WhichPLM

# ANNUAL REVIEW 2012

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# WELCOME

## to the **WhichPLM Annual Review 2012**

*Regular readers will be aware that this brand new publication replaces our popular Customer Survey, and that these pages have a much broader remit than anything we've undertaken before. Our aim is to paint a complete picture of the industry - mixing our own expert insight, the results of a long-running customer survey, and some truly unique market analysis, with a collection of the best articles our contributors have created over the past twelve months.*

**This year has been a mixture of tumultuous and exciting – for the WhichPLM team as much as the industry itself. For our part, we launched a new website in February last year (our first complete overhaul, and a process we plan to repeat later this year to support our phenomenal growth since that time) and have seen many of the world's best-known retailers, brands and manufacturers visit our pages as a result. We continue to attend events around the world, and this year will see some exciting developments and many new faces join the WhichPLM team.**

For the customers themselves, as our far-reaching 2010 customer survey and our experience since have revealed, there are very few businesses who do not at least know of the potential of PLM today. This hasn't always been the case: as recently as the beginning of the decade, a large proportion of retailers, brands and manufacturers were working in legacy PDM systems, with Excel, or on pieces of paper. PLM was perceived to be an expensive, immature system intended only for the world's biggest and best-funded organisations. Now, a PLM solution is increasingly being seen – by companies of all shapes and sizes, from the boutique to the world-spanning - as the most effective way of streamlining processes and ways of working in order to deliver real and quantifiable differences to their bottom line.

To give you an idea of how quickly this transformation has taken place: many of those businesses that in 2010 were in the tentative stages of considering a PLM solution are now engaged in active implementations. Of those who aren't, the majority are either enumerating their requirements, keeping tabs on industry developments via WhichPLM, or interviewing a select shortlist of prospective suppliers.

For a piece of software that so recently faced a phalanx of misconceptions, it may seem strange to say this, but there is one job that PLM no longer needs to do. It no longer needs to convert people. There is still evangelising to be done (and WhichPLM will run a series looking at PLM for the absolute beginner later this year) but now, a scant few years on, PLM is seen as a requirement for truly modern, global product development.

This fact was the primary inspiration for the way this first Annual Review has taken shape, and explains why we sought to expand on the work we did with our **2010 Customer Survey**. The last twelve months have taught me that the marketplace at large is now informed enough to make those base assumptions about the capabilities of PLM and, from the suppliers' point of view, we can reasonably expect even moderately successful solutions to deliver on the core promise of PLM, achieving efficiency savings and enable collaborative working.

*This is a fact: PLM, properly chosen, sensibly planned and well-implemented, works.*

Obviously there are solutions that simply do not measure up to their marketing claims (and the survey portion of this publication is designed to allow prospective customers to make informed choices about those basic requirements), but if advertising and shortlisting in 2011 has demonstrated any one theme in particular, it has been differentiation. No longer does the selection process focus exclusively on core capabilities; a business choosing a PLM solution today will look at a far greater range of criteria: this supplier has a pool of skilled resources in my area of Europe; this supplier has a product specifically developed for the fashion industry; this supplier offers a full end-to-end solution; this supplier's software integrates with my existing merchandise planning and 3D visualisation packages, and so on.

All of which leads me to this year's most fundamental development: the rise of E-PLM. Short for "extended PLM", E-PLM refers to the growing variety of solutions that support and expand upon the capabilities of what have become known as "core" PLM solutions. This can be anything from CAD to augmented reality, and both **Mark Harrop** and **Kilara Le** set out in far more detail the circumstances that have led to E-PLM's newfound prominence over the last twelve months. What is important, though, is that E-PLM – like PLM before it – is no passing fad. As consumer requirements change, and our industry is forced to adapt to harsher economic realities, more process areas and departments than before are turning to solutions under the E-PLM umbrella to allow them to remain committed, competitive and, above all, creative in a difficult market.

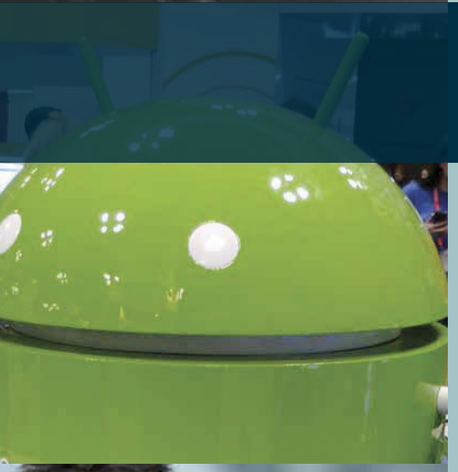
In short, this Annual Review (and WhichPLM itself) has not compromised or lost its core focus; we remain as committed as ever to creating informed consumers and offering insight into every stage of the product lifecycle. This year, however, has seen that product lifecycle extend and diversify in some truly remarkable ways, and we have ourselves grown and diversified to keep pace.

Whether you're interested in learning more about E-PLM, reading the results of this year's survey, benefitting from our exclusive market analysis, reading our in-depth event reportage, or revisiting the best of the year's opinion pieces, I believe that our first Annual Review contains something for you.

Likewise, I believe that it was only by broadening the scope of this document that we were able to do justice to the reality of modern product development, and create something that I hope will be resonant for readers at every stage of that process. Our industry truly is grander and more all-encompassing than ever before, and the solutions that support it have grown and diversified in ways some of us might never have predicted.

With no sign of the industry losing pace, I have every faith that 2012/13 will prove to be just as eventful.

**BEN HANSON**
*Editor*



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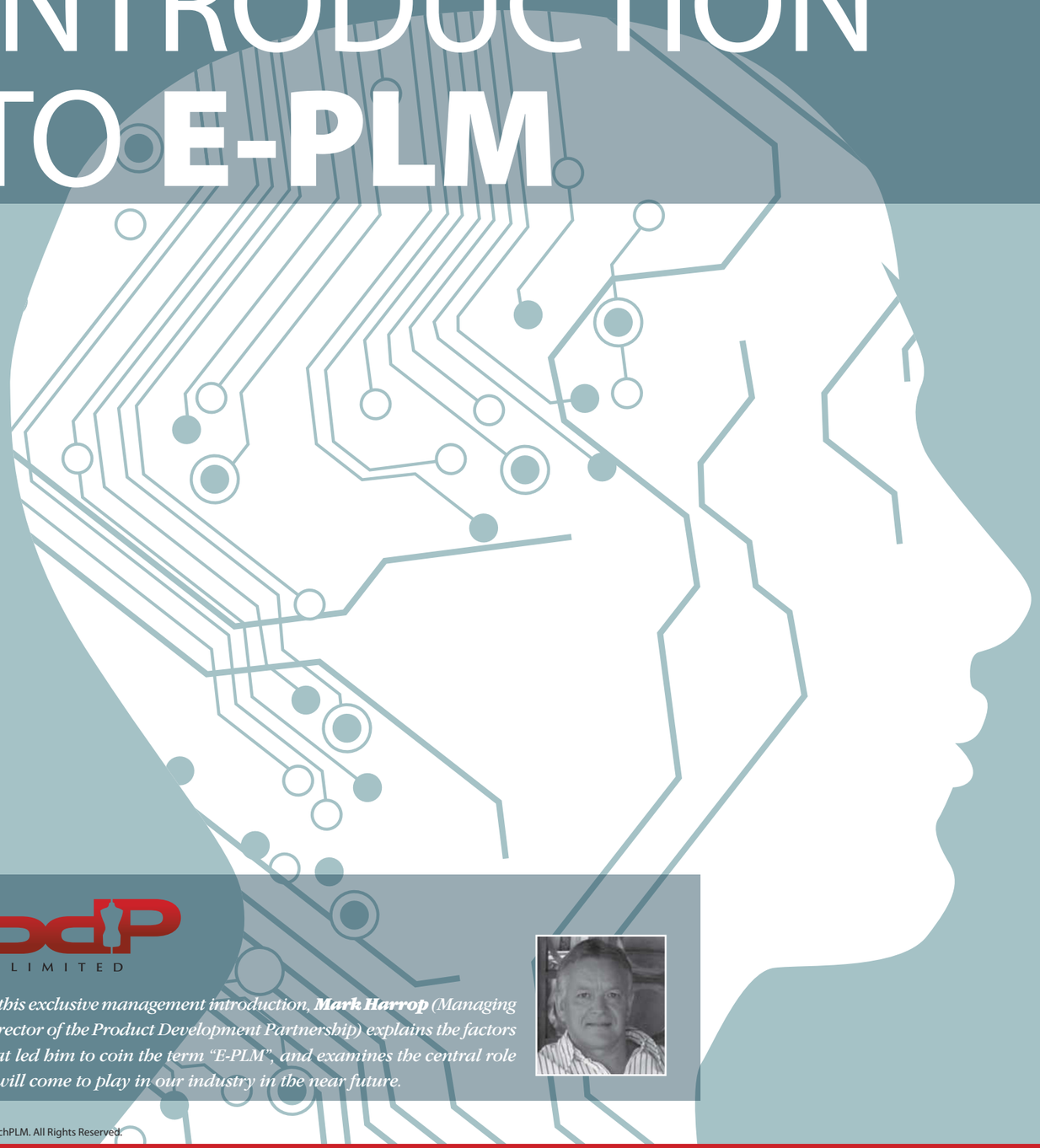
# A MANAGEMENT INTRODUCTION TO E-PLM



*In this exclusive management introduction, **Mark Harrop** (Managing Director of the Product Development Partnership) explains the factors that led him to coin the term "E-PLM", and examines the central role it will come to play in our industry in the near future.*







**The fashion market today is more competitive than it has ever been. Whether they produce one-off luxury items, complete ready to wear collections, sportswear, or corporate wear, companies of all shapes and sizes are vying for the attentions of better informed and more demanding consumers with each passing season. Alongside this, the rapidly-changing face of fashion means that the right products (informed by the latest trends and, increasingly, by direct customer engagement through social media) need to be delivered to more markets around the globe, more quickly than was possible using traditional techniques, and at a lower cost than ever before.**

In order to meet these heightened expectations and secure their profitability, even the most traditional retailers, brands and manufacturers are turning to technology.

As the WhichPLM team explain elsewhere in this publication, it is well established that modern PLM solutions are better than ever at supporting the processes at the heart of product development: design, sourcing, sampling and manufacture. Since these fundamental practices represent the most obvious areas for optimisation and efficiency savings, it should come as no surprise that a PLM solution is often the first choice when enterprise IT investments are considered. Indeed, the increase in its adoption across all walks of the fashion industry is well documented, and recent market research (along with our own insight) suggests that this trend is practically guaranteed to continue.

There is no question that PLM works, then, but when we confine it to just these core processes (which is how it is generally packaged and sold) we notice that even the most comprehensive out-of-the-box solution or the best-tailored bespoke software has clear limits.

As the business of fashion has grown more demanding, so too has the number of processes and business activities that fall outside the range of what we traditionally think of as PLM and what is traditionally supported by PLM solutions. Where design would previously have described a talented artist, a pencil and a sketchpad, nowadays it encompasses everything from fashion-specific CAD/CAM systems to industrialised drawing libraries and fully three-dimensional prototyping. Where delivery to store shelves would once have been a matter for road haulage firms and store managers, today executives can design, visit and stock fully virtual stores with their flagship ranges before the physical product has even left the manufacturer. Indeed, the time it took to manufacture that product prior to delivery can be analysed and simulated in minute detail, and every single component of the garment- from threads and trims, to material and packaging - can be tracked and traced to the far corners of the globe.

This raises an interesting contradiction: these processes and business activities are clearly part of the product lifecycle, and yet they are not typically considered to be part of product lifecycle management. This confusion is intensified when we actually attempt to define the term itself. Product lifecycle management is by definition a set of processes and a company-wide ideology that together allow companies to manage the development of a given product or range of products from their inception in their minds or as a sketch on the drawing board, to their eventual arrival on store shelves..

Why, then, is it the case that colour management, merchandise planning, mobile applications, trend analysis - each no less vital than those core processes - are treated as distinct entities, outside the remit of PLM?

The simple answer is that I don't believe they should be. Each of those processes is part of PLM - however constrictively you define it. Unfortunately the legacy of how PLM is traditionally packaged and sold (beginning with a finished design, and ending with a hand-off to ERP or an equivalent) would generate considerable confusion if these processes and solutions were all of a sudden to be referred to as PLM. Acknowledging this, the PDP and WhichPLM team sought this year to define a new paradigm that would reflect the true diversity of product lifecycle management today. Because these solutions extend the capabilities of core PLM, we now refer to them as "extended PLM" - usually abbreviated to "E-PLM" - a term that is now seeing wide adoption by vendors and customers alike.

The benefits of treating these solutions as part of PLM go far beyond a convenient name, however. By recognising the interrelationships and interoperability between these typically separate systems, organisations can begin to realise the benefits of a truly synergistic approach. Master data can be shared between systems, helping to ensure that designers, garment technicians, store managers and supply chain partners are all working from one consistent, accurate set of information. Under the E-PLM methodology, what people often refer to as islands of technology (a shorthand that refers to unintegrated systems that do not share a common data source and are, for most practical purposes, entirely separate from one another) are recognised for what they are: opportunities to create a single, unified approach and common data source - delivering cost savings and new ways of working to the entire product life cycle, no matter where it begins or ends.

For this reason, connecting E-PLM systems with core PLM does not undermine the latter's role as the centralised repository for product information and milestones, but is instead intended to honour its place in the extended PLM landscape.

I firmly believe that the benefits delivered by the E-PLM approach will play a key role in the continued success of modern product development in the very near future. From a management perspective, E-PLM has defined not just this publication, but the developments we are seeing (and will continue to see) across the industry as a whole. As E-PLM continues to emerge as the new industry standard, customersand suppliers alike will come to recognise that product lifecycle management is - and always has been - more than just software. It is an ideology predicated on the established fact that, in today's competitive marketplace, the technological foundations of creativity and competition are simultaneously more diverse and better unified than at any point in their history.

On that basis, E-PLM is more than just a buzzword - it is a cause for celebration.

# THE POWER OF THE END USER

*With customers often blinded by acronyms, buzzwords and marketing glitz, **Ben Hanson** reflects on the industry's tendency to place the emphasis always on the actions of vendors and developers. Originally published to accompany the launch of this survey (and rewritten to help introduce this publication), this article sets out why the true power in product development must always rest with the end user.*

**PLM is an ever-shifting acronym. Coming as it does in so many different guises – core software, end to end suites and E-PLM – it can prove difficult to keep a handle on the notion of "product lifecycle management" as it stretches to take in everything from trend collection to garment disposal, via socio-environmental compliance and multidisciplinary collaboration.**

One certainty in all of this, though, is the fact that as PLM has expanded to reflect the true scope of modern, globalised product development, the number of end users working with it (either directly or indirectly) has increased dramatically.

In today's world integration between systems has become an absolute priority for most enterprise customers, and data (where proper preparation and implementation procedures are undertaken) is steadily being refined, unified and shared between PLM, ERP, CAD, CAM and out along the entire extended supply chain. As that web of interoperability and seamless collaboration is drawn outwards, the number of people who influence product development has grown – and they all do so from within PLM.

In a very real sense, a PLM solution (properly chosen) empowers its end users… in more ways than one. Designers and garment technicians can collaborate more effectively than ever before, and executives can glean valuable oversight of their products from sketches to how they will look on a hanger in a flagship store – this is the traditionally recognised power of PLM. But what is often overlooked is the way that PLM allows a greater range of end users not just to play their part in product development, but to influence its future.

As the results of both the 2010 Survey and this year's equivalent confirm, the power of the end user is absolute where PLM is concerned. Yes, how soon a PLM solution will deliver a return on investment and how the budget for its implementation will be structured are discussions for the boardroom, but the solution itself will live or die in the hands of the people who use it, or don't, season in and season out.

From the feedback gleaned during both surveys (this year's and its 2010 equivalent), and in my routine correspondence with vendors and customers alike, I have learned that the most successful implementations have been those where the eventual end users (or a representative of each key internal team) is consulted prior to, during, and after the shortlisting, selection and implementation process. From broad criteria like the choice between Oracle and SQL, right down to the specifics of how data from Adobe Illustrator (or your design program of choice) will feed PLM, the eventual end users have the hands-on experience to, and should, help any management team to determine how a PLM solution will fit their organisation – not the other way around.

It is telling that most implementation projects also see the appointment of a "PLM champion" who is nominated to evangelise the chosen solution to the people he or she works with every day. It is absolutely vital that the champion believes in PLM, has been instrumental in its selection, and that those individuals who will work with PLM five days a week are comfortable in its use and satisfied with its capabilities. If not, that return on investment may never appear.

*Such is the power of the end user, and vendors and management teams ignore it at their peril.*

Whatever your role in the extended product lifecycle, do not underestimate your power to help shape this industry. Take the opportunities that are presented to you – join a CAB, fill in a survey like the one contained in these pages, answer questionnaires issued by your vendor and, where appropriate, present your feedback to the internal steering committees that are, right now, deciding how the future of the apparel industry will look.

Our goal is to help make this possible.

Ever since we founded the magazine in 2008, our mission has remained consistent: to provide an unbiased home on the internet (and now in downloadable digital format once a year) for companies either looking to find out more about PLM prior to shortlisting and selection, or to get the most out of their existing software investments.

Some of the biggest and most exclusive names in fashion and footwear the world over have visited our pages. The calibre of retailers and brands reading our articles, scrutinising our supplier listings and using our tools occasionally takes my breath away.

I don't point this out in order to brag, but to give the end users and vendors reading this article an idea of just how far words can reach. And I consider it to be central to our mission to provide as many avenues as possible for both parties to put their opinions forward.

Representatives of the largest (and the most niche) PLM vendors have blogged and been interviewed on a diverse range of topics, and I have personally sat down with Managing Directors, Chief Information Officers and Global Marketing Managers to ensure that their presence in the market is accurately reflected in our pages.

Prior to 2010 (when we contacted some 500 end users directly), though, the real users of PLM had the aforementioned power to nurture or stop PLM implementations in their tracks, but no way of communicating their valuable feedback and experience to those who could benefit from it. We changed all that.

You will realise as you move through these pages that PLM (in both its core and expanded forms) is already delivering significant value for some of the world's leading retailers, brands and manufacturers, and I believe that opening up their experience up to the people who are in charge of our industry's future will help to secure it.

You can jump directly to the results of this year's **survey,** read our detailed **market analysis** of the last twelve months, or turn the page and begin to take in some more of the best of WhichPLM.

*Whatever you choose, here or in the boardroom, remember that the power is in your hands.*



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# COMPLY OR DIE

## PART 1

## The Trident of Governance

*In this four-part series, PLM implementation expert and fully qualified England and Wales solicitor **Rob Smith** explored the impact that corporate governance, environmental regulation and ethical compliance have on doing business in an increasingly interconnected world. Originally published in 2011, this series of articles examined the green-socio-economic compliance landscape in a way that is as resonant today as it was twelve months ago.*

**Over the past few decades the consumer marketplace has changed and evolved to a point that is barely recognisable to that of the 1960s and 1970s. Developments in collaborative digital information exchange, a reduction on scrutiny of foreign trade policy and growth of third world industry has changed the market landscape for all companies no matter how big or small. The cost advantages are obvious and readily exploited by all businesses and their competitors, but companies need to be cautious especially when competing on price which leads to exploitation of other elements within their supply chain. In this day and age, taking time to properly audit your supply chain on factors other than cost can pay dividends in many different ways.**

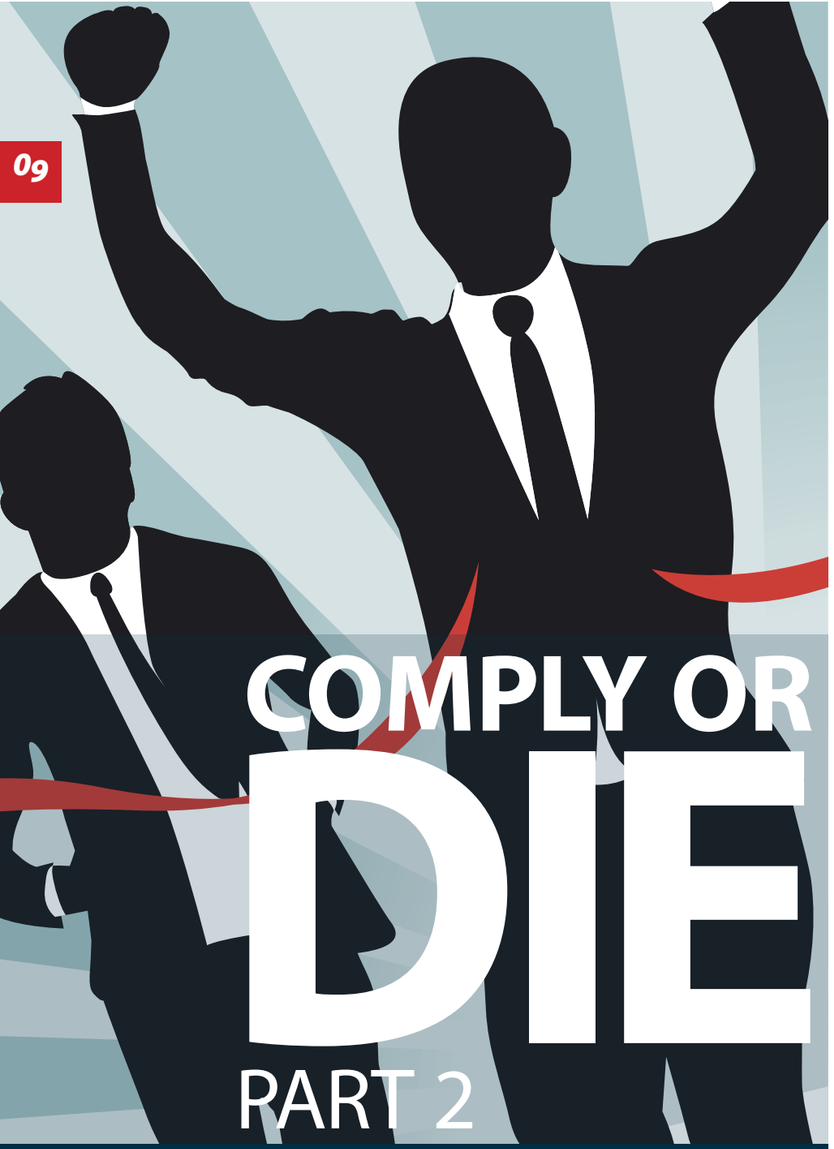
Phrases such as "green", "ethical" and "sustainability" are banded around the media on a regular basis but what exactly do they mean for businesses in the consumer products industry and where do the distinctions between these phrases lie?

'Green' is a relatively non-descript phase used to suggest that a business promotes an environmentally friendly stance and seeks to use less of everything in the activities they undertake. 'Sustainability' takes this position one step further by ensuring that all resources used across the supply chain are renewable and not depleted by the organisation's actions at any stage. 'Regulation' refers to the legislation put in place by government to control activities within a particular jurisdiction. Linked into this is 'Compliance' which typically refers to the requirement for an organisation to abide by formal regulations or principles. Finally a further media buzzword is 'Ethical' which encompasses the moral ideology employed by the company and is reflected in all actions and processes that the company undertakes. Broadly speaking, all these elements (and more) can be contained within three key drivers: Corporate Governance, Environmental Regulation and Ethical Compliance.

This series of articles addresses each of these drivers and takes a look at the impact that each driver has on the business and what it means going forward. It covers case studies and options available to businesses to address each of these drivers; the practical differences between legal and public image requirements; and, what the costs implications are of compliance and, more importantly, non-compliance.

READ THE INTERVIEWS THAT ACCOMPANY THIS SERIES

- **Mike Zepp** *of Dassault Systémes*
- **Philippe Ribera** *of Lectra*
- **Bill Brewster** *of Gerber Technology*
- **Beth Borland** *of PTC*



# COMPLY OR DIE

## PART 2

## Corporate Governance – "We didn't think it would ever actually happen though"

*In this four-part series, PLM implementation expert and fully qualified England and Wales solicitor* ***Rob Smith*** *explored the impact that corporate governance, environmental regulation and ethical compliance have on doing business in an increasingly interconnected world. Originally published in 2011, this series of articles examined the green-socio-economic compliance landscape in a way that is as resonant today as it was twelve months ago."*



**It is hard to ignore the impact of corporate governance since the turn of the millennium, likewise it is hard to ignore the words 'Enron', 'WorldCom', 'Arthur Anderson' or 'Sarbanes-Oxley' when discussing any element of corporate governance. Essentially corporate governance refers to the way in which a company is controlled and administered. Its scope is not just internal in nature but also encompasses external stakeholders, including suppliers, shareholders and the general business community. Its focus is ensuring that companies are accountable for their actions, transparent with much of their dealings and administered in the best interests of the business. The issue of corporate governance rose to the front pages of the broadsheets in the early part of this decade when a number of blue chip companies were found to have undertaken fraudulent accounting practices in an attempt to conceal financial liabilities and mislead shareholders. The scandal and others similar in nature led to:**

- the collapse of the Enron Corporation from assets over $60 billion in Q1 2001 to bankruptcy in Q4 2001;
- the collapse of WorldCom from assets over $100 billion in Q2 2001 to bankruptcy in Q2 2002; and
- the demise of Arthur Andersen LLP from one of the big five accounting practices in Q2 2001 to withdrawal from the market in 2005.

What is interesting about the latter is that since 2005, Arthur Andersen has had its fraud convictions in Enron over-ruled in the US, yet the partnership has not re-entered the market under its former prestigious name as the negative impact to its public image has been terminal and irreversible.

It is not just accounting scandals that corporate governance seeks to limit; more recent examples include the subprime mortgage model that is considered the lynchpin of the recent global economic downturn. Although many analysts and actuaries will tell you that the lending model in the subprime mortgages was genius in its inception (but) it is a corporate governance point that the senior management in the financial institutions never considered the 'what if' scenarios and looked at whether the business model could actually be supported in the real world. The BP oil spill in the Mexican gulf in 2010 highlighted another corporate governance point that asks 'should BP have made earlier information disclosures and established more effective reporting processes for an internal solution that was clear to any reasonable man would affect all company stakeholders and the external environment further down the line?'.

*The cost of poor corporate governance is all too clear and all too serious for any business.*



*"…it is not the mistakes that define a corporation, it is how those mistakes are dealt with and resolved both internally and externally."*

So what can businesses do to stay on top of corporate governance?

Corporate governance is something that should be ingrained into the company as its life blood. It should be promoted from board level and pushed through every level of the organisation including the supply chain. A company needs to ensure they recruit the best people to define the strategy and steer the company - people who aren't known to cut corners, people who the stakeholders can place their trust in and most importantly, people who are not afraid to take responsibility for the actions of the company.

Those who reside at mid to senior management and are involved in the steering of the company should also have clearly defined roles. A team of directors should be exactly that, a team. No one director should be directly in charge of operational and financial planning. No one director should be responsible for human resourcing and information systems… and so on. Ensuring there is a clear role identification and division of responsibility helps remove the 'primary agent' problem where you have much executive control limited to a just a few.

Moving into the operational area, companies need to make clear their strategy and communicate the type of company they are and what they are trying to achieve. They need to ensure they adopt tried and tested processes for business activity underpinned by a suitable 'checks and bounds' system, so that mistakes are easily identified and dealt with effectively in the first stage before a snowballing effect can ensue. From my experience, many companies and individuals within companies do (and will at some point) make mistakes, but it is not the mistakes that define a corporation, it is how those mistakes are dealt with and resolved both internally and externally.

Of course we have discussed the problems with financial accounting above and on the back of the Enron saga, legislation such as the Sarbanes-Oxley Act in the US, the Companies (Audit, Investigations and Community Enterprise) Act 2004 and the Companies Act 2006 in the UK (along with a host of others), all laydown rules and regulation for companies operating within their control. All companies within the relevant jurisdiction must abide by such legislation which is clear and obvious and should ensure they perform the necessary due diligence on engagement with professional advisors that are providing legal and financial advice to the company. All professional service markets around the world are competitive and if the company feels unsure about the actions of one of their advisors, they should explicitly ask the pertinent questions or ask competitors for advice. In the case above, it seems obvious that a top five accountancy firm or magic circle law firm could not be wrong, but would it have been so hard for Enron's senior management or any other company for that matter to take a view that shredding important financial documents is probably not an acceptable practice allowed for in legislation, or as the case may be not lead to a anything at all that is commercially positive?

