Fashion Industry Cashes in on PLM and Other Groundbreaking Technologies

By Rita Stange, ConnectPress Managing Editor

These days PLM is an inevitable part of being competitive in the market. Many industries, such as the automotive industry, are clearly aware of this and have been using the software for decades. As I learned by talking to several PLM industry experts, an industry that has more recently picked up on PLM is the apparel and footwear industry. For vendors like Siemens PLM Software, Dassault Systemes and PTC, interest from the fashion industry really picked up around 2005.

Since then companies in the fashion industry such as adidas, Guess, Gap, The Jones Group and Under Armour have rapidly adopted solutions such as Teamcenter, ENOVIA and Windchill. In addition the apparel and footwear industry have also utilized 3D printing and CAM technology. One of the key drivers of PLM implementations has been speed and the need to bring products to market quickly. Other motivators include globalization and keeping the supply chain connected and perhaps most important data management. In addition to data management, PLM solutions essentially play a large role in line planning and collaboration.
According to Susan Olivier, Director, Market Development - Retail, Footwear & Apparel, Dassault Systemes, the fashion industry was drawn to PLM systems for the ability to have “one data version of the truth.” Once web versions became available in the 21st century PLM systems became more appealing.

In addition to Olivier I spoke with Daniel J. Staresinic, Leader, Industry and Vertical Communications, Siemens Industry Automation and Beth Borland, Director of Retail and Consumer Market Strategy for PTC. Delcam and Objet were also interviewed by ConnectPress Editor John Myers.

Aside from agreeing on the common drivers for PLM adoption, the other consensus that I got from the group was that Adobe Illustrator was the most prominent design tool used for creating 2D drawings used by the fashion industry.

Other trends mentioned were social media including online communities, the use of mobile devices and some interest in 3D design tools.

“Mobile Applications like the SmartPhone and iPad have changed the way people interact,” stated Staresinic. Borland cited the example of a designer or associate being at a fashion show and being able to capture the idea and update it to the PLM database from a mobile device. Bill Brewster President of Software Solutions, Gerber Technology echoed this idea in his article from Apparel Magazine titled “What has PLM Done for you Lately,” in which he stated, “With the proliferation of mobile devices not only in the apparel industry but everywhere you look, users expect to be able to check the status of their products at any given moment, input data, make changes on the fly and manage their workflow on the go. Capture ideas. Communicate ideas. Collaborate to achieve perfection. PLM and mobile devices make it all possible.”
Another groundbreaking trend stems from the social media phenomenon. Dassault Systemes and PTC have both came out with online environments PlanetPTC Community and 3DVIA.com for sharing 3D models and networking.

More recently, Dassault Systemes launched 3DVIA Post3D, an interactive 3D community, where you can post your design, and then invite colleagues to view and discuss in real-time. Olivier mentioned that some of their apparel and footwear customers have shown interest in 3DVIA for conceptual purposes such as marketing and being able to show a sample of a product in 3D. In addition, 3DVIA Shopper, an online environment used to study the behavior of real consumers in virtual stores, has also gained a lot of attraction from the fashion industry.

Olivier said that although some handbags and intimates designers had inquired about CATIA software it was uncertain if the use of CATIA in the fashion industry would come into play.

However, 3D design is already present in the footwear industry. For instance, Siemens PLM Software’s NX software is being used by Black Diamond Equipment, Ltd, developers of ski and mountain climbing gear, to design their freeride boots.

In addition to CAD and PLM technology, CAM and 3D printing technology is also being used by the fashion industry for the testing of one of the most important aspects of apparel and
footwear: fit and form. For instance companies have utilized 3D printing technology for testing in the early stages of the design process in addition to marketing purposes. According to Bruce Bradshaw, director of marketing, Objet, there has been steady adoption from the footwear industries including companies like adidas, Nike and Puma. As Bradshaw pointed out prices for 3D printers have dropped in recent years, leading to increased sales.

The appeal for the footwear industry is the common driver and goal of bringing products to market much faster while improving product designs. Another incentive for the footwear industry, is to use 3D prototypes at trade shows in order to gauge market acceptance for upcoming seasonal lines.

Advancements in 3D printing technology has also lead to increased adoption rates such as having more material options and the ability to print rubber, in addition to printing in color.

And not only is the footwear industry using 3D printing technology for prototyping, but according to Bradshaw many footwear companies print the soles of shoes and attach it to the upper part of the shoe during manufacturing. In addition apparel companies print components such as zippers and other parts of clothing and accessories for prototypes prior to a product’s release.
CAM technology is also appealing to the footwear industry.

According to Peter Dickin, marketing manager for Delcam, Delcam's software is used at all stages in the design and manufacture processes. Delcam CAM software is used for the full range of machining operations used to manufacture the footwear including 3D machining of lasts and of molds for soles, plus the 2D machining of the upper components from both leather and synthetic materials, explained Dickin.

