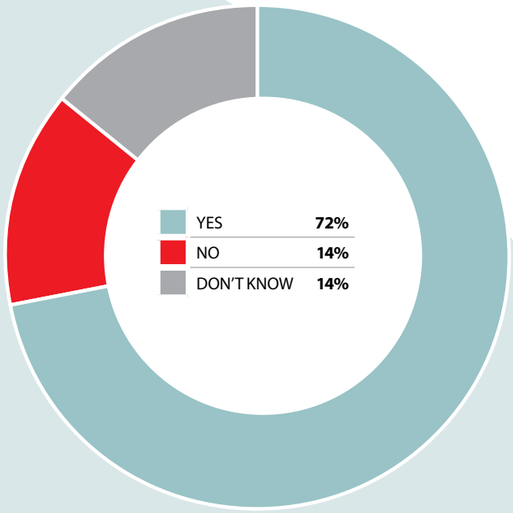
*"To date I have gotten every request I have ever asked for by the next release of the platform!"*

## 5f Have any of your requests or recommendations subsequently been integrated into the solution?

**Analysis:** A supplier listening to their customers' requests for enhancements is one thing; their actually incorporating those requests into a development roadmap is quite another. Fortunately the overwhelming majority of this year's respondents (echoing the results we saw in 2013) reported that their suggestions had sooner or later been incorporated into the solution - in at least one case being mandated by an agreement made between vendor and customer prior to implementation. Although these kinds of changes may occasionally run counter to the vendor's previously-identified roadmap, a receptive supplier should be able to rely on its customer base to provide broad indications as to how the market as a whole would like to see the solution mature, and then incorporate the most-requested functionality into the core of their solution.

*"Some, but not all."*

*"It was part of the agreement."*





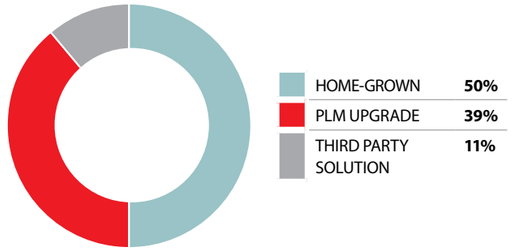



## 5g We asked each of our survey participants to rank a series of commonly-cited processes and future development opportunities. These functional areas and processes are presented with an average rank from 1 to 8 (one being the highest) awarded on the basis of how important they had become for both the current operation and future advancement of each respondent's digital transformation.

| | |
|---|---|
| 1 | MULTI-DIMENSIONAL ABILITIES FOR BOM/COSTING |
| 2 | STANDARDISED XML FOR COMMON PROCESSES AND KEY ATTRIBUTES |
| 3 | IMPROVED ABILITY TO INTEGRATE TO 3RD PARTY SOLUTIONS |
| 4 | FEATURE BASED COSTING TOOLS |
| 5 | DEEPER INTEGRATION TO ADOBE CREATIVE SUITE |
| 6 | MOBILE DEVICE INTEGRATION |
| 7 | ADVANCED PLANNING SOLUTIONS |
| 8 | INTEGRATION TO BOL PROVIDERS |

**Analysis:** As market analysis shows, suppliers continue to invest substantial portions of their revenue in research and development – informed by feedback received from customer advisory boards, in direct consultation with end users, and from surveys such as this one. Multi-dimensional abilities for Bills of Material (BOM) and costing appear for the second year running as the highest priority, and although each of the other processes or functional areas is roughly equivalent this year to its order in 2013, the desire for standardised XML for common processes and key attributes has ascended from near the bottom of the pile to become a top priority for our 2014 survey participants.

## 5h Where you rated any feature or process particularly highly, was it support brought into your business environment - or has it been identified to potentially become part of that environment - through a home-grown method, an upgrade to your existing solution, or the purchase of a third party solution to plug a PLM functionality gap?

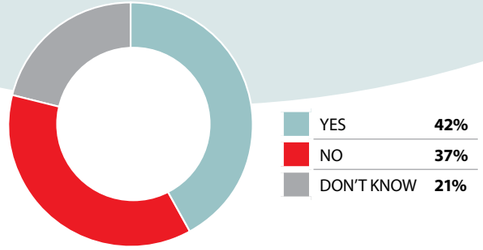



**Analysis:** Where customers are seeking to add in-demand functionality to their ways of working, they are presented with three methods of doing so: through their own in-house development efforts; by petitioning their supplier through one of the aforementioned avenues; or by purchasing a piece of third-party software. In 2013, none of our survey participants reported that they had considered the third-party approach, whereas this year's results show that more than 10% of respondents are considering the use of third-party solutions to add functionality to their PLM environment. This accords with the trend we see during our advisory work, whereby an increasing number of retailers and brands are integrating their mature PLM deployments with critical, extended enterprise solutions.

*"Nothing specific has been done yet. We may consider it in the future."*

*"Most of it is home-grown and is developing at a rapid rate."*

## 5i Do you believe that your supplier has a clear road map for the future support and development of your solution?




**Analysis:** As well as the software itself, as we have explained, adopting a PLM solution requires a customer to buy into an "ecosystem" for a set period. Barring any unexpected events (such as acquisitions or liquidation), a solution will be supported and developed over a period of several years following its initial implementation, and these support and development arrangements should always be made as transparent as possible in order to build effective and enduring supplier / customer relations. From that perspective, this year's figures are discouraging: by assuming that "don't know" answers are essentially equivalent to "no" responses, we see that only 42% of respondents overall believe that their chosen supplier has an established and accessible roadmap for the future. This suggests that suppliers are either not communicating their future development and expansion plans, or that these plans may not be in place in the first place. Prospective customers may wish to investigate those vendors who choose to undergo a WhichPLM Supplier Evaluation, since roadmap insight is one of the metrics by which these vendors are measured.

*"It is clear they do and get customer feedback all along the way. Their approach is sort of like a pre-line approach a brand might take with a key retailer."*

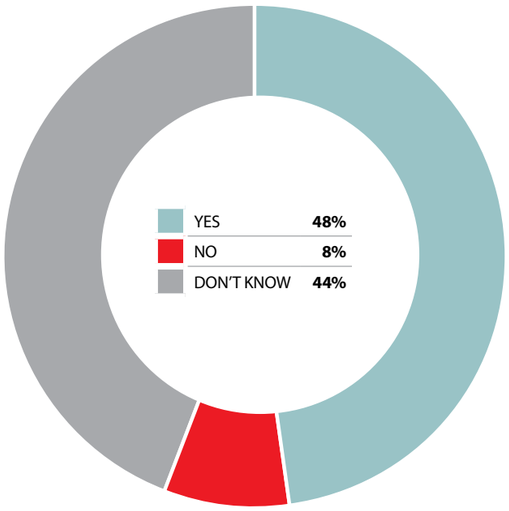
*"I think so, although getting onto support has been delayed."*

**5j With each new year comes a host of new demands and new functionalities. Please rate the following emerging trends on the basis of how soon you'd like to see them built into your PLM solution or brought into your business via other methods, with 1 being the highest, and 5 being the lowest:**

| | | | | |
|---|---|---|---|---|
| 1 | BUSINESS INTELLIGENCE | COMPLIANCE & SUSTAINABILITY | ADVANCED ADOBE SUITE (BIDIRECTIONAL INTEGRATION TO INCLUDE ILLUSTRATOR, INDESIGN & PHOTOSHOP) | |
| 2 | DIGITAL ASSET MANAGEMENT | OFFLINE WORKING & DATA SYNCHRONISATION | DYNAMIC SUPPLY-CHAIN COLLABORATION 24 X 7 | MASTER DATA REPOSITORY |
| 3 | 2 & 3D VIRTUAL SAMPLING INTEGRATION | E-PLM INTEGRATIONS E.G. CAD/CAM/BOL/ VISUAL COMPONENTS DATABASE | | |
| 4 | TRUE "STORYBOARD" PROCESSING | ADVANCED MERCHANDISE PLANNING "ALGORITHMS" | MOBILE DEVICE PROCESSING | |
| 5 | SOCIAL MEDIA INTEGRATION & ANALYTICS | ADVANCE COMMUNICATION (VIDEO CONFERENCING AND DYNAMIC MESSAGING) | | |

**Analysis:** Analogous to the way that suppliers rely on customer feedback to influence the future development of their solutions, here at WhichPLM we endeavour to keep a finger on the pulse of end user demand. This year's responses indicate that business intelligence (BI) has become a critical target for a large number of survey participants. Ranked justifiably highly were support for compliance and sustainability initiatives - something that should come as no surprise given the weight our contributors placed on that topic this year - and bi-directional integration to the entire Adobe Creative Suite, which we know from experience can be a "make or break" situation for new prospective customers of PLM: Also highy-rated this year and last was offline working and synchronisation - something that we believe will become increasingly necessary as vendors and customers alike begin to explore mobility in earnest.

**5k Would your company support a move to a standardized data format for apparel specific product information to allow bidirectional synchronisation of data/documents between enterprise systems such as PLM or ERP?**




**Analysis:** With integration points rising to the fore as one of the most widespread additions to PLM, and ERP being considered (and sometimes even adopted) simultaneously with PLM, the potential for standardisation between systems is greater now than ever before. This being said, although half of this year's respondents acknowledge that standardised data formats would enable seamless integration and interoperability, the other half are perhaps more realistic in recognising that little progress has been made in this area for a number of years. These retailers and brands have instead taken a pragmatic approach, and built bespoke integrations between their PLM solutions and other enterprise-level systems. Where the common topic of ERP / PLM integration is concerned, we believe that a gulf in understanding between the two types of vendors may be to blame for the lack of progress that has been made towards standardisation.

***"Changes to product can happen at any time- even after it has been adopted, being able to send data to an ERP and then send updates made there back to PLM is a must in this fast moving industry."***



# ADVISORY SERVICES FROM whichPLM

## Considering a PLM project of your own, but struggling to assemble a business case?

## Facing difficulties in understanding how the right solution can achieve its full potential in your extended enterprise environment?

Working as the WhichPLM Advisory Services team, Mark Harrop and a select group of expert associates have undertaken process analysis, extended-PLM system architecture mapping, master data consolidation and scientific PLM shortlisting and selection projects for major brands in Europe, the United States and Asia. Each of our associates has direct experience of multiple PLM solution implementations, and whether a client approaches WhichPLM looking for a comprehensive assessment of their investments in people, products and processes, or simply to obtain an expert perspective on the PLM landscape, our services remain unbiased and expertly informed.

Our proven methods - born from a marriage of best practices and hands-on experience - have helped to shape the digital transformations of retailers and brands around the world. Customer references are available upon request.

### PLM Customer Services

- Project team selection & education
- Strategy, scope & value
- Business case analysis
- Process maturity assessment
- Solution landscape insight & selection
- Solution audits & recommendations
- Whole-enterprise digital transformation

### PLM Vendor Services

- Solution and roadmap evaluations
- Process maturity scoring and development direction
- Education and certification of resources
- New process design
- E-PLM integration partner networking

whichPLM

Contact **advisory@whichplm.com** to arrange an introductory conversation

www.whichplm.com

# Vendor Profiles

**Each year, the WhichPLM Annual Review collects insight, opinion and analysis with the goal of providing the PLM industry – vendors and customers alike – with the information required to make informed decisions about its future. A significant component of the value in our yearly publications has always been our vendor listings, which collect profiles of PLM suppliers who have remained active within the retail, footwear and apparel marketplace during the span of time covered by each Annual Review.**

This year's publication is no different. Over the coming pages, readers will find alphabetical listings of fourteen software vendors, each of whom we consider to have played a regional or global role in the RFA PLM market in 2013/14.

Eagle-eyed readers will notice that the vendors who occupy positions in this year's listings number fewer than they did in our 2013 publication, and certainly fewer than the 40 or more software vendors who claim to offer PLM to the apparel industry today – at least according to their definitions.

We know from feedback that the Annual Review is extremely valuable to retailers, brands and manufacturers who are either considering embarking on a PLM journey, or who may already be several years into an enterprise-wide digital transformation. For these readers, our end user survey provides valuable project guidance, and our vendor listings serve as an introductory step to shortlisting and selecting the right solution for their unique requirements.

With this in mind, we have excluded a number of vendors from the Annual Review 2014 for a number of reasons. Some opted to exclude themselves by refusing to cooperate with our research in a timely manner; others, we felt, better qualified as providers of E-PLM, including those who focus on supply chain execution, for example. Still more fell short of our minimum turnover requirements in the RFA sector, or were revealed during WhichPLM's advisory engagements not to play a significant enough part in the regional/ global industry to merit inclusion on prospective customers' selection lists.

As well as taking account of the demands of PLM customers worldwide, this year's more streamlined vendor listings also reflect the composition of the market itself. The dramatic growth revealed by our 2014 market analysis has not been driven solely by an influx of new vendors (or vendors for whom the RFA industry is uncharted territory) seeking their slice of a buoyant market, but also in large part by the continued research, development and investment efforts of a subset of long-serving vendors who are invested in the apparel industry either entirely, or as a strong element of a broader industry portfolio.

Broadly speaking, the largest enterprise solution providers address a selection of industries including RFA, whereas the smaller vendors are typically only focused upon the RFA industry. For those vendors that do cater to two or more verticals, 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 where identified disregarded income, resourcing and investment that falls outside the scope of our resolute PLM focus.

In addition to some differences in the criteria for inclusion in our 2014 vendor listings, readers of previous Annual Reviews will notice that we also solicited additional information from vendors. This extra detail – overall customer figures, resourcing allocations by region, the ratio of internal and external users – is supplemental to the core financial and new customer data we have published previously, and is designed to allow readers to build a more comprehensive picture of their potential shortlist of vendors. Where "N/A" appears, it denotes that the vendor in question neglected to provide the relevant information, and should be read as "not available".

**Our vendor listings serve as an introductory step to shortlisting and selecting the right solution.**

One notable area on which we had hoped to report but found our best efforts thwarted was vendor revenue, both as a total and subdivided by software licensing, services, and maintenance. We are disappointed to reveal that the majority of vendors refused to provide this information, and although the WhichPLM team does hold historical data from which we might have extrapolated a strong estimate, we took the decision not to expose those vendors who did support our research to unfair scrutiny in comparison to those who didn't.

The fact that we were able to source research and development investment information suggests that vendors on the whole are more willing to advertise the amount of money they put into their products than they are to come clean about the revenue they get out of them.

Vendors who did volunteer to part with their financial data – Infor, Koppermann, NGC, PTC, Visual 2000 and WFX – are to be commended on their candour, whereas readers should question the motivations of those who neglected to provide at least ballpark figures: Centric Software, CGS, Dassault Systèmes, FAN PLM, Lectra, Polytropon, TXT, and Yunique Solutions.

Despite these absences, our vendor profiles do continue the tradition of asking each listed supplier to provide their own insight into what they feel has differentiated them from their competitors this year, and to explain what they see as the prominent emerging trends for the near future. These insights are always exclusive to the WhichPLM Annual Review, 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 are not 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, providing their identities have been disclosed to the WhichPLM team. 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. In the months leading up to this year's publication, the WhichPLM team rebuffed numerous attempts by suppliers to pass off non-PLM customers, non-apparel customers, and customers whose contracts were signed far outside the 2013/14 period as valid inclusions for these pages. In most of these cases, the vendors in question retracted some of their claims. In other instances, vendors chose instead to stand by their initial submissions, and 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 majority of vendors for their honesty, nothing in the vendor profiles that follow should be considered as an endorsement of any particular PLM vendors. Indeed, we would caution all prospective customers to pay particular attention to the suitability of any vendor who was unwilling to have their revenues exposed to comparison, or who refused to divulge the size of their R&D team or the composition of their global apparel resource pool.

All prospective customers of PLM should be seeking a viable and sustainable long-term partner, conducting their shortlisting and selection 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.

And for those readers who have already chosen a vendor and begun their implementation - or who may be facing the pressures of training or change management during their digital transformation - the new Consultant Profiles contained in this publication mirror this same level of insight for the select few consultancies that specialise in retail PLM.

**Beginning overleaf, pages 98 to 125 inclusive contain profile information and advertisements provided by PLM vendors, arranged alphabetically. No content within these pages should be considered an endorsement, approval, or assessment of any vendor or any product by WhichPLM.**

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## FINANCIAL YEAR 2013/14

**26**
**New Customers of RFA PLM, including:**
Grupo Cortefiel | **PVH Europe** | Hampshire Group | **Camper** | Beranger | **Cache Cache China** | Mustang Group | **Norrøna**|

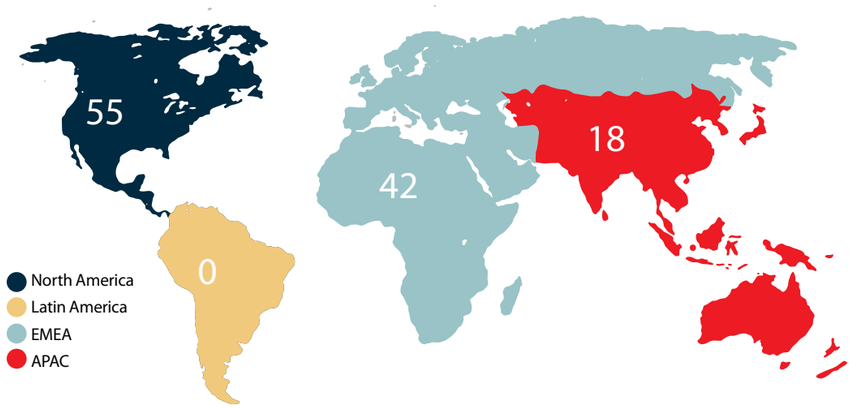
**65**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**20,090**
**Total number of internal users worldwide**

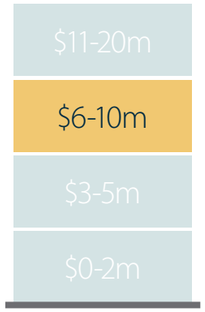
**N/A**
**Total number of external users worldwide**

**35**
**Number of resources specifically engaged in R&D**

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**




**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.**

During the period in question, Centric introduced three new mobile apps for Centric 8 PLM: Factory Audit Mobile App, Switchboard Mobile App and Material Sample Mobile App. Centric was the first PLM maker to deliver mobile apps for its PLM solution. The addition of the three new apps brought the company's total portfolio of mobile apps to six, the largest offering in the industry. The Factory Audit Mobile App enables brand owners to conduct and document onsite factory audits with any iOS- enabled mobile device, and link audit information to vendor scorecards in the Centric 8 software. Switchboard Mobile App receives images and documents from iOS-supported applications, and moves them seamlessly to Centric 8. Material Sample Mobile App captures and shares material sample information throughout the development lifecycle. All of Centric's mobile apps let those involved in the product's development complete their work more quickly, when ever and wherever that work is performed, while simultaneously including the results in Centric 8's "single version of the truth" about the product. All team members have instant access to that information in Centric 8, meaning products move to market more quickly and efficiently.