The same level of due diligence should be employed in the engagement of other third parties to the company. Simple vetting of customers for money laundering or criminal activity will prevent the company from being involved with monies that have come from the proceeds of crime (an offence that can attach to the receiving party under English law if proper checks were not undertaken). Vetting of suppliers of their company values and working practices is also a definite best practice. You will see over the next few articles in this series how a supplier's working conditions can seriously undermine a company that has no direct connection with the supplier other than that, a contract for the provision of goods or services.

*Dealing with the media is a skill in itself.*

Finally, as well as making clear to the outside world the company's corporate governance strategy and company mission, transparency with the media and regulatory services is always going to be the primary channel for promoting the company's corporate governance initiative and generating a positive public image. Dealing with the media is a skill in itself - hence why many FTSE 250/Blue-chip firms have large, dedicated marketing and press teams. However, many companies take the view of massively exposing the good and covering up the bad. In this current day of digital information disclosure, very little stays covered up and it is very easily for news items to escalate over a very short time. The simple solution: turn every negative into a positive. If a company has done wrong in the eyes of market, then take the exposure to show how it has been resolved, what the company has learnt from the wrong and what initiatives are being introduced to ensure a similar incident does not occur again. It goes without saying that actually going through these steps internally before such communications are a necessity.

All in all, from all of the drivers, corporate governance is the most encompassing but it is the one that is easiest to deal with and implement as ultimately underneath all the bravado, it is simple commercial common sense. It is holding your hands up when you get it wrong, it is flying the flag high when you get it right, it is acting on that uncomfortable twinge that sometimes occurs when dealing with a third party and it is making sure that the company is always acting in the best interests of its number one stakeholder… itself.

# COMPLY OR DIE

## PART 3

## Environmental Regulation – "But how exactly would a child ingest a magnet?

*In this four-part series, PLM implementation expert and fully qualified England and Wales solicitor* ***Rob Smith*** *explored the impact that corporate governance, environmental regulation and ethical compliance have on doing business in an increasingly interconnected world. Originally published in 2011, this series of articles examined the green-socio-economic compliance landscape in a way that is as resonant today as it was twelve months ago.*

**Environmental regulation by its nature is exactly what it sounds: ensuring compliance to regulation. The regulations that we are focusing on for the consumer goods industry (and thus the apparel and textile industry) are primarily the global restrictions and use of hazardous substances (commonly referred to as 'RoHS') and the registration, evaluation, authorisation and restriction of chemical substances (better known as 'REACH'). These are European born regulations but many governments have adopted their own variations and implementationsthat facilitate that same purposes (such as the CPSIA in the US). Although I am looking at hazardous substances there are other regulations that apply to different industries such as the end of life vehicles directive or the waste electrical and electronic equipment directive.**

Generally speaking both REACH and RoHS set regulation for what substances are allowed within end-user consumer products (and in what quantities) and which substances are restricted. A problem with regulations are that certain restrictions apply in different jurisdictions and what may be acceptable in one area may fall foul of legislation in another which makes this whole area hugely problematic for globalised industry. Put simply if you are operating within the consumer goods industry and REACH or RoHS are not on your radar, then you are walking a very dangerous tight rope, as the penalties can be severe.

The most famous case study within this area is probably Mattel (and their subsidiary Fisher Price) whom in 2007 were forced to recall over 18 million products world-wide over a six month period that included big brands such as Batman, Sesame Street and Barbie. It was found that in the majority of cases paint used to coat some of the toys was lead based and contained dangerous amounts of chemicals far in excess of those allowed by regulation. The chemicals used in the toy production were found to be extremely dangerous to children when ingested, and could potentially lead to death. Along with the massive cost of the recall on such a large scale, Mattel also faced: government fines in excess of £2 million; the cost of re-structuring the quality assurance process throughout its supply chain; and the expected huge downturn in trade associated with the negative publicity.

In the Mattel case there is also the element of outsourcing manufacture. The investigation shows that in this situation Mattel had outsourced production of some of the toys in question to China (which is a common practice for most consumer goods companies). If it turned out that the manufacturer was responsible for an issue such as this, you would think that the instructing company would be able to absolve themselves of liability through normal contractual means. However the situation for liability can become extremely complex and protracted and in the first instance, the reseller/distributor would be bearing the liability both in terms of financial reparations (which if necessary would be sought back collaterally from the manufacturer further down the line) and also through their brand image which is ultimately stamped into the dangerous product.

These problems are not just associated with consumer products such as toys, a quick flick through the **REACH website** shows a number of garment manufactures facing similar problems: jeans which have non-compliant dyes used in their production; trousers which have non-compliant nickel in the button rivets; dresses which contain a non-compliant chemical called 'benzidine'… the list is endless and for good reason to, the amount of processes and materials which are used in the manufacture of garments and the raw materials utilised are countless. A further problem comes into play that is common with regulation, what about chemicals and substances that are not currently restricted but perhaps may be placed on the restriction list a few years down the line?

I reiterate that with regulation going the way it is, this is going to be a huge issue for all companies operating in the consumer goods industry and it is only appears to be moving into greater levels of regulation. So what can a business facing this do and how can they limit their exposure?

The only way to stay on the right side of regulation is to know exactly what substances and materials make up your products. It is extremely common for most businesses to use a bill of materials but does it truly go into the detail necessary to identify risk?

**Q. What is a standard bill of materials for a typical polo shirt?**
**A. Design ID, Fabric, Trim, Labels and Packaging.**

That is a common BOM, but unfortunately as environmental regulation becomes more assimilated, it may no longer be suitable to provide the level of detail necessary to guarantee staying on the right side of the regulation or having security in being able to audit your products currently in the market should future restrictions come into play.

For the most cautious of businesses the detail required now needs to take the complete garment and split it down into separate libraries of fabric (raw materials, intermediate, aggregate), trim, labels, components, packaging, cleaning agents, transport mode, process energy and emissions. From this point it needs to further split into a micro level of precision such as (taking the trim and components sections): thread, rivets, buttons, seams, dyes, chemical composition, and chemical processing… Depending on how far you wish to take it, you could essentially drill right through to the chemical elements that make up a button rivet component (commonly made up of a nickel or steel alloy) and show what elements and quantities of other metals make up the alloy.

This is clearly quite a challenge for any company to be able to provide this data in real-time, on call, at a moment's notice. But then factor in the chemicals used in the manufacture process?

*How does a company know that the suppliers providing the individual components or materials can provide this level of detail?*

This is another question of due diligence. Outsourced manufacturers should be using some sort of product data systems that equally allow them to provide bills of materials that can be plumbed into your PLM and allow you to audit your supply chain from cradle to grave. As creators of the garments or components they should also be able to audit their own processes and show the materials that make up the product.

Alongside integration with their systems, there is simply an ethical research point (that we will look into in the next article in this series) that fundamentally highlights that knowledge of the restricted substances and educating the suppliers on regulation such as RoHS and REACH should be a simple first port of call. In the Mattel case above, it was not that the factory was trying to sneak in the restricted substances, but rather that Mattel did not advise them accordingly of the potential risk (something that they have gone on record and stated). This highlights such a simple yet effective point; when instructing suppliers, do they have full disclosure of all restricted substances and practices? Do they fully understand the areas where the end product will be marketed into? Do they fully understand the product's use and application? Do they themselves show strong corporate governance and ethical compliance practices?

*As the world goes 'greener' the regulation is only going to become more comprehensive and meticulous…*

Environmental regulation is certainly a challenge for most companies at this point in time. But that does not mean it is not possible… A few of the current PLM suppliers have already identified this regulatory requirement and already implement solutions (or rather modules) that fit into the PLM framework to be able to provide this level of detail. The current trend is that environmental compliance modules are very much a retrospective add-on due to the speed at which this landscape has changed however there is certainly at least **one supplier in the market** that is putting this need into the foundation strategy of their PLM system, and I expect all others will shortly follow their lead.

Linked into the use of substances, we know that carbon footprint is also a huge topic currently being fought in the media and the legislation. Carbon capture regulation is not yet in a comprehensive and standardised form for international businesses however as the Environmental Protection Agency pushes for such legislation in the US and across the pond the EU is pushing through guidelines such as the EU Emissions Trading Policy no business can be ignorant to the fact that carbon regulation is just around the corner. But of course how do you analyse carbon capture? Well one thought and a strong one at that is looking at business processes and production materials and associating a carbon 'cost' at each stage of the lifecycle throughout the supply chain (Exactly how you quantify that cost is something that people far smarter than I will decide). But if you adopt this view then (similar to tracking chemicals and processes for REACG and RoHS) carbon tracking is something that can be done in very much the same process and in a few cases by the very same systems.

As the world goes 'greener' the regulation is only going to become more comprehensive and meticulous, and with it the penalties for non-compliance will become more onerous. At this infant stage currently it is still not clear how the regulatory framework will take shape for a global business operating over multiple jurisdictions and for this reason it is probably best to analyse the level of detail required from your product's lifecycle on a risk basis and at the very least promote education of the issues through your supply chain. However be under no illusion, environmental regulation is definitely no longer just a pipedream on the horizon. What it is, is actually a well laid tubular plastic section made from reinforced polymer mortar (RPMP), polyethylene (PE), chlorinated polyvinyl chloride (CPVC), cross-linked high-density polyethylene (PEX) and is being plumbed into every consumer products company operating in the global market.

*In this four-part series, PLM implementation expert and fully qualified England and Wales solicitor* ***Rob Smith*** *explored the impact that corporate governance, environmental regulation and ethical compliance have on doing business in an increasingly interconnected world. Originally published in 2011, this series of articles examined the green-socio-economic compliance landscape in a way that is as resonant today as it was twelve months ago.*

# COMPLY OR DIE

## PART 4

## Ethical Compliance – "If I had a grain of rice for every time I heard that, I'd be a millionaire"



**The driver of "ethical compliance" addresses the ethics of a business's supply chain and includes a bit of regulation, a bit of corporate governance and a lot of the "media monster". We have looked at hazardous materials, carbon emissions and corporate decision making however now we are looking at the assessment of working conditions and business practices within the business. Ethical compliance essentially means abiding by all regulations, best practices, guidelines (both formal and informal) and terms and conditions of trade that involve some element of human or environmental morality. It is a remit for a number of initiatives but broadly speaking it deals with: working conditions and employment law; sustainable trading and promotion of just trading partnerships based on equality and transparency and environmentally friendly trading practices.**

Of course if you want to ensure that you operate an ethically compliant company you also need to ensure ethical compliance happens throughout your supply chain from cradle to grave, and unfortunately that means auditing. So what risks should businesses be auditing for and why?

There are so many case studies to look at when considering ethical compliance that it hardly seems fair to promote a small number within this article; However the companies and brands that I am about to reference have taken very positive steps in ethical compliance since the incidents such that they allow us to look at both the risks, and the opportunities of ethical compliance:

• In 1996, Marks and Spencer suffered at the hands of the media over allegations that one of its suppliers employed underage girls in textile mills in Morocco. M&S went through a lengthy court battle to clear its name however at a time when the company's image was already faltering, many people associated the brand with a low standard of overseas human rights for many years following;

• Nike has been another brand that is regularly in the media over concerns of its overseas sourcing practices. Allegations over child working conditions in Cambodia, Vietnam and Pakistan have tarnished the business brand throughout the 90s and 00s; and

• GAP equally has always struggled with ethical sourcing. In 2003 it was involved in a large class action lawsuit with sweatshop workers in Saipan who alleged working days in excess of 16 hours, unpaid overtime and a host of other infractions. No liability was ever admitted as the matter was settled out of court (along with a number of other co-defendants). More recently in 2008 the BBC highlighted concern of child working conditions in India. GAP immediately pulled the garment in question (girls' smock blouse) from its global stores and destroyed the line.

Other companies such as Zara, Wal-Mart, H&M, Adidas and Levi have also fallen foul of the media and faced allegations over overseas working practices, so this is certainly not an isolated segment of the market. But the costs faced by such allegations can have a massive impact on any company in more ways than one.

If we look at the latter GAP example, firstly from an internal perspective GAP would have costs associated with: the initial market research, the conception and design process of the blouse, the sourcing process and process analysis, the financial costs (including ROI propositions and cash flow forecasting), the production (including prototyping), the marketing and advertising costs (magazines, photo-shoots, labelling design, cataloguing), the distribution costs associated with logistics to 3,000 global stores, the retailing costs and all the indirect costs that occur throughout this whole process.

The lifecycle cost of a single garment is huge. Of course when unethical trading is brought into question there is suddenly a whole host of additional costs such as: logistics of pulling the product from the 3,000 stores, the financial costs associated with revised sales forecasts and loss of sales, the sourcing costs of investigations into the supplier and replacement suppliers and also any potentially effected secondary garments, and then, the cost of dealing with the media exposure, the cost of losing a valuable market position with the questionable garment and the opportunity cost of not fulfilling a particular garment need, the cost of c-level management time spend on the incident, the cost of loss of revenues from loss of brand, the cost of destroying the garments and so on and so on….

*All of these costs are:*

*1. completely fruitless as they will not realise any remuneration; and*

*2. completely avoidable.*

Continued overleaf…

*For many years, we were defensive about it and saw it as just a PR problem.*

Above all else there is the huge impact on the brand's image. Within the article for corporate governance we assessed the devastating effect of public perception on a company such as Arthur Andersen and this is no different here. Within the consumer goods industry, in the most part consumers are blissfully ignorant, but also extremely fickle. For example, I like eating steak but that does not mean I would be enthusiastic about meeting the supplying cow a few hours before I sat down for a Kobe sirloin. This is similarly true of the consumer goods industry. I do not check who supplies my clothes from my favourite high street brands and for the most part I probably would not check if it was not obvious. But if I was made aware that my clothes were sourced for a supply chain that was not ethically compliant, it would definitely have an impact on my choice of high street shop or brand, and this is a consumer decision that a fashion brand cannot afford to be subject to.

So what can companies facing this problem do? Well firstly as I mentioned previously you need to choose your suppliers very carefully. Look for those suppliers who are members of ethical organisations such as fair-trade and the ethical trading initiative. Audit your suppliers and where necessary set your own compliance standards that best reflect your businesses outlook to ethical sourcing. Such compliance standards should cover fairness in employment, workplace safety, regulated product labelling, protection of environment (looking perhaps at recyclable packing initiatives or end of life product initiatives) and most importantly the implementation of information systems to monitor and demonstrate compliance.

As well as ethical trading intuitive and other third party organisation guidelines (such as Greenpeace's guide to greener electronics), a number of big companies have taken this internal auditing to a new level. Marks and Spencer have their own global sourcing principles which is continually growing and evolving and which is required of all of its 1,500 plus suppliers. The Wal-Mart group is looking to ensure that by 2012 all its suppliers source at least 95% of their production directly from factories which qualify highly on their environmental and social practices ratings.

Clearly there is a cost involved with auditing your whole supply chain and more importantly regularly auditing your supply chain, but taking GAP's example above does the cost incurred in the first stage outweigh the potential cost of being branded across the front page of the broadsheets as an unethical company? Is that something that could be absolved by the company stakeholders (especially in public listed company)? The answer is probably not.

I mentioned in the articles on environmental regulation that there are currently product lifecycle systems that can track the carbon emissions and regulated substances within the supply chain, linked in with this, certain PLM suppliers also features modules that deal with ethical trading and allow companies to hold a wealth of information about their suppliers specifically for ethical compliance purposes. Some of these systems provide an 'information gateway' for suppliers so that all suppliers can obtain all the information required to understand and appreciate the businesses policies on ethical sourcing and undertake self-certification which can be centrally maintained and updated by the business. Of course self-certification is only as good as the trust that you have in your supplier, and if you do not have the resources that a company like Wal-Mart or M&S has to actually have internal auditing teams, you should try and perform 'acid testing' or auditing on a risk basis, which for most companies probably means auditing the suppliers in countries who have poor state regulation over such matters referred to in at the start of this articles such as Cambodia, Vietnam, Africa and other such states.

Where your ethical trading policies ay fail, the best response (as shown throughout this series of articles" is always to turn the public backlash into an opportunity: be open and honest about your failings and shortcomings; show the media how the company has restructured its supplier management; adopt an open and transparent stance on your supply chain; consider membership of organisations such as the ETI; and promote the new policies and ethical codes that now underpin your business.

*Nike, GAP and M&S have all performed this exercise and it has resulted in these companies now holding the image in some eyes as leaders/pioneers in ethical trading and sourcing policies.*

In 2005 Hannah Jones, (V.P. of corporate responsibility at Nike) stated "It has taken a long time to get to this point at Nike and we have made many mistakes. For many years, we were defensive about it and saw it as just a PR problem. Now we see it as part of the way we run our business. The report and the list of our suppliers was so that everyone can see where our goods come from."

This sums it up very well. Ethical compliance should be considered within corporate governance as a core value within the company. It should underpin all business processes and should be reflected in the actions a business undertakes. It is not a hindrance, liability or an unnecessary cost but rather a strong opportunity to build relationships with the people that are essentially counting on you as much as you are counting on them to operate within your market. Of course there may be times that cost is simply the key driver for selection of supplier and ethical compliance may start to be viewed in shades of grey rather than black and white, but as always, commercial common sense should prevail. It may be hard accepting an increase in trade costs associated with an ethical supply chain, but equally it may be even harder accepting the costs of it not being.

# EXAMINING MOBILE PLM

*Rather than a single, quick-fix piece of software, PLM has always been an all-encompassing ideology at heart. This is reflected in the growing range of solutions that support and expand upon the capabilities of what has now become known as "core PLM". In this article, originally published in April 2011,* ***Mark Harrop*** *argues that mobile applications occupy a vital part of the extended product development spectrum.*

"…a designer/buyer visits Paris, London, New York or Milan looking for new trends and inspirations. They could photograph a product, design feature, new print idea or inspirational trim, packaging and upload it directly to the PLM system in a matter of seconds."

**It is not long since PDM began the trend for collaboration, using solutions like Citrix Server and PC Anywhere. In the mid-to-late 1990s, these early web enabling technologies helped suppliers to begin offering collaborative product development solutions, and since that time we've seen a great deal of advances in mobile computing. In the 90s we used to use the term "Pure Web", since it enabled suppliers and customers to differentiate between the older web enabled technologies and those that were using the most up-to-date (and state of the art at the time) browser-based solutions. Customers using CPM and PDM solutions could link their respective business partners via B2B systems using browser-based technologies, in turn linked directly to their PDM/CPM solutions. It was these tentative steps that led to the launch of the first 'true form' apparel PLM systems at the beginning of the twenty-first century.**

Since then we've seen the rapid development of the internet, web services, software developments, coding standards, technical architecture and, now, mobile computing. Together, these new technologies have helped the industry to advance extremely quickly to a stage where they are able to offer supporting solutions to every area of product development across the entire extended supply-chain.

I had these recent advancements and the overall meteoric rise of mobile and web-based technologies in mind, when two recent events spurred me into writing this blog:

**1.** Recent discussions with one or two forward thinking retailers here in Europe (with whom I have been undertaking consultancy work), we have been discussing the use of mobile devices within product development - primarily tablets and smartphones; and

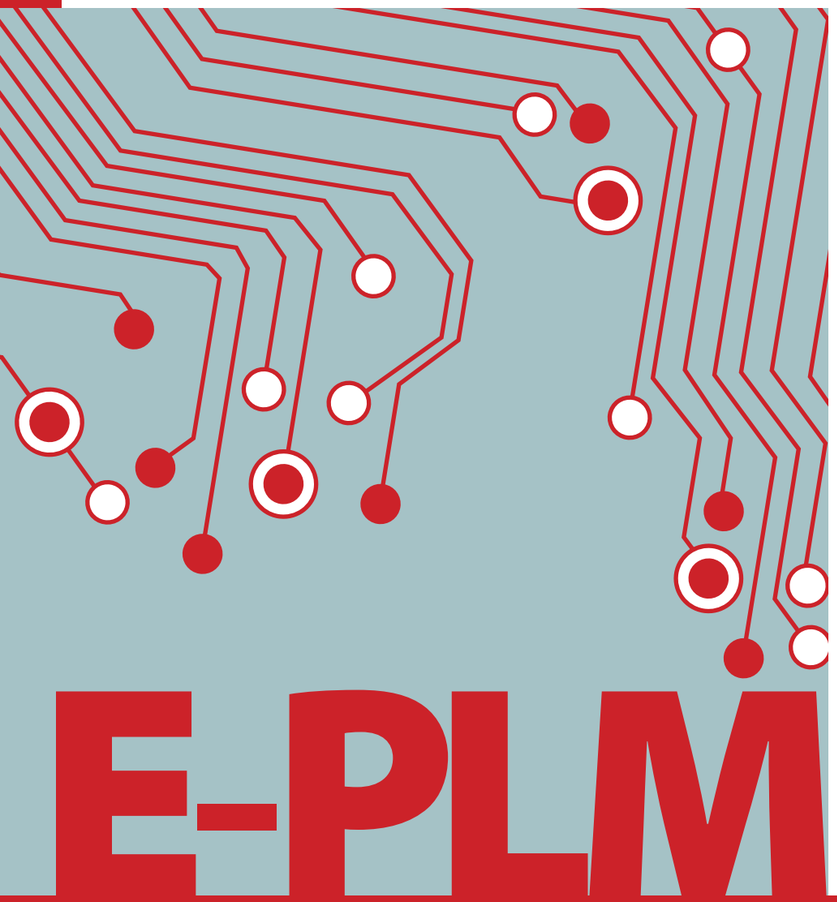
**2.** Two separate presentations by two thought-leading PLM vendors, who were among the first to pioneer the ability to develop apparel products using mobile computing solutions. Both these vendors presented on two exciting and competing mobile technology platforms. The first was demonstrated on a Windows 7 tablet (recently superseded by the Windows 8 consumer preview) and showed an exciting prospect, enabling the user to operate the entire PLM solution remotely – including full use of the creative design process, with integration to Adobe illustrator while on the move. Keep in mind that the Windows tablet can be used anywhere, and at any time the user has access to an internet connection. These days that can mean hotels, trains, planes, city centres, retail stores, airport lounges and more. In terms of the real value of mobile computing several thoughts come to mind, including: trend analysis, competitive shopping trips, retail sales teams on the move, quality assurance and control, and I'm certain there are many more opportunities for mobile PLM that we can all come up with!

**3.** Of course, almost all PLM solutions (at the functional user level) operate through a web browser. Although most PLM vendors will be cautious about declaring compatibility with all the browsers currently on the market, essentially a Web2.0/XHTML compatible browser is the main software requirement. But where this current mobile computing era provides greater opportunities for system collaboration is in taking advantage of all mobile devices beyond the top application layer, and truly exploiting the hardware below. This is where the second presentation (given by Centric Software) showed the start of things to come. Centric's solution was demonstrated on the Apple iPad, which again is a simple case of enabling PLM via a web browser (Mobile Safari in this case). However what was really of interest was the fact that the iPad presentation also demonstrated the addition of an App being used concurrently on the iPhone. That iPhone application enables a PLM user to take a photograph of a style, material, or trim using the internal camera, provide some basic supporting data (product type, price, design features) before uploading the image directly into the PLM solution.

Now consider the following scenario: a designer/buyer visits Paris, London, New York or Milan looking for new trends and inspirations. They could photograph a product, design feature, new print idea or inspirational trim, packaging and upload it directly to the PLM system in a matter of seconds. Perhaps more importantly, this upload would be shared at the same time with the extended product development teams, enabling earlier development across the extended supply-chain. Providing PLM users with this powerful ability is a fantastic prospect and one which has been in my thoughts since I first saw an iPhone. But with the rise in market share of Android and Windows Phone, a further question I now have for this mobile PLM generation is, "is the Apple iOS platform the right one for a vendor to align themselves with?". Several ecosystems certainly exist, and while iOS appears to dominate in the consumer sector, the situation in the business market is less certain.

The exciting part for me is the fact that we have now entered a truly new mobile PLM era where any member of the product development team, be that a designer/buyer at the early stages, or the QA/QC and logistics teams at the later stages of development, can use their PLM solution on their workstation, on their tablet, or on their smartphone, no matter where they are…. PLM is now truly on the move!

The exciting part for me is the fact that we have now entered a truly new mobile PLM era.




# Extending the Role of Traditional PLM

**Extending the capabilities of PLM (or Product Lifecycle Management) by connecting it with other business systems has become essential to effectively managing, analysing and reporting on the whole product development lifecycle. Ours is a visual industry adapting hourly to global trends, situations, and the multiple vendors affected by them. Because of this, we need to be able to "see" where we are and what is really going on, in order to react quickly, create beauty from this chaos, and still manage to remain focused on the bottom line.**

In the last 10 years, PLM systems have become an indispensible business tool for managing product development across the apparel industry. Traditionally PLM has been defined as starting with a product concept or sketch and ending with a "handoff" to an ERP, or Enterprise Resource Planning, system once approved for production. A PLM system would traditionally be responsible for also tracking the product through steps in a defined workflow in between. The problem is that product development and internal processes are rarely so simple and linear, and software is rarely as adaptable and visually oriented as the people who use it.

Amongst the many providers of PLM in the retail, footwear and apparel industry there are a plethora of options ranging from "out of the box" configurations that can be up and running within a few months, to completely customized solutions that can take years to implement fully. Some vendors offer all system functionality as a single package and others offer modules to phase functionality. Both, depending on business needs and allocated budget, can be equally viable options. The key concept is defining "business needs" and analysing what they truly are, both at present time and anticipating what they will or will likely be in order to meet future corporate goals. This is an essential part of identifying the right PLM vendor for any organization, but also a catalyst for discussions about what other business systems or software need to be purchased or integrated with that core PLM solution in order to truly facilitate management of the organisation's whole product lifecycle. Those systems and software are becoming collectively known as E-PLM.

The problem is that product development and internal processes are rarely so simple and linear, and software is rarely as adaptable and visually oriented as the people who use it.

No provider, whatever their claims, can offer one system that meets every single need of every customer across the entire concept-to-delivery cycle. This isn't a disparaging statement, simply reality: as every company works and thinks a little differently. Organisations can't just depend on technology providers to solve their problems; they must be active participants in the management of their own creative processes through information technology. Adding the interconnectivity that defines E-PLM means gaining greater control through visibility.

Of these points of interconnectivity, PLM's connection to an ERP system is most frequently discussed, but there is a great deal of other software used in processes before, after or running parallel with the product development cycle. Most companies have terabytes of valuable data in disparate systems, but it is essentially worthless if these "data islands" are incommunicado. Additional investment to create links between this data – minute compared to the initial substantial investments made in software databases, servers, licenses and manpower – can provide significant, companywide ROI.

### Financial & Line Planning, POS data

While many PLM systems start at the sketch concept stage, some providers have incorporated financial line planning, and even merchandise line planning into their PLM solution strategy and workflow capabilities. But what financial plan, or merchandising plan for that matter, doesn't take into account last year's sales data? Most retailers have this information from their point of sale (POS) system, and many brands can obtain the same information from their retail clients. This information, like that from all unconnected systems, is then typically cut and pasted from one or two reports into a Microsoft Excel spreadsheet, broken into smaller spreadsheets and then typed into planning software for the current planning period. Connecting this POS data directly back into the PLM backbone financial plan, or other merchandise planning software, can provide an easy way to see last year's, last month's, or even last week's numbers, saving days' worth of time, and enable more intelligent planning. Linking e-commerce data, especially if used as a testing ground, can enable even faster reactivity.

### Trend

Trends drive the industry, from uniforms to haute couture to automotive carpet; they guide us, dictate market performance, and need to be kept front and center for all departments, not just left in the design room. Few PLM systems have a way to showcase visual and material trends, but solutions can be found, whether on internal web portals that are also PLM login pages, or by connecting trend visuals to

*The most recent article in these pages, business process expert **Kilara Le's** examination of the place of Core PLM in the product lifecycle (originally published in April this year) takes a wider look at how integration with a growing number of supporting solutions (those that we describe as E-PLM, and that take in everything from CAD/CAM and the aforementioned mobile computing, right through to merchandise planning) has come to characterise many modern implementations.*

No provider, whatever their claims, can offer one system that meets every single need of every customer across the entire concept-to-delivery cycle.



Continued overleaf…

Building bridges between these E-PLM systems and Core-PLM is a win-win situation from product development right through to marketing and retail.

storyboard processes. So often concepts get lost in translation between suppliers, agents and even internal sourcing departments, but this need not be the case where trend analysis and inspiration is factored into both core and E-PLM implementations.