Aside from giving footwear customers the ability to achieve greater productivity, higher accuracy and better quality, Dickin spoke of two specific benefits including the ability to use CAM software to ensure accuracy of pairing left and right shoes and the increased durability that comes from assembling shoes using components that are accurately matched.

Two-shot molding for producing multi-colored soles is also in high demand for the footwear industry according to Dickin.

Currently Delcam is in the process of combining Delcam software for sole manufacture with the capabilities of the CRISPIN software for upper design in a new program called ShoeMaker, which will allow the complete shoe to be developed in one system.

Another fascinating technology being utilized by the fashion industry that Staresinic made me aware of was the full-size body scanners by [TCI]² and Image Twin. Apparently their NX-16 3D and LC-16 scanners scan the whole body within seconds and produce a true-to-scale 3D body model. And according to the company’s website, “The NX-16 now features capabilities for Virtual Fashion visualization with links to 3D garment content from major industry CAD packages.”
While PLM solutions like ENOVIA, Teamcenter and Windchill do seem to have a growing presence in the fashion industry, there are companies that specialize in PLM solutions specifically for the market such as ApparelMagic and Tradestone Software, which seem to be popular choices.

Fortunately, all three solutions from the CAD vendors (Siemens PLM Software, Dassault Systemes and PTC) have integrations with Adobe Illustrator and each of the vendors’ PLM solutions have specific features targeted for the fashion industry.

For instance PTC’s FlexPLM, which is built on Windchill architecture, includes features that support calendar management, line planning and merchandise planning. With calendar management users can define seasonal calendars and track progress of products against the seasonal calendar. A notable attribute of the merchandise planning capability is that it enables users to create product plans containing size and colorway matrices and indicates which combinations to use. And as far as line planning is concerned, FlexPLM enables the following as stated in PTC documentation:

• the ability to create your own role-based home page, and customize how the application looks based on your specific position
• manually or automatically generate product placeholders from a merchandise plan
• optimize the merchandising mix across company, brands, regions and distributor channels
• create line sheets and line presentation boards
• track product adoption against merchandise plans

Plus, FlexPLM has a direct integration with Adobe Illustrator through the FlexPLM Adobe Design Module, which allows a designer to pull color and materials information from FlexPLM onto the product in Adobe Illustrator.

Dassault Systemes also offers specific solutions for the apparel and footwear industry in the ENOVIA line. Olivier said they have a unique value proposition by offering templates fine tuned for season and line planning including the Apparel Accelerator for Design and Development, the Apparel Accelerator for Sourcing & Production, and the Accelerator for Sourcing & Production for Partners.

The Apparel Accelerator for Design and Development basically enables companies to rapidly deploy a scalable enterprise solution to take products from inception to design and manufacturing, and finally to the customer.

The Apparel Accelerator for Sourcing & Production enables collaboration, process control and risk
management during sourcing and pre-production processes, keeping all the parties involved connected.

The Accelerator for Sourcing & Production for Partners allows companies to leverage supply chain capabilities throughout the product lifecycle.

And finally, the Collaboration for Adobe Creative Suite offering can access ENOVIA-managed data directly from within the native Adobe interface.

Staresinic stressed that there was a huge need for rich reporting and analytics by the fashion industry in which they offered a module called Teamcenter for Reporting and Analytics, a solution to help establish, measure and analyze key performance metrics.

Another popular solution mentioned by Staresinic was their integrated specification development solution, Teamcenter for Softlines, Hardlines and Footwear, which enables users to build a library of approved colors, fabrics, sketches; track lab dips and samples; and capture performance of older styles and seasons.

In addition Siemens PLM Software also offers a Portfolio, Program and Project Management solution to help strategize and guide priorities and planning. And for linking and managing discrete and formulated product development with packaging, artwork, brand information and assets, Siemens PLM Software offers Teamcenter’s Formula, Package and Brand Management solution.

So what’s next from these CAD vendors? According to Staresinic one feature Siemens is working on is costing capabilities. As well the company continues to support academia by providing software grants to universities such as Auburn University and Oklahoma State’s apparel programs. Plus, Siemens is a sponsor of the upcoming American Apparel Summit in which they will be providing a demonstration and talk on their apparel and footwear solutions.

As for PTC, Borland stated that 2010 had been a great year with a lot of contract wins. PLM enhancements in the works include quality compliance and material sourcing capabilities. Borland was uncertain of what effect the new Creo launch would have on FlexPLM in future releases.

As far as Dassault Systemes is concerned, the company will continue an emphasis on introducing simplicity, including interface improvements, said Olivier.

And although Olivier said introducing PLM to the fashion industry is always a challenge, she asserted how PLM ultimately provides more time for being creative.

The payoffs of PLM systems are clear and seem to meet the goal of fashion designers everywhere in terms of achieving innovation through enhanced collaboration, reducing defects and overall reducing time to market and cost.
ConnectPress Editor John Myers contributed to the research of this article.

Note: Homepage image courtesy of Delcam