**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 go-to-market reality for apparel companies is evolving swiftly as manufacturers develop retail outlets, retailers add private label businesses, suppliers purchase retail brands, and fast fashion grows. Against this backdrop, RFA makers continuously face a tidal wave of new product introductions. Clearly, technology will continue its key role as a critical enabler of progress. Just as early-adopters hoped for improved efficiencies in their operations, those who are just now acquiring PLM seek its promise to reduce redundancies, free talent from administrative tasks, speed sample and prototype development, control costs, and—importantly—speed the right products to market. But as the market continues its rapid evolution, PLM technology will have to respond to support a changing set of customers and customer requirements. It's likely that PLM adoption will move further out across the supply chain, as suppliers and retailers acquire PLM technology to both realize its efficiencies, and provide better service to their customers. Moreover, the RFA industry is likely to push PLM makers to assure that the entire product lifecycle—from inspiration to customer experience—is a seamless one, fully supported by PLM's capabilities and benefits.

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## FINANCIAL YEAR 2013/14

**13**
**New Customers of RFA PLM, including:**
Malibu Design Group | **NYDJ (Not Your Daughters Jeans)** | Secret Charm | **S. Goldberg & Co, Inc** | World Threads, Inc | **Tart Collections** | Tommie Copper | **Jude Connally**

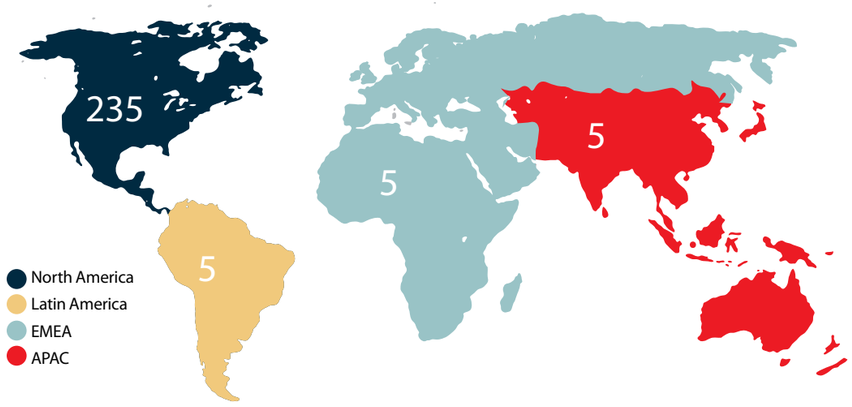
**60**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**1,200**
**Total number of internal users worldwide**

**300**
**Total number of external users worldwide**

**80+**
**Number of resources specifically engaged in R&D**

### Total number of resources focused on the RFA industry by region:




### R&D Investment

- $11-20m
- $6-10m
- $3-5m
- $0-2m

**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.**

BlueCherry® PLM draws from its enterprise solution heritage to deliver a fully integrated set of line planning, design, product and materials development, sourcing and production capabilities. These and other 'extended PLM' capabilities have better equipped our customers to streamline front-end processes, gain greater visibility and control over their collections, improve collaboration across the supply chain and accelerate new products to market. This comprehensive approach consolidates and manages key business processes into a single system that meets and expands the true promise of PLM.

Recent developments include the BlueCherry Adobe® Illustrator® Plug-in module, which enables designers to launch new products directly in Illustrator and automatically populate BlueCherry PLM, resulting in more innovative designs and better design efficiency.

Advancements in supply chain transparency and mobility include the BlueCherry Quality Assurance and Compliance Testing modules (CTS). Quality assurance tools provided through both an online solution and a convenient tablet app enable more efficient and effective Acceptable Quality Level (AQL) standards, onsite sample approvals, mill and factory score-carding and other quality initiatives. To ensure compliance, CTS manages test results, General Certificate of Conformity (GCC) forms and other required compliance documentation and 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.**

When we look at the challenges of international sampling, sourcing and production, social and environmental compliance is fast becoming one of the industry's hottest topics. As a result, support for supply chain transparency and governmental regulations are some of the industry needs we feel PLM vendors should be actively looking to add to their solutions.

In addition to global market interest in best-of-breed PLM solutions, a growing number of companies continue to adopt an "end-to-end" solution strategy to eliminate functional and visibility gaps across their extended supply chain operations.

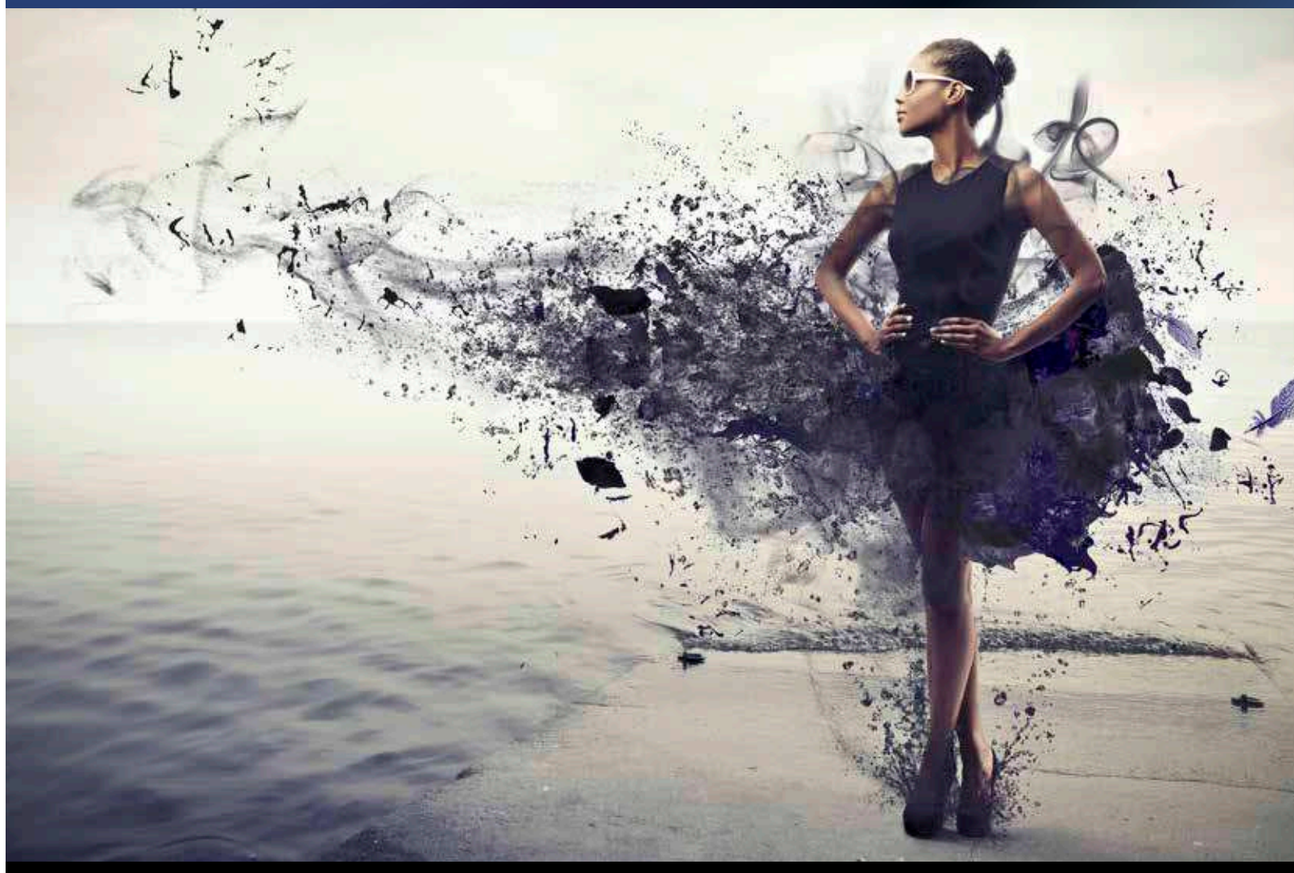
The demand for Big Data collection and analytics will continue to increase over the coming years. The challenge for enterprises will be to reassess their competencies, skills and systems to respond and take advantage of this opportunity.

As many companies continue to rely on external spreadsheets for merchandise and line planning processes, we are increasingly seeing requirements for more robust and flexible integrated merchandise and line planning tools.

While important advancements have been made over the last few years, the need for greater and more efficient mobility will continue to increase as smartphones and tablets drive the need for integration of mobile technologies with enterprise data.



# Redefining PLM



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- Adobe® Integration
- Color Management
- Raw Materials
- Vendor Portal
- Sample Management
- Costing
- Purchasing
- Auditing & Compliance
- Workflow & Critical Path
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## FINANCIAL YEAR 2013/14

**4**
**New Customers of RFA PLM including:**
Ay Guey | **ECI** | Fjällräven

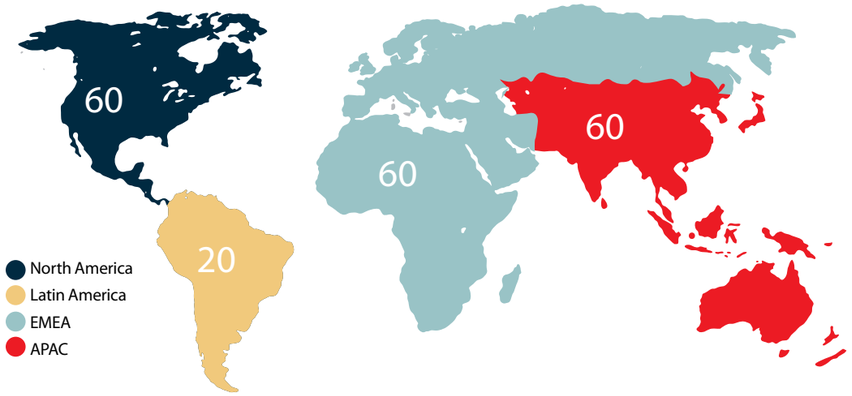
**33**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**30,000**
**Total number of internal users worldwide**

**10,000+**
**Total number of external users worldwide**

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

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**

- $11-20m
- $6-10m
- $3-5m
- $0-2m

**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.**

The Dassault Systemes PLM solution for RFA holds major functional and usability improvements to further inspire creativity and collaboration. With the enhanced Adobe integration, designers can stay in their preferred design tool. Bi-directional integration enables colors and materials from seasonal libraries in PLM to be directly applied to products and sketches in Adobe Illustrator®. This not only speeds up the creative process but also answers the needs of fashion companies to manage and leverage their digital assets across all functions from design to marketing and retail. The V6R2014X includes many major functional improvements for better configurability, usability and business ROI. Product briefs, product families and product placeholders allow creative direction to be defined early and easily for effective guidance to design teams and suppliers. This also improve sample accuracy while reducing prototypes. Multi-category support allows brands to manage all product lines within their collection in one single solution. Major enhancements in sourcing and capacity planning allow early visibility, better decision making and improve the overall supply chain efficiencies. Overall, the new Dassault Systemes solution for RFA is extending its coverage both upfront in the design activities to ensure a better integration/collaboration and downward in manufacturing to ensure a better efficiency in the production phases.

**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.**

Fashion companies need to focus on what will support their business in the next few years. And one area they must invest in is all the different ways consumers want to interact with their brand and how these interactions can shape the business for better and faster results. It is not just about re-using data and incorporating it in the product life cycle earlier in the process it also about managing and leveraging digital assets in all areas of the business. When a designer starts sketching a collection and technical elements are added, then this becomes marketing materials to share with consumers on websites and catalogues before the collection is produced. It also becomes assets to share with stores and merchants to create the best consumer experience.

FANPLM

www.fanplm.com

## FINANCIAL YEAR 2013/14

**1** **New Customers of RFA PLM including:**
W Diamond Group

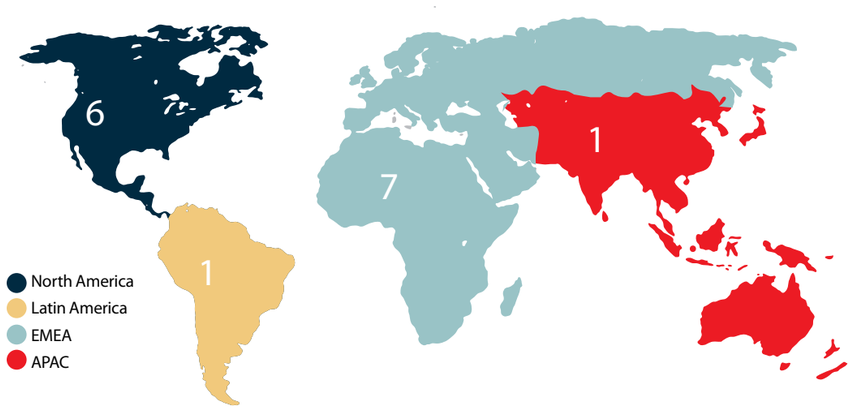
**9** **Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**2,500** **Total number of internal users worldwide**

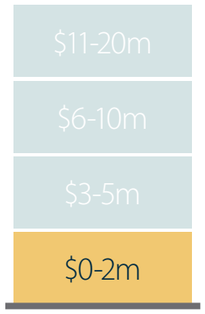
**800** **Total number of external users worldwide**

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

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**




**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.**

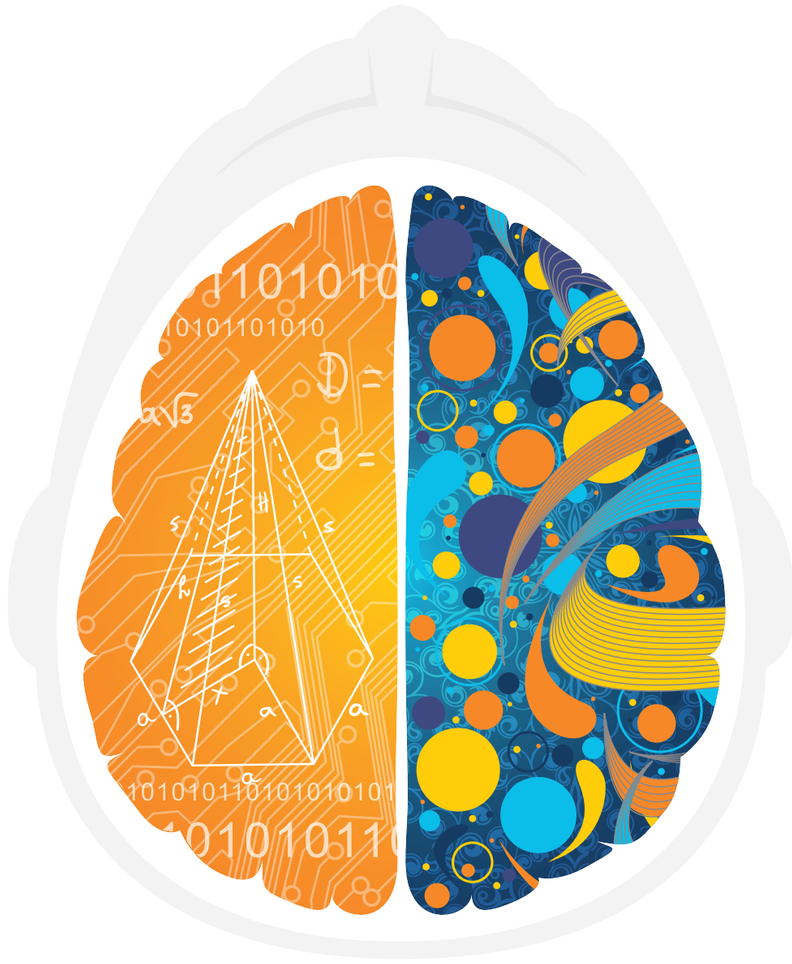
FAN PLM is revolutionizing the way PLM is used by modern fashion brands. A cloud-based architecture, combined with our focus on footwear, apparel, and accessory brands, gives FAN PLM customers confidence that our solution will fit their current structure, as well as offer ample room for growth. With customer support, a founding principle; we build systems that are designed to work in parallel with a company's existing structure. Our team of industry veterans has a unique understanding of what is needed to decrease bottom-line expenses and shorten time-to-market. Historically, a custom PLM solution has been cost-prohibitive, forcing many brands to rely on old technology like Excel, cheap ERP systems and even QuickBooks to analyze product data. Now, in addition to our enterprise level product offering, FAN PLM offers a future-foward modular system that allows them access to only the features they need. This brings inexpensive accessibility to brands by allowing them to procure an enterprise-like solution without the heavy costs that are typical of most PLM solutions. This alternative, gives mid-sized companies a starting foundation to build on with add-on options like Adobe Illustrator integration. Flexibility means less configuration time, less cost, plus many of the same great features of a traditional system.

**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.**

Broader market forces and globalization are allowing brands and their suppliers to better compete and have created a new pricing environment, whereby prices are being driven down. This ultra-competitive zone, is forcing factories outside of the US to raise wages. Additionally, we are seeing a consumer who is now dictating what fashion is and will be, setting trends for brands to follow. While this is an exciting and creative time for designers, it is nonetheless wreaking havoc on a brands' ability to stay ahead of the curve. More important than ever is the need for a PLM that allows brands to be highly efficient and squeeze every last bit of margin out of a product by being adaptable in their process and workflow. With this increased need for agility, it is a given that brands should be using a cloud-based, open source architecture that integrates seamlessly with their existing third party software solutions and offers a highly flexible and configurable solution without major code adjustments. Advanced PLM deployment methodologies need to be focused not just on how a company uses a system, but what they use it for and why.



## bridging the gap between science & art in retail



FIRSTINSIGHT
THINK LIKE YOUR CUSTOMER

www.firstinsight.com

infor

www.infor.com

## FINANCIAL YEAR 2013/14

**4**
**New Customers of RFA PLM including:**
None for public disclosure.

**98**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

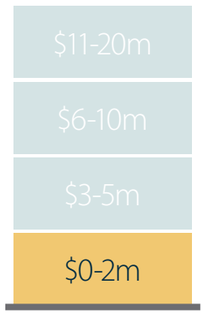
**2,411**
**Total number of internal users worldwide**

**N/A**
**Total number of external users worldwide**

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

**Total number of resources focused on the RFA industry by region:**


**R&D Investment**




**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 Fashion PLM 15.1.3.0 is the second delivery of Infor's new PLM product, which is specifically for apparel, footwear, textiles, and fashion accessories companies. Infor Fashion PLM helps create the foundations for faster work, greater flexibility, and a superior user experience. This latest version includes: •A new module to support the line planning process •A new module to help improve collaboration with external sourcing partners using a web-browser user interface •Expanded design and development capabilities within the Product Development module Infor Fashion PLM is designed to help increase speed and agility by automating time-consuming, repetitive tasks with the goal of enabling shorter time to market and higher efficiency when developing new collections and styles. Drag and drop capabilities and libraries of colors, fabrics, trims, and other supplier details can help speed the product development process so that users can focus on adding more value through product innovation. Critical path capabilities support day-to-day business activities and give visibility across collections and styles to allow the tracking of progress and follow up on styles at risk of being delivered late. The software was designed with the help of Hook & Loop, Infor's in-house design agency, to empower creative, technical, and commercial teams to collaborate and unlock the full potential of the business. Infor Fashion PLM is designed to be intuitive to use, which can speed up user adoption and reduce training requirements.

