Contactmag

INTERNATIONAL Spring 2011

Consumer Industries and shoppers: What's in store?

Procter & Gamble
Reinventing innovation processes with Dassault Systèmes

Clarion Malaysia
Shortening design time by 20% with V6 PLM Express

Minesto
Designing energy-producing underwater kites with CATIA

DASSAULT SYSTEMES

In this issue

Contact mag
Spring 2011

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Retailers can design their in-store experience virtually in 3D with Dassault Systèmes' new 3DVIA Shopper product line (page 11).

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The colorful square you see here is called a "tag". It enables you to play videos and other bonus content throughout *Contact mag*. Here is how it works:

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Editorial

Today, 3D has become an extraordinary medium for communication and a critical tool for decision-making and organization in the work place.

Philippe Forestier
Executive Vice President
Global Affairs and Communities
Dassault Systèmes

If you polled your colleagues for examples of the markets of the future, their responses would likely include environment, energy and healthcare. And rightfully so. The world's sustainability challenges and aging population are creating unprecedented demand in those industries.

Yet, it is also arguable that all industries, even traditional ones, are markets of the future. Why? Because those same sustainability challenges are creating investment opportunities in every sector with demand for products ranging from electric vehicles to energy-efficient household appliances.

Dassault Systèmes offers a variety of solutions to help companies address their industry-specific challenges and accelerate innovation. In this issue of *Contact mag*, we look at the incredible changes occurring in the Consumer Industries (Consumer Goods, Consumer Packaged Goods and Retail) and the Dassault Systèmes solutions that are helping Consumer Industry pioneers excel in their highly competitive market.

Due to the success of our industry-focused issues, we have created special *Contact mag* Industry Editions. Each special edition packages the best of articles on a specific industry from past *Contact mags* in one easy-to-reference industry guide. To date, special editions are available on Energy, Life Sciences and Industrial Equipment; a special Aerospace & Defense-focused issue will be published in June. They are all available, along with back issues of our regular editions at **www.3ds.com/contactmag**.

Today, 3D has become an extraordinary medium for communication and a critical tool for decision-making and organization in the work place. Virtual universes allow business colleagues, but also citizens, researchers, students and teachers, to simulate realistic experiences in order to create, share and discover in 3D. This is the "lifelike experience" they are discovering and we will continue to bring you their stories – to inform, inspire and help you succeed by showcasing the people, customers and innovative ideas that encourage excellence.

Parker Aerospace is implementing ENOVIA Version 6 (V6) to manage export compliance and protect the company's intellectual property. Parker also will benefit from lower cost of ownership by replacing multiple systems with a single instance of ENOVIA V6. V6 will manage both CATIA V4 and CATIA V5 data, giving Parker a single source of reliable information.

Parker Aerospace picks V6

Parker Aerospace is an operating unit of Parker Hannifin Corporation, the world's leading producer of motion and control technology solutions. Because Parker Aerospace supplies hydraulics and other critical systems used on virtually every commercial and military vehicle worldwide, protecting its intellectual property is critical.

To help streamline and further strengthen its processes, Parker Aerospace is implementing ENOVIA Version 6 Release 2011x (V6 R2011x) to manage regulatory compliance, consolidate disparate systems and enable quicker product data inquiries. As a result, Parker Aerospace will make significant progress on its goal of a model-based enterprise, replacing 2D drawings with a common user interface in the language of 3D.

"ENOVIA offers Parker Aerospace several exciting advantages, including the ability to deliver the appropriate information to the right resources at the right time and the power to control objects for export compliance and intellectual property protection," said Bob Deragisch, manager of enterprise systems for Parker Aerospace.

CONTROLLING CATIA V4 AND V5 WITH ENOVIA V6

"ENOVIA offers us substantial improvements in our total cost of ownership because we are replacing multiple systems with an end-to-end DS solution that integrates ENOVIA with our existing CATIA V4 and CATIA V5 investments and eliminates the need for us to write and maintain interoperability connections," Deragisch continued. "This strategy enables our ecosystem of customers to increase their efficiency, communicate in the universal language of 3D, and enhance their data protection."

ENOVIA also will allow Parker Aerospace to create an electronic, auditable engineering change process that can be used internally, as well as externally with customers and suppliers. Rather than printing documents related to a change, receiving several signed approvals and scanning the documents back into a system, ENOVIA will electronically route engineering changes in 3D for approval.

Parker Aerospace also has implementations of various other Dassault Systèmes solutions, including DELMIA and SIMULIA.

For more information:
www.parker.com
http://bit.ly/eBZEwC

zoom in...

Use your smartphone to learn more about the Intercim acquisition.

DS acquires Intercim

With the addition of Intercim,
DELMIA brings shop floor communities and manufacturing engineers together for immediate understanding.

Use your smartphone to learn more about the award.

Top honors for DS

Consumer Goods Technology 2011
Readers' Choice Survey ranks Dassault Systèmes highest among leading PLM providers.

Jaguar Land Rover and Dassault Systèmes agree to new strategic partnership

By Dora Laîné

Jaguar Land Rover and Dassault Systèmes have signed a strategic partnership that formalizes future cooperation and collaboration between the two companies. Jaguar Land Rover will deploy Dassault Systèmes' Version 6 (V6) platform and leverage the full range of its PLM solutions to enhance innovation and reduce development time.

The agreement, signed by Dassault Systèmes President and CEO Bernard Charlès and Jaguar Land Rover CEO Dr. Ralf Speth, will see advanced digital 3D simulation and development tools transform Jaguar Land Rover's Product Development processes. The two companies will work together to jointly develop industry-leading product creation solutions. Jaguar Land Rover will deploy Dassault Systèmes' V6 solutions for Product Lifecycle Management — the process that drives and controls all vehicle creation processes — to increase operational efficiency and reduce complexity through enhanced innovation and accelerated development capabilities.

Dassault Systèmes was chosen by Jaguar Land Rover as its preferred partner in the PLM field following an 18-month evaluation period that included a full analysis of the PMTI (Process, Method, Tools, Information) environment at Jaguar Land Rover. In addition to supplying existing system programs, development engineers from Dassault Systèmes and Jaguar Land Rover will work together on new processes and solutions that will provide the combination of simplification and specialization required to create new generations of premium vehicles. The focus on commonality, innovation and integration will have the dual benefit of significantly increasing efficiencies while reducing cost by a similar margin.

Jaguar Land Rover is leveraging the full range of Dassault Systèmes' V6 solutions from its industry-leading brands, including CATIA, DELMIA, ENOVIA, SIMULIA and 3DVIA PLM.

"The signing of this strategic cooperation contract will accelerate and reveal the power of collaborative innovation for intelligent vehicles," commented Bernard Charlès, Dassault Systèmes Président and CEO. "Integrating electronics and onboard software has become a critical element of differentiation for a great vehicle experience. PLM 2.0 with Version 6 can provide such simplification and elevation to Lifelike PLM with rapid ROI."

Jaguar Land Rover Chief Executive Officer, Dr Ralf Speth, said: "We look to this association to bring significant technical and commercial benefits to Jaguar Land Rover. Dassault Systèmes will provide the processes and tools we need to more efficiently develop and create vehicles that exceed our customers' expectations in every respect and deliver the highest standards of quality."

Dassault Systèmes President and CEO Bernard Charlès (left) and Jaguar Land Rover CEO Dr. Ralf Speth (right)

Premium German automaker implements V6

BMW chooses V6 PLM solutions to develop the future electrical, electronics, and embedded software (E/E) architecture of its cars.

BMW will leverage the V6 platform to manage the future complexity of embedded systems in its cars by providing a master architecture for all car derivations and enabling continuous modernization of car functions. The re-use of functions and the separation of hardware and software components in the development process will help BMW gain significant cost savings in the E/E domain.