### Color

Trend drives color, not only visually, but also from a fabric and material construction perspective. This in turn drives the formulation of the dyestuffs used to create the correctly colored end product under the desired lighting conditions in a retail environment. Making color work across channels is a true science and managing it not only requires a system rooted in this science, but a partnership with one of the companies who create, manage, read, and analyse color. A few PLM systems do hold color data, but can't automatically read spectrophotometric files and measure the difference between the material lab dip and color standard. The main color analysis providers that do this have tracking systems that analyze this lab dip color data, but capture very little in the way of product data. Building bridges between these E-PLM systems and Core-PLM is a win-win situation from product development right through to marketing and retail.

### Fabric & Compliance

For many apparel companies, material testing is an off-line activity that is only essential for approval before production, but for active sports and footwear, this is very often integral to approval of color/material from the very beginning of the process. All PLM systems have a space to hold material information, but this may not be detailed enough to capture technical construction "standards" information and the material testing in one place.

Moreover, if this information is captured, it may not be easily accessible or searchable to view what is or is not approved. The large material testing labs have their own databases that their customers can access in addition to the material pass/fail reports they receive. There are also software providers that capture and track detailed material information that links to color and supplier approval. Some of them can even give visibility to mill test results while fabric is still in production. Compliance from both human labor and restricted substances points of view can also be captured in these types of materials tracking systems. Linking this information back into a PLM system, as the "central nervous system", brings material testing and compliance into the E-PLM product workflow and is also an easy way to troubleshoot customs or customer returns issues down the road.

In order to get this whole picture, an organization must determine the most advantageous way to integrate their business systems and development processes

### Sketches

Across languages and the industry in general, most ideas are best communicated visually. All PLM systems can show standard format images as attachments and some do read the native file formats of the industry's most prominent design software. When PLM cannot read native file formats, scripts can be written that automatically re-save and publish updated sketch files from design software (most likely Adobe Illustrator) into a PLM-readable format. This makes viewing the latest version of the product sketch a breeze internally and for partners with system access. If designers forget to upload sketch updates, it can be a headache for everyone involved, so why not eliminate that possibility and give them more time to design rather than spend it converting file types?

### Patterns

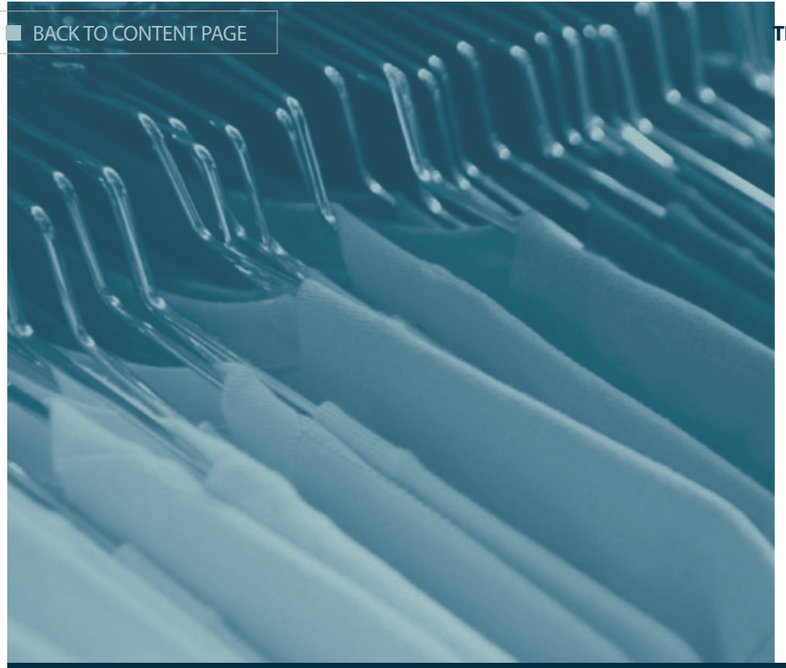
Attaching pattern files to a PLM product is more efficient than emailing them – as is done traditionally. As many apparel companies don't create patterns or only create first patterns, allowing supply chain partners to upload pattern files to a PLM product can help technical designers to give quick correction instructions, provided they have the patternmaking software to read the file. With increasing adoption of 3-D visualization, being able to view these files from PLM can help to reduce development time. These virtual garments can also be put into e-commerce sites or given to sales people to use as virtual showrooms – both of these examples capture the very essence of E-PLM, by taking data pertaining to a product all the way from the design room to the shop floor.

It's worth noting that the concept of E-PLM also takes in the kind of data management and support that an integrated environment requires. After combining data from multiple systems together, tracking by exception is the best way to quickly view bottlenecks. While many software providers advocate reports as the best way to do this, creating reports requires expertise in different databases and reporting tools, as does connecting systems together. This type of IT support is worth the investment if reports or real time screen views can enable users to "slice and dice" to view the exact data they need.

Broadly speaking, intelligently extending the role of PLM and having it serve as the central data location for your entire product lifecycle, or feed into a data warehouse, is a viable solution to provide visibility between all types of product development software – those you already use, and those you intend to incorporate into the various stages of your business in the future. In order to get this whole picture, an organization must determine the most advantageous way to integrate their business systems and development processes internally, and analyse precisely which aspects of both Core and E-PLM are vital to their ways of working.







# one size fits all part one

## The Chicken or the Egg

*As a precursor to what has since become known as "E-PLM", an increasing number of vendors developed what they referred to as "end-to-end" solutions platforms. These platforms encompass everything from ERP and SCM, all centred around a core PLM system. In this series of articles,* ***Rob Smith*** *takes a balanced approach and examines the case for and against integrating the most critical enterprise systems under a single banner.*

Within the middle market we have started to see an increase in projects involving end-to-end solutions. Generally speaking 'end-to-end' refers to all systems that are 'touched' by the product either directly or indirectly as it moves through the lifecycle from cradle to grave. This can include: ERP, PLM, EPOS, CRM, e-Commerce, BI and so on…However in the context of this article I am referring to projects which involve the two largest core systems in any apparel company or retail business: Product Lifecycle Management ("PLM") and Enterprise Resource Planning ("ERP") systems.

All businesses operating in this industry in the middle market will almost certainly have at least one of these systems (or rather systems which at least provide the same basic functionality) already in place. Most probably some ERP functionality will be available either through a first generation ERP project from decades past or perhaps one of the newer accounting software packages which delivers some additional functionality within the ERP remit such as line planning or business intelligence.

Suppliers in both software verticals have predominately stayed within the boundaries of their own vertical, not wishing to offer full proficiencies in both ERP and PLM for the simple reason that:

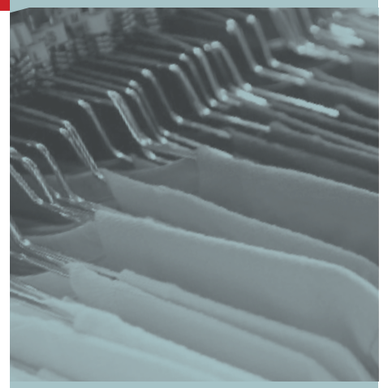
1. The market hasn't been ready (or customers not receptive to justify the vendor service diversification);and/or
2. The systems design framework has traditionally been introverted with external systems collaboration always existing as an afterthought.

However, around the early part of this decade the landscape for apparel solution vendors changed dramatically; ERP continued its established growth into the 2nd generation; apparel PDM finally became true PLM and realised its value; and technological advances in collaborative information systems along with an increase in cost effective outsourced development meant the scope for systems design could finally be wide encompassing. That's not to say there weren't vendors pushing this end-to-end strategy pre-millennium, but now at least all were recognising a genuine consumer need.

*"…is this where PLM should end and ERP should start?"*

Due to the evolution of the scope of these systems and greatly depending on which sales brochures you read it is hard to establish what business functionalities traditionally belong in PLM and which functionalities belong in ERP. Is it easier or harder now for a vendor operating within just one vertical to clearly say "is this where PLM should end and ERP should start" and discounting the issue of system accountability for a

Continued overleaf…



*Imagine you are a Tier 1 client looking to put in place a new 2nd generation ERP and your growth strategy also includes embracing this new generation of true PLM?*

minute, at a technical level can you clearly identify the separation?

**Let us look at how some of the vendors separate the systems. A quick look at the websites of some of the world's biggest ERP vendors (Microsoft and Oracle) shows that at a high level ERP roughly covers the following functional areas:**

1. Financial Management;
2. Planning and Budgeting;
3. Operations Project Management
4. Supply Chain Management;
5. Business Intelligence;
6. Executive Reporting and Analysis;
7. HR Management;
8. HR Systems Collaboration;
9. Quality Management;
10. IT Resource Management; and
11. Web Services Integration Management.

**A similar look at some of the websites of Dassault and PTC shows that PLM covers:**

1. Merchandise Planning;
2. Line Planning;
3. Creative Design;
4. Colour Development;
5. Material Development;
6. Specification Management;
7. Sample Management;
8. Supplier Management;
9. Sourcing Management;
10. Quality Management; and
11. Supply Chain Collaboration.

Straight away you see (where I have highlighted) the overlapping common functionality and thus the start of the potential problem for the consumer. Imagine you are a Tier 1 client looking to put in place a new 2nd generation ERP and your growth strategy also includes embracing this new generation of PLM? You have already identified the high level business case for both systems and at this stage you most probably consider the ERP as the first project because you already have ERP, you know it works and you are familiar with the benefits it brings… (plus it has been an easier sell to the FD). So your next point of call would be assessing the vendor market and making initial contact with suppliers. You go to ERP vendor X who tells you "our ERP can deliver better functionality from our vendor management, supply chain management and line planning functionality than PLM, you should implement (or replace in this case) ERP first and foremost as you already know how to use it and it has been developed with decent APIs and an accessible database so integration with any PLM down the line will be an easy win." Sounds like a fantastic proposition doesn't it? However out of curiosity you decide to speak to PLM vendor Y who tells you "why replace ERP at this stage when you already have basic ERP functionality, why not implement PLM now and get the benefits of both solutions within the year? Our line planning, supply chain management and vendor management functionality is far superior to anything that ERP can provide plus our PLM has been developed with decent APIs and an accessible database so integration to both your current ERP and your future system down the line will be an easy win." Before you start the functional systems design you already feel like Alice in the rabbit hole.

One of the main issues brands face at this juncture is highlighted above… which software comes first, ERP or PLM? Both systems are extremely beneficial to clients and both can easily realise their respective returns. But there are few different scenarios where one should be favoured over the other.

Of course any enterprise level project should be judged on the needs of the business at that time. If you have a business that identifies stock control is spiralling out of control, then of course the business should be looking to resolve the issues within the ERP functionality first and foremost. If you are having problems with quality control or sample processing then equally PLM should be your primary focus. One big different between the two systems is that ERP will make your traditional business processes more efficient; PLM will mature and evolve your business processes.

PLM is essentially a new way of working through making the product your core focus throughout its lifecycle. Any company starting a dual project with ERP would end up moulding PLM to fit in with the way the ERP has been rolled out which (unless you are very experienced with PLM) will make transition to PLM harder and you will end up hindering some of the benefits that PLM can bring. There is no point in going through all the requirements stages to then implement half a PLM system as your business simply will not grow and





*Before you start the functional systems design you already feel like Alice in the rabbit hole.*

evolve to the new way of working, which will greatly impact you competitive edge. At a technical level, before we even start looking at some of the nitty gritty, the product is conceived within creative design which is not touched by ERP. So from a purely logical level, in your business, the product exists before you even start thinking about supply chain, manufacturing or invoicing. The product will also already have product attributes, it will already have digital storage and most importantly it will already be codified and indexed in a way that makes sense to your design team and product managers. Forcing products in a PLM system to try and fit within product information schemes defined within ERP is one of common causes of budget overrun when implementing PLM; and for PLM process experts and implementers it can be extremely tricky to resolve. Changing data structures in either PLM or ERP once established is not easy. It requires technical knowledge of the solution, it requires an amount of system downtime, it requires a support structure to be in place for inadvertent issues and it can be an annoyance for users up the supply chain. The infuriating thing is that on paper is should be easy if scoped correctly at the requirements stage, but due to the wide variety of ERP systems currently in existence, the variation of system platforms and database models and the non-standard accessibility of data structures, ERP interfacing can be brutal for some PLM projects.

It goes without saying that anything that can be done to make PLM and ERP interfacing easier is a big win for all involved. Noted above, scoping both projects correctly at the inception of either project is a big win. Even if you aren't planning to start looking at PLM for another two years down the line, why not consider its potential impact when going through your ERP replacement and vice versa? Certainly some vendors have started to take notice of this fact and we are now in a generation where although they are still widely regarded as separate systems, the overlap between the two is leading to a flock of end-to-end solutions brought to the market that guarantee full operability without any of the complex interfacing… And a quick look on the WhichPLM website shows that a number of brands are starting to buy into this new movement.

*…overlap between the two is leading to a flock of end-to-end solutions brought to the market that guarantee full operability without any of the complex interfacing.*

READ THE INTERVIEWS THAT ACCOMPANY THIS SERIES

- **Mark Burstein** *of NGC*
- **Paul Magel** *of CGS*
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- **Judy Gnaedig** *of Lectra*

# one size fits all part two

## The Greatest Returns Come From Knowledge and Planning

*As a precursor to what has since become known as "E-PLM", an increasing number of vendors developed what they referred to as "end-to-end" solutions platforms. These platforms encompass everything from ERP and SCM, all centred around a core PLM system. In this series of articles,* ***Rob Smith*** *takes a balanced approach and examines the case for and against integrating the most critical enterprise systems under a single banner.*

The last WhichPLM Customer Survey, which was issued in September 2010 and collected feedback from some 500 customers of apparel PLM, highlighted some of the real costs of failed projects. That survey found that almost 60% of respondents' projects overran time and budget. Some of the more pertinent quotes from respondents highlighted issues with not scoping the project effectively and many customers found that they simply tried to do too much too fast. *(Indeed, these are results that are borne out by the results from* **this year's survey***, too - Editor)* Let's not be under any illusions here, both PLM and ERP are huge systems that require a huge amount of man power, time and finances to implement. Of course the benefits allow for returns far in excess of these costs, but still they are systems which touch on all users and departments across the business. Interestingly, some of the respondents mentioned that in retrospect if they were to revisit the project they would have chosen to do both ERP and PLM simultaneously. Surely this means increased costs, increased fragility of your cash flow, reduction of operating capacity and increased risk… Of course the next question is, why?

For a company, implementing just one big enterprise system at a time has a few advantages. Firstly the project itself is far more manageable in that the system capacity won't be as hard hit as it would if you were implementing two big systems. Downtime whilst the replacements go live, initial go live jitters and unfamiliar users are far easier to plan for when you only have to factor in one system rather than two. As above even single system projects can go wrong so the complexity of managing two concurrently is a much harder sell.

> Let's not be under any illusions here, both PLM and ERP are huge systems that require a huge amount of man power, time and finances to implement.

We know from experience that both ERP and PLM projects can follow a traditional implementation path of: requirements gathering > process mapping > vendor selection > system scoping > system configuration > system live > system support – Managing a project in this model itself is a learning curve and for immature clients will most probably be a steep learning curve. Therefore it makes greater sense that you 'acid test' the process and learn the pitfalls on just one project rather than having unforeseen circumstances or inexperience hinder two system projects. Ideally you want to utilise consultants to avoid the pitfalls, but there is a certain amount of best practice that all clients still need to adopt, consultants or not.

Whilst on the topic of managing the project, what about the impact to business users? With the amount of scoping and process mapping required to implement dual systems, can you guarantee that your business users will give the process mapping and requirements gathering the correct amount of emphasis? Our consultancy work has borne out the fact that most people working the supply chain are already pretty much at capacity in most businesses; how do you expect they would respond to being pulled from their duties regularly over a two week period to attend process workshops? Would they be fully engaged, or would they rush through to be able to get back to their roles? Getting the requirement capture correct is paramount to any project and major problems occur when you start an implementation on an understanding only to discover in the pre-live training phase that actually that's not exactly how it should be.

There is of course the issue of being tied to one vendor for the majority of your many information systems. No matter how many demonstrations you receive or how many workshops you attend, the true test of a software system occurs on go-live. If you start to find bugs in the solution, or errors then it may suggest poor QA from the vendor, which is more than likely to be the same QA process used for another of the vendor's product. Beyond the system functionality, what about the support for the system? You are buying a system that you hope will still be operational in 3/5 years, so of course you need to ensure the vendor is still around supporting said system. In our industry, **last year's acquisition of Lawson by Infor** presents a potential risk for customers, as here you have one company now potentially selling two separately branded apparel PLM solutions? I've not been in business all that long in the grand scheme of things, but I've been around long enough to know that competing against yourself, is a fruitless exercise and not a recipe for long-term success. It all comes back to getting the scoping correct (including vendor selection) although the recent financial troubles showed us that in tough economic times, no business is impervious to liquidation or the streamlining of their portfolio.

Reading the above it is easy to see why a business would want to avoid taking on too much too quickly, but for a lot of customers (and certainly more recently) the full end-to-end implementation route is being favoured and working very well.

I spoke above about the impact to resources and users, of course the flip side of this coin is the view that consolidating this downtime will actually be more efficient in the long run. Why engage users in process workshops for a few two week periods over a couple of years when you can pull them all together at one single time? Likewise generally speaking, the more you do something the better at it you become, thus if users are going to be expected to change the way they work, why do this once and let them get accustomed to it, only to change the processes for them again two years down the line? Change management is one of the biggest issues for IT projects, if your users don't buy into the system(s) then you have no chance to actually reap benefits from the end product. No matter how many changes you make, effectively managing the change management process should be one of your key priorities in any project.

There are of course economies of scale that can be utilised by running dual ERP/PLM projects. You will find greater financial incentives from vendors if you are purchasing two systems concurrently - both in terms of the licences and support, and once implemented you will end up being one of their preferable clients which can have some fringe benefits attached. Equally you'll tend to find that implementation costs can be reduced as you will bulk together a lot of the carry over work such as process workshops, end user training and if the vendor is well established, you will tend to find implementation partners who can do both implementations, again meaning greater financial incentives from your partners.

Finally, and probably most importantly, one of the key benefits of an end-to-end project is that you remove the complexity of inter-operability issues between the two systems. We have already identified a large element of cross-over in functionality between ERP and PLM, and this is most important at the technical level. Any company who has ERP and PLM will tell you that one of the most challenging parts of either project was getting the two systems to interface. Issues of data coding or database platform compatibility can lead to an end-to-end solution which is plumbed together by a Microsoft excel export routine (i.e. the very application and manual processing you are trying to remove from the system)! Suffice to say, what is the point of having the potential for fantastic benefits if you can't actually ever realise them? mplementing both ERP and PLM simultaneously will at the very least allow you to properly build your solution shortlist to ensure that each can dynamically interface with the other. If you are savvy enough, you will even get the system scope as an element of the software purchase agreement so that the interfacing cannot be misrepresented to you by the vendor. Most new systems do have many different interface routines to accommodate the most widely regarded solutions; however we do still come across issues regularly. If you are using one vendor for both systems then this becomes purely academic, as you would expect that any software vendor had already factored this very firmly into their original development roadmap, (they may not have of course, but it is unlikely). Some of the 'new breed'[1] vendors like New Generation Computing or Computer Generated Solutions (and others) have very smart deployment models in which the full end-to-end process is broken down into business functionalities, and each can be easily activated on a modular basis for full seamless integration.

In summary whether you are going to run a dual project or a single project, any project manager needs to be aware that these are truly enterprise systems and no matter which path they choose, these implementations (joint or several) should not be undertaken lightly. We know of projects that have been run fully end-to-end and have succeeded; equally we know of those that have not delivered the expected ROIs or business objectives. There is of course an increase in demand for end-to-end solutions at present (doubly so with the rise of E-PLM), perhaps as businesses attempt to take advantage of the financial cost savings I set out here. Ultimately it all boils down to business requirements, where are the current weak points and which parts of the business will provide the greatest ROI? The best advice is often the most straightforward: businesses which spend the proper amount of time in scoping and requirements gathering have a significantly greater success rate than those which don't.

[1] I use the phase simply to represent vendors who move away from the traditional one solution model, both referenced vendors have been in the industry for many years.

> …no business is impervious to liquidation or the streamlining of their portfolio.





> No matter how many changes you make, effectively managing the change management process should be one of your key priorities in any project.

# one size fits all

# part three

## That's How Dad Did It, And It's Worked Out Pretty Well So Far

*As a precursor to what has since become known as "E-PLM", an increasing number of vendors developed what they referred to as "end-to-end" solutions platforms. These platforms encompass everything from ERP and SCM, all centred around a core PLM system. In this series of articles,* ***Rob Smith*** *takes a balanced approach and examines the case for and against integrating the most critical enterprise systems under a single banner.*



**I hope to have now set out some of the benefits that can be realised by choosing a software vendor who provides a wide range of complimentary products all based on the same platform. The benefits are clear but equally so are the risks, especially when choosing a long-term partner for a significant amount of the system infrastructure. So what are the other options for those who simply don't want to deploy full end-to-end? Put simply, adopt the best in breed methodology.**

Best in breed solution ("BIBS") adoption requires no real definition; in basic terms it means segregating your functional systems and IT strategy and choosing the solution that is considered the best (or one of the best) and fits your requirements for that segment. (Note that I am not suggesting that any business buy the best or the biggest system blind; irrespective of which approach you choose, it is still vital that you map the capabilities of the solution to your specific needs.) The best in breed approach usually means running multiple different projects, with multiple teams, across different areas of your business. Straight away you should be thinking, "Why would I want the hassle of undertaking this?" – and you'd be forgiven for this train of thought – but there are some real benefits from adopting the best in breed approach.

Firstly from a functional point of view a BIBS project will ensure that you find a solution that perfectly fits a given process segment. End-to-end solutions are fantastic, but you are hanging your hat on the Out Of The Box ("OOTB") apparel processes developed by one vendor for a significant area of your business. In practice these processes may 'roughly' fit your needs but may not 'exactly' meet your unique business requirements. In that situation, the prospective customer would then need to decide (after a careful gap analysis) what the threshold for adoption should be in the latter case – i.e. just how far "roughly" is good enough.

We can be confident that a vendor who deals only in PLM or ERP or CRM will know that particular sector inside out, and that behind the scenes they will be focusing their development efforts on breaking new ground in that particular sector. Companies who choose a solution from such a vendor know that they will have first-to-market opportunity in some specific functions rather than a broad set of functionality that may fall foul of the old adage: 'jack of all trades but master of none.'

To cite a few examples from our industry: Centric Software are putting significant development into their iPad collection/merchandise book application, and Lectra are ploughing resources into the "smart service" collaborative abilities of their suite of pattern development and CAD applications. When you look at the technology available today, the options on the horizon for apparel and fashion companies are extensive. One current "hot" area of development is the range of solutions designed to make the apparel product lifecycle more 'visual'; 3D virtual sampling; visual costing; material texture mapping; 3D visual store planograms on so on. Take visual labour costing for example: within a PLM solution you are almost certainly going to have a Bill Of Material ("BOM") and Bill Of Labour ("BOL") for a style. You'll almost certainly also have the concept drawings and technical garment sketches that your designers and garment technicians are actively working on. Broadly speaking these three views should be drawing from the same data sources, and allowing your users to perform advanced analysis of the data. This could mean linking existing BOL and BOM data to that style data at the conception stage, which would allow your product development team (design and garment technicians alike) to design to commercial limits set out in a line plan. For most vendors who provide a broad spectrum of solutions the data will already exist, but it may take some niche and time-consuming development work to allow this particular bi-directional link to work. If you are the developer of a range of end-to-end solutions, are you going to plough resources into focusing on this very narrow area of development? Probably not, as you'll already have your hands full developing and supporting the basic capabilities and more obvious, "easy" wins in your solution. BIBS suppliers will almost always be the vendors who are pioneering this advanced functionality, rather than vendors of end-to-end solutions.

> From a commercial level, how many solution providers who offer end-to-end systems actually started with that product strategy in mind, and how many grew to be cross-industry out of necessity or opportunity?

From a commercial level, how many solution providers who offer end-to-end systems actually started with that product strategy in mind, and how many grew to be cross-industry out of necessity or opportunity? There are very few vendors who have both the expertise and / or investment to be able to develop such a broad solution portfolio at the time of incorporation, let alone to ensure that the wider development strategy stays current. Therefore, in reality, these solutions look appealing on the surface, but if you dig a bit deeper you may begin to see cracks in the product, and discover that what you thought was a fully integrated solution is actually several separate islands of technology with some great middleware in between.

I am aware of a recent project where a customers implemented ERP and PLM from the same vendor (a big vendor at that), which were sold as fully compatible. It transpired that in order to integrate the two solutions it was necessary to put together a bespoke script that would serve as a thin middleware layer between the ERP and PLM solutions and allow for mass updates of costing data. Mass updates are not widely implemented across the vendor landscape at present, but where a customer is purchasing both ERP and PLM from the same vendor, I believe that it's a legitimate expectation that the structure would allow for this, especially taking account of the fact that both systems should be using the same data source.

As I mentioned in parts one and two of this series, a full end-to-end system has its benefits. Being able to drive product development from integrated line plans and merchandise planning (perhaps existing in an ERP solution (or module)), or having purchase ordering fully integrated into PLM are useful capabilities which are not replicated in standalone PLM systems out of the box. But rest assured that a number of well-established and well-supported BIBS do come with very comprehensive interfaces to any number of ERP and supply chain systems, allowing these and similar added value features with a little more integration work.

Thirdly, there is a lot of risk in deploying one vendor's system across the entire business. You will be able to achieve some significant economies of scale on the licence fees, and you can expect to save costs on implementation and future service agreements, but what if that one vendor goes insolvent or is purchased and the business entities divided? We have recently seen Infor and Lawson merging and Gerber being acquired; through our connections with the vendors we are able to get a reasonably clear picture of the future developments in such situations, but are vendors communicating the same to their clients? Where a single vendor's system has been rolled out business-wide, are those customers always made aware of their vendor's structure and development plans? My experience (through discussions with both prospective and existing customers of PLM) is that they are not.

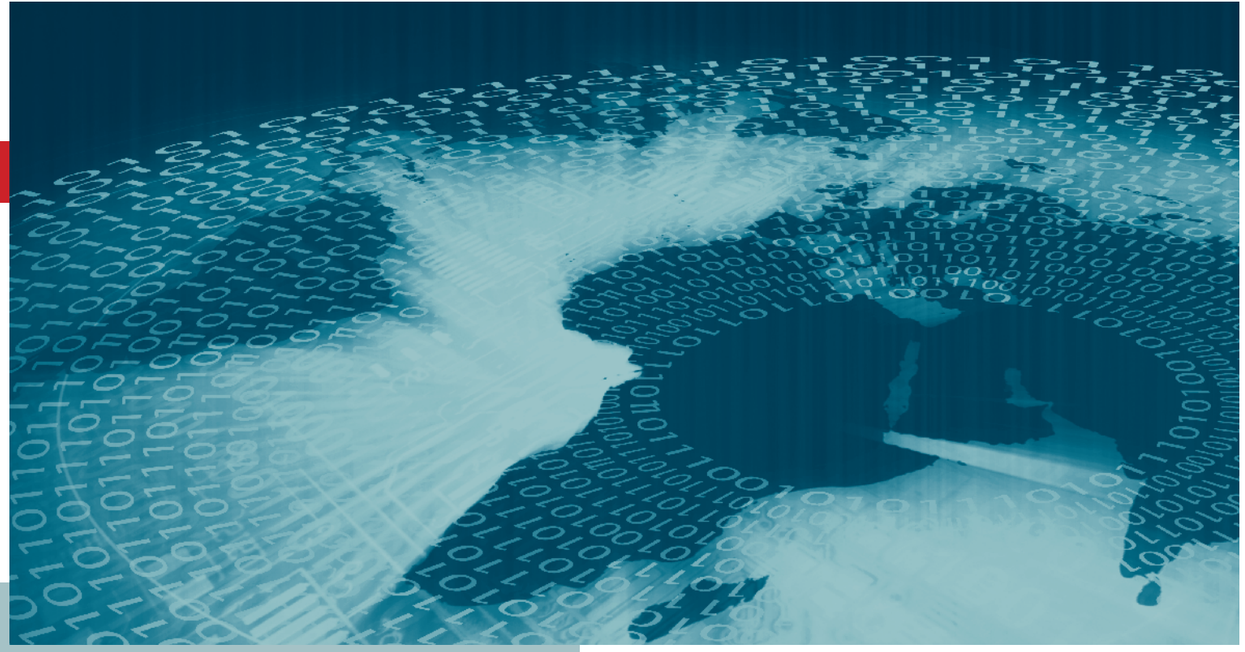
As a prospective customer of PLM, you need to ensure that the data behind the scenes of whichever PLM solutions you shortlist is relatively standardised, or that at least there is a reasonable export function; so that should you need to replace the solutions whatever reason, the migration won't end up being a potentially resource heavy process i.e. where there is an apparel PDM which utilises a bespoke database.