**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.**

Infor believes there is a fundamental shift taking place in the fashion industry today. Fashion businesses require collaboration and global business skills that were once unknown in the industry. With a generation of millennial shoppers and innovative new channels to market, fashion is becoming a different business. With this in mind fashion brands should be listening to the consumer and collaborating with their value chain to better anticipate consumer desires and be responsive to trends by delivering on them in very short periods of time. Once it was about controlling the supply chain and leveraging information, now instead of controlling the supply chain, fashion designers and operations should be acknowledging consumer behavior is moving to online communities built on sharing, liking, pinning, tweeting, and retweeting. All this information gives a voice to the consumer, to online communities, and to fashion bloggers—many of whom have as much influence as the top fashion designers. Why? Because they have the followers and their followers believe in and trust them. Collaborating more closely with consumers can be a game changer for fashion value chains, with new strategies, opportunities—and an exciting, fashion-forward influence for consumers to believe in. What better way to collaborate across the entire value chain than in the cloud. Cloud deployment offers companies the opportunity to reinvent their approach to operations, workflows, and information sharing. It's true that fashion companies are often not staffed to understand or take advantage of technology. They are experts in developing and producing their own innovative fashion products, relying on others to provide them with IT solutions. A cloud solution could be just the ticket for these businesses.



# Create exciting fashion, faster

**Innovate**
Exploit product innovation and drive profitable sales growth.

**Accelerate**
Develop the right collections and styles more quickly and satisfy customers sooner.

**Collaborate**
Bring creative, technical, and commercial skills closer together.

**With the intuitive, beautifully designed Infor Fashion PLM, you can turn inspirations into products and first-time customers into brand enthusiasts.**

infor Fashion PLM

Download information about the new Infor Fashion PLM:
www.go.infor.com/newfashionplm/

koppermann®
A Passion for Innovation

www.koppermann.com

## FINANCIAL YEAR 2013/14

**5**
**New Customers of RFA PLM including:**
TWIN-SET Simona Barbieri | **Sportalm** | Sterntaler | **Gilmar** | OSIT Impresa Spa

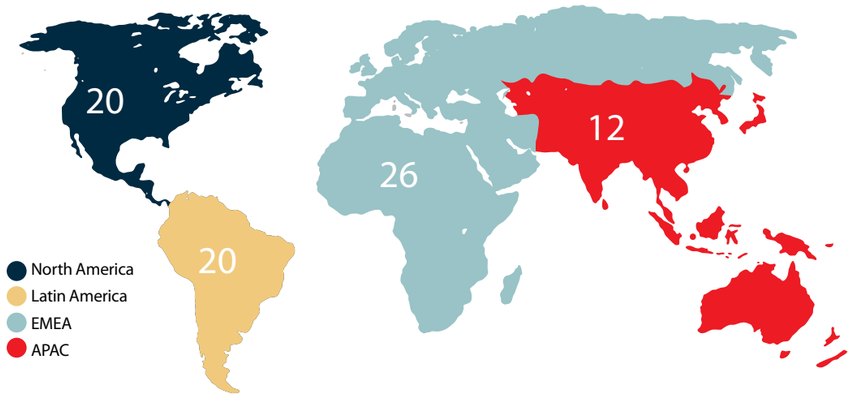
**95**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**5,000**
**Total number of internal users worldwide**

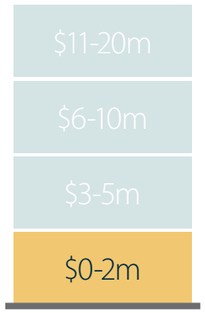
**2,000**
**Total number of external users worldwide**

**12**
**Number of resources specifically engaged in R&D**

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**




**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.**

KOPPERMANN´s PDM/PLM Solution TEX-DEFINE is tailored according to the needs and challenges of the ever-changing fashion and apparel industry; industry leaders choose TEX-DEFINE for various reasons:

- Reach and integrability: Ability to unleash unparalleled synergies and to add value along the entire value chain;
- Excellence in product development: Extended PLM reaching from a precise and effective collection planning to the presentation and management of products in the stores;
- Smart Design: A module feeding the data arising during the design process directly into the system;
- Effective monitoring tools: E.g. a dashboard giving an immediate overview of the collection development status, informing about criticalities and possible delays and providing user-specific information about the outstanding tasks;
- Strong analytical and reporting tools;
- Communication tool: Tracking and management of style-relevant communication facilitating the cooperation with suppliers;
- Mobile solutions: Data and image input from everywhere directly into the system;
- Industry experts: Project-managers and teams with many years of experience and highly knowledgeable of the industry best practices;
- Solution scalability: Guarantees a continuous adaptation of the system according to the evolution of the company's processes;
- Do-it-yourself: Flexible and intuitive solution allowing customers to perform adaptations autonomously and without any programming.

**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.**

Now, companies are coping more than ever with the challenges of a tough competitive landscape laid out across several channels. This dynamic Omni-channel presence and competition call for a strategic, effective and centralized data-administration, for solutions empowering integration and the synergetic management, usage and transfer of information. The strategic handling of big data becomes a source of competitive advantage. Collaboration tools are becoming more important than ever and are empowering the entire business. Also, the new market dynamics raise the need for a more accurate and focused collection planning so as to meet customer market demand better and more precisely. The constant renewal of the assortment displayed on the POS becomes a must for traffic generation, a challenge to be tackled by an increased number of delivery dates, and the provision of intermediate and demand-oriented collections. The remarkable increase in the collection development pace needs to be supported systemically, among others by providing a solution guaranteeing streamlined processes and minimization of time and effort. The provision of solutions enabling a tighter supplier control and code of conduct compliance will also massively increase in importance. All these solutions are already integrated in KOPPERMANN's PDM/PLM system TEX-DEFINE.

Lectra

www.lectra.com

## FINANCIAL YEAR 2013/14

**9**
**New Customers of RFA PLM including:**
Imperial | **Ellassay** | Zumba Fitness | **Aokang Shoes**

**165**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

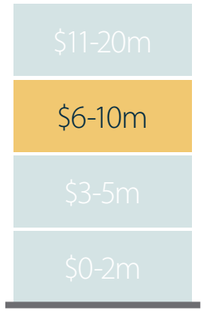
**3,830**
**Total number of internal users worldwide**

**N/A**
**Total number of external users worldwide**

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

**Total number of resources focused on the RFA industry by region:**


**R&D Investment**




**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.**

Lectra Fashion PLM supports collection development from design to production. Designed and developed for fashion and apparel, this platform environment comprises collection planning, calendar management, textile and fashion design, 3D product and pattern development, spec packs and supplier collaboration to speed time to market, control costs and boost newness. Lectra has a proven project implementation protocol based on lean methodologies and supported by 40 years of fashion expertise and best practices.

The latest release of Lectra Fashion PLM strongly focuses on user experience with innovative dashboards, a visual orientation with deeper 3D virtual prototyping and native Adobe Illustrator access. Creative and technical designers can add product specification information directly from Adobe Illustrator, reducing the time usually spent on file management and minimizing the risk of working on an old version of a file.

Also included are additional industry norms, standards and testing templates to further streamline development.

**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.**

Fast fashion, social media and mobile technologies have resulted in an instantaneous sharing of information and consumption of fashion. Demand has increased exponentially. This means that the industry will forever be changed. High quality, low prices and constant newness are what interest the consumer today.

Fashion risks reaching the point of commoditization partially due to risk aversion that has lead many companies to play it safe in terms of design and newness, not willing to risk changing from last season's best-sellers. There is sameness throughout fashion retail everywhere. This means less and less differentiation in the market place and represents a threat to innovation.

Yet there are also new opportunities such as 3D and design technologies to encourage creative iteration. Tools develop smaller, more frequent collections in lower quantities to localize design and fit help increase agility. Suppliers can become partners and OEMs can add design and development capabilities.

Lectra can help companies with the change needed to jump on these new opportunities.

NGC

www.ngcsoftware.com

## FINANCIAL YEAR 2013/14

**16** **New Customers of RFA PLM including:**
Tristan and America | **Just Fabulous, Inc.** | Val D'or Apparel, LLC | **Blank Generation, LLC** | School Apparel Inc. | **Watters Designs, Inc.** | J.J.'s Mae, Inc. d/b/a Rainbeau | **American Textile & Apparel**

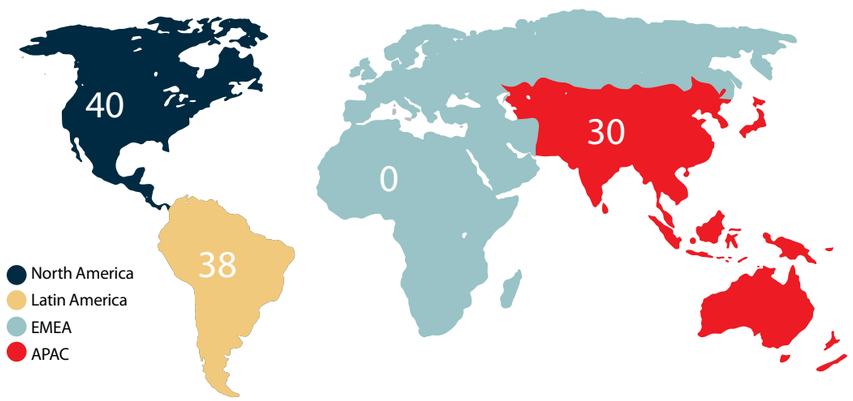
**90** **Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**15,000** **Total number of internal users worldwide**

**N/A** **Total number of external users worldwide**

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

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**

- $11-20m
- $6-10m
- $3-5m
- $0-2m

**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 added a number of new functions to our core PLM offering, including assortment planning, vendor and social compliance, and the ability to conduct customer surveys and receive "voice of the customer" social feedback.

We also added additional mobility features. Our PLM software supports user mobility and runs on any type of tablet or mobile device, with an enhanced, streamlined mobile display. Users can instantly view any image from their Digital Asset Library, add new photos and upload them to the PLM system, view style details, evaluate samples in remote locations, and collaborate with other parties to resolve open issues.

Our PLM software now has advanced business intelligence capabilities. A user-configurable BI dashboard provides graphical and tabular displays that show many key performance indicators. Easy evaluation of development progress, sales trends, production status, inventory positions and financial targets lead to better decision-making and increased profitability.

We continue to provide deeper manufacturing and Supply Chain Management (SCM) functionality with our PLM solution. Taking this even further, we provide integration with a majority of external systems involved in the fashion enterprise, using PLM as a platform (see more information below).

**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 new realization that the capabilities of PLM should extend far beyond its traditional role. PLM can provide a central repository to orchestrate all information, processes, departments and geographies and serve as the hub of the global fashion enterprise. Supply Chain Management, fashion ERP and other enterprise systems can all be incorporated into a central, seamless, fully integrated "hub," with PLM at the center. This greatly improves productivity, profitability and product quality.

Compliance in all its many forms – vendor, product and social compliance – will continue to be an important issue, as companies must ensure that their products are manufactured safely and responsibly, and that they meet the company's quality standards. Workflows and information from compliance and quality systems should be integrated into PLM.

Companies will continue to focus on raw materials management and planning, in order to ensure accurate, cost-effective materials planning during the design phase. Once raw material commitments are in place, the PLM software should automatically execute on the plan and optimize the distribution of raw materials throughout the supply chain.

# PolyOrganize®

www.polytropon.com

## FINANCIAL YEAR 2013/14

**9**
**New Customers of RFA PLM including:**
Grüne Erde | **Samha Group** | Ottorose | **Sarah Lawrence**

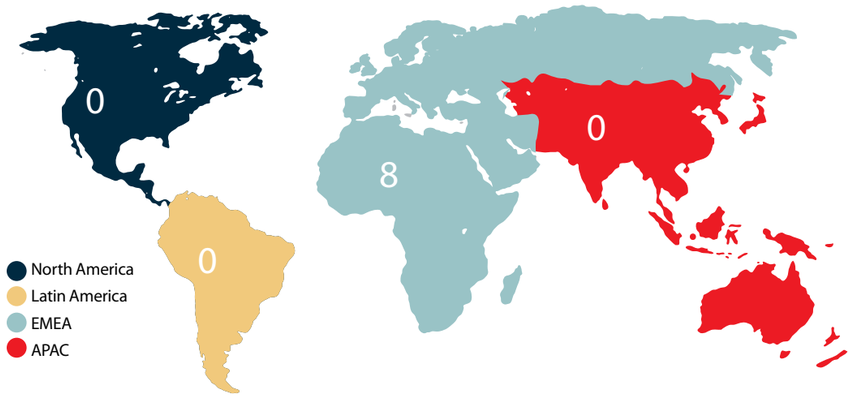
**73**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**650**
**Total number of internal users worldwide**

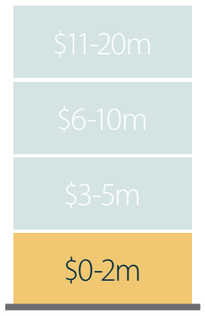
**N/A**
**Total number of external users worldwide**

**5**
**Number of resources specifically engaged in R&D**

### Total number of resources focused on the RFA industry by region:




### R&D Investment




**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.**

Driven by the practical and strategic needs of our customers, over the last year we've focused on strengthening PolyOrganize in two main areas: 1) in-depth functionality from design to delivery, and 2) multi-level information presentation and accessibility.

Supply chain planning and management features were significantly expanded to support supplier selection, evaluation, and process management from concept to delivery. PolyOrganize's already sophisticated tools for material development and production tracking have been augmented to manage the most complex styles and production scenarios. The user interface has been extended to allow flexible instantaneous on-the-fly data arrangement, filtering, viewing, and graphical feedback. Dynamic visual reporting and analysis have been enhanced to provide quick user-defined status overviews for any process. Workspaces can be customized so that every user can quickly get to a view of the data that he can act on.

**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 trends we see and the ideas driving the evolution of PolyOrganize are:

- Much of ERP functionality is moving forward to PLM, firstly because this information is now crucial to the product development and merchandising teams, and secondly because the organizational size and structure of many companies that need PLM does not justify a traditional ERP implementation.
- Improved visibility into sourcing and production is needed.
- Efficiency in data collection and propagation is central to project success.
- Analytics and decision making tools will play a central role.
- The influence of 3D virtual prototyping is growing.
- Seamless integration capabilities should be taken for granted.
- Every team member needs quick access to his own personalized "executive summary", not operational data to wade through.
- Accessible out-of-the-box PLM systems that can be customized and maintained by the non-specialist are in demand by small and medium sized companies with minimal or no IT staff.



# PolyOrganize®

KEEP EVERYONE IN THE LOOP

**COLLECTION PLANNING**
**MATERIAL MANAGEMENT**
**TIME & ACTION PLANS**
**COST SCENARIOS**
**PRODUCTION PLANNING**
**SUPPLY CHAIN MANAGEMENT**
**INVENTORY MANAGEMENT**
**VISUAL ANALYSIS**

## Get Results. Fast.

"PolyOrganize is a great Fashion PLM system. The total time from decision to our first collection in the system, including ERP integration, was 6 weeks. We now have a greater collaborative workflow and increased visibility from concept to delivery. With PolyOrganize at the core of our product lifecycle, we have the tools to evaluate and develop our strategies in terms of quality, inspiration, customer satisfaction, and supply chain."

**Jack Florentin**, *President, Sarah Lawrence*

Polytropon

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**Turkey (Istanbul):** Evren Mh. Koçman Cad. No: 54
Ziyal Plaza A-Blok B1 • 34212 Güneşli • T: +90 212 515 88 66

WWW.POLYTROPON.COM

# PTC®

www.ptc.com

## FINANCIAL YEAR 2013/14

**16** **New Customers of RFA PLM including:**
VF | **Gildan** | Cole Haan | **Carters** | Colony Brands | **David Yurman** | Volcom | **Marks & Spencer** | QVC | **Anzheng** | Toyota Motors | **Clarks** | Hanesbrand (C9) | **Crystal SAS**

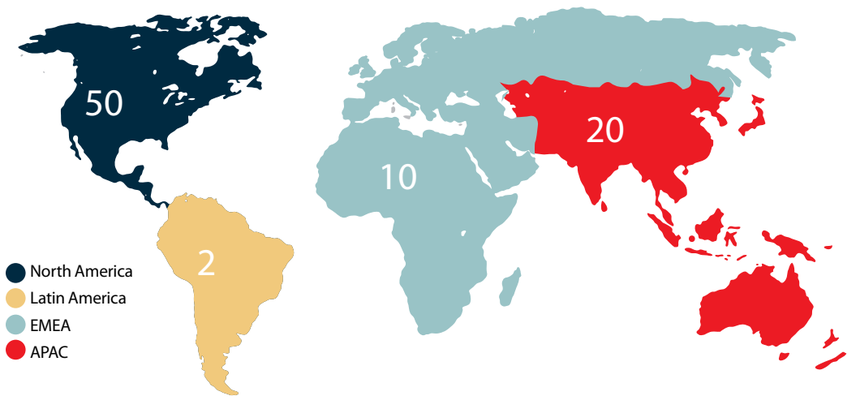
**75** **Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**53,000** **Total number of internal users worldwide**

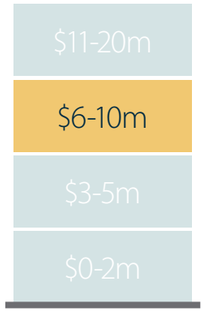
**13,000** **Total number of external users worldwide**

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

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**




**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.**

PTC continues to help Retail customers realize their business values by focusing on marrying deep Retail-specific PLM capabilities with industry best practices gained from over a decade's worth of implementations at industry-leading companies. The combination of process expertise, best practice guidance, and broad PLM capabilities is provided via PTC's Value-Ready Deployments for Apparel and Footwear. These Value-Ready Deployments were released in FY13-14. Each VRD enables customer realization of business drivers, such as lowering product cost, by providing process guidance and best practices that specify how PTC's PLM solution can be best used to achieve those drivers. PTC also delivers faster time to value by providing customers with an implementation offering called Managed Servies. This offering provides customers the option to deploy their PLM environments in a hosted private cloud that is robust, scalable, and secure - as verified by an independent security firm. This offering includes not only IT infrastructure services, but also process and implementation services. Companies using PTC's Managed Services and VRD offerings can deploy PLM in as little as 4 months.