Because of the flexible PLM backbone, and the large degree of out-of-the-box, specialized functionality for systems engineering, thousands of engineers will be using Dassault Systèmes' V6 platform. With the Architecture, Integration and Design for Automotive Project (AIDA), BMW will implement a seamless collaborative process to connect the various constituents and actors of the E/E process, putting BMW's customers' values at the center of its innovation initiatives. The V6 PLM systems design solution will be connected to the current BMW enterprise environment, demonstrating the openness of the V6 platform. This successful deployment, already in operation today, is the first step in a ten-year partnership that BMW and Dassault Systèmes have signed to build the best infrastructure and applications for the E/E domain.

BMW and Dassault Systèmes have signed a ten-year partnership to build the best infrastructure and applications for the E/E domain.

"We at Dassault Systèmes are thrilled to see that BMW is using our V6 platform and receives all the benefits of a unified, collaborative PLM environment," said Dominic Florack, Senior Executive Vice President, Products - R&D, Dassault Systèmes. "By strengthening V6 with new search technology, Dassault Systèmes provides a new class of PLM Systems Engineering Solutions, which give a strong competitive advantage to our customers."

ENOVIA CEO Michel Tellier (left) and Enginuity founder and CEO Dr. John Sottery celebrate the acquisition with a handshake. Enginuity is now part of the Dassault Systèmes ENOVIA brand.

Dassault Systèmes acquires Enginuity PLM

Use your smartphone to learn more about the Enginuity acquisition.

Dassault Systèmes has expanded its PLM offer for Consumer Packaged Goods, Life Sciences and other formula-based industries with the acquisition of Enginuity PLM, which enables customers to bring breakthrough formulations to market faster and at lower cost.

Dassault Systèmes (DS) has acquired Enginuity PLM, widely acknowledged as the best-in-class solution for formula-based PLM. The acquisition expands the extensive DS suite of collaborative business process solutions available in ENOVIA Version 6 (V6) to better support formula-c entric companies in the pharmaceutical, personal care, cosmetics, food and beverage and flavor/fragrance industries by uniting regulatory compliance capabilities with the management of formula, packaging and consumer knowledge in a single, global PLM solution.

"At a time when many products are coming under increased scrutiny from the international community, the ability to avoid mistakes and costly recalls while accelerating product development is of paramount importance," said Michel Tellier, ENOVIA CEO. "We believe that the acquisition of Enginuity represents a keystone in our PLM solution for formula-based industries."

The combination of Enginuity and ENOVIA V6 at last eliminates the need for formula-based companies to choose between a broad enterprise PLM solution optimized to support critical business processes, and a specialized point solution that provides deep formula, regulatory, labeling and compliance capabilities.

"By combining our best-in-class formula PLM solution and deep industry domain knowledge with Dassault Systèmes' ENOVIA V6 PLM platform, I believe that we will revolutionize how our customers develop and launch formulated products," said Dr. John Sottery, Enginuity's founder and CEO.

Focus on Consumer Industries

The fast-moving Consumer Industries — Consumer Goods/Consumer Packaged Goods/Retail — are undergoing radical change. Building lasting relationships with consumers is more critical yet more challenging than ever. Retailers and brands are struggling with tremendous pressures on margins, competition from the digital space and a relentless push for innovation from product-savvy shoppers. In this special feature, *Contact mag* looks at the evolution of both the industry and the consumer, the Dassault Systèmes solutions that are making progress possible, and a number of industry-leading companies riding the wave of change into a new era of shopping.

Open for business: Connecting with today's shoppers

Whether you are a hunter, planner, brand-lover or a price-conscious consumer, the way you shop today is changing. You expect more from products and the companies that make and sell them. You are less inclined to be influenced by the "push" of traditional radio and print advertising. Instead, you want companies to cater to your specific and fast-changing tastes and needs.

By Lisa Roner

Research shows that, in most instances, shoppers make up their minds about what they are going to buy within a few seconds of entering a store. "When a customer enters a shop, 70% of the time they make their buying decision in the first few seconds," says Monica Menghini, Global VP Industry CG, CPG and Retail for Dassault Systèmes.

But that does not mean shoppers are impulsive. In fact, today's shoppers are more informed and empowered about their purchasing options than ever before, actually making them less prone to impulse buying. They know what they want, and they expect companies to innovate and bring products to market faster than ever before.

Companies share four common challenges: innovation, sustainability, governance and IT system fragmentation. Their product lifecycle management solutions must be focused on helping them address these challenges.

Monica Menghini
Global VP Industry CG, CPG and Retail
Dassault Systèmes

"Shoppers are consumers with an active reason to buy," Menghini says. "They experience shopping as a holistic set of choices. Each brand must overcome barriers at each decision point encountered by the shopper and must deliver the right message when and where the shopper is the most receptive. Otherwise, even the best brands simply become clutter."

Increasingly, shopping is a multi-sensory experience that must appeal to consumers through sight, touch, sound, smell and taste. "Seeing through the eyes of the shopper is a way to create mystery, intimacy and sensuality with the consumers of this century, because shoppers are first moved by emotion," Menghini explains. "Nothing is more sensorial than a shopping experience, but only 7% of shoppers rate shopping as an 'exciting' experience."

70%

When a customer enters a shop, 70% of the time they make their buying decision in the first few seconds.

Menghini says the first "moment of truth" has become the store. "The next creative revolution for the fast-moving consumer industries is going to happen in the store, and this is where Dassault Systèmes is going," she says. "With solutions like 3DVIA Shopper, our mission is to prescribe the right solution to win in stores. From store, space and shelf configurators to design and lifelike experience solutions, Dassault Systèmes is working to offer the consumer industries an end-to-end solution with the same shopper-centric vision that our clients have today."

Companies in this space, Menghini says, share four common challenges: innovation, sustainability, governance and IT system fragmentation. Their product lifecycle management solutions must be focused on helping them address these challenges.

"Innovation in these industries is not the same as in automotive or aerospace, for example," Menghini says. "It's not the usual correlation between »

Mark Harrop
Managing Director
PDP Group

Analyst eye: Keep up with the consumer

With more than 30 years of experience in the retail, footwear and apparel industry, Mark Harrop is founder and managing director of PDP Group, focused on delivering a broad range of PLM consulting support services to end users and suppliers of PLM solutions. *Contact mag* spoke with him about the future of the fast-moving Consumer Industries and the role for PLM.

Contact mag: What trends are you seeing in the fast-moving Consumer Industries that might influence PLM solutions and vendors?
Mark Harrop: In a survey we recently conducted among more than 500 companies in varying stages of PLM implementation, the top concern was a requirement for advanced line-planning. And by that I mean views of the store showing the merchandise with the supporting metadata on those products to give a store manager, for instance, the ability to visualize how to merchandise, based on color, style, product popularity and other factors. They're also looking for a financial view: determining what the merchandise is worth and getting that value from the PLM tool, because the PLM solution holds the metadata – whether it be the size, the color, the fit, the target retail price or the actual costed price.

The other really important aspect for 2011 and beyond is social compliance. It's important that PLM solutions embrace this and offer support for social and ethical compliance. Retailers and brands are responsible for human rights wherever they produce products and do business. They need the ability to track and audit, particularly as aspects of social compliance become law – and PLM is the perfect tool to support this process. If PLM companies don't embrace this and build it into the solution, they'll lose out to the ERP world and point-solution makers. Companies also are focusing on best practices, improving product development processes and process management, and a push toward virtual sampling – all of which can be addressed with PLM solutions.

Contact mag: What are the top challenges for companies in this space?
Mark Harrop: The high cost of doing business, particularly for retailers with physical stores, is putting pressures on margins, especially for those with growing competition from the digital space. And a changing, much more demanding and empowered consumer who is looking for more styles, the right quality and better prices is putting pressure on brands to be the first to market with the right product.