Of course no matter what system you implement – whether it is a full end-to-end or BIBS – data should be a paramount concern. Where apparel PLM implementations are concerned, we tend to find that, assuming an average implementation period of 150 days, almost 40% of that time will be spent collecting, cleansing and unifying data across all business entities, defining low level field structure to accommodate incumbent systems and consolidating existing libraries. Colour libraries are a great example of this: if you have the colour 'blue', this can exist in the business with many different descriptions and codes ('sea blue', 'sky blue', 'Blue', 'Blue7', blue_2', 'b487' with a 3 digit code in ERP, 5 digit code in PLM and 6 digits in Pantone). The majority of the time this is actually the same colour on a standard colour chart but just entered multiple different times by different users working with different systems. Identifying and unifying all this data across an entire business is a huge task, and one that requires a significant amount of resources both internal and external. But, once complete, this set of unified data becomes the one master that you can easily control and structure for future operations (saving a significant amount of data migration costs both on the PLM and other foundation IT platforms in the future, and most probably realising a significant amount of internal collaboration and efficiency).

Ultimately there are risks and benefits associated with both types of PLM adoption – whether it's PLM alone or as part of a wider platform strategy. I have seen businesses of all shapes and sizes adopt PLM in all manners and deployments (in a multitude of system strategies). Apparel PLM is flexible, it can be iterative, it has OOTB functionality and has a great selection of vendors. However it is ultimately an important strategic system which brings about massive business-wide changes both internally and along the extended supply chain. From my experience of apparel PLM projects I know that the best approach is almost always the simplest. Get the core parts properly implemented (whatever type of solution you choose to adopt), working efficiently and returning value and before you know it the rest will fall into place.an always be boiled down to: assessing the key current business needs; looking at the drivers for the future; reviewing the internal resources (both financial and human productivity); and properly assessing the vendor landscape. Apparel PLM can be deployed on a phased approach (I.e. just core tech pack requirements) or it can go live with advanced functionality (such as advanced line planning) in place, jointly with an enterprise resource or supply chain system! No matter what project implementation strategy a customer adopts, there is a fine line between huge, quantifiable returns and six figure losses. Figures from our industry wide customer report in 2010 show that almost 60% of customers' apparel PLM implementations overran budget and time, with choice consumer quotes being: "We tried to do too much too fast"; " [We didn't] monitor the objectives and timelines closely"; and "[Our project overrun is] 30 months and over 10 million dollars".

For me the most important quote there is the first one.

> Ultimately there are risks and benefits associated with both types of PLM adoption – whether it's PLM alone or as part of a wider platform strategy.



# The Importance of Master Data

## Part One

*In our industry, the focus is often on the PLM solutions themselves (both core and E-PLM) but in this two-part series, originally published in November 2011,* ***Mark Harrop*** *explains the vital role that centralised Master Data plays in any implementation.*

Master Data (sometimes referred to as "Reference Data" or, as the scope of worldwide working and consolidated storage expands, as "Big Data") is one of the most vital components of any enterprise system, but one that you will very rarely see referenced in sales literature.



**Despite being a relatively new term, Master Data is really a new face on an old problem that's been with us for a very long time. Master Data (sometimes referred to as "Reference Data" or, as the scope of worldwide working and consolidated storage expands, as "Big Data") is one of the most vital components of any enterprise system, but one that you will very rarely see referenced in sales literature. Without it, work can be duplicated, product development complicated unnecessarily and entire implementations scuppered.**

In the world of modern product development, more and more solutions (ERP, CRM, CAD, CAM and more) share a common data source. So what is Master Data and why is it so critical not only to the success of your PLM implementation, but for those solutions in place across your entire global supply chain that rely on the same sets of data?

Managing the data used by a given business (data such as Supplier identifiers, Measurements, Product Types, Colour, Materials, Trims, Labels, Employee, locality and partner data) has always been a major challenge for any PLM implementation – ever since organisations have tried to share or integrate data across systems.

Much of the data your business holds, whether you realise it or not, falls within the scope of Master Data. Examples of the kind of Master Data that might play a part in a PLM implementation include:

Product data (item number, bill of materials, product codes)
Materials (All types)
Labour Operations (Standard Minuet values)
POM (Point Of Measures)
Size Ranges
Size Categories
Grading Increments
Colours
Image Types
Costing Data (Currency tables and exchange rates)
Country Codes
Duty Rates
Roles & Employee data (employee role, names, placement in organisational structure)
Partner data (Supplier name, address, contact details, classification)
**ETC.**

Let's take a step back and look at how many of today's businesses develop products without the support of a modern PLM solution. Whether they are a retailer, brand, manufacturer, agent or supplier, the majority of businesses around the world currently develop their products using traditional, paper-based methods.



At best, some of them use what I like to call "Microsoft PDM" – i.e. a combination of Powerpoint, CAD and Word files during the design phase, supplemented by hundreds of Excel spreadsheet that support the technical specification process. In these situations, Excel serves as a bridge between purchasing solutions, ERP and testing; e-mail is heavily relied upon for collaboration, and costing and critical path mapping tend, again, to be done in Excel and with hundreds of phone calls!

These legacy systems and piles of Excel files have held what is crucial master data for many years. Many such organisations have poorly implemented Data Governance processes to handle changes in this data over time, leading to inefficiencies, inaccuracy and many mistakes. Under the traditional and "Microsoft PDM" methods, data is almost always poorly integrated and at low levels of quality

While these traditional processes have been in place for many decades, that lack of data governance has seen little or no focus given to the way the data they rely on is handled, and this is the culture into which many PLM implementations have to fit. The foundations are far from ideal.

Without it, work can be duplicated, product development complicated unnecessarily and entire implementations scuppered.

These traditional development methods have evolved over time to a state where each process owner makes his or her own decision on how they would like to enter data, based on their own experience and personal preferences. For example: some of those process owners will have used capital letters for style or supplier names, while others will have used the typical capital first letter, followed by lower case, to enter their style names.

And this is just for a single core system! On top of this, many different supporting solutions will have been acquired, developed and deployed across the business over the years, and in many cases these systems will have rules that dictate the ways in which data can be entered into the system. Some of those systems will force the capitalisation of the initial style name letter, others still will not be case-sensitive; some systems will limit users to a set field length (e.g. ten digits for a style name, even while other systems within the same organisation support fields of 13 or 25+ characters) leading to a situation where we have potentially three ways of entering the same data within the same business.

Now, if we multiply this confusion by the hundreds of field types in place in a typical system, and the number of different systems in a given organisations, I'm sure you can begin to see the enormity of the challenge of bringing a modern PLM solution (which rely on standardised, unified data) into that situation and ensuring that it can still deliver bottom-line savings to the efficiency of the business.

Master Data, which in its purest form is the establishment of one centralised, unified set of data from which all enterprises systems can draw, is for me as critical as any part of a PLM project – on the same level as functional scoping or detailed design. In most circumstances, though, Master Data is not as simple as a data-cleansing and gathering exercise, but should also be seen as a critical methodology/process that should take place either before or in parallel with the PLM process design & implementation.

If we use the analogy that PLM is the vehicle that enables organisations to reach a state of streamlined, modern product development, Master Data should be viewed as the high octane fuel for that vehicle. There is no doubt that PLM (properly chosen and implemented) can deliver significant value to any business, but this value is limited where a business simply implements the system and leaves it up to the end users (who each have their own methods of data input) to organise and input the data that it relies upon.

Unless the business treats Master Data as carefully as the initial design of the PLM project then unfortunately the results are often that the data being loaded into the PLM solution is very poor and out of sync with the rest of the business solutions. often the data has not been carefully organised, cleansed and will most likely be full of duplications e.g. it could be the same data using capital letters and/or lowercase type settings, poorly organised coding of data types, unnecessary data that adds to the complexity of sorting.

Unfortunately this scenario is common: the data enters the system in an ad-hoc and disorganised fashion, compounding the difficulties inherent in the "Microsoft PDM" approach, and this is the reason behind the long delays in those businesses deriving the expected benefits from their solution.

The Master Data approach should apply to all of your business-critical product development data: POMs; Size Range; Sample Types; Materials; Product Types; Roles; Employee data; Design & Development Locations; Purchasing offices; Colours; Labels; Packaging; Trims; Costing Data; Field lengths and types. These should all be carefully examined, especially where their data is used in other supporting solutions like the Adobe Suite and ERP, CRM, tracking and sourcing solutions.

It is vital that data governance rules and a business-wide culture change are considered as early as possible in any implementation process, to ensure that, where PLM or other enterprise-level systems are adopted across a business, the data they rely on is accurate and consistent.

This ideology should also extend outside the company. As I explained at the beginning of this blog, in the world of modern product development an increasing amount of Master Data is being shared between businesses and their partners. Similarly, data that might not be thought of as Master Data internally (such as style codes, product codes, country codes, colour codes, material codes and foreign exchange rates, to name only a few) can comprise the core of your data-sharing relationship with your partners.

I cannot emphasis enough that transitioning from traditional methods to the Master Data ideology requires serious education (both internally and across your extended supply chain), and a supporting methodology using processes and tools that will aid in the creation and unification of Apparel PLM Master Data.

Taking account of the data gathering and unification process, the need for the development of uploading tools (managed by the PLM vendors) emerges as a critical key driver to speed and value. As with the core functionality of the PLM solution itself, the aim of establishing reliable, sustainable, accurate, and secure Master Data is to help businesses achieve real value from their investments, and vendors should ease this process wherever possible.

For those businesses considering PLM, though, it's time to clean up and unify your Master Data if you want to derive the optimum benefit from your PLM implementation!

…the majority of businesses around the world currently develop their products using traditional, paper-based methods.

# The Importance of Master Data

## Part Two

*In our industry, the focus is often on the PLM solutions themselves (both core and E-PLM) but in this two-part series, originally published in November 2011,* ***Mark Harrop*** *explains the vital role that centralised Master Data plays in any implementation.*

**Following on from the importance of Master Data itself, I now intend to look at why a Master Data unification project represents a unique opportunity to improve business processes across the board and promote a new ideology beyond the core of PLM.**

The process of Master Data unification and organisation is a difficult one to begin. Too often business and executive management recognise the necessity of the process, but believe that the resources needed to retrieve, organise and unify that Master Data are too significant and costly. As a standalone project, it can be tough to set out a tangible ROI (return on investment) for the kind of work necessary to do a Master Data project justice.

In order to avoid this, organisations should look to align their Master Data project with other PLM related initiatives – initiatives that improve business processes, business intelligence, integration to third-party extended PLM solutions, reporting and analytics, or help reduce administrative overhead caused by redundant data entry. By pairing a Master Data project with other introspective endeavours that deliver demonstrable benefits to the business, some of the sting can be taken out of the standalone project's tail. I call this broader approach the Master Data Ideology.

> …a Master Data unification project represents a unique opportunity to improve business processes across the board





Where does Master Data reside within your business? Well, this depends greatly on your IT strategy and architecture, and the maturity of your Master Data process. As with any product development maturity improvements, it is important that a Master Data project is only re-engineered to a level that is appropriate for your business, to avoid over-engineering.

Another sticking point for management when it comes to Master Data is the desire to do everything at once. We would never advise our clients to move immediately from using pencil and paper to a full-blown, state-of-the-art CAD solution, and the same principle applies to Master Data projects. A typical step-by-step Master Data project will look something like this:

### Step One

Low-level use of Excel (or comparable software) for data gathering and organisation.

### Step Two

Detailed analysis of how that data will be used within the business, taking in supporting field types and data values, before organising, educating and documenting these processes across the entire extended supply chain.

### Step Three

At this stage the benefits of a broad Master Data strategy become clear. A business could, for example, decide to add an Integrated Operational Data Store or a Master Data Hub, which can then be used as components of the staging area for the analytical Business Intelligence warehouse, as well as acting as a hub being co-existent PLM applications. This will allow new business functionality to be delivered on the analytical side in parallel with the new operational and process functionality delivered across the entire business.

A core tenet of the Master Data ideology is that improvement to the quality of that data requires more than just PLM software. As I have explained elsewhere: in today's hyper-connected world, the same data that underpins PLM is now shared across many different enterprise systems at every stage of the extended product development lifecycle.

When a PLM implementation is built on top of confused and conflicting sources of data, and that data is allowed to populate the expanded systems that integrate to PLM, an old adage comes to mind: "garbage in, garbage out". Without due care being given to a Master Data project (and one that takes in the entire extended supply chain), a business runs the risk of each of their PLM solution – where the centralised data will resides – being riddled with poor quality information.

> Today, we find that future integration is overlooked at the start of a PLM project…

The right PLM solution is unquestionably the best way for businesses to achieve efficiency savings and remain competitive in a difficult climate, but its potential is limited when implementation occurs without a concurrent Master Data project. The PLM solution will, in those circumstances, disseminate the poor quality data that it was fed – quickly – to the full range of solutions that rely on it.

Even a thoroughly-planned and sophisticated Master Data gathering and cleansing process cannot resolve data quality issues where proper standards and governance procedures are not in place. In line with the way that the data involved permeates across the business, the Master Data Ideology goes well beyond the initial gathering and cleansing process: it requires a culture change in the understanding of ownership and the responsibility for carefully considering the value of business-wide data and how that data works in conjunction with PLM-supporting solutions.

In the case of these broad Master Data projects, any business needs to carefully analyse data ownership, investigation of usage, re-engineering and data governance to address long-standing issues, prevent new data quality issues from occurring, and provide an enterprise exception processing framework for efficient data processing management.

In a typical broad Master Data project, we will typically see the gathering, cleansing and unification of existing data that has thus far been used by a wide range of systems (CAD / CAM / PDM / ERP / GSD / CRM / Excel / PLM / 2D / 3D / Others), into or through a centralised data gathering template. This is where most data quality issues are discovered and resolved, before loading into the centralised storage that could in some cases relative to maturity levels be the core PLM. This cleansing exercise alone can deliver the kind of broader business benefits (improving the reliability of every solution in the product lifecycle) that add to the ROI case for the project, as well as ensuring that the consolidated Master Data source is as accurate and consistent as possible.

When it comes time to import that data into the PLM solution, this is typically done with the aid of a defined template that will aid in the integration of other PLM-related solutions both now and in the future. As a corollary benefit, once this template is established it allows the Master Data project to be run on the full range of supporting solutions simultaneously, confident that the data from those disparate systems will conform to the standards established by the template itself.

> Without due care being given to a Master Data project (and one that takes in the entire extended supply chain), a business runs the risk of each of their PLM solution – where the centralised data will reside – being riddled with poor quality information.

As well as streamlining simultaneous projects, a well-mapped broad Master Data project can serve as a roadmap for future integration projects. The template defined in the initial gathering and cleansing exercise can serve as a framework for those future projects, along with the meta-data defined at the same stage. Today, we find that future integration is overlooked at the start of a PLM project, meaning that re-engineering is required when integration with additional solutions becomes necessary.

Integration (at both a systems and data level) requires a comprehensive strategy, taking in people, processes, organisation and technology. It can be conducted over many years, change entire ways of working, disrupt business processes and involve a significant number of business stakeholders. Adding re-engineering because of a lack of foresight will only increase the cost and disruption of those future integration and implementation projects. The business savings that can be achieved by establishing a robust integration framework and a healthy Data Governance culture at the time of the initial Master Data project should be clear.

A properly-conducted broad Master Data project requires a new mind-set based on a careful analysis of the value that it can bring to the organisation, and an understanding that it simply cannot be run in isolation.


# NRF 2012

## The WhichPLM Report

*The National Retail Federation Conference & Expo is one of the most prominent dates in the retail industry calendar, truly earning its handle of "Retail's Big Show". In January of this year,* ***Ben Hanson*** *spent three days experiencing everything the NRF show had to offer - meeting many of the world's leading PLM vendors in the process.*



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**This year's National Retail Federation Conference & Expo closed its doors to the icy New York air on 18th January. The exhibition floor had been methodically cleared, beginning at 5PM the previous evening when the show's 25,000 delegates began to wend their way along the city's streets and avenues either to industry parties or late flights home. A good portion of those delegates (more than 6,000) were returning to homes outside the US, marking a record in both overall turnout and the quantity of international attendees at the biggest of "retail's big shows" in their one-hundred-year history.**

I was one of those international delegates, invited to the NRF 2012 show as a member of the press. I came to learn more about the state of the global retail market, gain some insight into the emerging worldwide trends that hope to reinvigorate it, and to better understand the place of Product Lifecycle Management ("PLM") in both.

The subtitle for this year's event read "Retail's new rules: engage and evolve", which was as accurate a summary as I can imagine. There is no question that retail – as with all consumer-facing industries – is struggling in today's difficult economic climate, and that the workforce and associated industries that rely on it are suffering in turn. As NRF CEO Matthew Shay outlined in his opening address, retail supports one in four US jobs (more than 42 million jobs in total), making it the single largest employer of any industry. Whether it can continue to support that workforce, though, is another question entirely.

Broadly speaking, as the cost of living increases, people have fewer and fewer spare dollars each month, consumer spending drops, and many retailers find themselves having to compete for a smaller share of disposable income than ever before. Despite the preponderance of "big name" retailers on the NRF stage, of the 3.6 million retailers in the US more than 95% operate in just one location, without the added security that national or multinational reach can bring.

In a very real sense Retail Means Jobs. Indeed, the NRF's initiative of that name raised an astonishing $350,000 for the Retail Orphan Initiative during the five days of the show. And what became clear throughout was that retail must evolve to keep pace in a difficult climate and engage with less-willing customers to remain profitable if it intends to support or grow its existing workforce.

Fortunately, with 39% of attendees being C-level or senior executives, the Jacob J. Javits Centre halls and showfloor were thronged with the people best poised to make that happen.

While Saturday and Sunday played host to the international and opening night receptions respectively (along with several "super sessions" on Sunday), the big show kicked off in earnest on the morning of Monday 16th January with a keynote speech from former US President Bill Clinton.

The North Hall was packed to the rafters, and it seemed as though almost everybody who wasn't actively involved in setting up a booth had turned out to hear Pres. Clinton's address. I sat in the cordoned-off press area, just able to pick out the speakers in the distance. Following a brief introduction by NRF Chairman (and CEO of Macy's) Terry Lundgren, Pres. Clinton humbly took to the stage, declaring this to be "a bigger crowd than I usually draw".

Titled "Embracing Our Common Humanity", Clinton's address drew on his work as a private citizen and with the Clinton Foundation to act as a stark reminder of the economic realities facing not just the retail industry, but the world at large. As with the Retail Means Jobs initiative, Clinton drove home the fact that the current financial crisis has impacted on more than just ephemeral economics. While his generation were always confident that they would be able to make a living, the situation today has "gone to the core of people's sense of who they are and what they're worth", Clinton said.

After explaining how he almost wound up working in retail himself – selling pristine editions of vintage comics alongside his teenage job in an Arkansas grocery store – Clinton sought to remind retailers that they are responsible for 20% of the United States' GDP, as well as being the gatekeepers for the largest workforce of any industry. Those figures place a considerable burden on the shoulders of retailers, but it's one that goes beyond cold statistics. He explained that, "if [retailers] are leading the country out of a recession, you are doing something far more important than getting people back to work and putting money in their pockets".

Far from being US-centric, though, Clinton's speech reminded delegates that we are today "interdependent in a way we have never been before", and discussed how all industries and all nations share both the opportunities and the responsibilities of building a prosperous future for our shared world.

*There is no question that retail – as with all consumer-facing industries – is struggling in today's difficult economic climate, and that the workforce and associated industries that rely on it are suffering in turn.*

Continued overleaf…




The Javits Centre is a gigantic building – so much so that I was completely oblivious to another large conference and exposition running concurrently on the lower floors – so I don't mean it lightly when I say that the NRF expo floor was overwhelmingly large.

Split into three different areas, with interconnecting hallways at convenient locations, there seemed to be little logic to the way that booths were allocated throughout the cavernous space. Unlike IMB, though, this event had such a broad remit that it would have been nigh-on impossible to segregate the different retail processes to separate areas of the showfloor.

Customer engagement was unquestionably the predominant trend on display. Point of sale solutions and in-store product visualisation technologies were out in force, with every other booth displaying an eventually-very-similar-looking series of "revolutions" to the physical or online shopping experience. It is probably due at least in part to the nature of the solutions themselves – core software tends to look like a series of prettied-up spreadsheets, while gesture-based customer portals tend to look like a glimpse of the future – but there was a great deal of focus placed on direct retail interfaces and comparatively little attention given to the enterprise software that allows so many of those high-profile retailers to create products in the first place.

*…the range of customer engagement, business intelligence and product image capturing technology on display was intoxicating…*

PLM in particular did not feature prominently on the showfloor. Notable exceptions included PTC, ecVision, Epicor, Jesta I.S., and Gerber Technology, all of whom had PLM solutions (either independently or as part of an extended product development suite) on show. WhichPLM also had the pleasure of meeting with BMS, Visual 2000 andFastFit360 outside of the show. Dassault Systemes, too were present in their role as Microsoft partners, demonstrating the 3D visualisation software 3DVIA, while Infor (now owners of two PLM solutions following their 2011 acquisition of Lawson) had a conspicuous, PLM-shaped hole in their otherwise comprehensive product offering.

It is hard to draw any meaningful conclusions from this, though. Clearly PLM vendors are making an active decision not to demonstrate their solutions at NRF, but representatives of most (if not all) of the major vendors were present on the showfloor at one point or another. Perhaps PLM does not stack up well alongside glamorous storefront technology; a noisy convention centre crammed to bursting with interactive signage is hardly the ideal place to demonstrate a comprehensive Bill Of Materials, after all. Perhaps the money required to have a significant presence at NRF (and I understand floor space does not come cheap) is being spent elsewhere? I certainly don't believe that PLM is being actively marginalised, and I expect that as the PLM umbrella grows (taking in the kind of solutions collected here on WhichPLM as "E-PLM") so too will its presence at shows like NRF.

There's no denying, though, that the range of customer engagement, business intelligence and product image capturing technology on display was intoxicating. Matthew Shay revealed in his opening address that some 70% of customers shop online or on mobile devices, so it's no surprise that the integration between social media, mobile technology, online shopping and physical retailing was a cornerstone of many strategies.

At Microsoft's gargantuan booth, various partners (including IdentityMine andEmerging Experiences) demonstrated the potential of Microsoft's multi-user, multi-touch hardware Surface in to personalise the retail environment. Customers with a Windows Phone are able to compile a shortlist of products at home and then, by depositing their phone on the in-store Surface, compare those products, access special offers, create a virtual shopping cart and then collect their purchases. Similar use was made of Microsoft's Kinect (just recently announced for business use) and equivalent range-finding cameras by both Microsoft partners FaceCake and in the form of Cisco's StyleMe (PDF) to create augmented reality applications for retail. Using gestures, shoppers are able to select from popular items and looks before having them superimposed on their digitised selves – turning when they turn and moving when they move. The technology is still a little crude (and prone to interference when more than one person enters its field of vision), but the concept is compelling and here at WhichPLM we look forward to seeing how developers are able to leverage this kind of technology for early trend analysis and product development. As customers increasingly turn to online retail, flagship stores need to do everything they can to differentiate the bricks-and-mortar shopping experience with these sorts of engaging, augmented reality applications.

As I mentioned in my "Best of NRF 2012", I was particularly taken by the potential of one such retail technology: Google Wallet. The search engine giants had a considerable presence at the show (demonstrating everything from their long-established Adwords to Google Commerce), but Wallet was by far the most pertinent to the apparel shopping experience. Google has some intimidating partnerships in place, and it appears as though contactless payments – using an appropriately-enabled Android Phone – will become a reality in the US in the very near future. I look forward to seeing how far the UK retail industry is willing to adopt this kind of forward-thinking technology to reinvigorate the shopping experience.

*By far the most prominent point of interface between expanded and core PLM on display were the various product image capturing and virtual sampling tools.*

By far the most prominent point of interface between expanded and core PLM on display were the various product image capturing and virtual sampling tools. While customers are engaging with virtual representations of retail products in-store, designers and garment technicians are increasingly reducing their reliance on costly physical sampling by analysing and annotating detailed images of product prototypes. On the showfloor I was treated to a demonstration of the new StyleShoots solution from iShopShape. Using a high resolution camera, lightbox and wirelessly-linked iPad, StyleShoots captures a single view of a particular garment (rather than a series of images or 3D model) in exacting detail, with no background interference. The solution was shown to me capturing an intricately detailed scarf; StyleShoots was able to create a detailed, transparent image of every last stitch in less than thirty seconds, which could then be used to quickly and easily enter product image data into a PLM solution.

At the opposite end of the image capture spectrum were expanded PLM supplierFastFit360, whose eponymous solution captures an image array that allows designers and garment technicians to rotate a 360-degree view of a given product, providing feedback and annotations in a collaborative online environment. WhichPLM were shown the FastFit360 solution in-situ at legendary US retailer Macy's, where a staggering 70% of US households shop at least once a year. I was



Continued overleaf…

*Through conjuring up hyper-real worlds and using their marketing as insights into those aspirational lifestyles, Ralph Lauren seeks to keep its customers engaged by allowing them to buy into the dream.*



later invited to attend the company's lavish "Cloud" event at a nearby rooftop bar, where representatives of some of the country's highest-profile retailers were silhouetted against the frost-limned skyscrapers of Manhattan.

This is not to say that core product lifecycle software was neglected entirely, though. Merchandise planning, assortment planning, workforce management and business intelligence were the most obvious components on display, with Torex, daVinci, Kronos and Panorama Business Intelligence all demonstrating their solutions. Torex in particular were keen to draw attention to their new integration to Gerber Technology's YuniquePLM solution, although I only experienced this as an overview – not a functional demonstration.

Away from the crowded showfloor and beyond Pres. Clinton's keynote, the range of "super sessions" (or, in layman's terms, talks) at NRF 2012 did not disappoint. A trio of representatives from Leonard Green & Partners, The Container Store and Whole Foods (whose Co-CEO later accepted the award of Retail Innovator Of The Year on behalf of the company's 65,000 employees) gave an impassioned insight into "Conscious Capitalism", tying onto Clinton's earlier anchor of the often-overlooked humanitarian cost of business. Even the typically-low-key final morning saw CEOs from LocalResponse, OpenSky, Quirky and Zaarly take the stage for a lively Q&A looking at how social media is working to empower consumers, and how businesses are (or in many case are not) using that opportunity to engage with their audiences.

Particularly interesting was a keynote speech from David Lauren, Executive VP of Advertising at American institution Ralph Lauren entitled "Keeping a Classic Brand Modern".

Lauren walked his audience through a potted version of the forty-five-year history of the Ralph Lauren brand, taking them from unknown necktie designers to permanent fixtures on Madison Avenue and the Wimbledon centre court. Ralph Lauren were particularly notable for being one of the first luxury brands to embrace online retailing at a time when their counterparts believed that the web would either commoditise luxury brands or cannibalise sales from their own bricks-and-mortar stores. Lauren explained his eager adoption of online retailing as being just part of a larger strategy he terms "merchantainment" – a slightly unwieldy portmanteau of merchandising and entertainment. Over a series of high-gloss slides and videos, Lauren explained that whatever the medium – print, online, store window or holographic projection – Ralph Lauren is focused on telling stories through its collections. Through conjuring up hyper-real worlds and using their marketing as insights into those aspirational lifestyles, Ralph Lauren seeks to keep its customers engaged by allowing them to buy into the dream. In keeping with their early-adopter ethos, it's no surprise that Ralph Lauren have embraced the mobile revolution, allowing their customers to design shirts in a dedicated app and buying out the advertising space in the New York Times iPad app for the entire month of September.