**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.**

Consumer expectations for better shopping experiences and higher-quality products have increased dramatically the past few years. This has added pressure on retailers to differentiate themselves more than ever and focus on growing brand loyalty. PTC believes the Internet of Things (IoT) will play a key part in enabling retailers to address these challenges. IoT will transform how retailers: * Improve consumer experiences online and in stores * Optimize operations, from in-store resource management to design team collaboration to supply chain connectivity to enhanced planning/ development processes. A PLM and IoT platform capable of gathering data and analyzing patterns from a plethora of systems, devices, and sensors will provide retailers with intelligence to make better decisions in assortment planning, merchandising, product design/development, and supply chain coordination. To provide more differentiated but on-trend products, retailers will also need to incorporate ""voice of the customer"" (VOC) using innovative methods that leverage and analyze social media to predict / capitalize on trends. Incorporating VOC feedback into PLM enables better assortment planning, costing, and product design/development. Savvy consumers have increasing demands for omni-channel buying. Retailers will need internal systems that are sophisticated and integrated enough to enable channels to support each other.

TXTRETAIL
— ASSORTMENTS PLANNED FOR SUCCESS —

www.txtretail.com

## FINANCIAL YEAR 2013/14

**12**
**New Customers of RFA PLM including:**
Brums | **Callens & Clo** | Céline | **Chloé** | Diadora | **Fendi** | **Hamm Reno** | La Halle | **Louis Vuitton Malletier** | Roban's | **Staff International** | Yamamay

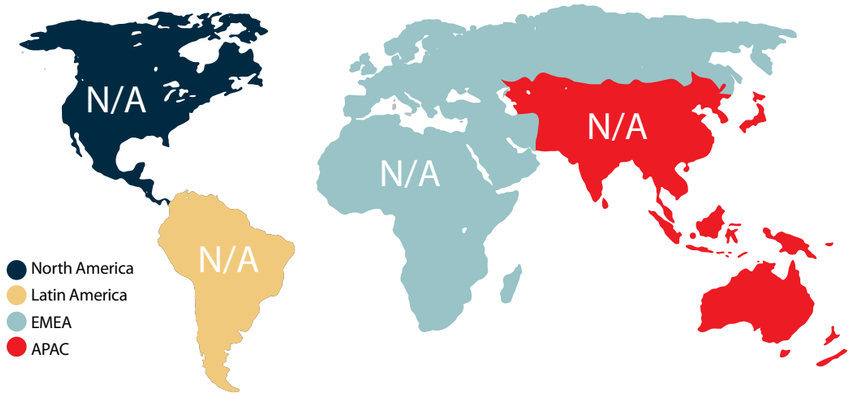
**130**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**4,500**
**Total number of internal users worldwide**

**3,000**
**Total number of external users worldwide**

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

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**


**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.**

The main differentiator of TXT's PLM continues to be the end-to-end capabilities of the solution which provides seamless integration of Core PLM functionalities such as Design, Collection Development, Costing, Quality Assurance and Calendar Management, with Sourcing and Logistics, Line and Retail Planning. All functions from Merchandisers/Buyers to Designers, Product Managers, Sourcing Managers and Suppliers work from a common understanding of the line structure, products, materials, calendars, business and strategic goals right from the start of the Seasonal Planning, easily tracked throughout the collection lifecycle.
TXT continues to work on the flexibility and scalability of the solution and to enhance our Solution Templates, which are tailored to specific business models within the Retail industry. This in conjunction with our experienced delivery team, with a proven track record with over 130 PLM customers, enables TXT to provide precise project sizing and on-time delivery resulting in low TCO.
Following the 2013 launch of TXTMobile, this year TXT used HTML5 to bring PLM to any online device, and launched Nuxie, the iPad based Sales Catalogue Management app, to generate visual catalogues, line sheets and photobooks with the latest data, in any location.
TXT have continued to strengthen their Global PLM team to provide a wealth and depth of PLM experience spanning the wide range of business models in the Fashion Retail Industry.

**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 convergence of core PLM with Retail Planning: Business models such as fast-fashion and multichannel retailing, and Sourcing trends, such as the 'Next-shoring' phenomenon, all require an integrated and agile solution to operate effectively, where planning and development are closely integrated to ensure that design, development, and sourcing benefit right from the beginning with a real tangible insight to the company's business, strategic direction and intelligence coming from the market.
Product Portfolio Management within PLM. Companies increasingly see strong value in the ability to analyse best sellers by geographies, product attributes or the most popular price points, and feed information back into creativity and development.
Frontiers between Supply Chain Collaboration and PLM are blurring. Essential to fashion companies is having visibility on quality, progress, as well as intercepting delays to gain reactivity from the supply network; advanced supplier collaboration is a key PLM initiative.
The great potential of mobile and social. Interest is in supporting business mobility at 360 degrees - share concepts through mobile, but also negotiate with suppliers, collect orders, manage your assortment. In regard to "social", strong opportunities come from the ability to understand customers better, sense and translate information coming from communities for new product introduction, assortment and portfolio decisions.



TXTRETAIL
— ASSORTMENTS PLANNED FOR SUCCESS —


# TXT Product Lifecycle Management

**Design, Collection Development, Costing, Quality Assurance, Calendar Management**

**Integrated Line and Retail Planning**

**Advanced Collaboration and Sourcing**

**Mobile technology: the right user, to the right data, at the right time**

**TXT PLM** is end-to-end. Its unique value is the ability to extend core PLM capabilities such as Creative design, Collection Development and Costing not only to Sourcing and Vendor Collaboration, but seamlessly to Line and Retail Planning.

Designers benefit from tangible insights into market demand, business and strategic goals right from the earliest phases to better "design what sells". Planners can associate visuals to the numbers, and define and specify the best assortments that "sell what has been developed".

- All functional business roles on the "same page"
- Collections that balance the creative and business perspectives
- Minimized reworking, faster time to market

INTERNATIONAL PLM CUSTOMERS 131

TXT Retail is a leading provider of end-to-end PLM and Planning solutions for Fashion, Luxury and Footwear
**For more information: www.txtretail.com**

VISUAL
2000 INTERNATIONAL
ENDZEND SOLUTIONS

www.visual-2000.com

## FINANCIAL YEAR 2013/14

**12**
**New Customers of RFA PLM including:**
**CIMA** | Bochi Brothers | **Marsylka** | Persnickety Clothing | **Cougar Shoes** | Naked Princess | **Mountain Equipment Co-op** | Pacifix | **Pentex** | Local Boys | **Hybrid** | Rogan/Loomstate

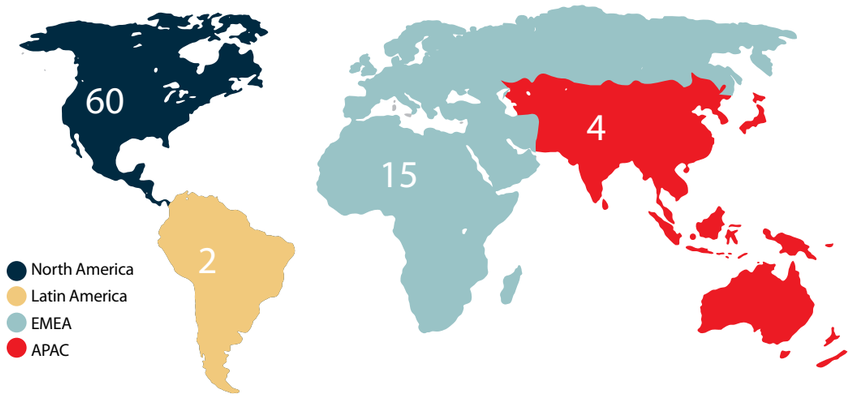
**25**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**3,000**
**Total number of internal users worldwide**

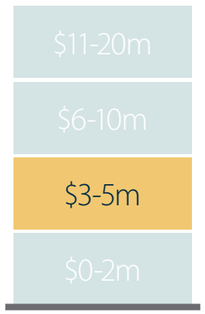
**1,000**
**Total number of external users worldwide**

**15**
**Number of resources specifically engaged in R&D**

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**




**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 PLM.net V8.0, released in January 2014, is a complete re-write of our second generation PLM.

The key areas of focus for this version were speed, scalability and configurability. Let me emphasize that Bi-Directional Ai integration, QR Code Technology, Digital Asset Management, Business Integration and Mobility received special attention throughout the process. We focused on these particular areas as customer feedback has proven them to be the key competitive advantages of our Visual PLM.net product in the RFA space. Current prospects agree that Visual PLM.net presents well with its modern user interface, its easily definable user Searches and views for quick reporting, and it's out of the box catalogs. Modules such as Range planning, Supplier collaboration and Workflow, reinforced by a fully configurable responsive mobile PLM, complete the well rounded suite and consecrates Visual PLM.net V8.0 as the best of breed enterprise solution it claims to be.

**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.**

Throughout our day to day experiences with the AFA industry on the global playing field, we can sense a welcome wind of change. The increasing rate of company consolidations, due to market downturn, will enforce synergies and accelerate a proliferation of multi-channel vendors. As a niche market end-2-end solution provider with a clear focus on AFA, we see this change as a validation of our road map. As companies become entrenched in multi-channel sales and distribution they will require more sophisticated tools to address the specific needs of each particular market they now cater to, all in a simultaneous live feed. This is a huge overhaul of the presently installed systems There is no doubt that current systems are very good at managing the area they were specifically designed for but funny enough that is the conundrum.

This changing landscape requires systems that are good at handling what all the different channels combined push their way. The sheer number of transactions that need to be compiled in order to define inventory/buy plans, forecasts and replenishment models have become so complex that "good old" Excel and specialised systems no longer suffice.

PLM has become the central player and most organisations will rely on what is now the cornerstone provider of all feeds.

WFX

www.wfxondemand.com

## FINANCIAL YEAR 2013/14

**18**
**New Customers of RFA PLM including:**
Oxford Golf | **Alternative Apparel** | Mod Bod | **Monica Vinader** | Corset Story | **Kit and Ace** | Southern Tide | **MCS** | Sonal Garments | **Just Funky** | HPI Direct | **K.Mohan & Co** | KDC | **Sugoi** | Bhartiya | **FOB Direct** | GEP | **Euro Fibres**

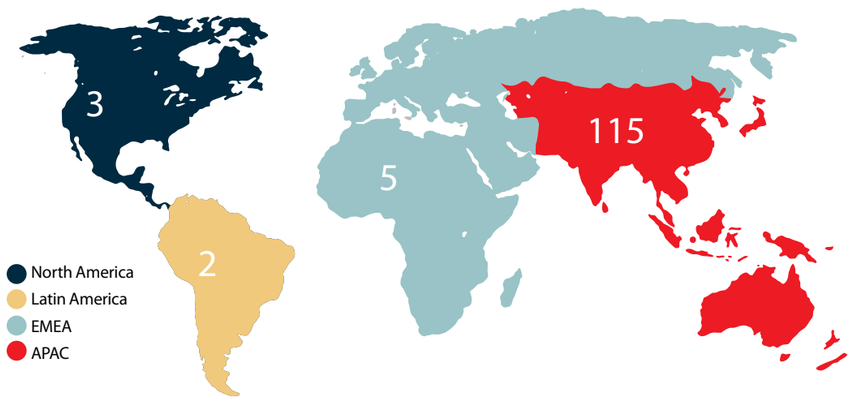
**245**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**12,000**
**Total number of internal users worldwide**

**3,000**
**Total number of external users worldwide**

**70**
**Number of resources specifically engaged in R&D**

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**

- $11-20m
- $6-10m
- $3-5m
- $0-2m

**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.**

WFX continues to be the only true Cloud-based PLM solution for Fashion. Through 2013 WFX added additional layers of configuration to the Cloud platform introducing even more flexibility for different fashion business to adopt the solution without customisation. Added ways to enhance product tracking. From collections at the planning stage to tracking products all the way through purchase, shipments and receipts. Launched a Quality Control App on the iPAD so QC teams can plan, execute and manage product inspections at factory sites even when internet connectivity is poor.

**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 increased proliferation of Cloud technologies and convergence with mobile devices continues to dominate the use of technology at the workplace. Easier information access via mobile devices and deeper integration with the supply chain. Companies are trying to further reduce the turnaround time for products and are taking active steps to connect their supply chain on-line with more visibility to production data. An increasing trend is also to enhance analytics and improving ability for data-driven decision making. These initiatives will further drive use of Business Intelligence and integrations to multiple systems.

Yunique Solutions
A Gerber Technology Company

www.yunique.com

## FINANCIAL YEAR 2013/14

**21**
**New Customers of RFA PLM including:**
Americo | **Bardot** | Filippa K | **Goang Li** | Honey Lady Intimates | **Lafodex SA** | Lardini Srl | **Lindstrom** | New Wide Garments | **Randa Swank** | Devold | **Nelly.com** | Thirty-One Gifts | **Victoria** | Wellensteyn | **Fila USA**

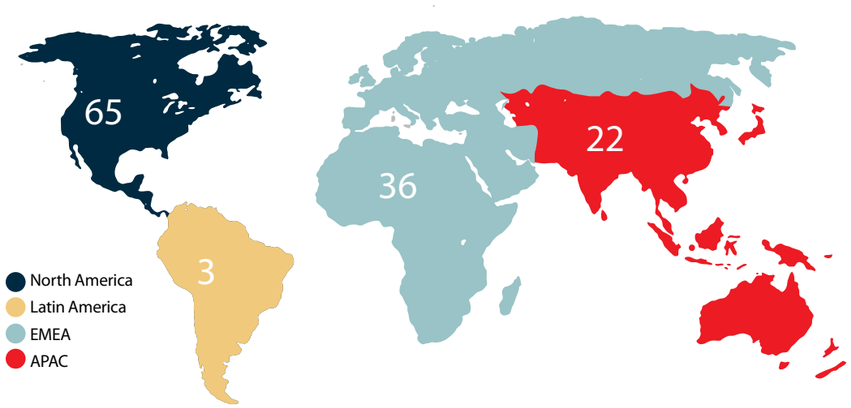
**130**
**Overall number of active customers**
of PLM within the RFA industry, excluding customers cited in 2013/14.

**22,500**
**Total number of internal users worldwide**

**12,700**
**Total number of external users worldwide**

**42**
**Number of resources specifically engaged in R&D**

**Total number of resources focused on the RFA industry by region:**




**R&D Investment**

- $11-20m
- $6-10m
- $3-5m
- $0-2m

**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.**

User adoption is everything. PLM must be easy to use, engaging and offer seamless integration with the tools that users are familiar with. We've worked hard to reduce the number of clicks by up to 80%: by doing so, businesses are able to realize increased adoption, reduced cost, and time savings. YuniquePLM accelerates style and line creation by allowing users to sync directly with Adobe® Illustrator® and have native access to complete PANTONE® color libraries. Our PowerGrid tool enables users to manage post-development activities by retrieving master data from YuniquePLM or an ERP system and extending that data with user-defined fields, calculations, validations, and roll-ups. PowerGrid effectively combines previously diverse and disconnected systems into a single-view for effective data management and visibility.

**Tell us what you believe are the most important trends shaping the near-term future of the industry – either in terms of technology or broader market forces.**

We are at an exciting inflection point as advances in automation, smart devices, material technology, and processor miniaturization continues to take hold. These transformative changes will serve to further increase visibility and bridge the dislocations between the various processes in the product lifecycle. By effectively marrying hardware with software comes the ability to monitor the real-time status of each stage from intermediate goods to final goods and, ultimately, retail.





Yunique PLM®


## Collaboration and visibility on a whole new level

Our solutions help align all of your products, financials, development, and sourcing within a single location. By combining previously diverse and disconnected processes together, decision makers have the tools to make smart business choices.

Visit us at **www.yunique.com**

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Yunique Solutions®
A Gerber Technology Company

# Consultant Profiles

**The overriding goal of all WhichPLM initiatives is to provide vendors and customers alike with the information needed to make informed decisions on the future of PLM for the retail, footwear and apparel industry.**

Despite the market's focus on PLM vendors, however, these kinds of informed decisions extend beyond simply picking a solution, and for a growing number of retailers, brand and manufacturers involve working with a host of technology suppliers and partners. Indeed, for readers at every stage of a PLM project – from shortlisting to post-implementation change management and support – the services of an independent advisor or consultancy practice are rapidly becoming as sought-after as the PLM platform itself.

**Of the PLM customers we surveyed in 2013/14, twice as many had employed a third party to assist with their process improvement.**

Of the PLM customers we surveyed in 2013/14, twice as many had employed a third party to assist with their process improvement and re-engineering efforts, and almost 20% had sought the help of an advisor or consultancy practice to develop their business case, and to track the delivery of their ROI objectives over time.

Coupled with the mounting pressures of post-implementation support and change management that face any business seeking to explore the full potential of PLM, these figures led us to invite a number of the world's leading apparel PLM consultancy practices and advisors to provide our readers with some insight into their methods, the work they have undertaken to date, and their perception of their roles within a rapidly-changing industry.

From that initial pool, we were able to secure the participation of five key consultancy practices offering services from selection and implementation, to change management, training and support. We expect, however, that our 2015 Annual Review will include several more such businesses, fuelled by an influx of new practices of varying shapes and sizes, who are being attracted by the explosive growth our industry has seen in the recent past.

Depending on their history, available resources, and industry experience, an advisor 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.

**Whatever their size, customers should exercise caution when it comes to locating a truly independent and impartial advisor.**

It is vital for customers to realise, then, that not all consultants are equal. A new apparel practice from a business that has typically focused on entirely different verticals should not be compared to a proven advisor who has catered to the retail, footwear and apparel industry for a number of years. Indeed, we believe that several renowned international firms will soon be opening apparel PLM practices, and beginning to upskill new resources. Although these expanding practices can (and often do) also hire experienced apparel PLM experts to help establish their operations, a period of years is still required to build the kinds of methodologies, tools, and process frameworks that 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. It is important for customers to make the distinction between these broad strategic services and the kind of detailed knowledge that a specialist will have of the extended product development landscape.

Whatever their size, 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 having a preference for 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 ensure that any third party they opt to work with is experienced with their chosen vendor and solution – to the same degree they are with any other vendor on their roster.

Although many of the fundament 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.

Owing to the relatively small sample size and the difficulties inherent in comparing drastically different services on a like-by-like basis, this publication does not contain any analysis 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.

As with our Vendor Profiles, the final responsibility for the accuracy of all information contained within these Consultant Profiles 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.

INTELAPHASE

www.intelaphase.com

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

Intelaphase employs subject matter experts that possess a very broad and agnostic Product Lifecycle Management aptitude and can accommodate implementation and integration services for any major PLM vendors but has a firm practice for PTC, Dassault Systemes, Siemens, Centric, Gerber Technology and Autodesk PLM 360.

**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.**

Intelaphase is a collection of the some of most influential consultants in the industry today.