Contact mag: Who will be the winners at the end of the day?
Mark Harrop: The future of the industry will go to the innovators – the brands and retailers that take on board solutions that enable speed, flexibility and efficiency. Those that can track and analyze demand by the hour or day will trump those looking at demand by the week or month. We have an impatient consumer these days that won't wait a week while their size comes in, they'll just go elsewhere and find it.

Profile: Monica Menghini

Monica Menghini is Global VP Industry CG, CPG and Retail for Dassault Systèmes. Prior to joining Dassault Systèmes, Menghini was CEO of 3DSwym, a joint venture of Publicis and DS, and served as the CEO of saatchi and saatchi X EMEA. Previously, she was marketing director of P&G Europe, responsible for brands ranging from baby care to pharmaceuticals. The Menghini family, with more than 100 stores in Europe, was among the first to introduce Chinese-produced apparel designed in Italy for high quality at an affordable price.

innovation rate and sustainable growth. The challenge is rather one of open innovation. The fast-moving consumer industries need a social innovation platform that facilitates an entirely new way of doing business that's driven by concepts like crowd sourcing and collective intelligence." To help drive this social evolution of innovation, she adds, Dassault Systèmes has just launched 3DSwYm, which is designed to help companies build relationships with their customers and leverage customer insight to work, analyze and innovate with them to deliver the products and services they truly want and need.

Although the sustainability challenge is not a new one for most companies, the nature of the challenge is changing, Menghini explains, to one focused more on the triple bottom line of people, planet and profit. "Companies are focusing on eco-product development," she notes. "And this is a particularly interesting challenge for Dassault Systèmes to assist its clients with, because here design takes center stage. And, with products like CATIA and DELMIA, meeting this challenge is facilitated on many fronts, from optimized worker activity and ergonomics to greener products and production processes."

When it comes to governance, Menghini says, companies must select and adopt standards for process and profitability such as sizing, strategic planning, technology and ROI optimization. Doing so, however, is often hampered – particularly in the fast-moving consumer industries – by a mass of different, disconnected IT systems.

"Some of our clients have more than 750 different systems – and many, particularly in fashion, still rely just on spreadsheets to handle their most important information and processes," Menghini comments. "All of these industries need to shift from a system that is done by micro-process to a single, centralized process that actually creates a flow that is without roadblocks or silos. Innovative tools like the 3DS Fashion Lab and a variety of accelerators for fashion, consumer goods and consumer packaged goods from Dassault Systèmes, will help drive the creative revolution happening across these industries."

For more information:
www.3ds.com/consumer-goods
www.3ds.com/fashion
www.3ds.com/cpg

3DVIA Shopper is a new Dassault Systèmes product line. Its objective is to help brand manufacturers and retailers better design and deploy in-store experiences. It leverages Dassault Systèmes' newest technologies and expertise to help large companies take advantage of the digital world to transform and improve their operations. *Contact mag* spoke with Philippe Loeb, General Manager of 3DVIA Shopper, to learn more about this new solution.

Retailers can design their in-store experience virtually in 3D with Dassault Systèmes' new 3DVIA Shopper product line.

3DVIA Shopper opens the door to new marketing techniques

Contact mag: Why is Dassault Systèmes developing 3DVIA Shopper?
Philippe Loeb: Dassault Systèmes believes that professionals in all retail-driven industries (CPG, CG and Retail) could benefit from what engineers have been experiencing with success over the past 30 years. This includes taking advantage of 3D and digital mockups to visualize future products to make better informed decisions and to easily collaborate within the enterprise. It can also open the door to Lifecycle Management of a store's complexity and scale and to provide a virtual universe to connect to consumers and to experience the product 'in context'.

Contact mag: How will 3DVIA Shopper benefit companies in the Consumer Industries?
Philippe Loeb: With 3DVIA Shopper, brand managers, space managers and category managers will enter a new area. This new technology will help them refocus on the basics of retail creating, for example, a more delightful shopping experience for shoppers, which means more revenue for store owners. Better instructions can be sent to stores to render them more compliant to marketing intent. Finally, working in a digital environment means companies save time and can explore more alternatives.

Contact mag: Is the offer the same for Brand Manufacturers and Retailers?
Philippe Loeb: For its first release, 3DVIA Shopper wants to help brand manufacturers use virtual reality to demonstrate and deploy their thought leadership to retailers. On the other hand, retailers will use 3DVIA Shopper to design in-store experiences, and optimize their merchandising process in 3D, in particular, in non-food categories where displaying products is more complex.

Philippe Loeb

Philippe Loeb is General Manager of 3DVIA Shopper since 2009. In 2007-08, he developed an offer with the objective of using 3D to co-create products with consumers. In 2006, he drove Dassault Systèmes' strategic launch of the company's newest 3DVIA brand, 3D online for Consumers, promoting Dassault Systèmes' Vision of 3D as a universal media.

Contact mag: How will 3DVIA Shopper benefit shoppers?
Philippe Loeb: In the short term, 3DVIA Shopper wants to help brands and retailers invent and deploy a better shopping experience in REAL stores. But of course, the next step will be to use the same technologies to let consumers visit virtual stores remotely through the web. This will definitely propel online selling to new heights!

Procter & Gamble: Reinventing innovation processes with Dassault Systèmes

By *Bernadette Hearne*

As the world's leading consumer packaged goods (CPG) company, Procter & Gamble (P&G) achieved total 2010 sales of nearly $79 billion. With 23 brands that generate at least $1 billion each in annual revenue, P&G touches more than 4 billion consumers and hopes to expand its reach to 5 billion by 2015.

Procter & Gamble ships more products daily than any manufacturer. Its packages contain a wide array of offerings ranging from dusters to diapers and beauty solutions to laundry products. Such volume and variety, combined with global manufacturing in 80 countries and distribution through hundreds of retailing partners in more than 180 countries, is quite complex – a complexity that will only increase as P&G pursues its vision of "touching more consumers' lives in more parts of the world more completely."

Mastering complexity so it can leverage both its size and scale is one of P&G's major challenges as the company approaches its 175th anniversary. CEO Bob McDonald has outlined "digitization" as an overall corporate strategy to address this need. Part of this vision includes "digitizing innovation" to create better product and package designs, eliminate expensive prototyping through modeling and simulation, and transform how employees access and share information across geographic and organizational boundaries.

A NEW VISION, A PROVEN PARTNER

To achieve these goals, P&G is focused on becoming one of the leading companies in any industry in its use of Product Lifecycle Management (PLM). P&G management has challenged the company's 127,000 employees to make P&G the most digitized company in the world and has made it a key corporate strategy for how P&G goes to market. "We are not talking about possibilities, but executing a PLM strategy to gain a competitive edge in how we innovate," said Gerard Baillely, P&G's Corporate R&D Manager, responsible for Innovation Capability and a key sponsor for P&G's PLM efforts. "We want our research and development PhD-level scientists to switch from spending a significant amount of time gathering data to focus on cutting-edge research."

Creating a seamless flow of digital information is difficult with a collection of solutions from different vendors, so P&G chose Dassault Systèmes (DS) as its key strategic partner for PLM. P&G is implementing a major slice of the DS Version 6 (V6) portfolio, including ENOVIA as the company's collaborative innovation backbone; CATIA for integrated design; and SIMULIA for realistic simulation.

The first area of focus: global packaging and artwork capabilities that meet the challenging needs of the consumer packaged goods industry. The goal: tighter integration with suppliers to more quickly create artwork and packaging shapes that better address consumer needs while meeting manufacturability and in-store shelf suitability requirements. »

> The future of the industry will go to the innovators. P&G is clearly positioning itself to be at the forefront of those innovators.
>
> **Mark Harrop**
> *Founder and Managing Director*
> *PDP Group*

"It takes a fair amount of internal culture change and investment in deep understanding for a PLM supplier to penetrate new industries like CPG," said Mike Telljohann, Director of P&G's Product Innovation Capability. "I'm convinced that Dassault Systèmes is committed to helping us use PLM to achieve our goals for digitizing P&G."