The lesson Ralph Lauren has to teach all retailers, and particularly those in the apparel industry, is that opportunities are there to be embraced. Whether it's virtual sampling, in-store augmented reality, merchandise planning or core product lifecycle management, the tools required to remain profitable and competitive in the retail industry are out there – on display at shows like NRF.

The mindset required to engage and evolve, though, can only come from within.

*…the tools required to remain profitable and competitive in the retail industry are out there – on display at shows like NRF.*

READ THE REST OF WHICHPLM'S NRF 2012 COVERAGE

**An interview** *with Gerber Technology*

**An interview** *with ecVision*

*The full gallery of* **photographs**



*Away from the crowded showfloor and beyond President Clinton's keynote, the range of "super sessions" at NRF 2012 did not disappoint.*

*The mindset required to engage and evolve can only come from within.*


# ABOUT

## OUR **2012 CUSTOMER SURVEY**

**In the summer of 2010, WhichPLM undertook an industry first: we directly contacted 500 customers of PLM from all areas of the globe and every stage of the product development process for footwear and apparel, and solicitied their feedback about the implementation process, capabilities and real, day-to-day experiences of working with PLM. We guaranteed anonymity and impartiality (both underpinned by the long-standing ethics of WhichPLM itself) and as such we were able to compile what was, at the time, the most complete picture of the PLM marketplace for retail, footwear and apparel. We examined not only the suppliers and the software themselves (since the customers we surveyed were users of a very wide variety of different solutions) but also the level of customer satisfaction of the industry as a whole - at every discrete stage from design to delivery.**

The results of that survey were published in September 2010 as a premium management report, intended to help prospective customers and PLM suppliers better understand what was, at the time, a crowded and confusing marketplace. Since then, the marketplace of PLM for retail, footwear and apparel has become, if anything, more crowded and orders of magnitude more confusing for beginners. The average industry document is cluttered with acronyms; mergers and acquisitions form the shrouded backgrounds of industry news, and matters are further complicated by the proliferation of new and newly-integratable solutions that fall under the banner of extended PLM (or, as we call it, E-PLM). In short, the industry is more opaque to the company embarking on a shortlisting exercise than ever before, despite some sterling marketing and branding efforts from some of the world's most savvy suppliers.

At WhichPLM, we have been helping customers (both prospective and existing) to navigate this marketplace for almost five years, and our unique domain expertise and industry knowledge has allowed us to keep abreast of this avalanche of developments as it has taken place. Our stated goal throughout that time has been to provide the resources - news, editorial opinion, unique insight tools - that collectively create better informed, more empowered customers, and help to establish the clearest possible avenues of communication between suppliers of PLM and their customers.

It was that overriding goal that led us to create that first independent Customer Survey in 2010, and the same goal has driven us this year in the creation of something different - something we believe will better serve the customers and suppliers that make up today's rapidly-growing and increasingly bewildering marketplace.

In 2010, a good portion of the customers who took our survey will have begun to create their solution shortlists offline: visiting trade shows, being given demonstration, and examining literature distributed by suppliers. Things have changed in the intervening period. Traffic to WhichPLM (which remains a digital-only publication) has risen astronomically, with more prospective customers than ever before consuming their news, viewing software demonstrations, reading trade show reportage, and comparing the capabilities of different solutions online. Indeed, in early 2011 we launched the **WhichPLM Comparison Engine** in collaboration with more than thirty PLM suppliers from around the world who cater to our industry, and we did so in recognition of the fact that an increasing number of critical steps in the PLM shortlisting and selection process were being conducted without the customers' ever setting foot in a trade show booth or seminar hall.

> *This same insight led to the creation of the unique document you are reading. We understood from the beginning that this should be a freely available digital publication (with all of the benefits this entails) and we equally understood that a simple customer satisfaction survey, conducted as it was in 2010, would not suffice for the requirements of today's audience.*

So it was that, this year, we chose to open a bespoke customer survey portal to everybody. Rather than directly contacting customers, we created a unique system that would allow end users for PLM - whatever their role - to complete







a detailed but streamlined questionnaire at a pace that suited them, submitting their results online. This approach resonated with customers and suppliers alike: many of the world's leading suppliers volunteered their customer bases to us (understanding the vital role that transparency and confidence in their software plays in public perception). And some extremely high-profile retailers, brands, and manufacturers took the time to provide their honest, unbiased feedback- making their voices heard to many more of the leading figures in the retail, footwear and apparel industry.

The survey portal closed in February 2012 after a lengthy data-gathering period, and the WhichPLM team began the process of analysing the results and comparing them to equivalents from our 2010 survey to ascertain just how far the industry had changed in the intervening years. While many of the questions we asked this year were the same or similar to those we asked in 2010, we also took great care to ask questions that would provide additional insight into how the industry has developed since - looking at systems integration and the diversity of new processes and methods that have arisen since we last solicited customer feedback on this scale.

Where possible, you will find these new results contrasted with their equivalents from 2010 in the analysis that accompanies each infographic. The graphics themselves display the raw results (calculated in percentage terms), while the accompanying textual analysis provides context, insight and buying advice relating to each question. The questions themselves are reproduced in their entirety, except where space constraints have dictated that they appear abridged.

Readers will note that these questions are primarily focused on the capabilities of what have become known as "core" PLM solutions. While the aforementioned new questions do touch on the role that systems integration and E-PLM play in overall customer satisfaction, the diversity of those supporting solutions can make it exceptionally difficult to separate the customers' satisfaction with their unique E-PLM combination from their experience with their chosen core PLM solution. Rather than duplicate insight that is found elsewhere in this same publication (Mark Harrop's management introduction to E-PLM, and Kilara Le's insight into systems integration and the expanding E-PLM umbrella), we chose instead to focus this survey on the core competencies of traditional PLM solutions for several reasons. Primarily this was because these are typically the first and largest systems implemented by an organisation, meaning that more focused results 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. Secondarily, had we changed the questions to reflect the real diversity of E-PLM, it would have become impossible to draw meaningful comparisons between this year's results and those seen in 2010 survey.

Finally, E-PLM is a concept that is only just beginning to gain traction in the marketplace. While many (if not most) retailers, brands and manufacturers are working with systems and solution that belong under the E-PLM umbrella, a large portion of them may not realise that they are doing so. WhichPLM is committed, both here and in our regular online publication, to educating the industry about the role of E-PLM, and it is our hope that the next such data gathering exercise will allow us to ask equally insightful questions about those extended solutions as we have done here for core PLM.

Readers will also notice that, unlike the 2010 survey, these results do not occupy pride of place in this publication - instead sharing equal billing with two brand-new initiatives, created specifically for the Annual Review. We recognise and routinely emphasise the importance of customer satisfaction, but we also understand the place it occupies in a broader, more comprehensive understanding of the market. This is why you find these results bookended by retrospectives of the past twelve months - one designed to provide the best educational, informative content from our pages, and one intended as a unique and detailed examination of the market itself.

In recognition of the well-established growth of the industry as a whole, and the way in which customers and suppliers consume and distribute their information, we believe that it has become more important than ever to talk about every aspect of extended PLM, rather than customer satisfaction in isolation.

We still, of course, believe that customer satisfaction occupies an important place in any such discussion, as it covers everything from the basics to the specifics - and from the capabilities of the software itself, to the market circumstances that surround its marketing, selection, implementation, day-to-day use, and future expansion.

> *The additional context we have provided in this new and unique publication is not intended to detract from the survey results themselves, or what they represent, but to strengthen their role in achieving our one enduring goal: the creation of empowered customers, able to rely on accurate, independent market research to make truly informed buying decisions.*

# 2012 SURVEY RESULTS

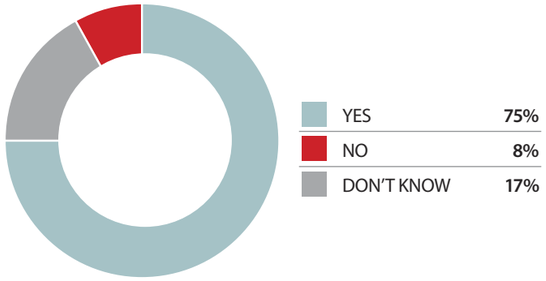
*In recognition of the well-established growth of the industry as a whole, and the way in which customers and suppliers consume and distribute their information, we believe that it has become more important than ever to talk about every aspect of extended PLM, rather than customer satisfaction in isolation.*





## Q1

**Did your business tailor its Refer For Information (RFI) questionnaire to your unique challenges and requirements at the time?**

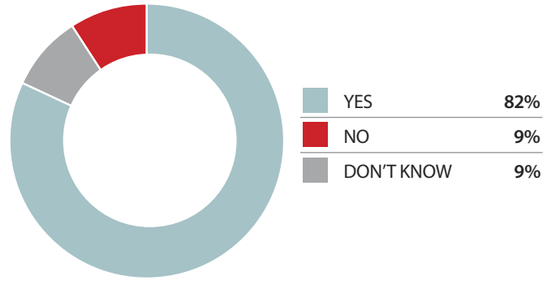



### ANALYSIS

An RFI questionnaire is one of the most valuable tools in the pre-selection and shortlisting process: it should comprise carefully-chosen questions, prcoess weighting and customer-specific scoring that will enable the customer's implementation team to compare the capabilities of each solution against their own unique requirements. In some instances, boilerplate RFI documentation is provided by the suppliers themselves, rather than being tailored by the customer, with the expected effect of producing far less effective results. This year's results confirm that the majority of respondents created their own RFI questionnaire (an increase of 15% over the results of our 2010 survey), with a very small percentage using an off-the-shelf equivalent. Please contact the WhichPLM team for additional information and tips on compiling effective RFI documentation.

## Q2

**Did you conduct an in-depth process examination, looking at your existing processes and ways of working, then defining how you would like them to look after the completion of your PLM project?**

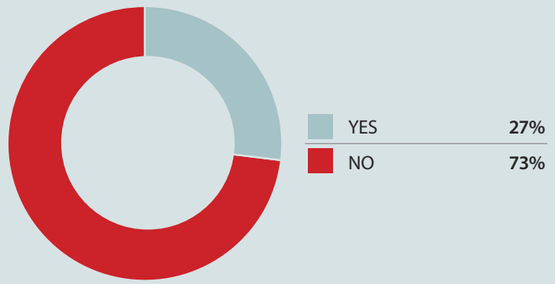



### ANALYSIS

Of equal importance to the shortlisting and selection process is thorough introspection on the part of the customer. Businesses that complete a detailed examination of their existing processes and ways of working, then analyse how they would like them to mature during and after the implementation are typically able to achieve a quicker and more comprehensive return on their investment. It is also important that any business process improvements should be aligned to the goals of a well-defined business strategy. Another improvement on the results we saw in 2010, this year an overwhelming majority of respondents conducted this kind of detailed process examination prior to moving ahead with a PLM project, with a much smaller percentage reporting that they did not, or did not know for certain.

## Q3

**Did you employ a third party consultant or adviser to help with this initial process improvement and re-engineering phase?**

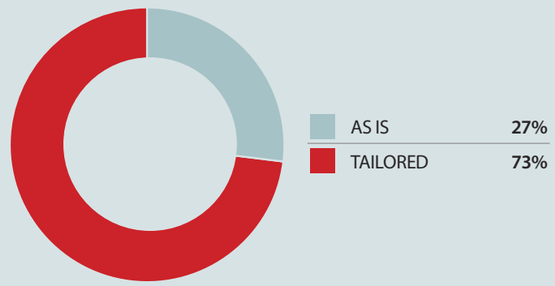



### ANALYSIS

This kind of business analysis and re-engineering is something that can be handled either by an internal team, or by a third-party consultant or advisor. In practice, though, it can prove difficult for an internal team (especially when that team is balancing a PLM project against their day-to-day responsibilities) to conduct this objectively and in sufficient detail. In a drastic change from the results we saw in 2010, this year a considerable majority chose to undertake the process alone. While this approach places more power in the hands of the businesses themselves, WhichPLM would always recommend expert, impartial consultation to any business that is at all unsure of its requirements.

## Q4

**Once you had conducted your initial shortlisting exercise, did those vendors you invited to demonstrate their solution do so on an "as-is" basis, or did they tailor their presentation and demo to give you an idea of how a day in the life of your business might be should you choose their solution?**




### ANALYSIS

As we recommend prospective customers do with their RFI questionnaire, the best suppliers tailor their solution demonstrations to be specific to the prospective customer's unique requirements and ways of working. This often takes the form of a "day in the life", where the supplier explains how their solution would work in the customer's existing environment. In 2010, only half of the customers we surveyed believed that their supplier's demonstrations were so tailored, whereas this year's results show that almost 75% of respondents were given demonstrations that accurately reflected their unique business challenges, rather than being simple walk-throughs of functionality.

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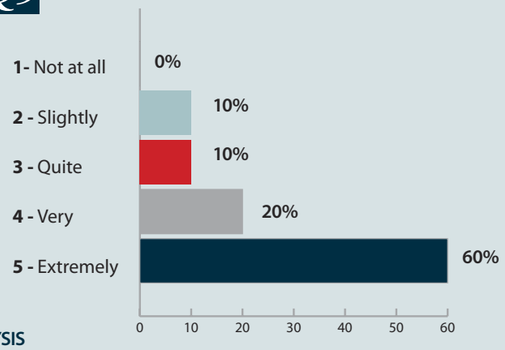
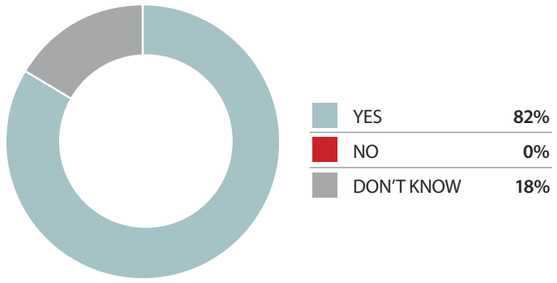
## Q5 How important to you was it that vendors had demonstrable fashion / apparel industry expertise, and qualified resources native to your region?




### ANALYSIS

WhichPLM is dedicated to the retail, footwear, and apparel industries, and this survey collected feedback exclusively from retailers, brands and manufacturers that fall within those sectors. Unsurprisingly, then, the vast majority of respondents considered previous fashion industry experience to be either a quite or very important factor in their eventual choice of PLM solution. WhichPLM would always recommend working with a partner who understands the highly specific processes that are unique to the apparel industry. If the trend seen between 2010 (when a slightly lesser majority reported that they, too, considered fashion industry experience to be vital) continues, this kind of experience is likely to become an even more prominent factor in whether a supplier reaches the shortlisting stage.

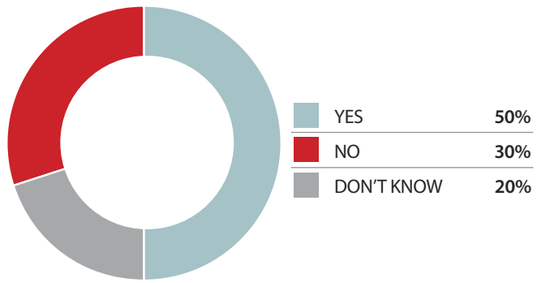
## Q6 Did the pre-sales presentation team for the supplier you eventually selected demonstrate that kind of expertise?




### ANALYSIS

In line with the expectations of the customers themselves, the results reveal that the demonstrations given by suppliers have become not just better-suited to the customers' needs, but also better able to articulate the suppliers' fashion industry experience. In 2010, slightly less than 70% of respondents considered the demonstrations they received to have accurately reflected the industry experience of the supplier. With this figure rising to more than 80% this year, it appears that the efforts of PLM vendors to advertise their dedication to our industry in seminars, webinars, and pre-sales demonstrations have been effective. It is worth noting that this expertise may be considered a fringe benefit where implementations of simple PDM solutions (those focused entirely on the production of tech packs) are concerned, but WhichPLM would always recommend that expert-level resources – with experience of working in the retail, footwear and apparel industry – are assigned to larger scale, enterprise-level projects.

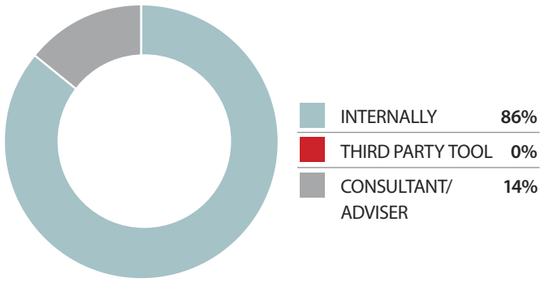
## Q9 Did you complete a detailed Return On Investment (ROI) analysis in advance of the implementation?




### ANALYSIS

An important part of preparation for any PLM project is calculating the Return on Investment (ROI) that the chosen solution is expected to deliver. In 2010, less than 30% of customers reported that they had undertaken a thorough ROI analysis before they began implementing their solution. Worryingly, a similar percentage had not analysed the benefits they hoped to realise with a PLM solution at all. This year a healthier 50% of respondents undertook an ROI analysis, leaving customers on the whole better equipped than ever before to examine the monetary benefits delivered by their solutions in the future. WhichPLM recommends that this analysis is linked to specific processes, since a greater return on initial investment can be delivered by focusing on those business-critical activities that will generate the most significant value, rather than approaching the product development process in sequential steps from start to finish. Such an ROI calculation can also be one of the best ways of quantifying the success of an implementation once it is completed.

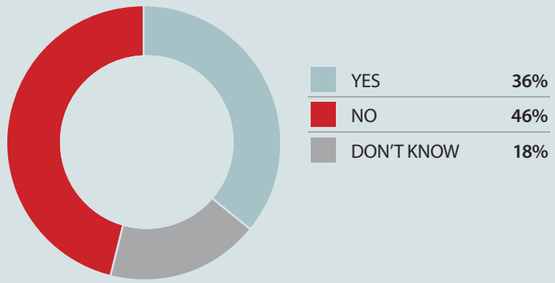
## Q10 If so, did you conduct this internally or using a third-party tool and / or consultant / adviser?




### ANALYSIS

Of those respondents who did conduct a detailed process and ROI analysis, a considerable majority reported that this was done by an internal team – an increase of 20% on the results of our 2010 survey. This approach has both benefits and drawbacks: in the first case an internal team will typically have a far greater understanding of the business's unique processes and ways of working than would a third party, and will be better able to prioritise those that will deliver the greatest return on investment. But, vitally, in the second case, an independent consultancy will have many implementations' worth of experience to draw upon, and a better understanding of modern best practices and economic realities. Those truly impartial consultants can provide a more detailed ROI analysis than would be possible using an internal team – relying on their deep domain experience and proven calculation methods to help accurately and effectively define an implementation strategy.

## Q7 Did you conduct any customer reference site visits before making your final decision?

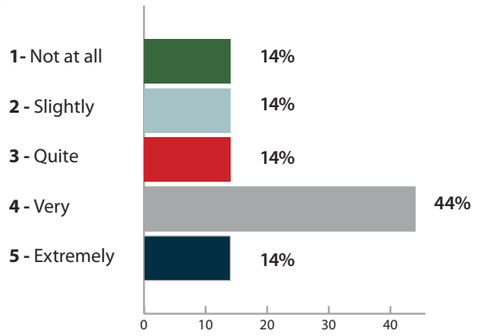



### ANALYSIS

Another vital tool when it comes to shortlisting and selecting a PLM solution is the customer reference site visit. These visits present an opportunity for prospective customers of a given solution to visit the offices of existing customers of that same solution, and to ascertain how the functionality and user experience seen in pre-sales demonstrations transfers to a real production environment. While this year's results show a 10% increase on the number of customers making such visits, the majority chose not to do so. This perhaps reflects the growth in confidence that many customers have in the core capabilities of PLM itself, but it is inadvisable to purchase any enterprise-level system on the basis of controlled demonstrations alone – particularly when, as our industry insight suggests – there continues to be a large number of reported gaps between customer expectations and the final capabilities of the installed solution.



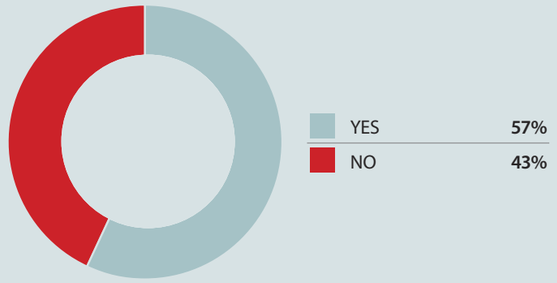
## Q8 How influential were those customer reference site visits when it came time to make your final decision?




### ANALYSIS

Despite the fact that very few of them conducted these visits (and although the spread of results was mixed) a considerable majority of those who did so, reported site visits as being quite influential in their eventual choice of PLM solution. A further 14% cited them as a very important factor in that decision. This combined figure of 58% represents a significant increase over the 40% shown in the results of our 2010 Customer Survey, and suggests that despite some customers' reticence to undertake them, these results represent a valuable opportunity to obtain an impartial and objective view on the past successes and, if any, failures of a shortlisted supplier. And neither should the customer reference process end here: maintaining a relationship with a supplier's previous customers can provide additional insight into the potential pitfalls (particularly where extended integration strategies are concerned) of the implementation and support processes in the future.

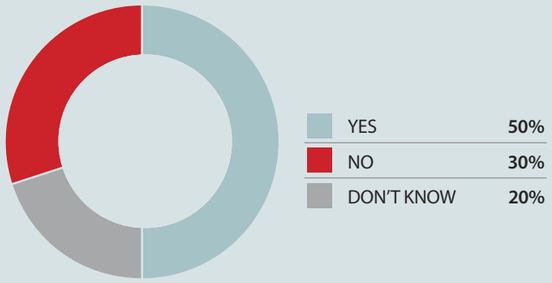
## Q11 If so, did you use that ROI analysis to define your implementation strategy?




### ANALYSIS

Worryingly, almost half of those respondents who conducted a detailed ROI analysis (either internally or with the help of a third party) subsequently neglected it when it came time to define their implementation strategy. The benefits of a properly-conducted ROI analysis go far beyond simply predicting a timescale within which the solution will become profitable, and it is a cause for concern that customers would limit it to that purpose alone. Using the priorities identified in the ROI analysis can help to bring focus to what can otherwise be a scattershot process – allowing the customer instead to optimise those processes that are most vital to the smooth operation and continued profitability of the businesses.

## Q12 Did you conduct a process workshop in that time?




### ANALYSIS

Internal process workshops are an excellent way to examine how processes will be prioritised and targeted as the new system is implemented, and establish clear goals for their improvement and increased value. These workshops represent a valuable opportunity to produce a detailed analysis of businesses processes at every stage of the extended supply chain – from concept to delivery - as they stand and, informed by best practice, define realistic milestones that will see them become leaner and more efficient. It is equally important that any such process workshop takes account of the unique challenges facing that particular business, since this enables more accurate prioritisation of those processes and milestones, as well as underpinning the monetary value that each process can deliver. As with the ROI analysis, this year's results suggest that half of all customers conducted such a workshop – an improvement on the results we saw in 2010.

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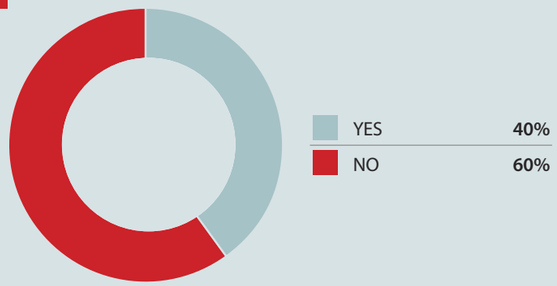
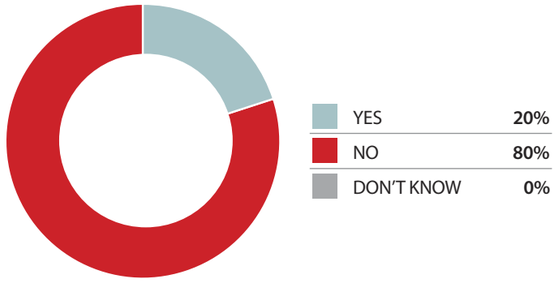
## Q13 Did you use any third-party consultants or advisers to help you plan your implementation?




### ANALYSIS

As with the ROI analysis and other preparatory steps, an independent, third-party consultancy can provide invaluable, unbiased insight when the time comes to plan the implementation itself – something only a disappointing minority of respondents (just 40%) will know. Consultants with the requisite apparel domain experience can provide considerable benefits during both project planning and budgetary estimation stages. Many such consultancies exist, but a good portion of them work with only a limited percentage of the more-than-fifty solutions that cater to the retail, footwear and apparel market today. In many cases, those consultants are contracted to implement only a single solution. A truly impartial consultant will have experience of implementing a wide range of solutions (from different vendors), an unmatched knowledge of industry-standard best practices, and can be an invaluable asset when it comes to planning a PLM implementation.

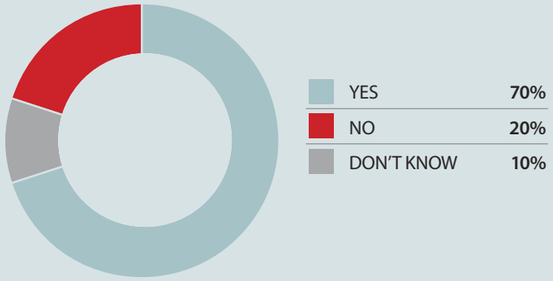
## Q14 Did you choose to integrate any third-party tools or expansions into the core PLM solution you selected?




### ANALYSIS

Taking account of the recent growth of E-PLM, this is a surprising result, with only 20% of customers integrating their core PLM solution to other supporting systems. This perhaps stems from the commonly-held misconception that a PLM solution will integrate only to other, large-scale enterprise systems like ERP. In today's market this is not the case, and many PLM solutions boast bi-directional integration with a wide range of product development systems – from CAD/CAM to 3D visualisation and augmented reality. This knowledge gap is something WhichPLM is seeking to address through the promotion of E-PLM; we firmly believe that maintaining separate "islands" of technology, especially at the implementation stage, represents a significant missed opportunity.

## Q15 Did the supplier you chose demonstrate a comprehensive and clear implementation methodology, explaining how it would apply to your unique implementation?

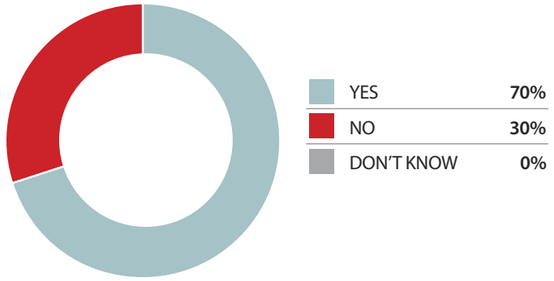



### ANALYSIS

In addition to the documentation and contracts that accompany a PLM solution, it is critical that a supplier has a clear, transparent methodology for conducting the implementation itself. While no one implementation will be identical to another, there are processes, milestones, and best practice techniques that are common to all. Typically, implementations fall into one of two categories: stage-gate implementations see the implementation team conducting detailed user workshops to define concrete requirements, which are then used in solution configuration; sandbox implementations begin with a basic configured system, which is then iteratively adapted as the project progresses. Whichever methodology is adopted, the details of it should be collected in a shared methodology document, accompanied by an explanation of how each established component will apply to the specific implementation in question. It is encouraging to see that an overwhelming majority of respondents were given this vital information, although there is still room for improvement.



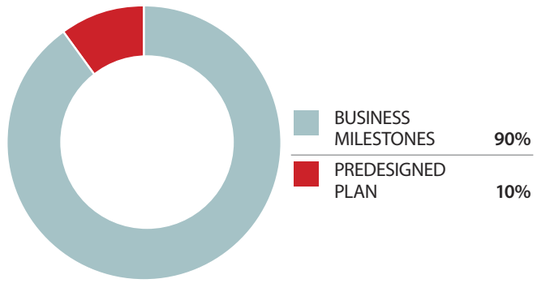
## Q16 Did your supplier work with your nominated internal project team to run process maturity workshops?