Our team comprises of innovators that pioneered PLM to leading footwear companies back in 2004 that were a few of the early showcase accounts for FlexPLM. Since that time our consultants have worked with leading retail, footwear and apparel companies.

Another division is responsible for introducing the Apparel Accelerator of Dassault Systemes back in 2005 and 2008.

We are also one the first PLM teams to implement Autodesk PLM 360 cloud based solution for retailers in 2013 to support merchandise planning.

Our team brings these capabilities and talents into one group, sharing their knowledge base and functional backgrounds to benefit our customers.

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

We at Intelaphase provide a proven Product Lifecycle Management (PLM) deployment methodology for Retail, Footwear and Apparel (RFA) that brings value by presenting not only agile result driven functional milestones, but also conveying those achievements in a manner that the business understands.

Our consultants speak the language of our customers based on their years of experience in the industry, and are then able to take those terms to the PLM functional and process roadmap to create optimal return.

We are comprised of a well rounded team that is not only seasoned in specific PLM vendors capability, but also experienced in service oriented design methodologies to support enterprise requirements. We work with very small to global accounts, so we know how to respond to each and every service call with consideration. We are innovators with predictable results.

**How many RFA PLM experts do you have on a global level, and where are they distributed?**

West coast office in Cupertino, CA and our east coast office in Nashua, NH that consist of fifteen (15) PLM Retail Footwear and Apparel members. These consultants are backed by twenty (20) PLM SMEs that range from vendor specific technical backgrounds, to tech support and enterprise programming.

**What do you see as the two most important emerging trends in retail (particularly fashion, footwear and accessories) for the coming year?**

At Intelaphase we feel the two most important emerging trends regarding PLM in retail in the coming year both cater to the change in the customer's shopping experience.

First meeting the omni-channel on a new frontier with all customer retail shopping channels working together from the same database of products, prices, promotions, etc. so the customer can experience the brand, not a channel. Offering a consistent message in price and time-to-market that communicates well.

Secondly, based on this new paradigm of customer purchasing power, retailers must being able to inspire a collection and deliver a competitive product by reducing cycle time and responding at any phase in the product development and retail cycle.

Discovering an influential or a proven season is key - that is why having relevant galleries and libraries at ones fingertips with a well-oiled approval and fast track process for planning is essential to respond to these new trends in customer shopping.



**P1 / Business Level Support**
Drive business level briefs to create budget and awareness throughout the organization and company leadership.

**P2 / Technical Support**
Provide skilled technical labor to offer immediate support and full service delivery in project execution.

**P3 / Global Reach**
Through alliance partnerships we deliver a global presence and multisite governance over our entire project scope.

**P4 / innovative Solutions**
Present effective solutions for deployment for any IT enterprise; server oriented, hosted and even clouded solutions.

# Intelaphase

## Integrated

## Technology and Services for Retail and Fashion

Retail and Fashion businesses that are flourishing in today's perplexing consumer spending environment are those that are making true distinction through innovating choices like full **Product Lifecycle Management (PLM).**

The main differences that retailers are driving innovation are:

- Merchandise Introduction - Bringing inspirational and trend setting products, merchandise and services to market.
- Consumer Experience - Permitting the consumer to shop where, when and how they want to shop.
- Business Model Improvements – Presenting new business models, often leveraging advancing technologies trends and solutions.

**Put our services and offerings to the test; contact us today for a free consultation.**

**INNOVATIVE NETWORK INTEGRATION**
Successful retail solutions evolve along with the demands of the customers. Consumers now expect a personalized shopping experience. A framework that meets the unique needs and expectations of each person who walks into your store will transform your customers into loyal advocates of your products and services.

**APPLICATION SYSTEMS**
Many service providers limit their capability and effectiveness by only providing skilled labor. However, we not only deliver an ability to execute business level consultative services, we also augment with technical resources and the vertical solutions to implement an enterprise system.

IT CONSULTING | NETWORKS | SECURITY | HOSTING | CLOUD SERVICES

INTELAPHASE

20045 Stevens Creek Blvd Suite 2E, Cupertino CA 95014 | T:408.564.6364
WWW.INTELAPHASE.COM

ITC INFOTECH
Business-friendly Solutions

www.itcinfotech.com

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

Our preferred solution is PTC's suite of PLM products, which includes PTC Windchill FlexPLM - a solution for the Retail, Apparel, Fashion, Footwear and Consumer industries. ITC Infotech has delivered value to customers for more than a decade, with unparalleled implementation experience across Apparel, Footwear, Private Label, Furniture and Consumer Goods sectors on the FlexPLM platform. Our experience and domain knowledge has helped us create robust best practices and accelerator solutions on FlexPLM.

**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.**

ITC Infotech has worked with **9 Fortune 500 Retail companies** and multiple **global apparel & footwear brands** including:

- A direct marketer and specialty retailer of outdoor recreation merchandise, 2009
- A leading American off-price retailer of apparel & home fashions, 2011
- A global consumer goods conglomerate headquartered in New York, 2011
- A US based leading running shoes and apparel company, 2013
- A UK based subsidiary of the world's largest retailer, 2013
- A French high end clothing manufacturer and global retailer, 2013
- A French multinational company that specializes in luxury retail, 2013

We are also **co-developing** technology based IP and best practices based solutions **with PTC** to complement the core FlexPLM product.

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

ITC Infotech delivers business value beyond PLM implementations and we guide customers throughout their PLM journey. We support our customers post the deployment of their PLM system through our structured Support services and provide organizational change management (OCM) services and train our customers to help them adopt PLM faster.

ITC Infotech also offers niche solutions built on FlexPLM:

- Style Performance Analytics – Enable smarter decision making by predicting fashion
- Material Aggregation – Unlocks hidden insufficiencies in material sourcing
- Factory compliance & product safety
- Vendor Scorecard
- Mobility Solution - Approve tasks, upload pictures, mass approve/reject samples on the fly via mobile app
- Accelerator kits for Apparel & Footwear
- Product Order Commitment & Tracking
- Migration Loaders - Faster, efficient and less expensive migration

**How many RFA PLM experts do you have on a global level, and where are they distributed?**

ITC Infotech has more than 200 consultants distributed across North America, Europe and Asia Pacific. 20% of ITC Infotech consultants are seasoned process experts from the industry.

ITC Infotech also brings a strong focus on business process consulting – our Process Consultants have 5-20 years of experience in the Retail, Footwear and Apparel domain and their understanding of the industry enables identification of product white spaces and development of best practices. We also have the largest number of PTC certified FlexPLM consultants who have inside out knowledge of product, technology and processes.

**What do you see as the two most important emerging trends in retail (particularly fashion, footwear and accessories) for the coming year?**

To remain on the cutting edge fashion retailers and brands must be nimble in order to adapt quickly. During the first wave of PLM, basic product development processes were enabled through PLM to ensure products reach consumers on time. Over next couple of years, companies in the RFA sector will look at PLM as a system that could provide an intelligent view into buyer's preferences, past sales data and use them to drive product development decisions. ITC Infotech has taken a lead and developed a solution called "Style Performance Analytics" that extracts style sales data from ERP and combines it with product information from PLM to give retailers an in-depth analysis of the performance of their designs and thereby churning out winning styles.

Another noticeable development that would impact the RFA industry is the rapid change in the nature of global sourcing. Sourcing has become more complex than ever. Cost of labour has been rising in traditional sourcing destinations. Compliance of vendors is going to be equally critical. And ability to win in this industry will largely be dependent on how well the companies integrate their sourcing process into product development. PLM would be at heart of the end to end supply chain that organizations will enable with suppliers and factories becoming part this extended enterprise.



ITC INFOTECH
Business-friendly Solutions

# INTELLIGENT INTERACTIVE IMMERSIVE

## Innovative retail solutions to unlock business potential

**On time. On budget. On trend - with PTC's FlexPLM solutions**
ITC Infotech is a leading provider of PTC's FlexPLM services. The company has designed and delivered robust solutions for some of the largest Retail, Apparel and Footwear (RFA) companies across the globe, enabling them to derive sustainable value from their PLM and extended PLM systems.

**Drive customer acquisition, retention and delight - with Customer Experience Management (CX) Solutions**
ITC Infotech's cloud enabled Customer Experience Management Solutions have empowered retailers to identify and segment their most profitable customers and win and retain them through digital marketing and Loyalty programme management.

**Create an interactive and immersive in-store experience - with ITC Infotech's mobile customer recognition and engagement solution**
ITC Infotech's mobile solution for retailers, helps you create an unobtrusive yet enjoyable experience for your customers, identifying, recognizing and engaging them through omni-channel mobile based recognition technology.

**For more information write to contact.us@itcinfotech.com**
**or log on to www.itcinfotech.com**

# 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 innovation and product development process for retail, footwear & apparel (RFA) clients. Our services span a progression from PLM assessments, to strategy, to requirements definition and selection, to implementation planning and execution. These services can be delivered independently or with a strategic PLM solution partner. We are vendor agnostic and work with any PLM vendor that best suits our client's needs. In RFA PLM we have collaborated with Oracle, PTC, Dassault, Centric and TradeStone based on market fit and demand.

**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 publically share client names. At Kalypso, our team has conducted over 100 PLM implementations across numerous industries. More specifically, we have helped numerous RFA clients tackle significant PLM issues and opportunities, including:

- Multi-year, multi-brand, global PLM transformation for $3B+ apparel & accessories manufacturer/retail
- Multi-year, multi brand, global PLM transformation for a $70B+ do-it-yourself retailer
- PLM transformation for a $3B+ apparel and hardlines catalog retailers
- PLM transformation for a $50B+ national grocer
- PLM transformation for an international quick service restaurant operator
- PLM Assessment, process design, selection for a $15B+ discount department store
- PLM Assessment, requirements definition and selection for $800MM+ direct-to-consumer retailer
- PLM Assessment, requirements definition and selection for $1.5B home shopping retailer

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

We help RFA clients develop dramatically improved, scalable and sustainable capabilities throughout the merchandise and product development lifecycle in order to become more innovative and differentiated in the market. We do this by developing vision, strategy, justification and roadmaps; by operationalizing these strategies into efficient processes and organizations; and by enabling them through industry leading technologies. We are particularly valuable to clients who are seeking to transform their product development capabilities by making significant improvements to process, technology and organization simultaneously. Tactically, we work at the client site, side by side with key executives and PLM vendors. In addition, we employ proprietary, industry-specific methodologies and tools, such as databases for requirements, use cases and business cases, process models, a best practices continuum and our Rapid Results implementation methodology.

**How many RFA PLM experts do you have on a global level, and where are they distributed?**

We have built a strong team of professionals to serve our retail and consumer clients. We staff our projects with a combination of dedicated RFA and cross-industry professionals. Approximately half of our 200+ professionals have served on at least one RFA client engagement, with a core set of 35+ professionals regularly serving our RFA clients. Our RFA experts have backgrounds as executives in the RFA industry, as industry professionals in prominent consulting firms and as professionals in leading PLM solution providers. They are located across North America and Europe.

**What do you see as the two most important emerging trends in retail (particularly fashion, footwear and accessories) for the coming year?**

- Realizing the promise of building world class store brand / private label programs, brands and merchandise.
- Prioritizing, managing and executing investments in the rapidly evolving marketplace for product development related technologies.

PRODUCT DEVELOPMENT PARTNERS

www.pdplimited.com

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

Vendor Agnostic.

**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
Voice/Gresvig Sports - 2012/2013 - Lawson
Build a Bear - 2013 - Centric
Kwintet - 2012 - Gerber
Marsylka - 2014 - Visual 2000
Seasalt - 2014 - Visual 2000
Tally Weijl - 2014 - Centric
Webster Holdings - 2010/2011 - Visual 2000
Country Road - 2010 - Lectra
Atlas Design - 2011 - Lawson
OSC - 2012 - Visual 2000
SRG Apparel - 2011 - Visual 2000
Veldhoven - 2009/2010 - Lawson,
Amongst many other clients over the years, who would prefer not to be publicly disclosed.

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

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.

**How many RFA PLM experts do you have on a global level, and where are they distributed?**

PDP has a core team of 5 industry experts, and operates with a network of freelance industry experts located in UK, India, South East Asia, and North America.

**What do you see as the two most important emerging trends in retail (particularly fashion, footwear and accessories) for the coming year?**

Ethical and Sustainability - ability to know where and how a garment has been produced and its environmental impact not only in its creation but also in how it should be cleaned right up until the day it is disposed of - Cradle to Grave. Social Media - feedback and input along with mobile applications allowing the interaction with customers and getting them to provide information on requirements, trends and design details - what they like and what they don't like.






www.ptexsolutions.com

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

We are a vendor agnostic company, and have experience of implementing Gerber, Freeborders PLM, Lawson Fashion PLM, and 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 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)
- Gini & Jony (India - 2007)
- Madura Fashion & Lifestyle (India - 2008)
- Colorplus Fashions (India - 2009)
- Peacock (UK in 2009)
- Weissman (USA in 2010)
- Club 21 (Singapore in 2010)
- Steve Madden (USA in 2011)
- Big Strike (USA in 2012)
- Courtaulds (UK in 2013)

And 10 others that are not subject to public disclosure.

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

With a decade long service in PDM and PLM for RFA, Ptex Solutions have been involved in 22 PLM projects that are Retailers, Brands, Sourcing, Manufacturing, Apparel and Footwear companies. Ptex is a software services company that focuses only in Retail, Footwear and Apparel space.

Founder, Prasham Kamdar's association with the fashion and textile industry goes back several decades, due to his family business of garment manufacturing. He therefore understands the importance of having a team with domain experts. At Ptex, Business Consultants have education qualification from Fashion Institutes and or have the background of prior work experience in RFA. This has allowed Ptex to develop PLM implementation methodology that incorporates industry best practices and addresses customers' requirements.

**How many RFA PLM experts do you have on a global level, and where are they distributed?**

We have a team of 25 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 and Hong Kong.

**What do you see as the two most important emerging trends in retail (particularly fashion, footwear and accessories) for the coming year?**

One of the most profound paradigm shifts that the retail industry is facing in current times is the gradual transition from brick and mortar retail to e-commerce and now finally m-commerce. Analysis of the retail sector shows that digital sales via e-commerce and m-commerce are the current game changer. There are new retailers that being born and in short space of time they are becoming dominant retailers.

These e-retailers go above and beyond the brick and mortar retail and provide alternative to ready-to-wear apparel by offering Make to Measure and Make to Order innovative business for example creyate.com, threadless.com and riptapparel.com

With the growing use of smart phones and tablets the retailers can cater to customers on-the-go that make informed purchase and in-pulse purchase. Data can collected from digital sales allows understand the consumer behavior and their buying patterns. Based on that customized offers and promotion campaigns can be carried out.

With evolution and revolution in retail, the solution providers will have to provide software solutions that support changing multi channel retailing.

# Market Analysis 2014

**Despite the obvious ROI potential of PLM – something proven time and again in the market at large, and validated by our yearly end user surveys – it has been common for retailers, brands, manufacturers, and even PLM vendors and analysts to underestimate not just the product, but the size of the market itself.**

For many years, WhichPLM has analysed the PLM market for retail, footwear and apparel: our high level market research started in 2010, and in 2013 a formal market analysis framework was adopted in order to dispel these common misconceptions. Working from only partial information, other analysts had urged caution (as well as dramatically undervaluing the size and scope of the market) for years, creating a marketplace where retailers and brands who faced real challenges in this area would shy away from a potential solution to many of the pressures affecting their businesses.

We, on the other hand, have always exercised the greatest care in obtaining, cataloguing, collating and analysing the widest possible range of data pertaining to the RFA PLM market, year on year. The market analysis we premiered in 2013 was, for the WhichPLM team and for adopters of PLM, a vindication, since it confirmed our 2012 prediction that "extremely stable foundations [would] underpin considerable growth in the very near future". In fact, last year's analysis demonstrated that RFA PLM market performance had exceeded even our expectations to the tune of $150 million in the financial year 2012/13, denoting a market worth more in a single year than other publications had given it credit for from its inception to date.

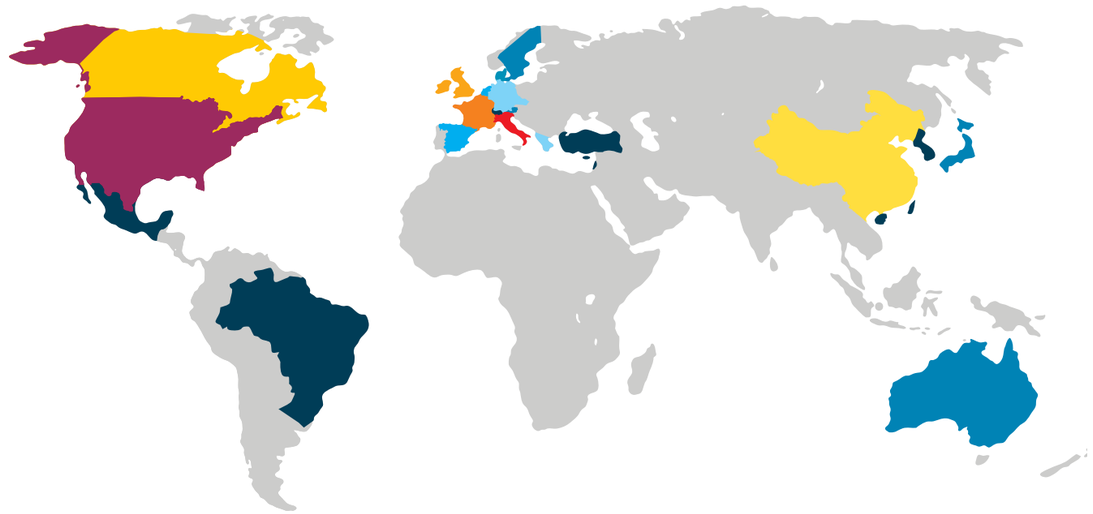
Our 2013 market investigation, then, was a proof of concept – a demonstration that the PLM industry for retail, footwear and apparel deserved scientific analysis. Customers and vendors alike had suffered because our industry – in totality and year on year – was so routinely undervalued, and here at WhichPLM we sought instead to empower both sides of the equation with access to the facts.

This year we have taken everything readers valued from our 2013 market analysis, and improved on it in multiple ways, as well as adding entirely new facets to our evaluation work. In 2014 our analyst team pushed back hard against suppliers more than ever, disputing the inflated sales information that was in some cases submitted, so that we were able to arrive at the soundest possible data from which to draw our conclusions. Over the coming pages we have analysed the RFA PLM market geographically, financially, in terms of market penetration, customer perception, marketing, total cost of ownership, untapped market potential, and looked more generally at which forces are affecting the market's present, and which will drive its future.