THE POWER OF PERVASIVE INFORMATION

P&G estimates that its employees make more than one million product development data entries daily, a number the company aims to shrink by eliminating duplication and making data easier to locate and leverage. Rolling out V6 PLM to between 15,000 and 25,000 P&G employees is an important contributor to this goal.

ENOVIA V6, for example, supports "a single version of the truth" by creating an accessible source of dynamic, up-to-the-moment data that is presented to each employee according to their role, allowing Purchasing, for example, to focus on pricing and sourcing, while Manufacturing uses a different slice of the same data to focus on how to best make a product.

Making V6 even more relevant to the CPG industry is a key focus of the DS/P&G partnership. Not surprisingly, given that innovation at P&G is a multi-functional collaborative process, the two companies have cast their net well beyond the traditional realms of Design and Engineering, where discrete manufacturers have used PLM for years, to focus not only on packaging design, but also on intuitive functions ranging from R&D to marketing. And while PLM has traditionally served discrete manufacturers, DS and P&G recognize that CPG requires a diverse set of product design tools that can plug into PLM.

One such solution is technology for formula design. DS recently acquired Enginuity, a leading formula design technology company, which will extend V6 PLM to address the development not only of discrete CPG products such as packaging, but also of formulated products such as those found in P&G's beauty and fabric-care lines. Integrating non-traditional tools like Enginuity into the DS V6 PLM solution set helps P&G achieve its vision of integrated, enterprise-wide solutions that cover the company's broad range of mission-critical business processes.

"Dassault Systèmes' decision to enhance the V6 PLM product suite with formula-authoring capability reflects its determination to help P&G drive scale, improve R&D productivity and accelerate delivery of new products to market," Telljohann said.

INNOVATION THROUGH DIGITIZATION

One key win already achieved with V6 PLM is broad data availability for targeted users, giving P&G significant opportunities to improve its processes. The goal is to create a single data model that spans how the company develops products and packaging. The ensuing automation and readily available data will help P&G to optimize its processes, making them more effective and efficient.

Another step on P&G's journey to digitize innovation is to integrate modeling and simulation into all of its development processes from the start, a process that Tom Lange, P&G's Director of Modeling and Simulation, describes as "explore virtually, confirm physically." By using computers to model and simulate what once could only be made, analyzed and tested in the physical world, P&G will have better information earlier in the design process. By identifying and eliminating mistakes in the digital stage, when changes are least expensive, managers will be empowered to make better decisions faster and at reduced cost. Evaluating decisions digitally also will help P&G executives determine the optimum approach before production begins.

Dassault Systèmes' decision to enhance the V6 PLM product suite with formula-authoring capability reflects its determination to help P&G drive scale, improve R&D productivity and accelerate delivery of new products to market.

Mike Telljohann
Director, Product Innovation Capability
P&G

In short, the V6 portfolio will help P&G digitally model and optimize package development and, eventually, product development as well, before committing a penny in the physical world.

REINVENTING THE FUTURE

The work is far from over, however. And while the benefits that have been achieved to date indicate that the digitization process at P&G is on the right track, DS and P&G estimate it will take another three to four years to complete the envisioned PLM implementation and achieve the full benefit.

"The future of the industry will go to the innovators – the brands and retailers that take onboard solutions that enable speed, flexibility and efficiency," said Mark Harrop, who is founder and managing director of PLM consulting firm PDP Group and who has more than 30 years of experience in the consumer goods industries. "P&G is clearly positioning itself to be at the forefront of those innovators."

For more information:
www.3ds.com/cpg

We are not talking about possibilities, but executing a PLM strategy that creates shareholder value and gives us a competitive edge in the way we innovate. We want our research and development PhD-level scientists to switch from spending a significant amount of time gathering data to focus on cutting-edge innovation and consumer insights.

Gerard Baillely
Corporate R&D Manager, P&G

Fashion Lab®

In 2011, Dassault Systèmes launched 3DS Fashion Lab, a technology incubator dedicated to fashion designers and stylists. The goal? Marry the engineering creativity of Dassault Systèmes with the artistic inventiveness and industry know-how of designers to develop a fashion offering that integrates the design, simulation and collaboration tools required to create an entire fashion collection.

By *Dora Laîné*

3DS Fashion Lab: Technology with style

If the front office of the fashion industry is a glittering runway filled with supermodels, the back office is an intensely competitive global market where fashion houses and designers must continually innovate to satisfy customers' changing tastes. In addition, an increase in the number of collections per year and the rising use of the Internet as a sales vehicle are forcing companies to multiply the way their brands are marketed and displayed.

With the stakes so high, a growing population within the fashion industry believes virtual 3D will bring their art to a new level, allowing them to innovate and explore areas never before imagined. "Fashion designers can create an article of clothing directly in 3D by 'clay modeling' the fabric directly on a virtual mannequin," said Jérôme Bergeret, Director Consumer Goods, Dassault Systèmes. "The style variants are endless and the time saved represents a real cost advantage."

A 3D 'clay model' of a garment designed in the 3DS Fashion Lab

PARTNERS IN CREATION

Bringing the 3D virtual realm to the fashion industry is the goal of Dassault Systèmes' 3DS Fashion Lab. The Fashion Lab is a technological incubator of ideas born and nurtured through a partnership between Dassault Systèmes and some of fashion industry's most creative talents. The objective is two-fold: provide partners with the tools and services that will help bring their ideas to life using 3D virtual technology, and in exchange diversify Dassault Systèmes' offering to satisfy the specific needs of fashion professionals.

Dassault Systèmes officially launched its Fashion Lab at the Paris Spring-Summer 2011 Fashion Week during the show of Julien Fournié, one of the industry's most promising designers. Fond of new technologies, Fournié belongs to a new generation of designers that believes 3D virtual technology can propel *haute couture* to new heights. This is why he agreed to be a design industry ambassador to the 3DS Fashion Lab, exchanging ideas with Dassault Systèmes that will forge the company's future solutions dedicated to high-end fashion.

"The Fashion Lab has much to gain thanks to Julien Fournié's collaboration," said Monica Menghini, Global VP, Consumer Goods, CPG & Retail at Dassault Systèmes. "His input will help fulfill the Lab's mission — to develop 3D virtual modeling and collaborative tools that respond to the needs of the fashion industry." And because this is a diverse industry, Dassault Systèmes continues to welcome other actors to its Fashion Lab; it recently formed partnerships with designers in ready-to-wear apparel and luxury watch making.

For more information:
contact@3dsfashionlab.com

3D modeling takes fashion design to a new dimension

By *Jean-Marc Galéa*

Use your smartphone to learn more about the 3DS Fashion Lab.

Julien Fournié, a French fashion designer, and Dassault Systèmes (DS) have joined forces to conceive, create and share the design tools of the future for *haute couture* and ready-to-wear. During his Spring/Summer 2011 runway show, entitled "Première Couleurs" (First Colors), Julien Fournié spoke with *Contact mag* and gave his first impressions of the Fashion Lab.

Contact mag: What impressed you about the way Dassault Systèmes approaches fashion design?

Julien Fournié: I first met Monica Menghini and her team to work together to develop a 3D modeling solution for fashion. Fashion Lab didn't exist at the time. Very soon, we realized that this offering could be extended to a wider community of designers in the clothing, footwear, jewelry and watch-making sectors.

Contact mag: What do you think of existing 3D design/collaboration tools for the fashion industry?

Julien Fournié: There are a number of rather disparate and unstructured products on the market. DS is the only company to deliver a comprehensive set of digital tools for fashion. It already has a number of prestigious clients but there is room for improvement in the fashion industry. That's where I come in. My experience of this sector can serve as a good starting point.