### ANALYSIS

Process maturity workshops are intended to scrutinise the transition from the processes identified in the initial implementation-planning stages to the newer, leaner processes identified in the ROI analysis and implementation strategy. This year sees a considerable improvement on the results of our 2010 survey, with the percentage of suppliers conducting such workshops doubling to 70%. That said, the remaining 30% of suppliers missed a valuable opportunity to analyse the ongoing implementation, share milestones and concerns with their customers, and, in some cases, learn about possible difficulties before they arose. Similarly, these process maturity workshops can provide a point of reference when those difficulties do arise. Suppliers and customers alike can use the information gleaned from them to look at why their implementation faltered – whether it is through inadequate planning, difficulties in execution, software limitations, or a lack of resources.

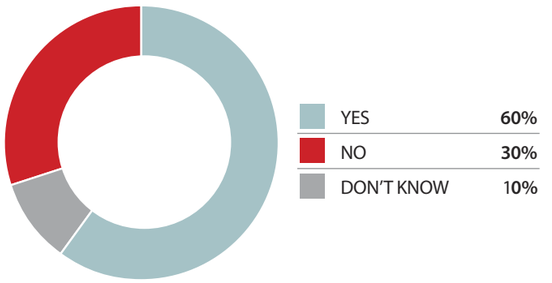
## Q17 Did your implementation project focus on the milestones/ tasks that offered the greatest value improvements for the business, rather than simply following the suppliers pre-designed implementation plan?




### ANALYSIS

While a well-defined and broadly-applicable methodology is a crucial component of an implementation, it must retain some flexibility in order to accommodate the unique requirements of each customer. It is heartening to see that almost all of the participants in this survey experienced an implementation that was tailored to agreed-upon milestones rather than being forced to follow a rigid plan. WhichPLM suggests that customers employ the services of an independent consultant to help develop milestones based on the rapid delivery of value to the customer, rather than following a predefined approach that may be illogical given their unique circumstances. While this question did not appear in our 2010 survey, industry experience tells us that this represents a considerable change from how things have been done to date, demonstrating the increasing adaptability and customer-focus of today's leading suppliers.

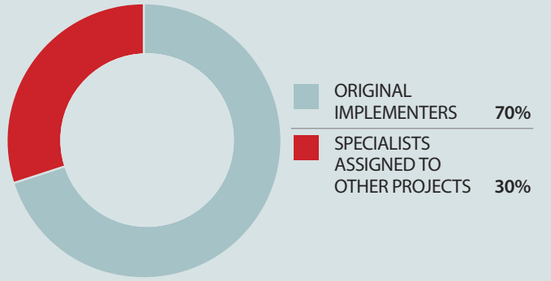
## Q18 If you required any customisation to the solution you chose, was that customisation conducted on time and in line with your requirements?




### 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, made to the solution to accommodate a customer's unique requirements. Even the most capable Out Of The Box solution will at some stage require adaptation to suit a particular business's needs, and proper preparation can help to forecast those customisation requirements early in the implementation project, meaning they can be budgeted for and allotted time. In our 2010 survey, less than 50% of those adaptations were conducted effectively and on time; this year, that figure has risen to 60%.

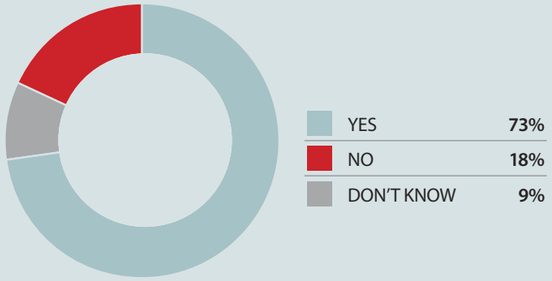
## Q19 Did your supplier maintain their own original implementation team throughout the PLM project, or were specialists you expected to assist you assigned to other projects?




### ANALYSIS

With the preparatory steps completed, customers then find themselves at the exciting stage of actually putting their new solution into place. Usually this is done by the supplier's own team (or by a nominated third party) in concert with a pre-selected internal team. Often, customers make the assumption that the supplier's implementation team will remain constant throughout the project, but this is not always the case. This year's results show that a good majority of vendor teams saw their implementations through to the final stages, but still almost a third of all implementations suffer potential delays and confusion when specialists are removed mid-project by the supplier and assigned elsewhere. It is important that both customer and supplier teams remain consistent for the entirety of the implementation, since the cost and time implications of switching teams can be considerable.

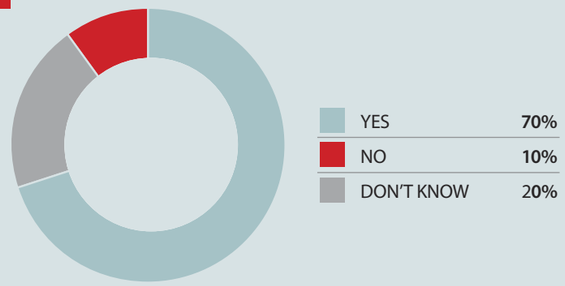
## Q20 Did the initial installation of your PLM solution go to plan?




### ANALYSIS

The assumption many customers make is that, since the core capabilities of PLM are so well-established, all PLM installations run smoothly. This is not always true – in fact, our 2010 survey revealed that just over 15% of implementations in our industry suffered one setback or another. While this year's results (an excellent 73% of installations being conducted according to plan) are extremely encouraging for the industry as a whole, customers should not be tempted to rely too heavily on their suppliers to ensure that they fall within that majority. It is likely that a good portion of those successful implementations were either relatively simple, or that they came as the result of the kind of meticulous analysis and research that we have advocated in previous questions.

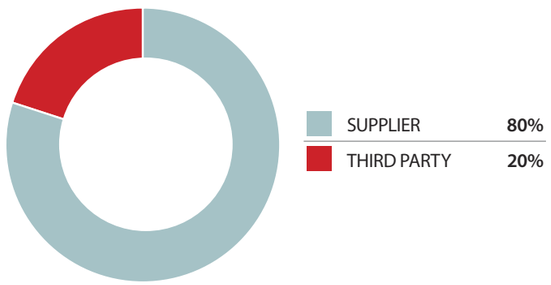
## Q21 Did you maintain the technical environment and hardware / network infrastructure that was identified at the pre-sales stage, or were upgrades necessary during implementation?




**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 2010, almost half of all customers reported that they had had to make such changes on the fly, with several respondents stating that they "hadn't realised [they] would need" a hardware component. This year, those numbers have dropped considerably, and we are pleased to see that 70% of all customers were able to adhere to the technical requirements they established in the pre-implementation period.

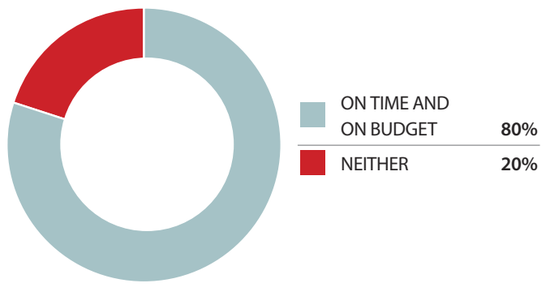
## Q22 Did your supplier conduct the implementation themselves or contract it out to a third party?




**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. In some cases – particularly those in territories where that supplier does not have regional offices – the supplier will instead choose to hand the implementation project over to a third-party consultancy. Typically this will be a consultancy they have worked with before, and one that understands the company's software, but perhaps not to the standard of the suppliers own internal teams. This year, a large majority of respondents reported that their project was assigned to an internal team. From industry feedback WhichPLM understands that many low-cost consultants lack the requisite domain expertise to conduct such implementations, and based on the successes of the industry as a whole, we expect to see more consultants begin to migrate from other industries. We would always advise that customers ascertain the industry expertise of any third party consultant - even if they have been appointed by the supplier themselves.

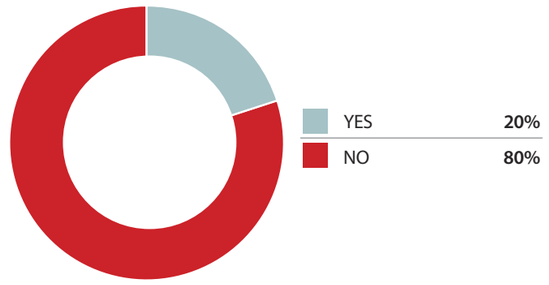
## Q25 Did your supplier complete the implementation on time and to budget?




**ANALYSIS**

This is a crucial question, and one that demonstrates how the PLM market (and the individual solutions that comprise it) has matured. In 2010, just 59% of all PLM implementations were completed within the timescales and budgetary constraints that had been agreed between the customer and supplier. Indeed, one notable customer told us that both had overrun to the tune of three years and $10 million. In our survey report, we ascribed this result to the rapid growth of the market and the relative inexperience of some suppliers. This year, a large majority of PLM implementations were delivered on time and within the agreed-upon budget, suggesting that, while the rapid expansion of the market shows no sign of abating, PLM suppliers are now better able to manage and meet the expectations of their growing customer bases. Similarly, there is evidence that informed customers are now better able than ever to assemble realistic requirement specifications, avoiding the temptation to do too much at once.

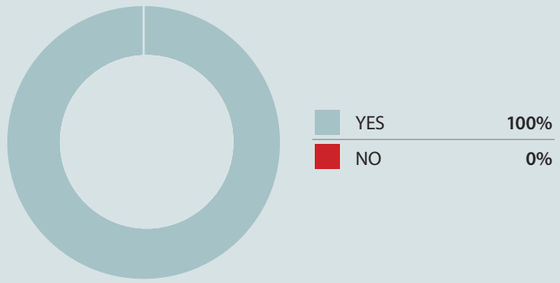
## Q26 Did you require any additional process enhancements beyond those identified during the initial pre-implementation stages?




**ANALYSIS**

Supplemental to the time and money agreed for the implementation itself, is the fact that a great many customers find themselves expending more of both on additional process enhancements that were not budgeted for in the planning stages. Reflecting the fact that a considerable majority of customers this year undertook a more thorough process analysis than their 2010 counterparts, the results show that 80% of respondents did not need any costly, time-consuming process enhancements during their implementation. This ably demonstrates the benefits of meticulous forward-planning when it comes to implementing any enterprise-level system.

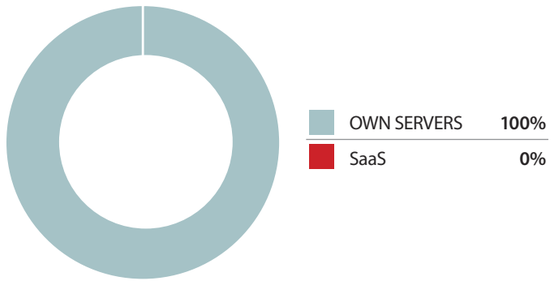
## Q23 If you answered "third party" to the above, were you made aware of the fact that a third party would be conducting your implementation during the negotiation stage?




**ANALYSIS**

A concern arises (as it does when suppliers divert expert resources to other projects mid-implementation) when the customer is harbouring the misconception that the supplier's internal team will handle their implementation, when in fact the supplier has already appointed a third-party to do so. Fortunately this year's results suggest that this is an extremely rare case, since all of our respondents were notified prior to signing any contracts that a third party would be carrying out their implementation. This kind of communication is emblematic of the way we have seen supplier / customer relations improve in just two years.

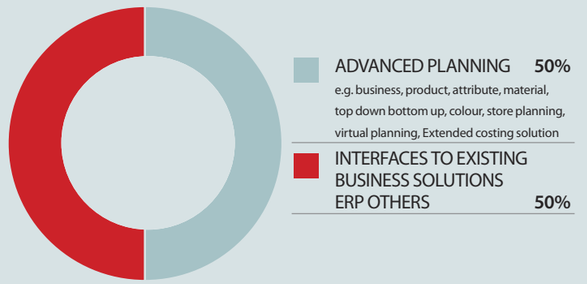
## Q24 Did you install your PLM solution on your own servers or via a SaaS model?




**ANALYSIS**

In our 2010 survey we saw very few customers adopting the Software as a Service (SaaS) model, and this is a result that has been repeated this year. A growing number of PLM suppliers are choosing to adopt the SaaS model , but the results suggest that a total majority of customers prefer the level of control and / or security afforded by installing their PLM solution on their own servers. This is a situation we expect to change in the very near future, though, along with a growth in platform independence and the rise of cloud storage and distributed computing.

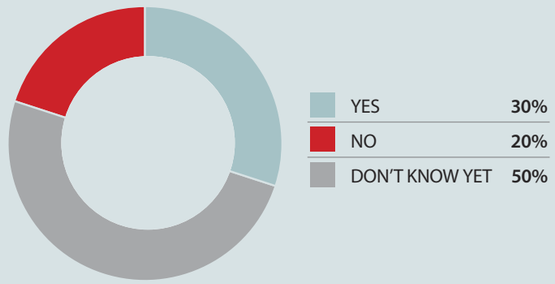
## Q27 If yes, which of these common process enhancements apply to your PLM implementation?




**ANALYSIS**

Of the small proportion of customer who did find themselves conducting unexpected alterations and additional process enhancements, their scope reveals a great deal about the kind of impact such alterations can have. The most common process enhancements were the expansion of planning and costing solutions, and the creation of interfaces to existing enterprise solutions such as ERP. Neither of these is a small project, and their impact on the implementations in question should not be underestimated. Each process enhancement could easily have been scoped, planned and budgeted for at an earlier stage, rather than being an unexpected cost during an already time-consuming implementation.

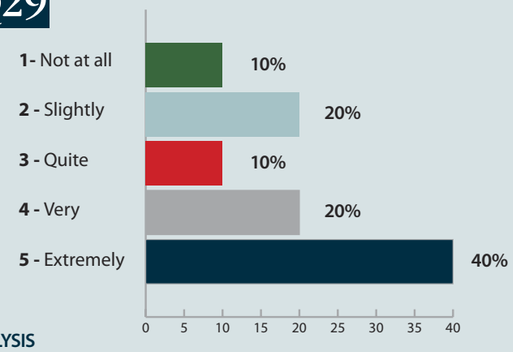
## Q28 If your PLM solution has been in place long enough to draw conclusions, has the solution you chose realised a return on investment within the expected timeframe?




**ANALYSIS**

Despite the maturity of PLM solutions themselves, our is still something of a nascent market. Many organisations (including some of the world's leading luxury brands) still conduct product development in Excel or on paper, and while PLM is increasingly becoming a necessity for businesses wishing to optimise those processes, many are still analysing the market, or find themselves in the initial stages of implementation. As was the case in 2010, approximately half of all customers reported that they did not know whether or not their solution had delivered a return on investment within the expected time. Of those that did, a majority found that their solution had delivered the expected return on investment – meaning those solutions had likely been in place for at least a year.

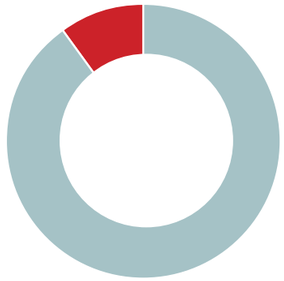
## Q29 Overall, how satisfied are you with the PLM solution you chose?




**ANALYSIS**

In 2010, the majority of customers (close to 40%) were ambivalent about their satisfaction with their PLM solution, with 10% residing at each extreme of the spectrum. This year, we are pleased to see that a considerable majority (80%) are satisfied, quite satisfied or very satisfied with the solution they chose. This bears out the conclusion drawn in our editor's introduction: PLM, properly chosen and implemented, satisfies the goals that drive customers the world over to adopt it. From the perspective of the growing number of suppliers catering to our industry, it goes without saying that we cannot overstate the importance of that kind of customer satisfaction. It speaks to the maturity of the industry that most businesses are growing in the ways that matter to their customers: delivering the ultimate goals of exceptional customer satisfaction, loyalty and retention.

## Q30 Are your teams using the solution as originally envisaged?



| | |
|---|---|
| YES | 90% |
| NO | 10% |

**If not why not?**
Slow to Accept

**ANALYSIS**

In analysing preparatory documentation, implementation strategies and process enhancements, it can be all too easy to lose sight of the fact that most customers adopted a PLM solution to meet an identified need within their business, and to enable their existing teams to work more efficiently. Powerful, robust software is one thing, but unless the eventual end user understands the reasons for its adoption, and is involved in the selection and implementation process, user acceptance may suffer. In 2010 we saw just 60% of end users working with the PLM the way the company had originally envisaged. This year, that figure has risen drastically, to 90%. This terrific result is testament to both the user-management skills of the companies themselves, and the work of talented developers who are committed to creating what has become known in the industry as "realised value", where the potential of software is brought to bear quickly, effectively, and in a way that allows end users at every stage of the product development process to work more efficiently.

## Q33 Has your PLM solution delivered the value you expected in terms delivering process efficiencies, eliminating data redundancy and streamlining everyday tasks?

| | |
|---|---|
| YES | 80% |
| NO | 20% |
| DON'T KNOW | 0% |

**ANALYSIS**

It is at this stage that we revisit the process and ROI analyses that most customers conducted during the initial stages of their shortlisting and selection process. With the expected process efficiencies and desired ROI recorded, it is possible to accurately ascertain the real value delivered by PLM, both in terms of monetary savings and the optimisation of standard business processes. A large majority of customers believe that their solution has delivered against both requirements: one respondent reported that their solution had delivered efficiency savings of more than 40%; another explained that the "quality of data has significantly improved" since their adoption of PLM.

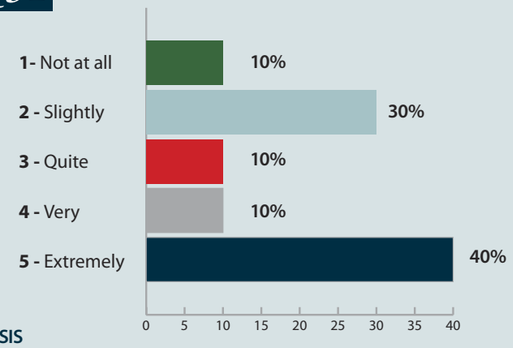
## Q34 Has your PLM solution delivered the direct cost savings you expected by reducing the expenses incurred in, for example, creating samples or sourcing materials?

| | |
|---|---|
| YES | 40% |
| NO | 10% |
| DON'T KNOW | 50% |

**ANALYSIS**

PLM can also deliver significant savings in areas that many customers do not expect. By providing a centralised repository for master data, for example, 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 like international sourcing and sampling. Since many people consider these processes to be outside the purview of PLM and hard to quantify, it is perhaps unsurprising that half of our respondents did not know whether their solution had delivered such savings for them. Of those that did, a very positive 40% reported that they had been able to achieve these kinds of savings.

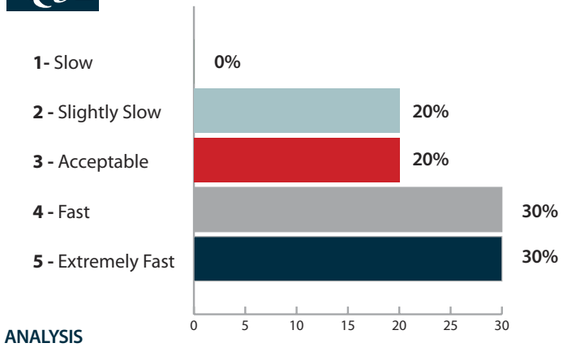
## Q31 Please rate the PLM solution you chose on the basis of how easy or intuitive it is to use.




**ANALYSIS**

Our 2010 survey revealed that almost 40% of customers found their PLM solution difficult to use. This year the majority (a cumulative 80%) reported that their solution was quite or very intuitive to use on a daily basis. This represents a significant improvement in a short space of time, with one customer calling their solution "very user friendly, with an exceptional support team". There are still, however, a further 20% of customers (a significant number) who found their system to require "too many clicks to navigate or complete an action", or to be "illogical". Generally speaking, the industry standard for process execution rests between three and ten seconds, depending on the complexity of the process in question. There is clearly room for improvement in terms of usability engineering and logic, but our insight and this year's improvements suggest that most suppliers are committed to making such improvements.

## Q32 Please rate the PLM solution you chose on the basis of its speed.




**ANALYSIS**

Again, 80% of customers reported that their PLM solution performed either adequately, well, or very well in terms of its speed. Speed of use plays an important role in usability – particularly where large volumes of data (both visual and alphanumeric) are concerned. Stumbling blocks can typically occur where data leaves and re-enters the system, but the fact that a scant 20% of customers found their solution slow suggests that suppliers have undertaken considerable research and development to ensure that the proliferation of integrated solutions does not compromise the speed and stability of their core PLM solution.

***If, in your day-to-day experiences of working with your PLM solution, you have found any aspect of it to be notably fluid (or slow), or if you would simply like to qualify your answer to this question, please provide those additional details here.***

We are currently going through a planned upgrade (4.1) as our end to end solution cannot be accommodated in current version

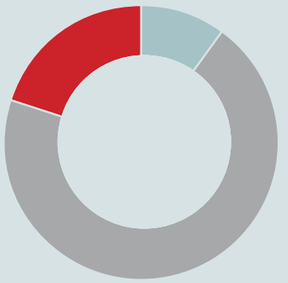
## Q35 Has your PLM solution helped you to realise savings by eliminating or reducing the cost associated with handling anomalies or unexpected developments in the product development process?

| | |
|---|---|
| YES | 60% |
| NO | 20% |
| DON'T KNOW | 20% |

**ANALYSIS**

Yet another often-neglected benefit of PLM lies in its ability to present data pertaining to every stage of the product lifecycle, accurately and transparently. With end users in all locations (and every job role) along the global supply chain, that data visibility enables organisations to identify and mitigate the impact of errors, unexpected setbacks or socio-economic circumstances on their product development processes. A majority of respondents this year reported that their PLM solution had done just that, allowing them to better handle the unforeseen difficulties that are sometimes inherent in multinational working.

## Q36 Has your PLM solution enabled you to achieve increased sales and revenue by allowing you to position your product launches more effectively and cutting product lifecycle times?



| | |
|---|---|
| YES | 10% |
| NO | 20% |
| DON'T KNOW | 70% |

**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 demand more fashionable apparel, of better quality, and at a lower cost than ever before. The aforementioned data visibility and transparency can assist with this - by allowing designs to be created more rapidly than is possible under traditional methods. But as this year's results suggest, a majority of customers do not know whether they have been able to achieve additional revenue from these capabilities. This is likely due to the time it takes for these results to become visible, coupled with the fact that superlative business intelligence is required to properly analyse this and other less concrete benefits.

## Q37

**Where they form part of your PLM solution, please rate the following process areas in terms of how far they have enabled you to realise the promised value of your solution.**

**SCALE**
**1** not at all **5** very

| PRIORITY | PROCESS |
|---|---|
| 1 | Supply Chain (Supply Chain collaboration and manufacturing process) |
| | Bill Of Labour (Support for operations and SMV/SAM's and/or integration to graphical based labour values) |
| | Green-socio-ethical compliance (sometimes referred to as S.E.T. compliance) |
| 2 | Mobile device integration |
| 3 | Materials Management (Material development and testing, color development, artwork development or packaging and labelling) |

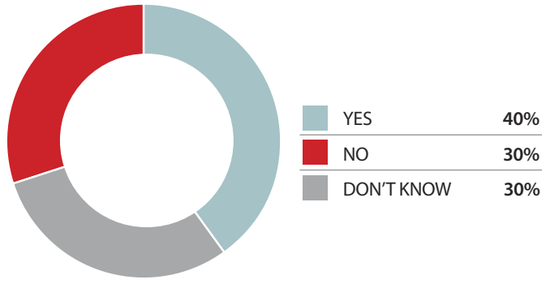
| PRIORITY | PROCESS |
|---|---|
| 4 | Merchandising and Design (concept planning, line planning and creative design |
| | Sourcing (Supplier Management, Early Sourcing, Costing and Commitment Management) |
| | Quality Management (Quality and Compliance Management) |
| | Costing (multi-dimensional costing i.e. Single size, single colour, multi size, multi-colour, packs, multi destination, multi-currency, multi-variation) |
| 5 | Technical Development and Engineering (Specification development, Detailed design, and Sample Management) |

### ANALYSIS

A critical component of any PLM implementation is the process of post-implementation introspection. A truly comprehensive ROI analysis should take account of the particular processes and capabilities of the solution, and examine how much those processes have contributed to the overall value realised by the solution as a whole. The results show that technical development (what is traditionally thought of as the "core" of PLM, aiding in the creation of industry-standard "tech packs") remains at the forefront of most PLM implementations, and continues to deliver the most impact to the profitability of the companies that adopt it. Also important were the other key processes involved in the creation of garments; customers are continuing to see substantial value from using PLM to manage their merchandise planning, sourcing, costing and quality assurance processes.

## Q38

**Where your PLM solution has been integrated with another suite (whether ERP or an alternative) have you been able to achieve savings through the interoperability of existing data rather than having to re-enter information?**

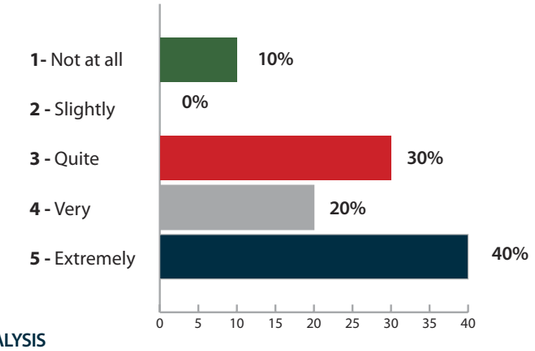



### ANALYSIS

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. Integrating these systems with PLM enables them to share the same set of master data, eliminating time spent creating duplicate data, or the cost impact of data entry errors that make their way into production. Despite the fact that very few systems were integrated with PLM by our respondents, the results show that a majority were still able to achieve savings through data interoperability and error reduction.

## Q39

**How satisfied were you with the technical support provided by your PLM supplier when you last contacted them?**




### ANALYSIS

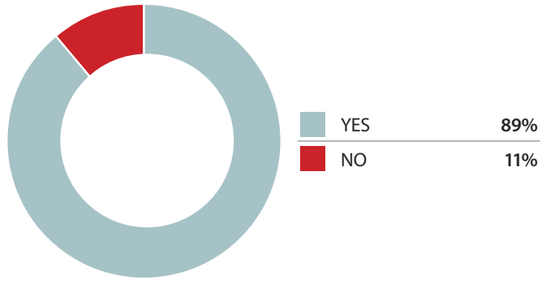
The results of 2010 survey showed that only a small majority of customers were satisfied or better with their most recent experience of the supplier's PLM support team. This figure has increased dramatically, with 90% of respondents reporting that they were satisfied or better with the experience. This speaks volumes about the increasing importance that major PLM suppliers are placing on customer satisfaction, and several support teams were singled out for particular praise: one customer reported that their supplier's team had "gone above and beyond to help us achieve our implementation goals […] they made the implementation process smooth and relatively hassle-free."





## Q40

**Does your PLM supplier operate a Customer Advisory Board (CAB) or user group?**

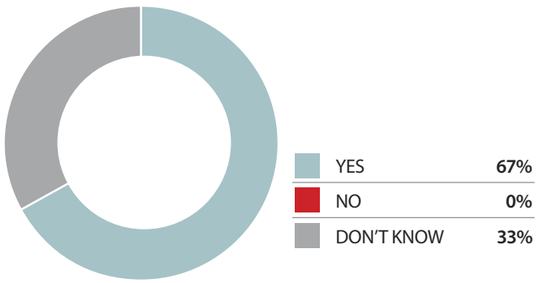



### ANALYSIS

A Customer Advisory Board is an initiative that takes place after a PLM implementation. A CAB will provide direct interaction between the customer and supplier, and serve as a valuable tool for helping to shape the future growth of both solutions and client relationships. The fact that almost 90% of customers reporting knowing of or attending a CAB run by their supplier (an improvement on 2010's already-encouraging results) is further evidence that customers and suppliers are able to work together and ensure that the former can derive maximum benefit from the latter's solution. It is worth noting, though, that the efficacy of these Boards is determined by the customer's willingness to share constructive criticism, and the supplier's receptiveness to incorporating the suggestions raised into their future development plans.