In order to properly quantify any market, a central metric must be chosen. When we began our first market analysis in 2013, we faced the question of how to qualify and quantify the performance of an industry where much of the qualifying information and quantitative data is hidden from the public eye.







| | |
|---|---|
| USA | 39.5% |
| Italy | 12% |
| France | 6.5% |
| UK | 6% |
| Canada | 5% |
| China | 4% |
| Norway | 3% |

| | |
|---|---|
| Germany | 2.5% |
| Greece | 2.5% |
| India | 2.5% |
| Netherlands | 2% |
| Spain | 2% |
| Australia | 1.5% |
| Austria | 1.5% |

| | |
|---|---|
| Japan | 1.5% |
| Romania | 1.5% |
| Sweden | 1.5% |
| Belgium | 0.5% |
| Brazil | 0.5% |
| Denmark | 0.5% |
| Hong Kong | 0.5% |

| | |
|---|---|
| Lebanon | 0.5% |
| Mexico | 0.5% |
| South Korea | 0.5% |
| Switzerland | 0.5% |
| Taiwan | 0.5% |
| Turkey | 0.5% |
| Total | 100% |

A number of potential metrics – numbers of new seats sold, overall revenue generated – were discounted because the vast majority of vendors are unwilling to part with that information, leading to an analysis within which a significant portion of the essential data is masked. We settled instead on centring our analysis around the most publicised and most easily-contrasted quantum year on year: new customer names signed by each vendor. Although some of these, too, are typically hidden from the public, WhichPLM has fostered strong relationships with every vendor that appears in this year's publication, and we were granted access under non disclosure to the names of those private customers in order to verify the figures submitted.

As well as providing us with strong data on which to build our geographical, customer tier, and cost analyses, selecting new RFA PLM sales in the financial year 2013/14 also provides our readers with insight into the broad direction towards which each supplier is tailoring their offering.

The choice of new PLM sales as our primary metric, however, means that the WhichPLM team must be extremely clear as to what constitutes a new sale, which dates comprise the period 2013/14, and where the lines between PLM, PDM, and E-PLM are drawn. Readers are invited to turn to our extensive glossary in order to better understand our definitions of these terms, since several of them will be key to understanding the analysis that follows.

In 2013, our market analysis focused on two distinct goals: the examination of intelligence from the financial year 2012/13, and the creation of a more accurate estimation of the overall value of the PLM market for retail, footwear and apparel to date. We have already set out the circumstances that gave rise to the latter, but since we no longer feel that the PLM industry has anything to prove – that myth having been shattered to the tune of $2.9 billion – the focus of these pages, and the annual review as a whole, will remain firmly on the analysis of the RFA PLM market in 2013/14.

This decision was galvanised by the desires of our readers, many of whom – being retailers, brands and manufacturers of all shapes and sizes – make their own decisions year on year, season in and season out. For them, the greatest value lies in understanding as thoroughly as possible the market into which they are entering, as it was at the close of the fiscal year 2013/14.

Readers should note too, that despite the fact that WhichPLM is based in the UK, we have long been a global publication with truly international perspectives. And in recognition of this, these pages (and indeed this publication as a whole) continue to adopt the US Dollar as a standard currency for ease of communication and comparison.

Finally, prior to beginning our analysis in earnest, the WhichPLM team must thank every retailer and brand who took part in our 2014 end user survey, providing us with the information to not only build the most accurate market analysis possible, but to truly understand the impact of this year's growth – for better and for worse. The team also extends its thanks to those vendors who contributed accurate information on the progress of their PLM solution and broader business. Combined, these perspectives have allowed us to again assemble a truly unique summary of the RFA PLM market, its major players, and its overall direction.

**The RFA PLM Market in 2013/14**

In 2013, we stated that PLM may have "reached critical mass in a wide array of territories". Although this was meant as an indication that wide adoption had begun, even this proved to be an under-estimation in light of the figures

## Dead Ends on the PLM Upgrade Path

The ascendency of OOTB deployments has been driven at least in part by savvy supplier marketing to new PLM customers, but a growing number of these sales (and indeed sales of PLM in general) have come from existing customers of PLM toolbox solutions for whom the possibility of upgrading their current solution has all but disappeared.

To the uninitiated this may sound ridiculous - and this is not necessarily an invalid conclusion – but it is important for both existing and prospective PLM customers to understand exactly why these retailers and brands face the difficult outcome of shutting down their current toolbox PLM solution and starting over.

Although some PLM vendors do work extremely hard to build a smooth and robust upgrade path today, the way that PLM solutions were deployed in the past – the "toolbox" method – led to a situation where most PLM solutions were tailored to each customer's needs so extensively that they might as well have been entirely bespoke. Because of this, expectations from the consumer space (the move from Windows 7 to 8, or OSX 10.8 to 10.9) cannot be applied to legacy PLM implementations, since the numbered version paradigm has in some cases been abandoned.

To better understand this, consider a PLM implementation at the headquarters of an early adopter, perhaps ten or twelve years ago. The software that retailer bought may have been titled PLM Version 1, but by the time the extensive customisation was completed, it might better have been called Retailer's PLM Version 1. Over time, as the main software branch continues to develop through to PLM Version 4, elements of that new functionality might have been adapted to fit into Retailer's PLM Versions 2, 3 and 4, but at each juncture that functionality will have been customised so comprehensively that it resembles bespoke development. In this scenario, although the retailer's own customised version of the software may have kept pace with industry progress, with each iteration it has drifted further and further away from the main upgrade path – to the extent that it may not even be recognisable any longer as being based on the latest GA solution the vendor is selling.

The time then arrives at which the cost of conducting upgrades to Retailers PLM Version 4 become so prohibitive that starting anew – switching back to the main software branch with a new OOTB deployment – becomes a more compelling and cost effective option. In our experience, some customers have paid millions of dollars for a single upgrade step due to the widening gulf between their customised toolbox and the main software branch. This sort of exorbitant cost is something very few retailers or brands would consider sustainable in the long term, which is where the attraction of a customisation-light OOTB replacement comes from. Migrating to the latest version of the core solution is important for the on-going ease of maintenance, not just taking advantage of technological advancements, and for the benefit of additional functional capabilities.

Today, tailored solutions are still being implemented within larger businesses, whose needs are so idiosyncratic that no "one size fits all" solution would accommodate them. Increasingly, though, these alterations are being conducted through clear and transparent configuration rather than customisation, allowing these personalised deployments to remain on the vendor's upgrade path.

that have emerged from this year's market analysis. Our previous estimations put the expected growth at slightly higher than average – around 15% - when in fact the sales figures we analysed this year revealed an overall industry growth rate in the period 2013/14 of more than 19%.

Readers should note that, in accordance with the inclusion criteria set out in our introduction to this year's Vendor Profiles, these growth figures are based only on the information provided to us by suppliers who were able to participate in this year's Annual Review. Taking account of potential sales by the twenty or more vendors who did not meet our inclusion criteria – or who opted not to take part – we expect that the percentage growth may actually be higher.

When growth outstrips the predictions of even industry experts, the natural question becomes: why? What market forces – internal, external, geographic – can account for such strong deviation from even informed expectations?

Our analysis suggests that in fact no single factor is responsible for the rapid and unprecedented expansion of the PLM market for retail, footwear and apparel, and in addition to presenting the raw data from which we draw our conclusions, these pages will now focus on analysing some of these market forces, and attempting to extrapolate from them to make informed predictions for both the near and longer-term future of our industry.

One of the primary catalysts for this increase in PLM adoption appears to have been the increased availability of Out Of The Box (OOTB) solutions – sales of which dominated this year's statistics. These deployments – which are variously named depending on the vendor in question, but which all focus on the delivery of relatively rapid value with configuration not customisation – have proven to be extremely attractive to two specific subsets of the overall RFA PLM customer base:

Businesses seeking to replace what we refer to as "PLM toolboxes" – extensively customised platforms up to a decade old, and for which the upgrade path is either closed or prohibitively expensive.

New PLM users drawn by the touted reductions in implementation time, the comparatively low cost of ownership, and the potentially rapid return on investment.

PLM – for these customers and others across the market - has now become essential to the smooth running of any business that depends upon product innovation to meet changing consumer needs. Our research suggests that PLM is now considered to be as important to the IT strategy of business enablement though package adoption as warehouse management, supply chain or ERP.





| | 2013 percentages | 2014 percentages | Difference |
|---|---|---|---|
| Australia | 11.0 | 1.5 | -9.5 |
| Austria | 0.5 | 1.5 | +1 |
| Belgium | 1.0 | 0.5 | -0.5 |
| Brazil | 1.0 | 0.5 | -0.5 |
| Canada | 2.0 | 5.0 | +3 |
| China | 1.0 | 4.0 | +3 |
| Denmark | 1.0 | 0.5 | -0.5 |
| France | 5.0 | 6.5 | +1.5 |
| Germany | 8.0 | 2.5 | -5.5 |
| Greece | 0.0 | 2.5 | +2.5 |
| Hong Kong | 1.0 | 0.5 | -0.5 |
| India | 2.0 | 2.5 | +0.5 |
| Italy | 5.0 | 12.0 | +7 |
| Japan | 2.0 | 1.5 | -0.5 |
| Lebanon | 0.0 | 0.5 | +0.5 |
| Mexico | 0.0 | 0.5 | +0.5 |
| Netherlands | 4.5 | 2.0 | -2.5 |
| Norway | 0.0 | 3.0 | +3 |
| Romania | 0.0 | 1.5 | +1.5 |
| South Korea | 0.5 | 0.5 | 0 |
| Spain | 2.0 | 2.0 | 0 |
| Sweden | 0.0 | 1.5 | +1.5 |
| Switzerland | 2.0 | 0.5 | -1.5 |
| Taiwan | 0.5 | 0.5 | 0 |
| Turkey | 2.0 | 0.5 | -1.5 |
| UK | 13.0 | 6.0 | -7 |
| USA | 31.0 | 39.5 | +8.5 |

The growth of the industry in 2013/14 cannot be accounted for just by customers attracted to a new kind of solution or a replacement for their outdated deployment. To understand the ways in which the RFA PLM industry has developed this year, we must look at who bought PLM at several more granular levels – beginning with geographical distribution.

At the highest possible level, regional divisions between PLM new name sales in 2013/14 can be demarcated as follows:

**The Americas accounted for 45.5% of all sales.**

**Europe collectively was home to 43% of all sales.**

**The Asia-Pacific region played host to the remainder, with 11% of all apparel PLM sales.**

Turning to examine regional sales in greater detail, the heatmap accompanying this analysis shows sales by country as a percentage of the total new name sales of PLM to the retail, footwear and apparel industry in 2013/14. While the table alongside this paragraph compares these sales percentages against the same countries from 2012/13, and arrives at an incremental difference (whether positive or negative) over the intervening twelve month period.

As the data demonstrates, as a rule of thumb the regions in which PLM sold well last year saw continuity between 2012/13 and 2013/14. Notable exceptions to this trend were Norway, Mexico, Romania and Greece: none of these territories was represented at all in our 2012/13 sales figures, suggesting that potentially these markets are beginning to become receptive to the PLM message.

Conversely, present in last year's sales figures but entirely absent in 2013/14 were New Zealand, Russia, Sri Lanka and Bangladesh.

This being said, the growth of the Asia Pacific territories to 11% of all apparel PLM sales in 2013/14 is indicative of a trend that vendors and analysts have long predicted: the maturation of domestic retailers and brands in the Asia Pacific sub-continent and throughout other former manufacturing strongholds.

Although this may not appear to be a significant market share (an increase of 2% in total over the Asia Pacific regions last year) it is now apparent that larger retailers and brands throughout Asia are turning to PLM to support the territories' broader transition from manufacturing to the creation of their own brands. From a PLM sales perspective, these organisations might previously have been considered "spokes" – conurbations of external users – allied to a "hub" sale to a number of internal users in the western world. From this year onwards, however, we predict that retailers and brands in these regions will become seen as "hubs" in their own right.

Socio-economic forces such as the rise in minimum wages and the increase in consumer spending power have been the major catalysts behind the ongoing expansion of PLM into Asia, but it is also important to remember that infrastructure developments have (and will continue to) opened the potential of PLM to a growing number of countries.

Previously, without effective connectivity and the rollout of what the Western world considers to be basic technological infrastructure, it would have been impractical for a remote factory to have strong, reliable web access, let alone own several licenses for PLM. Improvements in these areas have increased opportunities for international collaboration, and also allowed the early adopters amongst the new brands in these regions to begin taking advantage of PLM.

Although some of them fall outside the scope of this publication, we understand that Centric Software, Lectra, PTC, WFX and Yunique Solutions (Gerber Technology) have made sales in Asia - specifically China - which is an encouraging statistic, and an opportunity that we believe will continue to flourish as the nature of domestic and international manufacture changes over the next twelve months and beyond.

## Domestic and International Manufacture in 2014 and Beyond

Very few regions of the world have all the natural, human, and infrastructure resources required to design, source, manufacture and sell products in a way that is both efficient and cost effective, although certain aspects of this maxim are beginning to shift. Territories in which it is cost effective to make garments, footwear and accessories, for example, have historically not been considered as target markets for those products. Similarly, regions with a predominantly affluent population – interested in luxury items, and possessing the disposable income to acquire them – very seldom retained a manufacturing industry or workforce that allowed for the construction of those products within reasonable margins.

Today, however, these two extremes are becoming more balanced. China, for example, is host to both a growing super-rich list as well as some of the poorest people in the world, allowing it to serve as both garment manufacturer and consumer. And this is a trend that we see becoming mirrored in a number of other regions that have previously been known only for their production and manufacturing industries, as well as the reverse taking place in consumption-only Western territories that are now re-embracing domestic manufacture.

Despite this, retailers and brands must still by necessity manufacture products where the raw materials and labour required are most cost effective, and sell them where the identified consumer has the money to buy them and engage with the brand. This remains the essential business model of the retail, footwear and apparel industry. As a consequence, adopting a global mindset is a requirement of modern product development – even where those products are sold exclusively in domestic markets. As a retailer or brand, although your own products may be sold in tens or hundreds of countries – even those where they were manufactured – your headquarters are likely to remain geographically disconnected from the bulk of these operations.

In 2014, most apparel and footwear products worldwide are manufactured in China, the E.U. 27, India, Turkey, Bangladesh, Vietnam, Korea, Pakistan, Indonesia, South America and other emerging regions in Africa . Indeed, despite the growth in domestic consumption, the Chinese textile industry still accounts for a significant percentage of all global apparel production, much of it conducted by third-party manufacturing partners working on behalf of brands in the USA, UK, Scandinavia and mainland Europe.

Textile manufacture in the United States, as a counterpart, reduced significantly (to $13.5 billion in 2012) in the latter part of the 20th Century, a trend that was replicated in much of the western world. Once the seats of the textile industry, since the latter part of the twentieth century, fair labour practices and material costs have rendered domestic manufacture in the USA and Europe prohibitively expensive, leading to a massive increase in outsourcing of manufacture to the aforementioned territories.

This trend, however, has now begun to reverse – complicated by the dual production / consumption status of regions like China.

In the USA, the White House has publicised initiatives intended to return domestic manufacture to its position as a unique selling point, including tax breaks and new expense rules for investment in US-based infrastructure, plants and equipment. This has led to the creation of a "proudly made in America" movement, with marketing-savvy brands using the cachet of domestic manufacture as a unique selling point. By no means exclusive to the United States, other countries are beginning to follow suit, driven by the demands of consumers who are increasingly critical of the supply chain processes of the brands they follow.

Similarly, empowered by growing standards of living, infrastructure improvements, increased wages and spending power, manufacturers in those traditional low-cost strongholds have already begun to shift their emphasis to the creation of their own private label products and domestic brands. This creates not only competition between domestic and foreign brands, but has also prompted Western organisations to begin to seek out new manufacturing partners in the dwindling numbers of regions where labour remains inexpensive compared to western labour rates.

### About Our Tiers

Throughout this section and elsewhere in this year's publication, we refer to customers as falling into four distinct "Tiers" – including an additional one that was not used directly in last year's Annual Review. In a market where PLM sales to the middle and lower portions of the spectrum are growing at an increasing rate, it is important to differentiate – especially for the purposes of market estimations – between a sale to a large, multinational, multi-billion-dollar organisation and one to a single territory boutique brand. For the purposes of revenue and license quantity analysis alone, the former sale will likely be worth substantially more than the latter, and it is only possible to build fair and reasonable market estimations when these disparities in value and size are taken into account.

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 revenues in excess of $10 billion, and are typically multinational organisations.

#### Tier 1

With revenues of between $1 billion and $9.9 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 up to $499 million.

**Please note:**

While only three tiers were used in last year's WhichPLM Annual Review, we have always tracked the actions of Tier 0 customers, but opted in previous publications to include them in Tier 1 rather than enumerate them separately. This year, a quest for greater granularity has led us to list Tiers 1 and 0 individually, but readers are asked to remember that some reductions in Tier 1 sales may be accounted for by this separation, rather than sales performance within that portion of the market. This change has no effect on Tiers 2 & 3.

Tier 3 has also been expanded from last year's baseline inclusion criterion of $30 million in revenue and upwards, and now includes any customer with revenue up to $499 million. This change was made to reflect the fact that smaller companies than ever before are now adopting PLM – in many cases with revenues below our original inclusion threshold. This growth in the lowest end of the market has been partly driven by the enhanced financial attractiveness of the subscription model approach.





PLM market growth for the apparel industry will, however, not be confined exclusively to developing economies, as evidenced by the United States and Europe continuing to drive a considerable majority of new name sales this year.

For further analysis on the potential for future regional growth (and conversely contraction) please refer to the box labelled "Regional Potential for the Future."

In order to truly understand the shape of the market in 2013/14, though, this section will now go on to examine not just where these sales occurred, but who they were to. And although we cannot name them all publically, there is valuable insight to be gleaned from separating all of this year's new PLM customers into Tiers.

By subdividing the market in this way, we are able to see not just where in the world PLM sales took place, but to what size of organisation: Tier 0, Tier 1, Tier 2, or Tier 3. For descriptions of these tiers, please refer to the box labelled "About Our Tiers" in order to better understand where the divisions between customers of different sizes fall.

| | Sales percentage in 2012/13 | Sales percentage in 2013/14 | Incremental Difference |
|---|---|---|---|
| **Tier 0** | 3% | 9% | +6% |
| **Tier 1** | 7% | 13% | +6% |
| **Tier 2** | 29% | 5% | -24% |
| **Tier 3** | 61% | 73% | +12% |

The most notable change between the figures we saw in 2012/13 and the data we collected this year occurred in Tier 2, where the total share of overall sales fell considerably. Uptake of PLM amongst the other three tiers, however, remains strong.

Readers should note that we have normalised the figures between Tiers 1 and 0 for 2012/13, so as to better reflect the comparative difference between those statistics and the data we collected in 2013/14. And although the growth of the uppermost tier is certainly suggestive of another wave of multinational retailers and brands adopting PLM, we should caution smaller companies against attempting to follow too closely in the super tier's footsteps.