Contact mag: How do you see these solutions being put to practical use?

Julien Fournié: My ambition is to develop both ready-to-wear and couture product lines. This would involve, among other things, a robust use of lifecycle management tools and flawless collaboration with my suppliers.

3D modelling is a real challenge in the fashion world. It is one of our priority developments at the Fashion Lab. The first prototypes have an innovative user interface, where collaboration between the designer, the studio assistants, the fashion house's workshop, suppliers and sub-contractors is essential. We are only in the early stages with DS, but this partnership has strengthened my belief that 3D will revolutionize collaboration and design in the fashion industry. It is really exciting for a young fashion house like mine to be part of this adventure.

Julien Fournié

With ten years of experience working with leading labels – including Christian Dior, Givenchy, Jean-Paul Gautier and Torrente Haute Couture – Julien Fournié created his own fashion house in 2009. His first eponymous runway show was rewarded with the Grand Prix de la Création de la Ville de Paris. Since January 2011, he has been included on the select list of designers invited to participate in the week of Haute Couture shows under the auspices of the Chambre Syndicale de la *haute couture*. His Spring/Summer 2011 collection, entitled "First Colors" featured statuesque models and was a memorable event in the fashion world.
www.julienfournie.com

4N: A revolution in timekeeping with CATIA V6

By *Dora Laîné*

4N uses CATIA Version 6 (V6) to transform the innovative ideas of its designer and founder – François Quentin – into a viable, precise and revolutionary watch. The solution is used to simulate its complex mechanical moving elements and the way they interact together. CATIA was essential in managing the entire watch assembly and implementing changes rapidly throughout the design, considerably shortening design time.

Use your smartphone to learn more about the 4N watch.

The French company 4N was founded by watchmaker François Quentin in 2009, the same year the brand 4N was born. Quentin, an independent designer since 1986, has gained considerable experience over the years designing models for French and Swiss watchmakers. His desire to create a watch like no other, with a simple digital display and a mechanical alternative to analog timepieces with moving hands, gave rise to the 4N watch model. The name stands for "4 numbers" in reference to the four digits that represent the time indication (tens of hours, hours, tens of minutes and minutes). "Never before has a watch displayed time in this way, with large numbers and powered by complex kinematics," says Quentin, CEO and Watch Designer, 4N. The 4N brand is intended for the modern luxury watch market and collectors of exceptional timepieces.

François Quentin

An independent designer since 1986, François Quentin has a wealth of experience in the watchmaking world that has enabled him to design many contemporary models for French and Swiss watchmakers. At age 47, he has already gained a wide range of skills. With an avid interest in mechanics and computers, Quentin works in business sectors requiring skills that are as diverse as they are specific, from machine tooling to mechanical optics to web design.

OUT-INNOVATING OTHER WATCHES

Quentin's biggest challenge was to provide the level of innovation expected of a luxury watch. "In general, watchmakers try to make their products unique by incorporating clever inventions such as sounds that tell time when there is not enough light to see or a stopwatch feature," Quentin explains. "I was looking more for something in the way time is displayed. My approach focused on the movement of the different mechanical elements as time passes. It was important to do something that was never done before." Then Quentin added an extra level of complexity to his already ambitious challenge: create a watch that was robust, efficient and easily readable.

Quentin used Dassault Systèmes' (DS) CATIA V6 to design the 4N watch model and to validate the moving mechanisms, comprising more than 200 elements inside the watch. This proved considerably more efficient than the hand sketches and 2D drawings derived from CAD tools traditionally used in watch design. "Compared to the design tools I used in the past, with CATIA V6 I was able to create a complete and precise 3D model of the casing and the internal mechanism with all its intricacies and to perform virtual simulations to make sure there were no design errors," Quentin says. "When I showed the model to potential manufacturers, the level of detail provided by CATIA conveyed exactly what I wanted to communicate and confirmed the feasibility of my design. It was a considerable qualitative leap with respect to designs created using any other solutions."

CATIA also proved essential for managing the way the different elements were assembled and the ease with which changes were made and propagated throughout the design. "It considerably shortened design time," he says.

AMBASSADOR TO 3DS FASHION LAB: SHARING A PASSION FOR DESIGN

Quentin recently joined forces with DS to further advance the concept of watch design. He formed a partnership with the company to address the specific needs of this sector and is serving as ambassador of the 3DS Fashion Lab for the watchmaking industry. "At Dassault Systèmes, I discovered people who are as passionate as I am about design," Quentin says. "Together, we took watchmaking to new heights using V6 solutions including CATIA, SIMULIA, DELMIA and 3DVIA."

For example, SIMULIA was used to perform stress tests of the watch's bracelet, whereas DELMIA was used to illustrate a manikin wearing the watch and displaying it in different positions. With 3DVIA, Quentin depicted a customer living the buying experience by having him walk through a virtual showroom where the 4N is presented. "All these applications enabled me to address aspects of the 4N I would not have envisioned before. My product took on a whole new dimension," he says.

Quentin says he joined the 3DS Fashion Lab because he is convinced that V6 PLM solutions have an important role to play in watch design. Creative ideas can easily come to life thanks to powerful V6 design tools, virtual mock-ups, and simulations. And by replacing physical prototypes, design time and costs are drastically reduced. "Dassault Systèmes is the only company I know that proposes such advanced solutions for watch making," Quentin concludes.

For more information:
www.4-n.fr
www.3ds.com/V6

Compared to the design tools I used in the past, with CATIA V6 I was able to create a complete and precise 3D model of the casing and the internal mechanism with all its intricacies and perform virtual simulations to make sure there were no design errors.

François Quentin
CEO and Watch Designer, 4N

Photorealistic CATIA model of 4N watch mechanism

Video game characters enter the real world with CATIA

By *Florent Gilbert*

Nowiew used 3D virtual product creation to design a toy version of Ubisoft's Raving Rabbids. The manufacturer needed a precise representation of the characters on which to base production. Nowiew relied on CATIA, especially CATIA for Creative Designers, its industrial design solution, to develop a production-ready design used to manufacture a doll that complies with Ubisoft's specifications.

In just a few years, Ubisoft's Raving Rabbids have become a global video game phenomenon. Combining a series of wacky challenges and an unusual sense of humor, Raving Rabbids have rapidly captivated people of all ages. Ubisoft licenses the rights to Raving Rabbids to toy manufacturers, including Polymark, who wish to produce the bobbing heads of its video characters.

CATIA is the solution that enables me to fulfill all the requirements of an industrialized product, from styling and design all the way to manufacturing.

Olivier Lemaître
Director and Founder Nowiew Design

AN INDUSTRIAL DESIGN AGENCY

Olivier Lemaître, director and founder of the design agency Nowiew, previously spent 20 years as a designer working for one of the world's leading providers of tableware products and services. His experience as an industrial designer enables him to combine creativity with the demands of a product development process.

When Nowiew was contacted by Polymark with a design issue concerning the production of Raving Rabbids dolls, Lemaître responded with an innovative approach to the challenge. The usual approach, which involved sculpting physical molds of the characters and providing these molds to the manufacturer to produce the plastic toy figure, did not provide satisfactory results. "The bobbing head did not comply with Ubisoft's graphic charter and had to be reworked," Lemaître says. "Re-sculpting a new mold took time and did not provide the manufacturer with enough precision to produce an acceptable prototype. My customer, Polymark, had already lost four weeks going back and forth between the physical sculpting phase and the production stage."

A CREATIVE YET INDUSTRIAL APPROACH

To resolve the dilemma, Lemaître used CATIA for Creative Designers, including CATIA Imagine and Shape, the module that delivers ultra-fast modeling technology based on exact subdivision surfaces, to design the character, finally producing a doll that satisfied Ubisoft's requirements.