## Q41

**Either way, do you feel as though your business would benefit from the existence of a truly independent CAB?**

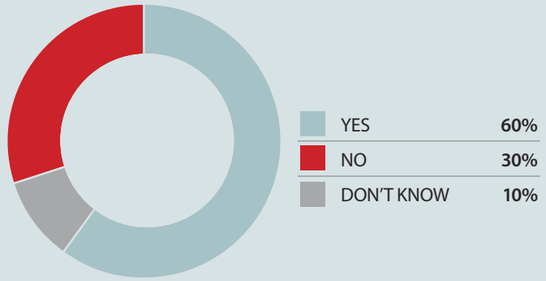



### ANALYSIS

Customer Advisory Boards are traditionally operated by the suppliers themselves, for the benefit of their customers. While they are incredibly useful, and demonstrate a real commitment to customer satisfaction on the part of the supplier, by their nature traditional CABs exclude the kind of insight and process-sharing that a multi-disciplinary, independent CAB would bring. A considerable majority of respondents this year were interested in an impartial, supplier-agnostic board operated by a third party on behalf of the industry – one that would supplement that run by their supplier. This is something that we at WhichPLM have been considering for some time, and this year's results have helped to crystallise that design.

## Q42

**Does your PLM supplier have a clear policy in place for the provision of future enhancements to the solution?**

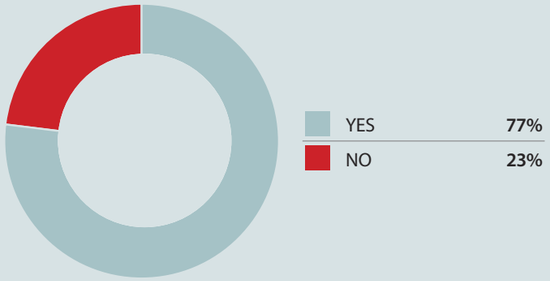



### ANALYSIS

No implementation project is static – even after the official go-live date. All suppliers dedicate a portion of their revenue to research and development, 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. In some cases, the content of those updates, and the schedule on which they are to be delivered, is not properly communicated to the supplier's customer base. In 2010, more than 75% of customers reported that they were unaware of how their supplier would handle future enhancements; we are pleased to see that that figure has reduced considerably this year, with a majority of customers reporting that they have been made aware of how future enhancements and updates to their solution will be conducted.

## Q43

**Does your supplier listen to your requests for enhancements and / or changes?**




### ANALYSIS

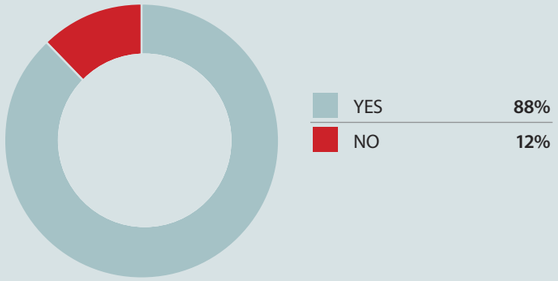
In addition to the CAB setting, customers often remain in contact with their supplier's support team, from whom they might request routine support or, in some cases, specific enhancements or changes to the solution itself. The supplier will need to factor these requests into their ongoing development – something that is done to varying degrees of success – and may or may not appear receptive when it comes to accommodating changes demanded by their customer base. This year, however, a large majority reported that their requests were taken on board, which further reinforces the trend we are seeing elsewhere: that the best suppliers are making far more than a token commitment to their customers.

*"The team helped us work through our requests and advised where our requests would not be practical. Always offered an alternative explanation and solution where they could not meet our request."*

*"Team was very knowledgeable with real experience from industry which is comforting".*

## Q44

**Have any of your requests or recommendations subsequently been integrated into the solution?**




### ANALYSIS

The results of our 2010 survey revealed that while more than half of all suppliers listened to their customers' requests (compared to almost 80% this year), the required functionality was not added to the installed solution for a number of years, or until several other customers had lodged similar requests. This year sees a massive improvement on those results, with close to 90% of customers reporting that their requests for enhancements, changes, or new functionality had been integrated into the solution. As a corollary benefit: by incorporating the most-requested of these enhancements into the core of their solution, suppliers can do their part in avoiding unnecessary and costly customisation.

## Q45

**Please rate the following in order of importance based on what you would like to see incorporated into your PLM solution in the near future.**

| PRIORITY | FUTURE DEVELOPMENT |
|---|---|
| 1 | Mobile device integration |
| 2 | Advanced Planning Solutions |
| 3 | Standard XML for common processes and key attributes |
| 4 | Integration to Bill of Labour providers |
| 5 | Improved ability to integrate to 3rd party solutions |
| 6 | Deeper integration to Adobe Suite |
| 7 | Feature based costing tools |
| | Multi-Dimensional abilities for BOM/Costing |

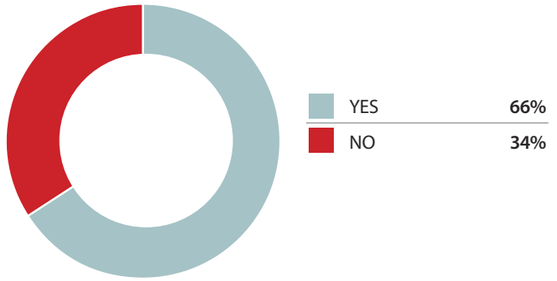
### ANALYSIS

The best PLM solutions (whether they are core or E-PLM) are never static. 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. This year's results show that the most-requested future enhancements are in the areas of costing, planning, and systems integration. On examination, these results certainly support the assumption that customers who neglected to integrate their PLM solution with other systems during the initial implementation stages now seek to integrate those same solutions (see Question 14). While a good portion of these will have been customers who simply did not realise the integration potential of PLM, it appears from these results that integration capabilities with industry-standard solutions remains an important area of development for the future of the PLM solutions themselves.



## Q46

**Do you believe that your supplier has a clear road map for the future support and development of your solution?**

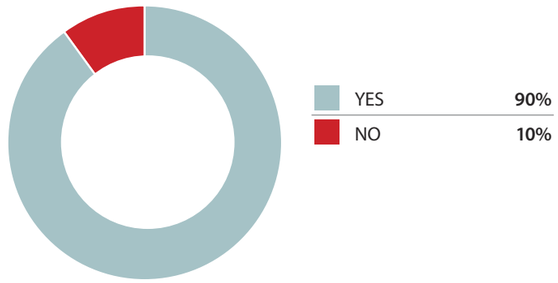



### ANALYSIS

As well as the software itself, 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 arrangements are generally factored into the negotiation stages between customer and supplier. It is vital, therefore, that the customer understand how this future support and development will be managed. And, more importantly, what new functionality they can expect to see over the course of the coming year. We are happy to report that a majority of respondents did have a clear understanding of their support and development arrangements, but a worrying 34% were unaware of how a crucial part of their ongoing PLM project would be handled.

## Q47

**Would your company support a move to a standardised data format for apparel specific product information to allow bidirectional synchronisation of data/documents between enterprise systems such as PLM or ERP?**




### ANALYSIS

As we saw in the results of Question 14, ERP is one of the foremost enterprise systems to which PLM is typically integrated. The process of external system integration (whether to ERP or to any other enterprise system) can be either relatively painless or costly and time-consuming, depending on the degree of data and process interoperability that exists between the two systems. All too often, customers find that their data sets are incompatible, or that they must be exported, edited, and then re-imported in order for them to make routine changes. It is for this reason that an almost total majority of customers reported that they would support the creation of an industry-standard data format that would remove the uncertainty and additional work associated with exporting and importing data between ostensibly integrated systems. With such standards for apparel product data in place, the value opportunities of integrating PLM, ERP, and many other solutions that fall under the E-PLM banner, will increase dramatically.



# THE PLM MARKETPLACE

# 2012

## *A Year in Review*

**As we set out earlier, our aim with this publication has been to go beyond typical market analysis, insight and customer feedback, and to create something more comprehensive. We adopted a three-pronged approach to what would traditionally have been a one-dimensional report, because it better served our long standing goal of creating better-informed consumers: companies who come to the marketplace armed with the information that allows them to make buying decisions based on facts – not spin.**

To that end we have collected exclusive thought **leadership pieces** designed to make those consumers think, and **real customer experience** that they can use as a model for best practice in shortlisting, selection and implementation. The final component of that trinity (one no less vital than the others when it comes to developing a real understanding of the PLM marketplace for fashion) is timely and accurate market intelligence.

With that goal in mind - relying on our own insight and on figures provided by the vendors themselves - we set out to analyse the overall size of the PLM market for retail footwear and apparel, its growth potential, the most prominent emerging trends, and the panoply of forces that have driven companies of all shapes and sizes - from the boutique to the monolithic - to adopt PLM over the fiscal year 2011/12. In order to replicate and expand upon the purpose of our already-exhaustive 2010 Buyer's Guide, we set out to find thought leaders, market leaders, and investment and development leaders. And we did so in close collaboration with customers, vendors and industry analysts with the aim of creating as complete a picture as possible of our industry as it stood at the end of that financial year.

For the purposes of this analysis, we adhered to the commonly-accepted standard of mapping the fiscal year from the calendar months April to April, and as such any mention of "2011/12" in the results collected here refers to the period between the beginning of April 2011 and the end of April 2012. This approach has allowed us to draw meaningful conclusions about the market that other interim publications cannot duplicate, and it ensures that we were able to collect the most up-to-date and accurate figures from each vendor.

In addition to the information gleaned from published reports and from the vendors themselves, this market analysis contains an element of our own insight. This may seem to run counter to the idea of a factual, scientific market analysis, but we believe that our long-standing relationships with customers and suppliers in every corner of the world, and our four years of providing educational, unbiased news and opinion to the entire fashion industry, qualifies us to make qualitative and quantitative assessments where figures may not have been made publically available. And this is without the unique insight that our world-renowned PLM solution benchmarking processes has afforded us into the inner workings of many of the world's leading vendors. Needless to say – as is the case with all of our work – these insights are both rigorous and resolutely independent. Despite enduring and productive relationships with many of them, we own our own thoughts and answer to no single supplier. Our own insight is educated, informed and impartial, and readers can be assured that it is at no stage coloured or influenced by any customer or supplier.

This market analysis is separated into two components: one examining the composition of the worldwide customer base for PLM, and the other looking at the vendors themselves. The first section seeks to explain market forces, analyse its overall scope, and address some commonly-held misconceptions about both. The second highlights the performance of each major PLM vendor in 2011/12, and affords leading figures from each the opportunity to add some context to those figures.

Finally, the results of both are then extrapolated to draw conclusions about the size, composition and future direction of the industry as a whole.

# THE CUSTOMERS

*We undertook this market analysis not just because previous equivalents have severely underestimated the value of PLM, but because they have sold short the concept of technology for fashion as a whole.*

**As this year's survey results suggest, customers of PLM come in all shapes and sizes. As recently as five years ago, a PLM solution was seen as being suitable only for large, multinational organisations with the resources (both fiduciary and in terms of staffing and infrastructure) to carry out such a risky and all-encompassing implementation.**

This impression (which was in many ways misleading even at the time) placed some limitations on the public perception of PLM that persist even today. This is exemplified in a recent industry publication that estimated the overall size of the PLM industry for retail, footwear and apparel as being around $50 million. Not only is this a serious underestimation of the market, but it appears to have failed to take account of the substantial changes we have seen in the way that PLM is developed, marketed and sold, and the sheer variety of companies that now rely on it in both its core and E-PLM forms.

When we undertook this market analysis we did so not just because previous equivalents have severely underestimated the value of PLM (although these results do confine themselves to core PLM sales), but because they have sold short the concept of technology for fashion as a whole. This is something we set out to address, and the results reinforce what experience and customer feedback had already suggested: PLM is a significant enterprise system with substantial growth potential, and one that is in use by an extremely diverse selection ofretailers, brands, agents, and manufacturers the world over.

For the purposes of this analysis we separated the marketplace into three tiers: Tier 1 is predominantly occupied by large, multinational organisations with revenue in excess of $1 billion; Tier 2 encompasses a wide variety of retailers and brands in what is commonly referred to as the "mid-market", with revenue from $50 million upwards; Tier 3 takes in those smaller organisations that fall below the revenue threshold of Tier 2 – typically boutique or specialist retailers and brands.

| Tier 1 | Tier 2 | Tier 3 | Total |
|---|---|---|---|
| **Estimated sales in 2011/12: $200-250 million** | **Estimated sales in 2011/12: $50-70 million** | **Estimated sales in 2011/12: $20-30 million** | **Combined sales in 2011/12: $270-350 million** |
| Suppliers predict a sector average 14% increase in the financial year 2012/13, leading to pipeline sales of between $228 million (low estimate) and $285 million (high estimate). | Suppliers predict an above average 19% increase in the financial year 2012/13, leading to pipeline sales of between $60 million (low estimate) and $85 million (high estimate) | Suppliers predict a sector average 14% increase in the financial year 2012/13, leading to pipeline sales of between $23 million (low estimate) and $34 million (high estimate) | Combined sales of PLM to all tiers of the RFA industry of $270 million (low estimate) and $350 million (high estimate), with predicted growth (calculated at an industry average of 14%) to between $310 and $400 million in 2012/13 |

We arrived at these figures through a combination of publically-available information, data provided by the suppliers themselves, and our own insight into the market. Due to its perception as a competitive advantage, a fair portion of PLM sales go unreported (primarily those within the notoriously secretive and protective luxury market), and many privately-held companies choose not to disclose their sales figures with any degree of specificity. Because of this, we chose not to rely solely on published figures, and instead worked closely with suppliers and customers alike to draw our own conclusions informed by the opinions and insight of prominent industry figures. While these results are conservatively marked as estimates, they represent a more accurate analysis of the industry than that seen in reports based solely on published figures.

As we can see, the recent growth of PLM for retail, footwear and apparel has created a market that in the mid-market sector alone exceeds sales figures that have been ascribed to the sum total of all sales in other publications. While sales to large, multinational organisations constitute the majority of the combined figure (more than triple the estimates published elsewhere), this year has also seen a marked increase in sales to both the mid-market and low-end sectors, driven by the reduced cost of ownership and increased out-of-the-box functionality of modern PLM solutions.

Beyond the simple expedient of today's solutions being more capable and more competitively priced, a variety of other market factors have also conspired to influence this growth. Sales to Tier 1 organisations (historically the largest market for PLM) show no signs of slowing down, but many of the world's leading retailers and brands are already realising the benefits of their PLM implementations; these implementations now serve as inspiration for retailers, brands, and wholesalers in the mid-market, who are beginning to see how they can derive equivalent or similar benefits from one of the many solutions that now cater to the Tier 2 sector. This effect has been compounded as retailers and brands towards the bottom end of the mid-market have begun to learn from those at the higher end, and in turn smaller businesses in Tier 3 are now realising (through this steady cascade of knowledge, experience and best practice) that the core capabilities of PLM apply as much to their operations as they do to those of the international conglomerates in Tier 1.

Of those sales to Tiers 2 and 3, a growing proportion represent new and emerging markets (with notable sales in Turkey, Australasia, Eastern and Southern Europe, Scandinavia and the Middle East) where the traditional landscape of manufacturing for export is being supplemented by an increase in domestic retail. Indeed, Turkey alone boasts more than ten thousand manufacturing sites, many of which have undergone a PLM-led transition from being small, family-run operations, to become larger enterprises competing directly with traditional manufacturing strongholds like China.

Predicted sales figures for the coming financial year (2012/13) demonstrate that suppliers have considerable faith in the growth potential of the mid-market, with major vendors anticipating a 5% increase above the 14% that has become the industry average. This said, there remains much untapped potential in Tier 1, with a considerable number of multinational retailers and brands still analysing the market. Likewise, the cost and capabilities of modern PLM solutions will continue to decrease and expand, respectively, and the coming year will likely see even more boutique and specialist brands adopt PLM as a consequence.

These figures lead us to draw two primary conclusions about the PLM market for retail, footwear and apparel. First of all, the size and growth potential of that market far exceeds most published estimates. Secondly, the misconception that PLM is exclusively for Tier 1 organisations is steadily being dispelled, and that reality is reflected in the market itself: more retailers, brands, and manufacturers in Tiers 2 and 3 are adopting PLM than ever before, and educated predictions suggest that this is a trend that will only increase as we move into the next financial year. As an enterprise-level system, PLM is both capable and proven, and from a financial point of view the market rests on extremely stable foundations that will underpin considerable growth in the very near future.

# THE VENDORS

**No analysis of any market would be complete without a detailed examination of the suppliers that cater to it. Mirroring the quantity and diversity of companies that now rely on PLM in both its core and E-PLM forms, the number of suppliers that produce solutions for our industry has also increased considerably in an extremely short time. Some cater exclusively to the retail, footwear and apparel industry, while others develop and supply PLM to a wider range of verticals – automotive and aerospace in particular – and have expanded to take in our industry as a consequence of their success elsewhere.**

The list collected over the coming pages is not an exhaustive catalogue of every supplier catering to the fashion market (for that, readers are invited to visit our comprehensive supplier listings on WhichPLM), but is rather a list of those that have been most active in our industry in 2011/12 and have helped to shape the results we see both in this market analysis and this year's customer survey. To that end, the following pages are designed to provide some insight into how each of those suppliers has performed this year – using both objective statistics and the suppliers' own thoughts on what they believe sets them apart from their competitors, and what forces they expect will shape the industry in years to come.

Each of the following pages is dedicated to a particular supplier (they appear in alphabetical order according to company name) and includes several sets of statistics and context that are intended to qualify and add weight to the conclusions we reached in our analysis of the market. First of all, we set out a list of those customers who have adopted the supplier's PLM solution in the financial year 2011/12, with links to press releases where these exist. Secondly, we have reproduced (where this information was a matter of public record) the supplier's revenue derived from, and reciprocal re-investment in, PLM. Many of the suppliers listed cater to a range of verticals, but the figures that appear here are confined to the sale and development of PLM for the retail, footwear and apparel industry only. Where a given supplier works across multiple industries (or ever where they supply 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 extended product development), we have disregarded income and investment that falls outside the scope of this publication. Finally, we contacted each supplier and asked them to provide their own insight into what they feel has differentiated them from the other suppliers on the market this year, and to explain what they see as the prominent emerging trends for the near future. These insights are exclusive to the WhichPLM Annual Review.

We have placed the sales and R&D figures we were provided in bands (with $1 to $5 million being the lowest and $50 to $70 million being the highest) both for ease of comparison and because it simplifies the process of placing the suppliers themselves into the same or a comparable tier structure as the customers. Where those customers are concerned, we would remind readers that these lists are (as with the publically-available sales information) 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. WhichPLM understands that many of these are to prestigious luxury brands and internationally-renowned groups who consider PLM to be such a strategic advantage that they choose not to divulge its role in their overall IT strategies. Although these sales must remain absent from publications such as this one, we consider them to be yet further proof of the vital role PLM is already playing in the landscape of modern fashion.



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## CENTRIC SOFTWARE

**Find out more** *www.centricsoftware.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Sundance Catalog Company, JD Sports, Beretta, DSquared, Kindy |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | The Centric 8 solution has been designed from the bottom up for the retail, footwear and apparel market. Customers find that the ease of use, and ability to reflect the math of Excel directly into the user interface is a huge benefit for adoption. Centric's Agile Deployment methodology also assures industry leading rapid time to benefit and laser focus on truly delivering what the business needs. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | Growing consensus in the market place that mega implementation projects with layers and layers of consulting are a thing of the past. Agile Deployments are the best way to stay focused on the business and shorten the time to ROI. Out of the box deployments that allow customers to easily upgrade and receive new features developed on behalf of other customers is a much better investment strategy than stand-alone implementations with huge upgrade fees. |

# COMPUTER GENERATED SOLUTIONS (CGS)

Find out more *www.cgsinc.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | MYX, Diane von Furstenburg, Ellery Homestyles |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $1-5 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $1-5 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | CGS is a financially strong and well diversified private corporation that has its roots and history in the fashion capital of the world. With over 4,500 employees worldwide, and a dedicated business unit of 250 professionals which focuses on developing and delivering solutions to the fashion/apparel/footwear/accessories/home goods industry, combined with a worldwide presence of 18 locations around the globe, CGS has the experience, infrastructure and financial stability to take on assignments of any size, scope and duration.<br>Commitment to innovation: CGS offers competent, seasoned professionals with deep apparel/footwear/ accessories industry experience and world-class support to help our clients get the system operational and delivering business value as soon as possible.<br>Customers reap the benefits of being a part of a very large and active BlueCherry Community, and leveraging the collective experience and innovation of hundreds of similar customers.<br>The BlueCherry Suite goes beyond standard PLM offerings with sample and production capabilities, import management, web collaboration for RFQ, production tracking, spec backs, and internal tools such as alerts.<br>• Total integration with virtually any ERP solution<br>• Sophisticated tools for managing, developing and tracking of raw materials that flow seamlessly to ERP systems<br>• Easy and familiar user interface.<br>• Integrated Tech Pack Designer.<br>• Integrated Purchase Order Management |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | Cloud and collaboration. |



# CORE SOLUTIONS

Find out more *www.coresolutions.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Grupo Cortefiel, Apparel Group, Lidl, Praktiker Group |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | We think of ourselves as a merchandise execution system, focused on the end-to-end supply chain, what we call concept-to-delivery or extended PLM. As such we have developed tools such as Critical Path Management which provides end-to-end visibility to enable faster problem solving and response to issues which impact on-time product delivery.<br>While we come from a strong background in supporting apparel and footwear retailers, we also have a strong base in supporting general merchandise and hard goods retailers and have a particular strength in the global sourcing and supplier collaboration aspects of the product lifecycle. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | Multichannel is probably the biggest trend everyone is talking and thinking about. From a supply chain perspective, the challenge will be to integrate supply chains across channels to reduce costs and create efficiencies. Another way to frame this trend is the increasing complexity of global supply chains.<br>Raw material costs have been a headache for executives and we expect this trend to continue this year. The ability to execute on accurate material forecasting and planning will give certain companies an edge.<br>Overall, we can expect to see more widespread application of technology, especially in the adoption of Cloud solutions, to increase visibility, collaboration and automation. |

# DASSAULT SYSTÈMES

Find out more *www.3ds.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Benetton, s. Oliver |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $11-50 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $1-5 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | World leader in PLM, Dassault Systèmes provides solutions that enable businesses of every size and sector around the globe to design, simulate and experience tomorrow's products with their partners, from suppliers to consumers. These Industry 3DEXPERIENCE solutions are built on the 3DEXPERIENCE platform composed of:<br>1. The 3D Modeling Platform with CATIA and Solidworks,<br>2. The V+R (Virtual+Reality) Platform is the Content and Simulation platform with DELMIA for digital manufacturing and SIMULIA for realistic simulation<br>3. The Social Innovation Platform represented by ENOVIA for global collaborative innovation and 3DSwYm for social innovation<br>4. The Information Intelligence represented by EXALEAD for search-based applications<br>The 3D Experience platform is transforming the way "innovators will innovate with consumers by connecting designers, engineers, marketing managers and consumers in a new social enterprise. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | Rise of the power of the consumers who are more and more informed and instrumented, which implies that retail strategies have to take into account all channels from the traditional store to the social media<br>Critical management of the Brand image while at the same time ability to instantiate it on multiple and rapidly changing variations of the products. |



# DISCOVER E-SOLUTIONS (DeSL)

Find out more *www.desl.net*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Men's Wearhouse |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | No information provided. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | No information provided. |

# ecVISION


Find out more *www.ecvision.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | No retail, footwear or apparel customers in the financial year 2011/12 that are public knowledge. |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | Brands and retailers have already spent billions of dollars on PDM, ERP, TMS, WMS and other "big data" systems. But a new class of technology has emerged in order to effectively use the information that is extracted from these existing applications. Other solution providers are promoting their products as 'Extended PLM or ePLM' solutions; providing a platform where brands and retailers have better access to enterprise-wide information tying together design, production, and other management aspects of their business. But these extended solutions still lack the collaborative features necessary to bring together the disparate role groups. This is where the collaboration capabilities in a technology platform become the important, conjoining layer for all these other systems.<br><br>Through a platform like ecVision Suite™, content from multiple technology sources and service providers is converged into a single solution instead of separate silos. Because these other technology systems are now "talking" to each other, there is no disconnect and the information is easily traded from one system to another. Only then does it become easier for information to be mined. More importantly this information can be used to collaborate with suppliers of every tier where the real benefits are derived. Furthermore, by connecting internal and external parties, multi-lateral communication flows freely and provides a collaborative space for more efficient commerce.<br><br>The brands and retailers we are working with have retained their existing solutions and are successfully implementing our collaborative platform to maximize the investments by using the information to make timely, fact-based decisions with input from vendors and suppliers. This gives the retailer the ability to effectively manage the supply stream by weighing the options when making choices that will have a better outcome. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | Collaboration is the buzz all around supply chain management. But understanding the how, why and who isn't always answered. As a leading collaborative platform provider, ecVision is creating a trend called "supply chain convergence". By converging content from multiple technology sources and service providers, it will become easy for information to be mined and have more value extracted out of it. More importantly this information can be used to collaborate with suppliers of every tier where the real value is derived.<br><br>This gives the retailer the ability to effectively manage the supply stream by weighing the options when making choices that will have a better outcome. At the end of the day, all that matters is whether the consumer likes the product and takes it home.<br><br>Also, we see material management as an emerging trend that can save retailers and brands millions of dollars. When a brand can determine the quantity of a certain material – and we are just talking about fabric in all cases, it could be trim or buttons, you name it – they can initiate a material buy for multiple orders and lock in the price with a single order. Through a collaborative platform when orders are issued the material supplier then can decrement from the bulk order and ship the material to the factory for production. The gives control over price and availability – affecting the entire downstream process. We also have the ability to track the brand's liability and utilization to further control the entire process. These process changes have a profound effect on the cost of goods sold that equal anywhere between a 30 to 80% decrease. |





# FRONTECH


Find out more *www.frontech.ca*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Quicksilver |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | The company opened its first Sales and Marketing office in Southern California in early 2012, making revenue difficult to calculate. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $1-5 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | There are many specifics but two basic differences:<br><br>Our application is based on very new technology and is structured in a very dynamic way. Our application is driven over the internet and is very compatible with almost any ERP system.<br><br>Our product was developed by professionals working in the footwear and apparel markets to function in the real world of FW/AP merchandising/design/development/production. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | 1. The need to have more visibility with the costing arena. As profits are challenged by ever increasing costs there is a priority on transparency in detailed costing models. There is a necessity to be able to make hard choices when reducing product features, (and/or value) to reduce costs. When making this decision there must be 100% clarity as to what is being sacrificed in the name of protecting profitability.<br>2. The other targeted area of profit preservation is SKU productivity. Companies must analyze the resources that they are utilizing to maintain the SKU/Style count that they are offering. If their productivity is declining resources must be reallocated to assure that efforts are being made to increase profitability, and that these resources are not be squandered on products that are yielding a diminishing return. |

# GERBER TECHNOLOGY

Find out more *www.gerbertechnology.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Jonathan & Fletcher, Consortio Fashion Group AB, Koi Design, Fruit of the Loom (including: Spalding, Vanity Fair, Russell Athletic), Wolverine Worldwide, Merrell, Abercrombie & Fitch, Disney, Randa Accessories. |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $11-50 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $6-10 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | With Gerber's rich history of providing innovative solutions for design development and production of apparel products we are uniquely qualified to bridge the gap between the creative process of product design and development and the business process of product delivery and profit generation. We seek to accomplish this with innovative solutions that excel in usability, visibility, mobility, flexibility and scalability. And we back it up with an unprecedented team of globally deployed industry experts.<br>Gerber Technology unique qualifications:<br>1. 50 years of innovation in apparel design and manufacturing technology<br>2. Unprecedented global customer base ensures best practice enablement<br>3. Deep industry expertise deployed on customer sites<br>4. Global award winning PLM solution with proven successes<br>5. Solutions designed for the retail footwear and apparel industry, by people from the industry<br>6. Intuitive user experience fosters proven rapid adoption, including by design<br>7. Flexible, scalable and extensible platform that grows with your needs<br>8. Unmatched global support for your organization and your partners<br>9. Customer engagement in product development ensures long term value<br>10. Financial stability for a long term partnership<br>The brands and retailers we are working with have retained their existing solutions and are successfully implementing our collaborative platform to maximize the investments by using the information to make timely, fact-based decisions with input from vendors and suppliers. This gives the retailer the ability to effectively manage the supply stream by weighing the options when making choices that will have a better outcome. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | Better ability to engage, manage and track supply chain partners.<br>Out of the box functionality that rapidly meets the vast majority of requirements, enabling swift value realization. |



# iShopShape

Find out more *www.ishopshape.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | CoolCat, Telstar Trading |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | No information provided. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | No information provided. |