While the likes of Adidas, Nike and Walmart are able to apply considerable pressure to their chosen vendor (potentially monopolising research and development), they will invariably look only at a diminishingly small pool of PLM suppliers – those with strong financial stability, a growing global network of resources, and flexibility in their long-term partnership potential. Smaller retailers and brands should not ignore either the specialised, mid-tier vendors who might suit their requirements, or the mid-market solutions that are today provided by larger vendors, tailored for the needs of smaller businesses.

Separating this year's customers of RFA PLM by tier also affords us the opportunity to build an extremely accurate picture of the overall size of the marketplace itself. The following table sets out the itemised costs of acquiring PLM in 2013/14, and allows us in turn to accurately calculate the overall size of the PLM market for RFA.

**Legend for below table**

- Per user license costs are based on an equivalent, traditional licensing model, and do not take account of subscription /cloud deployments.
- Service days includes only supplier days which the customer pays for – total costs and time could potentially be much greater when internal costs and hardware upgrades are factored in. Last year's research suggested a ratio of two to one in man days of internal resource compared to external.

| Item | Tier 0 (14 sales) | Tier 1 (19 sales) | Tier 2 (8 sales) | Tier 3 (113 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) |
| **Total seats this year:** | 28,000 (comprised of 10,500 internal, and 17,500 external) | 11,400 (comprised of 3,800 internal, and 7,600 external) | 2,400 (comprised of 800 internal and 1,600 external) | 8,475 (comprised of 5,650 internal, and 2,825 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 |
| **Total license costs this year:** | $19.25 million | $13.3 million | $2.6 million | $12.7 million |
| **First year maintenance (as a percentage of software license costs):** | 18% | 20% | 17% | 15% |
| **Total maintenance this year:** | $3.5 million | $2.7 million | $0.4 million | $1.9 million |
| **Typical number of service days to conduct implementation:** | 2,000 man days | 600 man days | 300 man days | 100 man days |
| **Total service days this year:** | 28,000 | 11,400 | 2,400 | 11,300 |
| **Typical service costs per day:** | $1,750 per day | $1,500 per day | $1,250 per day | $1,000 per day |
| **Total service costs this year:** | $49 million | $17.1 million | $3 million | $11.3 million |

**Taking this spread of information into account, it becomes possible to arrive at a total size for the RFA PLM market in 2013/14 as follows:**

| Cost | Tier 0 | Tier 1 | Tier 2 | Tier 3 | Total |
|---|---|---|---|---|---|
| **License costs** | $19.3 million | $13.3 million | $2.6 million | $12.7 million | $47.9 million |
| **Maintenance costs** | $ 3.5 million | $ 2.7 million | $ 0.4 million | $ 1.9 million | $8.5 million |
| **Service costs** | $49.0 million | $17.1 million | $3.0 million | $11.3 million | $80.4 million |
| **Composite Total** | $71.8 million | $33.1 million | $6.0 million | $25.9 million | $136.8 million |

***These figures provide us with a total market size for the new name RFA PLM market in 2013/14 of $137 million, rounded up to the nearest whole million.***

Readers should note that this year's market size analysis focuses exclusively on the total cost from the PLM supplier. It is important to remember that for every dollar spent here, a further $2 on average will be invested by the PLM customer – spent on internal implementation resources, hardware, and rollout to the extended global supply chain. Bearing in mind that this analysis also excludes extended PLM solutions, whole-industry estimations would place the figure much higher – potentially approaching $400 million for the period 2013/14.

As the itemised figures by tier show, average license costs are substantially discounted at the super tier based upon volume licensing. Similarly, costs at the lower end of the market, in Tier 3, are also tailored to create a more attractive prospect for smaller businesses without the capital their larger counterparts have to invest in enterprise projects.

The itemised figures also reveal the stark difference between the revenue that a PLM vendor can potentially generate from a large, Tier 0 sale as compared to a sale to the lower end of the market. Despite only comprising a tenth of the customer numbers, the super tier generated close to three times the revenue of Tier 3 in 2013/14, demonstrating just how lucrative a potential market these multinational organisations can be for the right PLM vendors.

While our estimates are based on composite averages from several years' worth of PLM market analysis and hands-on consultancy work, one significant disparity appeared between those averages as presented here and the information we gleaned from our research in 2013/14.

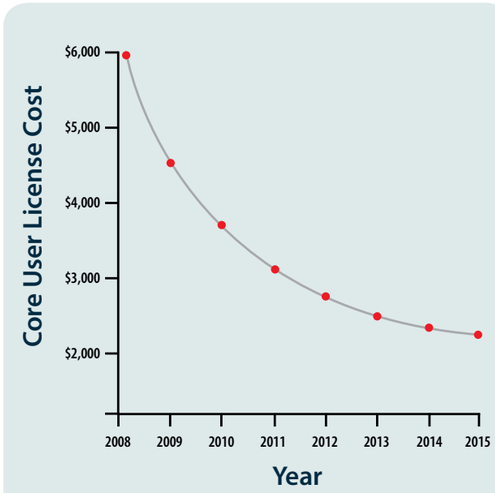
Our experience suggests that the ratio of internal to external users should typically be in the order of 1:2 or potentially 1:3, reflecting the spread of PLM across the extended supply chain, where it would be implemented at external partners and agents, enabling smoother collaboration.

This year that ratio was actually reversed, and the data reveals an actual ratio of 2.26:1 in favour of internal users. This strongly suggests that many of the customers who have recently adopted PLM have only gone as far as to implement its functionality at the headquarters level, rather than extend its potential across the global supply chain as we would suggest. This is partially due to deferring the purchase of external users that are not typically required in the initial phases of the roll out process.

Another difference in ratios – although this time a positive one – lies in the changes underway to the relationship between software costs and service costs.

In previous years we have identified that the ratio of licensed user costs to implementation service costs was 1:3. We are happy to report based on user survey data that the transition from the toolbox model to a customisation-light deployment approach has reduced that ratio to 1:2. Readers should remember, however, that hosted deployments will distort this model somewhat, and that these are becoming increasingly popular with the smaller Tier 2 and Tier 3 customers, where a preconfigured approach is more acceptable.

Also tied to this reduction in service days and improvement in configurability is a drop in software license user cost itself over time – something that is often credited with helping to reduce the overall cost of ownership of PLM, but that we believe has coincided with a commensurate increase in module cost.

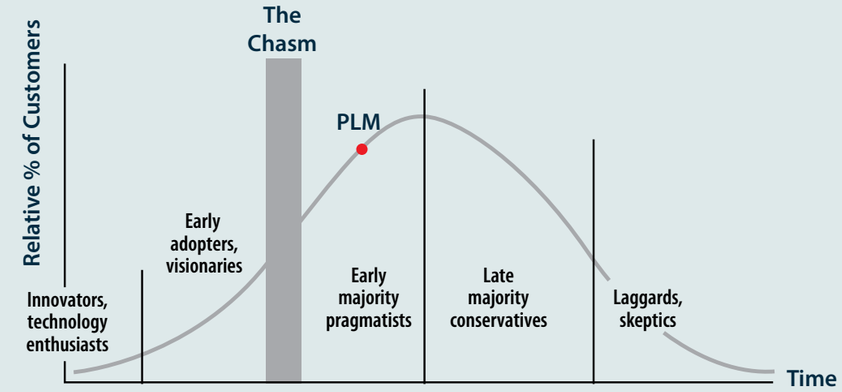



**Core license cost is defined as the price an average customer of PLM pays to obtain a single, named read / write user license to use core PLM software modules. It is one of the simplest metrics by which total cost of ownership (TCO) can be judged, and reductions in this cost are often cited by vendors and analysts as helping to lower the 'barriers to entry' of PLM. While WhichPLM does acknowledge that core license costs have decreased substantially within the past decade, it is important for prospective PLM customers to remember that module cost – the price of additional software modules that the average customer is required to purchase in order to have a complete solution – has risen over the same period of time, meaning that the TCO of PLM is almost certainly more static than the market at large expects. It is critical that customers compare like for like solutions, including all required modules, when analysing their TCO.**

Now that we understand the location, shape and size of the RFA PLM market in 2013/14, where does that leave us, as either vendors or customers? In terms of market penetration, customer perception, and general performance (beyond the financial level), where exactly does PLM sit when compared to other large enterprise solutions?








*The 'crossing the chasm' concept originates with Geoffrey A. Moore – further information can be found in his book of the same name.*

"Crossing The Chasm" is a term coined by Geoffrey A Moore, in his book of the same name, which attempts to analyse the process of marketing and selling high-technology products. In essence, crossing the chasm refers to a product making the transition from visionaries and early adopters to bulk adoption by the early majority, after which more general market forces begin to apply. There are strong parallels to be drawn between his cycle of customer desire over time and the forces we see acting upon and driving the PLM market for retail, footwear and apparel.

Broadly speaking, PLM (then PDM in many cases) was originally taken up by the most innovative retailers and brands, who went on to invest a great deal of themselves in shaping the future direction of their chosen solutions – so much so that these initial visionaries can be said to have been instrumental in bringing product lifecycle management technology to the attention of more risk averse (but nevertheless experimental) early adopters, spurring on the addition of even more apparel specific processes and functionalities. This second wave of PLM were typically to brands who were au fait with the idea of using technology to optimise their product lifecycles, but who lacked the resources and financial clout to deploy a solution that was as yet unproven in terms of its raw functionality.

The "Chasm" of Moore's high-technology selling process lies between early adopters and what he also refers to as "early majority pragmatists", which is to say those members of the general population who the technology in question will help achieve a specific goal. Applying that same logic to the ingress of PLM into the apparel industry, we observe parallels between Moore's theory and our reality in the transition from enthusiasts to early adopters – the latter of whom sought out PLM with a clear understanding of what it could do for them, functionally speaking.

It was at this point that PLM crossed the chasm. Early adopters were beginning to show compelling benefits from their adoption of PLM – reduced cycle times, improved margins, clearer collaboration, reduced data duplication and redundancy. Those retailers and brands who represent our pragmatists were able to assemble clear businesses cases for their own PLM projects, driven by informed return on investment analysis, and supported by a number of their peers who had previously achieved returns on their initial investments within the broad timeframe they had predicted.

Today, WhichPLM believes that PLM has crossed the chasm, and is beginning to ascend the slope to where we might see peak adoption rates on a global basis. In previous years we have occasionally referred to PLM as being functionally incomplete, or at least lacking in some of what we consider to be the essential processes and capabilities. In 2013, however, our Annual Review explained that customers could now shop for PLM with confidence, safe in the knowledge that a set of core competencies could be assumed of all major PLM vendors.

PLM – as sold by key vendors - was at that point considered to be a complete product, capable of delivering against its promises, and already in the hands of both early adopters and the more forward-thinking members of the broader community. And things have only progressed since then: the growth and integration of E-PLM solutions and the use of PLM as an enterprise backbone for extended integration and data consolidation have created a situation whereby PLM is rightly considered a true enterprise solution, like ERP – something that is evidenced by the significant market growth seen in 2013/14.

**2014 to 2015**

In the 2013 Annual Review, our analysis closed with estimations of market growth by tier, and an average predicted market growth rate of 15%. As the data presented in these pages demonstrates, our expectations fell short of the reality, with considerable untapped potential still being demonstrated in both the upper and lower echelons of the market – in practice, only Tier 2 suffered any significant deviation from our expectations.

In 2014/15, we believe a number of factors will contribute to a market growth potential in the order of 20% worldwide.

This analysis has already mentioned the growing number of retailers and brands who are seeking to replace their overly-customised toolbox PLM deployments with new, OOTB solutions, but beyond this reservoir of potential growth is also another significant potential market for PLM.

By our estimations, there are approximately five thousand PDM solutions installed globally – Gerber Technology's WebPDM and Classic PDM; Infor's Runtime, Lectra's Gallery, Investronica's PMWeb, Karat's PDM system, TXT's ModelForm, A.I. Style Manager, Koppermann PDM and more - all of which are well beyond their potential to deliver true value to a modern apparel business. These are customers who are educated to a good degree about the potential benefits of product development technology, and who will now be fast approaching the limitations of their current technological environments and will need to upgrade to a modern PLM solution that offer greater benefits than just PDM.

This represents a market that PLM vendors need to address as rapidly as possible – particularly where they were also the supplier of the original PDM solution. While some have taken steps to provide a clear upgrade programme, others have provided a date by which the legacy PDM application will be "sunsetted", by which date customers will either be

## Regional Potential for the Future

| | |
|---|---|
| **Australia** | The most dramatic downward swing in this year's figures, Australia showed a market share decline of close to 10% year on year. Although the country has seen strong sales over a number of years, our insight suggests that its potential may be almost depleted for the Tier 1 and 2 businesses, although we expect to see slowing but continued growth in the Tier 3 market |
| **China** | Each year, China is predicted to be the next major apparel region – not in terms of manufacture, but consumption and, eventually, technology sales to emerging domestic brands. Our 2014 figures show a steady progression in China's percentage share of overall PLM sales, and intelligence from outside the scope of our 2013/14 sales analysis suggests that existing large retailers and new, emerging retailers and brands in the territory are beginning to lead a charge that may result in dramatic market growth potential in the not too distant future. |
| **France** | Although the French market for apparel PLM increased only incrementally in 2013/14, we believe one of the major drivers behind its continued growth to have been the luxury market – a trend the country shares with its Italian neighbours. As is the case with Italy, we expect to see increases in PLM adoption by mid-market retailers and brands for whom PLM will soon become a key initiative. |
| **Germany** | Although Germany boasts Europe's strongest economy and a number of technology vendors catering to the RFA industry, our 2013/14 figures show a precipitous decline in PLM sales by percentage share of the overall market – one that is second only to Australia's. This suggests that the German market may for now have reached saturation point - at least at the Tier 0 and 1 levels, although there remains plenty of scope in the mid-market. This also reflects the release of pent-up demand that was initially catered to when a group of competing vendors entered the market two years ago. |
| **Greece** | Amidst a period of economic strife, Greece was entirely absent from our PLM sales figures in 2012/13. With the country now making its presence felt in this year's data, there may be potential for further expansion as Greece works to stabilise financially. |
| **Italy** | Examined through the lens of its percentage share of overall apparel PLM sales in 2013/14 versus the same quantum in the previous year, the Italian market for fashion PLM has doubled in size. This is due to swift and sudden uptake amongst luxury businesses. We expect to see other sectors of the market prove equally receptive in the coming years, and we are confident that these mid-market retailers and brands will follow in the footsteps of the luxury sector |
| **Scandinavia** | This year has also shown growth across Scandinavia in PLM adoption, which is expected to continue, driven by mid market adoption. |
| **Spain** | Although our 2014 figures suggest continuity, broader market insight suggests that the Spanish Tier 1 and Tier 0 apparel PLM market may be approaching saturation point. We expect, however, to see continued growth in Tiers 2 & 3. |
| **United Kingdom** | In the ascendency last year, the UK's share of overall apparel PLM sales declined by almost half in 2013/14. Intelligence from outside the scope of this market analysis, however, suggests that large-scale adoption by leading retailers will generate significant interest amongst Tier 1, 2 and 3 businesses in the coming years. |
| **United States** | The USA continues to dominate apparel PLM sales, seizing the lion's share of the market in 2012/13, and increasing that lead by close to 10% in 2013/14. A buoyant retail industry coupled with domestic brands uniquely receptive to technology continue to create an extremely fertile market for RFA PLM – something we predict will not change in the near future. |



guided through a transition to buying that company's PLM product, or no longer be supported. On the opposite side of the coin, some vendors of PDM have not yet admitted to a "sunsetting" policy, and continue to define their outdated, end of the road PDM systems as active and viable products for today's marketplace. If not addressed swiftly, this will lead to increased friction between vendors and long standing customers.

Just as separating 2013/14 sales by region enabled us to better understand the shape of the market today, our predictions for the future of the RFA PLM market are also tailored by territory, with recommendations based not only on the data collected this year, but from our ongoing experience of conducting introspection, supplier evaluations, shortlisting and selection projects on a global basis.

Further to this regional analysis, in a broader geographical sense we expect to see greater uptake in external user licenses in the near future as implementations move to advanced collaboration and connectivity, enabling dynamic communication with first and second level supply-chain partners. Concurrent to this, we predict that improvements will be made quite rapidly to the workflow and collaboration modules of many PLM solutions, facilitating phased implementations that begin with the retailer or brand's headquarters, before percolating out to the full spectrum of supplier, vendors, factories and agents. Examples of these improvements to the solutions themselves may include: tighter security, more seamless access, improved ease of use, and potentially standardisation, taking account of the fact that most factories and supply chain partners work with multiple retailers and brands, each of whom may operate a different PLM product.

With this goal in mind, we expect that an increasing number of customers will begin turning to these more capable solutions for their international collaboration needs, buying larger volumes of external licenses as they realise the true value they provide – reducing re-keying and data duplication, mistakes, assumptions and helping to drive even greater returns on investment than a static, headquarters-only implementation or even half-way supplier portals.

Driven by this desire to fulfil the collaborative potential of PLM, we expect the internal to external user ratio to normalise in 2014/15 towards a more typical 1:3 as early adopters of the supply-chain-wide strategy begin to demonstrate benefits to their counterparts who have thus far only deployed PLM at a local level. This is one area where our chosen focus on new name PLM business may not accurately reflect the changing patterns of adoption and roll-out, and readers should be aware that the addition of new external users to an existing customer is an area of revenue that is essentially hidden from our analysis – and one that would prove difficult to validate.

Although we only expect so much change in the course of a twelve-month period, an examination of the longer-term future also presents some opportunities for retailers, brands and vendors to change how PLM is deployed.

**Market Forces – 2015 to 2019**

This analysis has covered the typical PLM upgrade path (as well as how easy it can be for a retailer or brand with good intentions to wander away from it) and explained the potential market growth that may come from "replacement" sales. This is something that has solidified our decision to use new customer sales as our primary method of analysis, since we expect that the coming three to five year period will be characterised more by new PLM sales than it will by upgrades that may potentially be hidden from scrutiny.

This being said, the longer term future may see hosted and "cloud" deployments beginning to impact the upgrade paradigm, minimising or eliminating upgrade costs in the process due to a complete lack of bespoke customisation and standardised configuration.

Marketed on their lack of customisation, the OOTB solutions that have already begun to dominate PLM sales this year will, we predict, come to replace all legacy PDM solutions entirely within five years. Those PDM products, by that stage, will have been effectively abandoned by their parent companies, and despite any promises to the contrary, no retailer or brand operating PDM today should expect their solution to be maintained, serviced or supported by 2019. Indeed, we are aware that many such solutions already lack support for the latest revisions of popular operating systems, exposing their users to undue risk as the very environments in which they run cease to receive security patches and support.