Design modifications were fast and easy to implement. In a matter of weeks, the final prototype was manufactured. "I could not have done it without CATIA Imagine and Shape," Lemaître declares. "CATIA is the solution that enables me to fulfill all the requirements of an industrialized product, from styling and design all the way to manufacturing." It also became very easy to derive new toy versions showing the characters in different positions by simply modifying the validated products.

Thanks to a unique CATIA data model, Nowiew designed the associated package directly on top of the Raving Rabbid toy. "The advantage is that even if the design is not completely finished, the associativity between the packaging data and the character itself enabled me to update one when the other was modified, thus accelerating design time," Lemaître explains. "I was also able to prepare the supports used to position the product in the best way and to validate not only the product and the packaging, but the experience the final customer has with the combination of these two elements together."

Nowiew is a young company with grand ambitions. Lemaître is convinced that choosing CATIA for Creative Designers has done a lot for his company's image. "When clients see that we use CATIA, they look at us differently. They know they can count on Nowiew and that we are a reliable and serious agency. It has brought us credibility."

CATIA for Creative Designers is a comprehensive industrial design solution offering a wide variety of creative tools, from modeling – with explicit, parametric nurbs surfacing and exact subdivisions surfaces (surface modeling tools that can be combined) – to direct solid modeling, drafting, rapid prototyping and rendering capabilities.

For more information:
www.nowiew.fr
www.polymarktoys.com
www.ubisoft.com
www.3ds.com/catiafordesign

Nowiew

In 2009, based on 25 years of experience in design, Olivier Lemaître founded Nowiew Design, an agency devoted to brand promotion. Design is of strategic importance for a company's growth. Nowiew helps its clients realize their products, graphic artwork and services of tomorrow. Imagining, designing and innovating to satisfy the needs of its clients and their market is Nowiew's primary concern. The agency excels in products for the home (furniture, tableware, lighting, etc.), as well as in the design and creation of licensed products.
www.nowiew.fr

By Tim Trainer

Fender rocks guitar design with SolidWorks

Fender Musical Instruments Corp. wanted to take the design and manufacture of its guitars from a handcrafted art to automated production while maintaining quality. It implemented SolidWorks 3D design software to automate design and production, enabling Fender to save time, increase throughput, and achieve more consistent quality.

Use your smartphone to learn more about Fender Guitars.

For much of its history, Fender produced guitars by hand, and the company continues to operate a custom shop where artisans still handcraft custom-ordered guitars. As the company has grown, however, it has integrated design and manufacturing technologies into its traditional processes and methods to achieve greater consistency and efficiency, and to keep pace with a continuously expanding market. While the company used 2D design tools for many years, the 2002 acquisition of the Jackson guitar brand — created with the debut of the Jackson Rhoads guitar for former Ozzy Osbourne guitarist Randy Rhoads — brought more complex geometry challenges, according to Glenn Dominick, senior manufacturing engineer.

"Jackson guitars are a completely different type of guitar," Dominick explains. "The geometry is complex. We can better address Jackson design challenges with 3D, particularly the neck shape, because its 15-degree angle makes tooling much more difficult to produce. Since there is no efficient way to develop fixtures on those kinds of angles using 2D, we have to use a 3D tool for Jackson guitars."

Fender chose SolidWorks 3D design software from Dassault Systèmes SolidWorks Corp. — first deployed on the Jackson and Fender Stratocaster lines and now used companywide — because it is easy to use, includes advanced surfacing capabilities, and integrates well with computer-aided manufacturing (CAM) applications.

REDESIGNING MANUFACTURING PROCESSES

On the Jackson line, Fender redesigned its manufacturing processes to accommodate the guitars' more intricate and complex shapes, as well as to take advantage of automation. "SolidWorks has enabled us to improve our secondary manufacturing processes with computer-control (CNC) machining," Dominick stresses. "Because we have an accurate, precise 3D model of the guitar body, we can take advantage of the efficiencies associated with programming tooling paths and procedures using automated equipment.

"Since we began using SolidWorks, we have been able to complete the most difficult step — developing the neck back shape — 30% faster," he adds. "That's just one example of how SolidWorks is helping us cut time and manual steps from the process. By using SolidWorks, we have reduced manufacturing time by at least 20% across the board and have boosted production throughput by creating better tooling and taking advantage of better CAM programming."

20%

With SolidWorks, Fender has reduced manufacturing time by at least 20% across the board.

MEETING DEMANDS FOR GREATER CONSISTENCY

In addition to saving time and increasing throughput, SolidWorks is helping Fender achieve more consistent quality and an equally high level of performance from instrument to instrument. "With a hand-built guitar, you want every guitar to be different and have its own sound," Dominick points out. "But with a production model you want to standardize shape, quality, and performance. A Fender Master Builder can use a lot of tricks and extra sanding to finesse the handcrafted instrument to achieve what he wants. On production models, we want to produce the same level of quality performance over and over again. Using SolidWorks, we know that the notes are going to intonate correctly and that we will produce more consistent-playing instruments," he adds. "SolidWorks helps us achieve consistency through a higher degree of accuracy and greater levels of automation."

STANDARDIZING ACROSS ALL PRODUCTION FACILITIES

Fender first used SolidWorks to design a recent Stratocaster guitar model at its facility in Baja California, Mexico, and to drive manufacturing of the Jackson line. Since then, Fender has standardized on SolidWorks across all products and facilities, and now operates more than 20 seats of the software throughout the company.

Since we began using SolidWorks, we have been able to complete the most difficult step — developing the neck back shape — 30% faster. That's just one example of how SolidWorks is helping us cut time and manual steps from the process.

Glenn Dominick
Senior Manufacturing Engineer
Fender Musical Instruments

"We have standardized on SolidWorks across the operation, from research and development through manufacturing," Dominick notes. "Working on the same 3D platform makes it easier to share ideas and furthers our goal to produce consistently high-quality guitars with less effort and fewer manual operations."

For more information:
www.fender.com
www.solidworks.com

30%

Fender has been able to complete the most difficult step — developing the neck back shape — 30% faster.

Fender Musical Instruments

Fender Musical Instruments Corp. is a leading manufacturer of stringed instruments, including electric, acoustic, and bass guitars, as well as guitar amplifiers. Since the founding of its predecessor company in 1946 by "Leo" Fender, Fender has built a reputation for producing some of the world's best-sounding and best-playing electric guitars. Fender's Stratocaster and Telecaster guitar models have become rock-and-roll icons as the instruments of choice for legendary guitarists including Jimi Hendrix, Eric Clapton, and David Gilmour.

SOLUTIONS

Leading UK distance-learning institution Open University has selected Exalead's CloudView Search solution to provide core search capabilities for the university's website, intranet and Virtual Learning Environment (VLE). Thousands of university staff, tutors and students worldwide will benefit from CloudView Search's powerful and user-friendly search capability.

Open University benefits from Exalead CloudView Search

Open University is the top open-admissions, distance-learning institution in the UK, with approximately 4,500 staff and 7,500 tutors. It has more than 200,000 students in more than 40 countries studying for a variety of degrees and vocational qualifications ranging from short courses to PhDs.

Finding information is essential to the University's academic mission. It is therefore important to provide the best possible tools to students and researchers so that the University's resources are easy to search and navigate. The public-facing web presence is a large, complex network of more than 2,000 inter-linked websites hosted on multiple domains. The intranet alone consists of around 300 sites.

"Intranet search had been fairly neglected over time, and there had been no real business management around it," explained Nicky Waters, the Open University's Business Change Manager, Intranet. "This, combined with an older search tool, contributed to a poor end-user experience. It was evident from feedback that we had to do something about it."