# KOPPERMANN

Find out more *www.koppermann.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Marc'O Polo, Globetrotter, Ulla Popken, Basler |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $1-5 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $1-5 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | Koppermann offers a fully integrated PLM solution.<br>TEX-DEFINE allows companies to begin not with an isolated, cut-off planning process, but rather within an integrated, uninterrupted cycle. It therefore starts where the cost and time schedule for the next seasonal period is set up, and is either based on previous seasonal selling successes or on a "design to cost" framework.<br>Retailers can import the plan in order to have a "shopping list" based on either optimized collections for their POS or individually targeted line plans, thus making sure they will meet or even increase the success of the past season.<br>Koppermann's solution therefore represents a best practice approach especially for verticals and companies having a global value and supply chain in which a worldwide, real-time communication is a must. This PLM solution understands itself as the ultimate connector between Design, Product Development and Merchandising.<br>With Koppermann's PLM system, communication and data flow becomes seamless, as it can be perfectly integrated within a company's IT environment by offering interfaces to several systems, as for example standard interfaces to ERP systems. TEX-DEFINE also facilitates the designers' life as it allows an integration of the major design software file formats.<br>The system is also conceived to ensure transparent processes and an efficient knowledge centralization and transfer.<br>Koppermann's PLM solution TEX-DEFINE offers a fully flexible platform: Client-server, web or mobile access. The new mobile solutions allow users to input data and run analyses at any time and from anywhere in the world while making sure that the most up-to-date data is available.<br>One of the highlights of TEX-DEFINE is certainly the dashboard, a function for a user-specific overview of the upcoming task, milestones, events and deadlines. This overview is particularly user-friendly thanks to its calendar function.<br>The integrated control functionalities allow for a constant progress monitoring. Their effectiveness is being enforced by progress bars giving an overview of the current status at a glance. Also, an alerting system ensures that all deadlines are being met and, if needed, a quick reaction.<br>Koppermann's PLM solution also has a variety of reporting tools enabling not only the creation of individual style books or storyboards at any time but also all sorts of analyses.<br>Koppermann's solutions result from more than 20 years of experience in this market as well as from a constant interaction and intensive communication with its large customer base and its business partners. This ensures the highest level of inspiration and a particular proximity to this ever-changing market. This is why Koppermann is continuously able to deliver specialized cutting-edge technology.<br>Despite for its highly specialized industry knowledge, Koppermann stands out from the competition by creating evolutionary and modular solutions which are highly flexible. This flexibility allows to reproduce within the system all processes constituting a company's competitive advantage.<br>At the same time Koppermann's solutions are known for their user-friendliness and intuitive handling. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | he POS will become the undisputed leader of the product development process. From the very beginning of the product development phase – i.e. the planning phase –this means that the product mix must be constantly tested (in terms of quantity and quality) on the POS in order to ensure not only a substantial increase in process efficiency but also a perfect impact of the new collection on the POS.<br>Also, an accurate planning process will become more and more important, especially in times of fierce competition and resource scarcity.<br>Manufacturing companies will be focusing more on "private labels", therefore this process will be empowered with several features supporting "product information management" that communicates via XML with retailers' web-shops. |

# LECTRA

Find out more *www.lectra.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | La Jolla Group, Les Enphants |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $1-5 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $6-10 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | Lectra Fashion PLM is just that: a PLM for fashion. We were born in the fashion industry and have evolved alongside it, so we know how important design and development are to creating a successful product.<br>We have continuously invested in our fashion platform to stay innovative and offer new technologies like 3D prototyping that respond to real design needs and provide solutions to the challenges of speed and cost that preoccupy each and every one of our customers. We also understand that technology is only one part of the equation, which is why we have specialists around the world to teach and support fashion best practices.<br>We cover all aspects of fashion and apparel from design to production for all sorts of fashion companies, from brands to retail to manufacturing. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | We see two things as being important: an emphasis on brand authenticity and shifting supply chain strategies. One places an emphasis on unique design and the other on logistic acumen, but both are crucial to long-term success. Brands carefully craft their image and strive to offer authentic products that speak to a more discerning consumer, but must also deliver on those promises as fast as ever. Increased supply chain control is crucial to making good buying decisions, supporting green and sustainable initiatives, and carving out the time necessary to do the priceless creative work that ultimately defines a brand.<br>One way that companies are achieving these goals is by integrating new technologies such as 3D into design and development. |

# NEW GENERATION COMPUTING (NGC)


**Find out more** *www.ngcsoftware.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Jaya Apparel Group, Vesi Inc., Marchon Eyewear, Swatfame, GTM Sportswear |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $11-50 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $6-10 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | NGC's deep experience in both PLM and SCM/global sourcing gives us an edge, and that is reflected in NGC Extended PLM software. PLM and SCM must work together seamlessly for companies to realize the full benefits of each solution. In addition, no other company can match NGC's product breadth and experience in the fashion industry, as we have provided fashion software solutions for more than 30 years. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | One of the most important trends is supply chain execution within a PLM system. Many fashion companies using PLM also realize that there are huge savings by having visibility into the production and logistics processes. Global views of WIP inventory and inbound shipments enable quick decisions to expedite the supply of strong products and halt the production of weak ones. |

# PLURAL TECHNOLOGY


**Find out more** *www.pluraltechnology.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Blauer Manufacturing Company |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $1-5 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $1-5 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | Apparel Innovator is the only open source PLM available in the market.<br>Solution upgrades are provided at no cost to subscribers.<br>All the modules are provided out of the box and hence no modular pricing. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | 1. Simplified PLM<br>2. Availability on Cloud |

# PARAMETRIC TECHNOLOGY CORPORATION (PTC)

Find out more *www.ptc.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Tommy Bahama, Ben Sherman, Devanlay (Lacoste), Umbro, and an additional twenty new customers who are not yet subject to public disclosure. |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $50-70 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $11-50 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | Global adoption of our Windchill FlexPLM solution has increased dramatically over the last few years, and the combined PTC platform continues to deliver unparalleled value across our worldwide customer base. Thanks to enduring partnerships with many leading consulting organizations, the time it takes to achieve that value is decreasing steadily, and our customers will continue to see returns on their investments within the shortest possible timeframe.<br>PTC also continues to increase resources internally to support existing installations, and that same commitment enables us develop new functionalities for Windchill FlexPLM that allow the solution to scale to meet growing customer needs.<br>Windchill FlexPLM has been adopted by a diverse range of companies over the past few years – with anything from 50 to 4,000 licensed users - and the solution as a whole boasts more live users than other PLM vendor.<br>Our commitment to strategic visioning, and our strong customer partnerships remain the primary differentiator between PTC and its competitor, and both will enable us to maintain our leadership position within the Retail, Footwear and Apparel industry. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | Within the market place, there are several key trends emerging. They range from the enablement and partnership with the supply chain , to sustainability improvements enabled by PLM technology and the need to incorporate the voice of the customer and applying that data to make smarter business decisions to improve brand and customer loyalty. Retail and Consumer companies will also continue to improve processes and technologies and will challenge themselves to implement and execute new applications with OOTB functionality |



# RLM APPAREL SOFTWARE

Find out more *www.ronlynn.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Louis Raphael, Donna Karan |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | No information provided. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | No information provided. |

# SIMPAREL

Find out more *www.simparel.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Fownes Brothers & Co, RG Barry |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $1-5 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $1-5 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | Fully embedded collaboration. Shared Master Tables with ERP (gets rid of the need for interfaces). Embedded production tracking (allows customer to do production orders and track them right within the PLM system without having an ERP). |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | No information provided. |



# TECHNIA

Find out more *www.technia.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | DOME Corporation |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | No information provided. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | No information provided. |

# TRADESTONE


**Find out more** *www.tradestonesoftware.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | Belk Department Stores, Family Dollar Stores, Group Dynamite, Talbots, Spencer Gifts, Landmark Group (including Splash), Ascena Retail Group (including Tween Brands, Justice & Brothers brands, Dress Barn, and Maurices), Hot Topic, PartyLite as well as a number not yet subject to public disclosure. |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | What differentiates TradeStone from other suppliers is that TradeStone is recognized as the low risk option in the market for three simple reasons.<br>• We are 100% focused on retail and brands. It is all we do. We are not in other industries such as automotive, industrial or aerospace.<br>• We are built from the ground up for retail and brands, including apparel & footwear, department and discount, hardlines and food, as well as their suppliers.<br>• We are built for adoption. We have more than 50,000 global users of TradeStone. We are recognized in the market consistently for successful projects and fast, reliable implementations. Thanks in large part to glowing customer testimonials, TradeStone was featured in the renowned RIS Leaderboard as the sole PLM company awarded this honor for the past two years running.<br>We are focused on innovation – TradeStone has always led this market and will continue to do so.<br>Our vision is to help the people in retail, brand manufacturing and their suppliers move away from manual effort and harness their creativity to build inspired brands. Our tagline says it all, Inspire a Brand. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | Two of the major trends we're seeing this year are the rise of Omni-Channel and the adoption of Analytics.<br>As the consumer has grown more savvy about using various mediums to access information and interact with retailers and brands, these companies are moving quickly to provide the same level of service and experience across all channels as well as geographies. Additionally, many retailers are looking to expand internationally and as a result they are developing a retail/ wholesale model to support franchise opportunities. Retailers are pushing to look across their omni-channel demand picture and at their supply network simultaneously. This will enable them to control inventory remotely allowing them to leverage postponement strategies and respond to local demand and what's trending. All of this cannot be done without an omni-channel supply chain that captures the nuances of each channel while providing centralized visibility to all channels.<br>TradeStone is uniquely qualified to help retailers and brands to quickly enable an omni-channel supply chain by incorporating requirements by channel across the entire design-to-delivery process. Critical success factors to consider by channel include packaging, testing, cost models as well as the ability to layer omni-channel order management on top of legacy systems to provide visibility to all orders. Benefits to this approach include a decrease in order delivery time and expense, an increase in margins through more reliable landed costs, and the ability to balance production with channel specific demand.<br>The second area is Business Intelligence (BI) and analytics for merchandise lifecycle management. Retailers and brands are using analytics across many parts of their organizations and we feel product development and sourcing are still untapped opportunities for potential margin and cost savings. Often times this data exists in multiple systems and spreadsheets.<br>To address this issue, TradeStone recently launched TradeStone Business Intelligence. TradeStone Business Intelligence sits on top of our Merchandise Lifecycle Management suite to transform operational data into actionable information. By providing a powerful business intelligence platform, a robust exception management engine and best practices across the entire design-to-delivery lifecycle, TradeStone has complemented our already widely-proven technology with the next level of analytical insight. Additionally, our best practice reports and intuitive user-interface facilitate quick adoption. |



# VISUAL 2000 INTERNATIONAL INC.


**Find out more** *www.visual-2000.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | SRG, The Limited, OSC Group, David Chu |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | $1-5 million |
| **R&D INVESTMENT IN THE SAME PERIOD.** | $1-5 million |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | Visual 2000 distinguishes itself in a number of important ways. Our deep industry experience and expertise uniquely enable us develop and implement fashion-ready products tailored specifically for this fast-changing and highly competitive industry, and designed to allow our customers to clearly visualize their business processes. In contrast to generic, one size fits all systems that cater mostly to highly structured industries, our low-cost software solutions are dedicated to meeting the unique interests and needs of apparel, footwear, accessories, and other fashion-related companies.<br>From a solutions perspective, Visual 2000's comprehensive End-2-End platform provides unparalleled visibility into enterprise-wide business information. This unique approach to business computing redefines the role and value of PLM as the core business application for global fashion retailers, brands, and manufacturers. Featuring first-of-its-kind integration and interoperability, the Visual PLM.net® product lifecycle management solution gives managers and end-users access to an unprecedented range of order management, product development, supply chain, warehouse, point-of-sale, e-commerce, and other critical process information that has traditionally been restricted to independent ERP, SCM, WMS, and other software systems.<br>Visual 2000 delivers the highest level of out-of-the-box capabilities available in the fashion software market. By leveraging the latest Microsoft® technologies, we ensure that our solutions are not only powerful but easy to use and implement. With an interface that will be immediately familiar to users of Microsoft Office, our solutions are designed to minimize the time and resources required for implementation, training and system maintenance.<br>As a global leader in fashion software solutions, Visual 2000 maintains offices in Montreal, Toronto, New York, Los Angeles, Manchester (UK), and Shanghai (China); as well as support and distribution alliances in Asia, Europe, and Mexico. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | To succeed in today's fast-paced and highly competitive business environment, fashion companies must have transparency and control over every stage of the concept-to-consumer lifecycle; from design and development to production and delivery. With little room for errors or delays, these companies must continue to find new and better ways to identify and control costs, increase product innovation, speed new products to market, manage global supply chain operations, tightly control inventories, and generate profits from a variety of sales channels.<br>While the use of information technology has become essential for success, we believe that IT will play an even greater role going forward. Even though many have already implemented key software components, fashion companies are recognizing the significance of eliminating functional and visibility gaps across their internal and supply chain operations. To eliminate these risks, an increasing number of companies are rethinking their independent systems approach by adopting an End-2-End solution.<br>Moving to a new IT platform has been greatly simplified by the development of more configurable systems that require little or no code customization. Of course, the availability of strong out-of-the-box capabilities plays a critical role in the quick adoption and continued success of such a system. Cloud-based solutions can also remove many of the traditional time and cost barriers to adopting new technology.<br>With the increased requirement for mobile technologies, new tools for managing sales and customer relationships will also continue to grow. As the volume of business being conducted using tablets and smartphones increases, buyers and sellers will continue to work to simplify these processes through more accurate and accessible information. |

# WORLD FASHION EXCHANGE (WFX)

**Find out more** *www.wfxondemand.com*

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| **NEW CUSTOMERS IN THE FINANCIAL YEAR 2011/12** | F J Benjamin |
| **REVENUE DERIVED FOR APPAREL PLM SALES IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **R&D INVESTMENT IN THE SAME PERIOD.** | A privately-held company. Does not publish this information. |
| **WHAT DIFFERENTIATES YOUR COMPANY FROM OTHER PLM SUPPLIERS IN THE RETAIL, FOOTWEAR AND APPAREL MARKET?** | No information provided. |
| **WHAT DO YOU SEE AS THE TWO MOST IMPORTANT EMERGING TRENDS FOR THE COMING YEAR?** | No information provided. |





# IN SUMMARY

**As these results reinforce, the market today is strong, robust, and continues to defy expectations not just in the face of a deepening global economic crisis, but in the face of long-held and widely-disseminated misconceptions that might lead prospective customers to conclude that PLM remains the exclusive domain of international mega-corporations and software giants. To appropriate a piece of evolutionary theory: the PLM marketplace for retail, footwear and apparel is stronger for its diversity, and the existence of market leaders (while a strong indicator of just how viable a market ours has become) does not preclude the precipitous growth we're seeing of other, more unique solutions, each tailored to meet the requirements of a different market segment.**

Financial analysts measure strength not just in terms of overall earnings and growth potential, but also in the ability a given industry has to mature and develop. Instead of remaining stagnant and catering only to a very specific subset of potential customers, our industry has followed this path particularly well over the past year: these results (along with those of our customer survey) reveal that every tier of the market has experienced growth and diversification, rather than any particular tranche leading the way in the number of new customers or the potential for growth.

That said, an overall leader must emerge, and judged solely on the revenue derived from PLM sales to the retail, footwear and apparel industry, Parametric Technology Corporation (PTC) have led the market in 2011/12. The company is the only occupant of the highest revenue band ($50 - $70 million), and has over the past year continued to cater to the biggest and most prominent figures in our industry.

PTC also lead the pack in the sheer number of new customers brought into the fold this year (twenty-four that are public knowledge), but that is not to say that other suppliers have underperformed. Gerber Technology have performed admirably, upgrading their existing WebPDM solution to the new YuniquePLM platform, and attracting the second-highest number of new customers in 2011/12. Computer Generated Solutions (CGS), Centric Software and New Generation Computing (NGC) all follow closely behind. And while PTC also lead the market in terms of overall research and development spend, Lectra are alone in investing more in the future of their solution than they earned from the sale of it throughout 2011/12 – demonstrating a clear commitment to the growth potential they see in the market. This is representative of the wider trend that we see in these results: investment in research and development is clearly a high priority for suppliers, irrespective of the market sector that they cater to. With a combined investment budget of more than $100 million (and much more in the way of venture capital investment and ongoing development conducted elsewhere in the industry, and by private companies who do not divulge their financial information), the suppliers who shaped the industry this year are all betting heavily on the futures of both their solutions and the market itself.

Those futures will take different shapes depending on the priorities of particular suppliers and their customers, but several notable trends emerge. Supply chain agility, support for multi-channel retailing, extending the reach of PLM (via E-PLM) to all aspects of the product lifecycle, three-dimensional design, loud computing, a focus on the user experience, and further improvements to out of the box functionality are all likely to characterise the ways in which supplier choose to approach the future development of their solutions.

Further reinforcement of these companies' faith in our collective future comes from the composition of the PLM customer base over the past year. We have seen implementations in the USA, Scandinavia, Japan, Australia, and throughout Europe. And the presence of prestigious retailers and brands like Donna Karen, Wolverine Worldwide, Devanlay (exclusive manufacturers for Lacoste), JD Sports, and Tommy Bahama in this year's results (along with the many luxury brands who chose not to divulge their implementation strategies) only furthers what customer feedback and our own insight are telling us. PLM - and in a broader sense, technology for fashion - is big business, and it is our hope that this publication will provide customers with a real understanding of not only which forces, which suppliers, and which technology trends are driving its growth on a daily basis, but also those larger trends that will shape the future for all of us.

# THE FUTURE OF PLM

*These scenarios may sound like wishful thinking, but each of them is feasible today.*





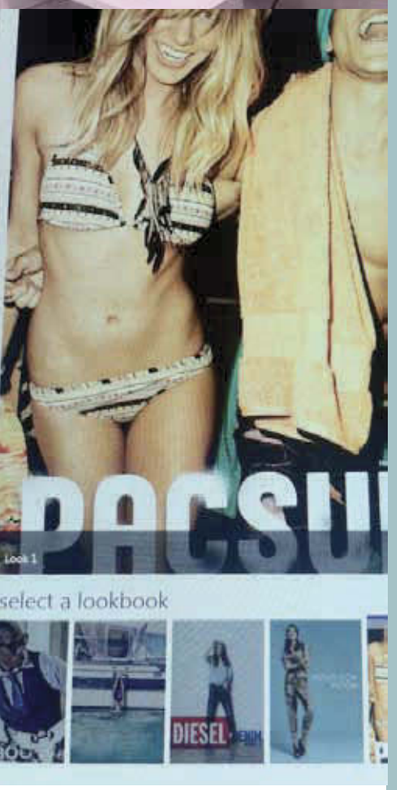


**Garments are artfully positioned on the racks at the flagship store of a major brand, their hangers displaying not just typical sizing and pricing information, but also the number of "likes" the jackets, jeans, handbags and skirts have received on Facebook, polled in real-time. Elsewhere, shoppers approach banks of augmented reality "virtual mirrors", where gesture-based skeletal tracking systems allow them to select and try on new and up-and-coming items without ever visiting the changing rooms.**

In the brand headquarters, lead designers experiment, on life-sized screens, with a range of materials for a new product suggested by their social media audience, carefully comparing their weight, opacity and drape characteristics in a virtual environment. Typically, those prototypes would have been produced as physical samples and shipped around the world to allow the same kind of experimentation that is now possible with standardised 3D avatars and meticulously-researched cloth simulations drawn from online material libraries. Amongst more traditional materials, the designers are able to select location-aware "smart fabrics", capable of communicating the wellbeing of the wearer to social networks, and employing ultra-low-power sensors and lighting to display subtle brand signatures.

Once the right material is selected and the garment enters mass production, it begins to appear in specifically-produced video advertising on the brand's website and on a variety of social media channels. Customers the world over are able to interact with intelligent video overlays to choose their size and colour and add it directly to a virtual shopping basket contained within the video frame, with product information and stock control data obtained in real-time from the company's existing enterprise solutions. Customers will be able to order correct sizes and colours based on scientific made-to-measure calculations and data from online colour libraries.

This kind of fervent dreaming is something we see a lot of in proof-of-concept videos and controlled demonstrations, but in many cases the reality does not measure up. Companies like to suggest what may be possible in the near or distant future, but often these concepts fall short of the rigorous standards that are required to turn dreams into usable, reliable products, ready for the market.




*In fashion, technology has rapidly become a prerequisite - and those who do not use it soon find themselves falling behind.*



The scenarios outlined above may sound like precisely that sort of wishful thinking, but each of them is not only feasible today – using infrastructure that is already in place - but actually supported by functional solutions that are either already available or extremely close to reaching the market.

The retail, footwear and apparel industry is a trailblazer in this respect – primarily because the commodities it produces are both necessary (we each wear clothes and shoes) and subject to rapid, unpredictable change in order to meet shifting consumer demand. Traditionally, garments, footwear and accessories were produced in strict, predictable seasons (a model still used by luxury brands) but the ascendancy of "fast fashion" brands like Zara and H&M has altered expectations considerably. Consumers now expect fresh trends delivered to markets around the globe more rapidly and at a lower price point than ever before, and retailers, brands and manufacturers are increasingly turning to new technologies to enable them to keep pace and to differentiate themselves in an extremely competitive market.

Unlike other industries, where technology can be a useful benefit, in fashion it has rapidly become a prerequisite - and those who do not use it in one form or another soon find themselves falling behind. As these trends continue, technology may not necessarily become fashionable in and of itself, but WhichPLM firmly believes that the future of fashion will be impossible to deliver to the standards expected by the modern consumer without it.

Perhaps unsurprisingly given the quantity of retailers, brands and manufacturers who have adopted it over the past few years, WhichPLM also believes that PLM will over the coming years solidify its position as the underlying platform that supports the technological landscape of the future.

Although each of the examples cited at the beginning of this article would be feasible to deploy using software and hardware available today, the logistics of integrating any of them into existing enterprise systems, global supply chains, and internal infrastructures can be daunting. Given the realities of today's market and the unique challenges faced by the fashion industry, these and more solutions will unquestionably be used to create the future of customer engagement, trend analysis, e-commerce, augmented reality and more. But as the opportunities to increase profitability and efficiency, and to create a unique brand identity, increase, so too do the potential pitfalls of adopting such a dizzying array of new technology without a robust platform to support and feed it.

WhichPLM believes that PLM is that platform.

As well as revitalising global collaboration and delivering efficiency savings in its own right (and these and other benefits are well-documented elsewhere in this publication), PLM's role as a centralised repository of master product data (or Big Data) will make the integration and interoperability of this growing range of extended solutions possible – allowing seemingly-far-fetched dreams to become reality. Whether it's size information, style numbers, product images, three-dimensional models, merchandise planning data, planned markdown schedules, material images, or advanced colour management data, the information already contained within PLM can be used to accurately populate and shape the development of not only the solutions that are being devised or marketed today, but virtually any future solution that may be developed in response to consumer trends.

With this in mind, the examples mentioned at the beginning of this article are by no means the only ways in which we can expect to see our industry change. The demands of global fast fashion will only increase, and the face of consumer engagement several years from now may be essentially unrecognisable. The WhichPLM team has set out below what we believe will be the most prominent of these forthcoming trends, and the obvious footprint of PLM can be detected in each.

The established paradigm of retailers and brands dictating styles to their consumers is already being replaced by more bi-directional communication (facilitated by social media), as consumers begin to play a greater role than ever before in shaping the development of individual products, lines and entire collections. No longer will a Facebook profile, Twitter account, Pinterest board or website serve as a channel for retailers or brands to communicate their latest developments to their customers, but rather they will become avenues for those same retailers and brands to either solicit their customers' opinions on their future direction, or ignore them at their peril. This valuable trend information will then be fed into core and E-PLM solutions to inform merchandise planning strategies, garment designs, store layouts, advertising strategies and more.



Sharing the same goal of customer engagement and satisfaction, we will see retail continue to grow in two contrasting directions. It is no secret that high street retail has weathered some difficult times: online sales have in some cases cannibalised their physical counterparts, and an increasing number of retailers and brands have found themselves doing whatever it takes to differentiate the bricks and mortar shopping experience from its virtual equivalent.

On the one hand we expect to see more and more in-store "experiences" it simply would not be possible to replicate, including the aforementioned virtual mirrors, but also touchscreen kiosks, catalogues and "lookbooks" built on platforms like Microsoft Surface. Conversely, we also expect to see other retailers and brands embracing the role of e-commerce and social media, and mitigating their impact by more closely integrating them with the retail experience. We will begin to see more in the way of mobile device integration, where virtual shopping carts can be brought from home, and mobile-exclusive vouchers downloaded on the move before being redeemed in store. Needless to say, the information that populates these virtual catalogues, vouchers and mirrors will be drawn from PLM, so that the latest products can appear across an organisation's entire retail operation (online and in store) without necessitating additional data entry.

The anticipation generated for those products is typically conducted by marketing teams (either in-house or third party) who are more often than not handed a simple specification sheet for the products they are tasked with advertising, and required to communicate the designer's original intentions on the basis of that limited, potentially out-dated information. We expect to see this typical process replaced by a direct channel between designers, garment technicians, supply chain partners, and marketing professionals. By storing the data required for effective marketing (design inspiration, material types, sizing details, and intended audience) at an early stage in the product development process, companies will be able to ensure that a single data set is carried through from the inception of a given production to its communication to the consumer. PLM will also play a key role in making this a bi-directional process, by incorporating consumer analytics and retail performance statistics into that same centralised data source, allowing retailers and brands to gain valuable insight into the performance of their marketing processes.

*The future will see PLM truly earning its name, acting as the unifying force for a huge range of software and solutions...*

Away from advertising and retail, the benefits of a unified approach to technology (with PLM at its core) will be felt to an even greater degree than it is today across global supply chains. A good portion of core PLM solutions already incorporate supplier portals and role-based access to centralised data, and this is a trend that will only increase over the coming years, as retailers and brands are forced to develop supply chain agility and create enduring partnerships with manufacturers in all corners of the globe. A prime example is already being seen today in the form of advanced colour management and calibration, with retailers, brands and their supply chain partners adopting standardised technologies and methods that allow for accurate, scientific communication of colour intentions. Traditionally, this kind of colour management is handled using either proprietary hardware or physical materials and substrates shipped around the world, but newly-developed display calibration technologies may soon reduce the need for both. As a direct result, retailers and brands can be certain that their internal teams and supply chain partners are working within the same subjective colour parameters, and consumers can shop with the confidence that the garment they want to order will match the colour they see on screen in the retailer or brand's e-commerce portal. With online shopping returns due to incorrect sizing and colour accounting for substantial losses each year, this newfound confidence potentially represents a significant saving.

Rather than using PLM to create and email an isolated "tech pack" to those partners, savvy retailers and brands will invite their supply chain partners to adopt the same ideologies and technologies that are enabling them to remain profitable and unique in these and other areas, and begin to leverage their power away from customer-facing applications. These may already be core capabilities of PLM today, but the increasingly-interconnected future of core and E-PLM solutions for the extended supply chain will see them collectively ensuring that everybody, no matter their role in the product development process, is working from a single, accurate and consistent data set. This will be the foundation of a channel that runs from the designer to the consumer - delivering efficient mass customisation.

It does not qualify as a prediction to say that our world is becoming smaller and more interconnected as the years go by. This is a fact. And the technology that underpins the retail, footwear and apparel industry will continue to blur the lines that have typically separated different disciplines, geographical regions, software platforms, traditional ways of working and, indeed, many of the barriers that until recently exist between retailers and brands and their consumers.

Those consumers will continue to shape the requirements of our industry - exercising their buying power to reward those brands with which they are engaged. And although that engagement will come through an increasingly wide range of media, the most important pieces of software for delivering on their expectations will remain those that live behind the scenes. Accurate costing and colour reproduction, global collaboration, supply chain efficiency, cost-effective virtual sampling, and 3D design will seldom factor in the marketing materials of those retailers and brands - and indeed the consumers who seek out the latest garments and accessories will likely never realise they exist - but nevertheless they will have been absolutely instrumental in how those garments were manufactured, and how the retail experiences, online or in person, were designed.

The future will see PLM truly earning its name, acting as the unifying force for a huge range of software and solutions that support and expand upon the myriad stages of the product lifecycle, as well as continuing to streamline the core processes that enable truly modern, global product development.

*The benefits of a unified approach to technology (with PLM at its core) will be felt across global supply chains.*

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