As a corollary benefit of this large-scale transition from legacy PDM to OOTB PLM, we will continue to see customers of all shapes and sizes achieving potentially significant savings by moving their initial configuration and on-going maintenance in-house, and eliminating their reliance on vendor technical services teams.

While minimising upgrade and configuration costs is one goal, we also expect some software developers to properly target the next major cost of PLM implementation over the next few years: integration and interoperability.

Our experience of working with multinational brands (some of whom employ in excess of fifty different software solutions in and around the product development area) suggests that the end goal towards which developers should be working is the creation of an "enterprise hub" or neutral integration backbone. Vendors who understand the industry are already beginning to map the inputs and outputs of common solutions, and are working to transform integration itself from bespoke middleware development to the deployment of a configurable integration platform that supersedes all point-to-point direct integration. Some vendors are already working to achieve this – for ERP, CRM, E-Commerce, PLM and E-PLM – and will enable their customers to achieve true, 360-degree intelligence, with reactive and responsive dashboards that collect information from across the entire I.T. infrastructure and allow key stakeholders to make informed management decisions in near real time.

**Market predictions 2014/15 by customer Tier**

| | |
|---|---|
| **Tier 0** | 14% |
| **Tier 1** | 22% |
| **Tier 2** | 25% |
| **Tier 3** | 20% |
| **Overall** | 20% |

In addition to our forecasts for the coming twelve month period, we also predict that the coming five year period will be characterised by accelerating sales across all Tiers. Growth in Tiers 0 and 1 will be less significant than in the lower ends of the market; although some organisations have yet to take the plunge on product development technology at all, many more are as ready as their smaller counterparts to replace legacy toolbox deployments with solutions better suited to the rigours of modern retail.

We predict the largest growth potential rests in Tier 2, where the bulk of new adoptions will take place, galvanised by PLM's penetration into the mass market. Slightly reduced growth (but increased competition) should be expected in Tier 3, driven by perceived reductions in the total cost of PLM ownership.

It is important to remember, however, that we do not expect the tiers themselves to remain static: over the next five years we will continue to see retailers and brands migrating across tier boundaries. Today's Tier 1 American retailer may become 2018's Tier 0 multinational, and breakout brands may ascend through the tiers rapidly in accordance with consumer demand.

And as for the proverbial chasm, we expect that all of the "late majority" will have joined the throngs of PLM users within this same five-year bracket – by the end of which it will have become increasingly rare to encounter a PLM skeptic.

# THE FUTURE OF PLM

**In the closing pages of the WhichPLM Annual Review 2013, we predicted that the financial year 2013/14 would be characterised by pragmatism – by new, strictly goal-oriented PLM adoptions from retailers and brands for whom the immediate and pressing needs to reduce cycle times and product costs, and work more quickly and efficiently far outweighed the longer-term possibilities.**

These, we expected, would be organisations facing stiff competition from their peers who had already embraced technology. And although the promise of revolutionary developments like three-dimensional design would not be alien to these customers, they would by necessity take a back seat to more urgent priorities – challenges like fast fashion, escalating consumer demand, and the mounting pressures and associated costs of international design, development and manufacture.

We are happy to report that many of the PLM sales that took place in 2013/14 appear to have been out of the box deployments targeting precisely the kind of low tier customer that stood to gain the most from taking a proven, practical, and focused approach to adopting PLM. That these sales were also accompanied by strong growth in the upper echelons of the market suggests, however, that a healthy number of larger businesses managed to balance this short-term strategy with a simultaneous focus on their future.

So, twelve months on, do we still believe that a grounded, practical focus is the right way for the average prospective customer of PLM to approach the market? Or has the time come for retailers and brands new to PLM to think not just about what it can do for their next two seasons, but how it can help to lay the foundations for their longer-term digital futures?

We do still advise any prospective or new customer of PLM to be pragmatic and goal-oriented in their approach, but in 2014/15 and beyond we believe their focus should (and will) shift away from being purely software-centric - moving to a wider perspective that takes in the whole-business impacts of their investments in technology.

Since WhichPLM was founded in 2008, our own perspective on the PLM industry for retail, footwear and apparel has shifted in a similar way. Originally we wrote often about the business imperative that is adopting PLM as an end in itself: preparing the business, picking the right solution, implementing it according to apparel-specific best practices, and avoiding the pitfalls of looking too far ahead. Today, though, our team will very rarely look at software in isolation – whether that's in the analysis you'll find in this year's Annual Review, our ongoing Supplier Evaluations, our advisory services, or even our routine discussions and updates with the industry's key vendors.

As the people perhaps closest to the pulse of PLM for fashion, we now believe that the product itself – the fine detail in the PLM picture, if you will - has matured to such a degree that the wider industry context in which it's prepared for, selected, and deployed should be given equal weight to the platform itself.

So whether you're a software supplier, and analyst, or an end user, the future of PLM will be all about the broader canvas.

As a result, in 2014/15 and beyond, forward-thinking suppliers will continue to place greater and greater emphasis on the more qualitative aspects of their offerings. End to end solutions packages; expert resources in the territories that matter; a clear roadmap; the true scope of integration; their implementation expertise. For modern PLM vendors, the software will be rarely spoken of in isolation, and instead the focus will shift to these previously secondary aspects – the things that will differentiate them from their competitors in the eyes of increasingly informed customers for whom core functionality has taken something of a back seat.

As an industry, we have already begun to examine PLM this way - as just one constituent part of a larger whole - and at WhichPLM we believe this elevated perspective is something that will help to create the future of PLM for retail, footwear and apparel. With core capabilities all but assumed, the coming years will see robust and flexible software deployed as simply as possible, with minimal customisation and a dramatic reduction in costly, dead-end, bespoke development. With the majority of customers able then to remain on a smooth upgrade path, this will allow the industry as a whole to begin unlocking the greater potential that resides in considering PLM's place within both the broader enterprise and our collective digital future.

The market analysis contained in this year's Annual Review has already made a case for PLM having "crossed the chasm" from early adoption to broad market penetration, but equally important to this shift in awareness will be a commensurate change in the way PLM is actually perceived. Beginning in 2014/15, PLM will no longer be thought of simply as powerful software (illustrated by strong capabilities in data consolidation, collaboration, process efficiency and more) but rather as an enabler – a tool with which retailers, brands and manufacturers can carve out their own paths to digital transformation.

But like any paradigm shift, the transition from just buying, implementing and using PLM, to truly leveraging its potential will require effort – and not just on the part of its creators and vendors. Speaking generally, PLM as a product might be functionally complete, but are tomorrow's businesses prepared to get the most out of it?

In other words, PLM may have progressed far enough to have crossed the chasm, but has the average customer's mindset evolved with it?

The term "digital transformation" is gaining a great deal of traction as a way of packaging something quite ephemeral – the idea of growing from an "analogue" business to one that thinks and acts digitally - but it is by no means a new idea. We have previously referred to the same concept as the "PLM ideology", which was our own attempt to pin down the complex task of using the right solution to its fullest, and making it a fulcrum around which the entire business can pivot in the direction of its long-term future.

For WhichPLM, a digital transformation requires two concrete things: a change in mindset, closely coupled to enhancements to business processes enabled by a change in technological environment. That environment is where PLM comes in, serving as the backbone of a modern, interconnected enterprise, but the mindset itself is something that can only come from within, empowered by cultural change, business intelligence and a more acute understanding of the modern world.

A digital transformation is not a project with a finite end point. It is not at task that we can call complete once we have bought and used the right tools – any more than a home redecoration ends after we purchase the paint, open a pack of brushes, and brighten up a few rooms. There is considerable untapped potential in both of these scenarios – the difference between a near term goal and an all-encompassing transformation. In our analogy, the layout of entire floors could potentially be altered and a grander design realised with much the same toolset we began with; and in the case of a PLM project, an implementation designed to allow collaboration at the headquarters level only could be expanded to include the entire global supply chain without significantly varying the equipment we purchased at the beginning.

The trend for stopping short of this goal, however, is demonstrated in earnest in the results from this year's end user survey, and it's that tendency for retailers and brands to "buy PLM and implement PDM" that we believe is now changing, since it originated from an outmoded mindset rather than an inherent problem with PLM itself.

**Whether you sell hundreds of new products in a rapid seasonal calendar, or a small line of luxury items comprised mainly of carry-overs, it's vital to remember that your consumer already thinks digitally.**

A true digital transformation, then, might begin with a PLM project that steps outside this limited way of thinking. Exporting a static PDF and issuing it to a supplier on another continent, then awaiting physical samples – the way the process has probably worked within your organisation for many years - is certainly still possible with a modern PLM solution, but thinking digitally would lead the same brand to purchase external user licenses in order to collaborate seamlessly with those same suppliers instead, reducing cycle times, costs, and environmental impacts in one fell swoop.

And that extension of PLM through digital-first planning and execution isn't limited in its scope to just on-boarding supply chain partners. With in-house designers and marketing teams sharing common digital assets, existing ways of working can be transformed, ensuring that the designer's original inspiration arrives intact at the point of sale, or the time when the consumer first engages with the product – which as we'll see may even be prior to it physically existing.

Our contributors have written in detail this year about the potential for 3D technology and supply chain transparency to redefine the brand / consumer relationship, but it is important to remember that the future of that engagement is both digital and bi-directional. Retailers and brands can already leverage their social media audiences in order to obtain feedback on their existing and future collections, but by thinking digitally in the future, these same organisations can use distilled and directed versions of the resulting data to inform their designers' and merchandisers' work on future products.

Whether you sell hundreds of new products in a rapid seasonal calendar, or a small line of luxury items comprised mainly of carry-overs, it's vital to remember that your consumer already thinks digitally. He or she is seeking out new ways to participate in your brand lifestyle and identify with your products, enabled by technology, and they expect the brands they love to share that mindset.

As catchy and pervasive a term as it has become, the concept of digital transformation did not originate in a marketing department – in our industry or any other. It is without doubt a movement that will sell systems, but it is not one devised by the system vendors themselves. Instead, the steady migration from single software installations to holistic digital transformations has been galvanised by the maturation of consumer technologies, ubiquitous global connectivity and a concurrent shift in expectations on the part of both shoppers and future hires.

For the consumer arriving at your stores or e-commerce portals today, the world is already interconnected and intuitive. Smartphones, smart watches, cloud backups, common user profiles, offline working and synchronisation – these are all areas in which consumer grade technology led the charge towards broad adoption. And for the student in the final year of his or her fashion design qualification, the expectation is that the enterprise environment they enter will be as user-friendly, social, seamless and enabling as the ecosystems they interact with in their personal lives.

This is an important gulf. If we, as retailers and brands, hope to sell to an educated, technology-savvy consumer with omni-channel expectations, our enterprise environment must measure up. And similarly, if PLM vendors intend to meet the exacting expectations of a new generation of designers, merchandisers and marketers, they must be able to demonstrate clearly how their solution can underpin the unified product development environment they will expect to encounter upon entering the workforce.

So, in 2015 and beyond, that sort of unification will rise rapidly through the priority ranks when educated retailers, brands and manufacturers approach the PLM marketplace. Many leading brands have already begun to extend the scopes of their PLM implementations, linking the nodes across their potentially vast networks of E-PLM solutions, and conducting data cleansing and consolidation exercises that will facilitate the re-use rather than the recreation of digital assets.

Much has been made this year of the "internet of things" – a decades-old concept that is only now finding traction, since the technological infrastructure is now in place to do it justice. A better name for it might be "ubiquitous connectivity", since the definition suggests that the future of all industry will be characterised by smart (which is to say "data generating") devices, end products, and systems.



In the simplest terms, any industry that produces products must consider what happens when the lifecycle of those products extends beyond the point of sale. Up until recently, useful data and intelligence could only feasibly be generated by devices of a certain size - smartphones and above – but the advent of wearable technologies provides us with a glimpse into a near-term future where essentially any product can communicate how and where it is being used. The challenge for the retail, footwear and apparel industries will be to make this data meaningful – to incorporate it into both their cyclical product development processes and their ongoing consumer engagement strategies.

This proliferation of connectively, though, is not limited to products. Solutions that might yesterday have operated in relative isolation – the proverbial "silos" of product development - will soon be connected to an integration hub or enterprise backbone, exchanging common master data with other previously-disconnected software suites to create the system-to-system future – the quintessence of a digital transformation.

Approaching this future will also require retailers, brands, and the solution vendors that cater to them to consider the way that PLM is actually chosen and implemented. With a growing number of business looking to OOTB solutions for either their first steps towards digital transformation, or as a replacement for a legacy platform, we believe the next three year period will represent a tipping point for PLM implementations that mirror the simplicity of the solutions themselves. As more businesses become aware of the distinctions between configuration and customisation, the industry will crest a tipping point where cloud installations and management deployments are concerned, bringing us closer to a future where upgrading PLM, rather than being a multi-million dollar exercise, may become as invisible to the end user as progressing from one version of Adobe's Creative Cloud software to another.

Liberated from conducting time intensive customisation in-house, customer I.T. departments will then pursue the "system to system" interconnected future in earnest, working to integrate the full spectrum of their product development solutions into a system-agnostic enterprise backbone – embracing their roles as environment architects rather than system administrators.

And, freed from the need to conduct all-consuming bespoke installations, we predict that PLM vendors will begin to develop new experiences in both core and E-PLM: comprehensive digital asset management (DAM) functionality; regional compliance modules; business intelligence and social media analytics; as well as plug-in or bi-directional integration between a host of CAD, CAM and bill of labour solutions in order to develop true synthetic costing capabilities.

The potential for expansion and improvement in the future – in an "ecosystem" or "application marketplace" world – is potent, and if we extrapolate these possibilities a little further, it's easy to see how today's bleeding-edge technologies will be employed to create tomorrow's revolutionary experiences.

Imagine if lifestyle photoshoots could have their lighting, composition, and even the colourways of the products themselves changed in real-time, without reshooting? What if retailers and brands were able to pose digital models in real-world environments (complete with accurate global illumination) and conduct virtual photoshoots on demand for the social media audiences? And all of this using garments, footwear and accessories that don't yet physically exist.

**A digital transformation is not a project with a finite end point. It is not at task that we can call complete once we have bought the right tools.**

Similarly, picture a world where consumers can "try on" future design ideas in-store using virtual mirrors – something that is already possible with relatively rigid products like bags and watches, using consumer-grade technology like Microsoft's second generation Kinect camera. Assuming the shopper parts with their details, the brand in question could then leverage its integrated systems architecture to provide him or her with updates to the product's progress through the design cycle, and personalised discounts when they later enter a store equipped with NFC tags or iBeacons. What better method can we envision of fostering consumer engagement than democratising and personalising the product design and marketing processes?

This is the world of three-dimensional digital working, enabled by the creation of high-fidelity 3D assets as early as possible in the product lifecycle – assets which can then be reused by interconnected systems (sharing a common set of master data) at every stage from sampling to point of sale – the embodiment of thinking digitally.

Having seen the RFA PLM market grow by an unprecedented 19% (our most conservative analysis) in 2013/14, we expect that these distinct possibilities and desirable goals for the future will spur on growth on an even larger scale. The relative ease of deployment, coupled with the addition of exciting new functionality will likely conspire to produce market growth of as much as 25-30% year on year, comprised of continued growth in the upper tiers as well as potentially hundreds of new businesses in the small to medium sector embracing the potential of PLM.

The experience-focused approach will define the future of PLM, then, at both ends of the customer Tier spectrum - in 2015 and in the three-to-five-year period that follows. With the chasm crossed and solutions approaching a consistent standard of functionality, PLM is poised to get creative, and to facilitate inspiration, experimentation, engagement, and yes, digital transformation in all its forms.

# 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 publication, readers will find those industry acronyms and common terms used or alluded to by both our in-house team and this year's pool of feature contributors. While we have made every attempt to define these where they first occur, the nature of the WhichPLM Annual Review 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.**

### 2013/14

Each WhichPLM Annual Review represents a retrospective look at the year that has gone before it. Our 2013 publication, released late that year, examined trends, market analysis, topics, events, end user feedback and more – all originating from or pertaining to the fiscal year 2012/13, while the publication you hold in your hands contains the same content, but from the financial year 2013/14. WhichPLM defines a fiscal year as beginning 1st April and ending 31st March of the following year, so when we refer to "2013/14" we mean the period from 1st April 2013 to 31st March 2014 rather than both full calendar years.

### CPM

A short transitional phase between PDM and PLM (between 2000 and 2003), standing for Collaborative Product Management. These solutions bolted additional collaborative functionality onto the capabilities of PDM, but fell short of what we now consider to be true PLM.

### 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.

### 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 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.

### GA

General Availability (or GA) is used to refer to the most up-to-date version of a PLM solution that is currently available to a paying customer, and fully maintained. Prospective customers of PLM should not buy a solution on the basis of functionality or modules that are not listed as being in the GA release – unless their own due diligence has identified commitments that it will be added to the GA release in a satisfactory timeframe.

### Hub and spoke

Analogous to a hub at the centre of a bicycle wheel and the spokes that radiate from it, we use these terms to refer to PLM deployments that begin at the headquarters level (the "hub") and then expand to the various "spokes" that make up the local and international supply chain. In this year's publication, we argue that some spoke deployments in traditional manufacturing regions are now becoming hubs in their own rights.

### 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. 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 of RFA PLM

Readers will find this phrase throughout our Vendor Profiles and Market Analysis sections. Where it is used, we are referring to a business that has, in the period we define as 2013/14, signed a deal with 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, 3D store visualisation 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 the WhichPLM Annual Review, and customers of PDM (and CPM) are not included in overall figures or statistics for 2013/14, falling well outside the scope of this publication.

### NPI / NPD

Used interchangeably with each other, the acronyms NPI and NPD may stand for one of two things: New Product Introduction (or Development), or New Process Introduction (or Development). In the case of products, NPI or NPD is defined as the entire cycle of product creation, from ideation to market. Where business processes are concerned, NPI or NPD will instead refer to the adoption of new processes by a business, and their transition from informal to fully documented.

### OOTB

This acronym stands for "Out of the Box", and refers to a pattern whereby preconfigured PLM solutions have become simultaneously more feature-rich as standard, and more streamlined to deploy. As a result, vendors applied the OOTB label to their solutions, claiming that they offer a robust product development environment as-is, with little or no costly customisation, and reduced implementation services. These claims vary in their truthfulness, but in our opinion, no PLM solution can be considered truly "out of the box", and prospective customers must be mindful of the need for effective configuration when evaluating the marketplace.

### PAM

A new acronym, defined in this year's WhichPLM Annual Review as standing for Product Asset Management. PAM is a label for a new generation of product lifecycle solutions that may come to define the future of the RFA PLM market. PAM treats all information about products, and the products themselves, as assets, regardless of their format, size and type. These assets can then be indexed, referenced, and utilised for advanced reporting and analytics.

### 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 and textiles industries.

### 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 can be 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.