ADAPTABLE AND SCALABLE SOLUTION

Following an exhaustive selection process, Exalead's CloudView Search was selected, as it offered an exceptionally powerful and user-friendly search capability, coupled with the adaptability and scalability to make it suitable for such a large and potentially complex project. "Users can already find things easier and quicker. Feedback, particularly at the usability-testing stage, indicated time and cost savings in the future," explained Waters. "Improved relevance ranking means that staff can actually find content that they had trouble finding prior to the implementation of Exalead."

"CloudView Search provides a much more sophisticated user interface, with the right-hand categorization and filtering of results. It allows users to 'roll up' results, which prevents those from the same site from flooding the interface." Waters concluded: "It also saves users from having to scroll through pages and pages of results. They can search across all University content at once, or alternatively, can navigate and drill down on a particular set of results."

The University is considering the technical possibilities afforded by Exalead CloudView Search in a project to make both audio and digital content fully searchable. It also plans to integrate existing document management systems using Exalead's technology.

For more information:
www.open.ac.uk
www.exalead.com

Users can already find things easier and quicker. Improved relevance ranking means that staff can actually find content that they had trouble finding prior to the implementation of Exalead.

Nicky Waters
Business Change Manager
Intranet, Open University

CloudView Search

Exalead's CloudView Search is an easy-to-use platform for creating search-based applications that access both structured and unstructured data, such as instant messages, emails, web pages, and multimedia. With its innovative architecture, the CloudView platform provides core search solutions that are feature-rich and extremely easy to implement, providing a perfect combination of reduced administration costs and a better search experience for users.

BOBST GROUP

Faced with a heterogeneous installation of 2D drawing solutions that made data exchange difficult, one of the world's top packaging equipment manufacturers replaced its different solutions with DraftSight. Today, Dassault Systèmes' no-cost, intuitive and powerful 2D CAD software is helping Bobst simplify 2D data management and eliminate data incompatibility and exchange problems.

Bobst Group eliminates DWG data incompatibility with DraftSight

Use your smartphone to learn more about Bobst's use a of DraftSight.

In international companies as diverse as Switzerland's Bobst Group, ease of communication is critical. Bobst is a world-leading supplier of equipment and services to packaging manufacturers in the folding carton, corrugated board, and flexible material industries.

One of Bobst Group's most significant business challenges is to adapt its industrial processes and organization to better face rapidly increasing competition and market changes. At the same time, the company must ensure that these internal changes do not adversely affect the quality of its products or the high quality of service to which its customers have grown accustomed.

Faced with challenges like these, Bobst needed to address incompatibility and exchange problems of the DWG (drawing) files used by its development teams. DWG is one of the most popular and commonly used data formats for 2D and 3D designs.

SIMPLE AND UNIQUE SOLUTION

Bobst focused its efforts on implementing an IT strategy with the objective of simplifying and standardizing all its 2D drawing solutions. "We had deployed a variety of 2D solutions over the years but were increasingly faced with DWG data exchange problems that arose when colleagues didn't use the same software," said Marcel Gerber, VPLM Competency Center Manager for Bobst worldwide. "We therefore decided to implement a unique solution on one platform so that employees all over the world can communicate and exchange 2D information."

The solution Bobst Group opted for is DraftSight, Dassault Systèmes' no-cost, intuitive and powerful 2D solution for creating, editing and viewing DWG files. DraftSight thus became the unique and standard tool for technical 2D drawings for the entire Bobst Group. "DWG files are the most popular file format for 2D CAD data in the world," Gerber said. "It was only natural that we choose a solution that processes this format natively and renders DWG data incompatibility issues a thing of the past. And the fact that DraftSight is free was also a determining factor."

OPTIONAL SERVICE PACKAGE FOR MAXIMUM BENEFIT

Bobst selected DraftSight's Premium Service Pack, which is a bundle of services that includes telephone and email support, among other things. "We opted for this package for two reasons," Gerber said. "One is for license management for future product updates, and the second, which is important to Bobst, is to have an API library so that we can port our existing applications to the systems we have set up."

Gerber had very positive feedback from DraftSight users from the very first day it was deployed. "We are very satisfied with our choice of DraftSight and with the partnership we have with Dassault Systèmes. It has enabled us to accomplish what we set out to do — implement a unique and standard solution that responds to the needs of all those who need to create and exchange 2D geometry."

Bobst in brief

Bobst's mission is to enable its clients to provide reliable and attractive packaging that is eco-friendly and cost-effective. Bobst Group comprises more than 30 companies around the globe, including Asitrade, Bobst, Fischer & Krecke, General, Kocksiek, Martin and Rotomec. Each company designs, develops and manufactures its own products, which are adapted to a wide variety of local conditions and market preferences. Headquartered in Lausanne, Switzerland, the Group is also present in France, Italy, England and Germany and has manufacturing and assembly facilities in Brazil, China and India.

For more information:
www.bobstgroup.com
www.draftsight.com

Tips & Tricks: DELMIA Virtual Ergonomics

Use your smartphone to learn more about DELMIA Tips & Tricks.

In this installment of Tips & Tricks, *Contact mag* looks at a best practice in virtual ergonomics that allows users to save time and costs by leveraging a posture catalog.

Once a motion has been programmed once and captured in the catalog, it can be used by any manikin in any setting, simply by clicking on it.

Users of the Dassault Systèmes Virtual Ergonomics Solution often create postures for digital manikins to reach and manipulate tools as part of design, manufacturing or maintenance tasks. The time it takes to create a specific posture can be highly dependent on each user's experience with the tool. The key to avoid one-off work and save valuable time and resources is to create postures than can be reused from one scenario to the next with posture catalogs.

TIP: HOW TO SAVE TIME CREATING A POSTURE

Using catalogs to save local postures and human interface for common tools is an effective way to save time. A company's manufacturing and maintainability groups often use the same tools and postures, so human interface on those tools can be saved in catalogs and shared among groups. Instead of manually creating a posture and interface for the manikin to reach and grab a tool, users can save time by leveraging the catalog.

HERE'S WHAT TO DO:

- Define grip location and grip type:
  - a) Define human interfaces on tool (where the manikin will grasp a tool).
  - b) Define a Human Interaction on tool (what skill will be performed).
- Save tool in catalog:
  Bring tool into context; when instantiated, human interfaces/interactions remain.
- Update human interaction:
  - a) Use the update interaction command.
  - b) Select the interaction and the manikin to perform it from a given list of interactions in context.

Check out our next issue of *Contact mag* for more Tips & Tricks for other Dassault Systèmes solutions!

Powering future engineers with DS PLM

By Lisa Roner

High school students in the design drafting program at Crocus Plains Regional Secondary School in Brandon, Manitoba, Canada, are using CATIA and SolidWorks from Dassault Systèmes to prepare for the global "F1 in Schools" competition, gaining valuable experience for their future endeavors while helping Manitoba develop home-grown talent to support its local industries.

F1 in Schools is a global contest in which students deploy CAD/CAM software to design, analyze, manufacture, test and race miniature gas-powered balsawood Formula One (F1) cars.

In Manitoba's engineering design program, students use CATIA for F1 car design, creating realistic presentation drawings and generating files for the 3D router that cuts the cars. Students also use the CFD (computational fluid design) flow simulation features of SolidWorks for virtual wind tunnel testing.

"When they have tools like CATIA and SolidWorks at their disposal, I don't need to entice them in any way into the world of engineering or design," said Miro Gawinski, engineering design instructor at Crocus Plains. "They see the merits of it right away."

Crocus Plains' six-student Golden Geckos team began preparing for the Second Annual Province of Manitoba F1 in Schools Technology Challenge in 2009, working closely with the engineering faculty and students at the University of Manitoba to make their F1 project a success.

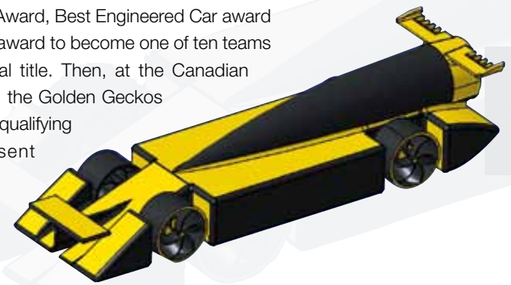
"The students – high school and university – speak the common language of CATIA," Gawinski said. "Seeing them work together is amazing. They're able to show images, exchange ideas and tweak things on the fly. It definitely shows that what we're doing at the high school level dovetails nicely with what's happening at the university and beyond."

At the regional competition in Winnipeg, the team won the Judges' Choice Award, Best Engineered Car award and the First Overall award to become one of ten teams vying for the national title. Then, at the Canadian national competition, the Golden Geckos finished first overall, qualifying them to represent Canada internationally at the 2011 F1 in Schools World Championships later this year.

The Golden Geckos of Crocus Plains Regional Secondary School in Brandon, Manitoba, Canada, took first place in the Canadian national "F1 in Schools" competition with their CATIA-designed car. Team members are (back row, left to right): Brett Coey, Tyler Enns and Dustin Sparrow; (front row, left to right): Ashley Scott and faculty advisor Miro Gawinski.

With the headquarters of Boeing's largest composite manufacturing facility and the Royal Canadian Mint both located in Manitoba, growing and keeping engineering talent in the province is important. So is ensuring that students are prepared for the highly technical careers of tomorrow. The provincial government therefore teamed with DS and Engineering.com to bring CATIA to Manitoba's schools – including high schools, community colleges and universities – as part of the province-wide Technical Vocational Initiative (TVI).

"The sophistication of CATIA is absolutely critical because students are able to tackle problems at a level that previously we couldn't teach in a high school classroom," Gawinski said. "And it's the preferred tool of the industry, so everything they learn in the classroom is directly transferable to their post-secondary education or to the workplace." Experience with CATIA helps students get better summer job experience and, ultimately, better opportunities at university and in the workplace.



For more information:
www.f1inschools.com.sg/champ.html
www2.brandonsd.mb.ca/crocus
http://news.gov.mb.ca/news/index.html?archive=month&item=10218

Use your smartphone to learn more about the Stepping Garden.

Pierrick Thébault, a student at France's Ecole de Design Nantes Atlantique, planted a virtual forest using Dassault Systèmes' 3DVIA Virtools. This innovative project, which aims to draw attention to the fragile nature of the Earth, was done in collaboration with L16, a group of collective designers. Through stunning imagery and real-time interactivity, students experience an immersive and educational approach to saving the planet.

EDUCATION

By Dora Laîné

3DVIA Virtools plants the seeds of human-computer interactivity

Environmental awareness is a key step on the road to reversing the ecological impact of humans on the planet. The Ecole de Design Nantes Atlantique decided to do its part to turn things around with an innovative approach. Using virtual technology, the school's students designed the Stepping Garden, a fun and innovative virtual forest where visitors can plant flowers and trees simply by walking along a path. As they walk, Dassault Systèmes' 3DVIA Virtools technology brings the forest to life with bright and colorful virtual plants.

PLANTING AN INTERACTIVE FOREST

In the Stepping Garden, visitors walk along a touch-sensitive path in front of a screen that displays a forest. Sensors beneath the path transmit signals generated by the visitors' steps to receptors installed behind the screen. The information is relayed via a Midi connection to 3DVIA Virtools, which dynamically and randomly generates images of trees and plants on the virtual screen, as if they are sprouting from the ground. Different musical sounds herald the arrival of each new plant.

Grégoire Cliquet, professor of real-time 3D interactivity, is in charge of the school's curriculum for interactive design. He proposed a class on human-computer interaction that teaches topics ranging from the design of services and the creation of virtual interfaces using Web standards such as XHTML/CSS/JS/PHP, to different authoring software, including 3DVIA Virtools. For Cliquet, 3DVIA Virtools addresses a wide range of uses, including immersive virtual reality, games and real-time 3D applications. "With Virtools, our students' imagination is limitless," Cliquet said. "Thanks to the software's power and user-friendly visual scripting language, they are able to quickly and easily prototype interactive real-time 3D applications like the Stepping Garden."

Cliquet believes that 3D is rapidly becoming an important part of modern life, mimicking the real world with surprising precision. "Our virtual reality program prepares our students to make the most of what technology has to offer to create innovative and fun applications. 3DVIA opens countless possibilities by breaking down the barriers between the real and virtual worlds," he concluded.

For more information:
www.lecolededesign.com
www.l16.fr
www.3dvia.com

Ice Dream: Towing an iceberg for fresh water

By *Dora Laîné*

Move an iceberg? This has been Georges Mougin's dream for more than 35 years, a dream considered by many as unrealistic. Mougin, a French engineer and enthusiastic believer, has been collaborating with a team of scientific experts that include renowned glaciologists and oceanographers to try to transform this dream into reality. In 2009, he met with engineers from Dassault Systèmes, who agreed to help put his hypotheses to the test through 3D modeling and simulation to see if an iceberg can indeed be towed across the ocean.

Use your smartphone to learn more about the Ice Dream project.

Why does Georges Mougin want to move an iceberg? "With the world's water resources projected to diminish by one third in the next two decades, providing pure water to an ever-increasing world population is vital," Mougin explained. To Mougin and Mauviel, one solution would be to transport icebergs to areas that lack fresh water for drinking and even cooling purposes.The scientific challenges are impressive — capturing a large iceberg that can weigh up to 7 million tons, protecting it from melting while transporting it across the ocean, securing and optimizing the trajectory with respect to meteorological and oceanographic conditions, and breaking up the iceberg to turn it into drinking water.

Passionate about Innovation?

If you have an outstanding idea but lack the appropriate software resources to bring it to life, Dassault Systèmes' Passion for Innovation program may be for you. Its mission – help individuals and non-profit organizations virtually simulate projects using Dassault Systèmes' 3D solutions. And since *Contact mag* is also passionate about innovation, we are launching our Passion for Innovation feature, which will highlight a different and exciting project in each issue. **For more information on the Passion for Innovation program, visit www.3ds.com/passionforinnovation.**

MOUGIN'S PROJECT REKINDLED THANKS TO THE POWER OF 3D

Dassault Systèmes worked with Mougin and his team to simulate the iceberg's trajectory and its evolution by taking into account data such as variations in ocean temperatures, wind force and direction, sea currents, and boat drag force. They inserted this data into a 3D model of the iceberg to simulate what would happen all along the voyage.

Some important questions needed to be answered. Can an iceberg be towed from point A to point B? If yes, how many tow boats with what horsepower will be needed? How much fuel will be consumed? How long will it take to tow the iceberg from Newfoundland to the Canary Islands, for example? How can scientists prevent the iceberg from melting and disappearing into the ocean?

The critical challenge presented to Dassault Systèmes' engineers was to demonstrate, using virtual technology, the technical feasibility of displacing the iceberg in a controlled manner while reducing its melting. The project, managed by Cédric Simard, Interactive Strategy & Marketing Project Director at Dassault Systèmes, involved a number of steps:

1. Model the iceberg with CATIA based on a cloud of points obtained by scanning a real iceberg with radar.
2. Calculate and simulate the way the iceberg would melt using CATIA Systems and SIMULIA.
3. Simulate the way the iceberg would melt if surrounded by a protective isothermal "skirt" imagined by Mougin to slow the melting process.
4. Calculate how much fuel the boats would consume depending on the winds and currents encountered along the way.

Various scenarios were simulated, such as number of boats needed, different departure dates and climate conditions, and the behavior of the boats and iceberg in the event of a storm or turbulence. In addition to enabling the team to visualize these scenarios, the simulation also allowed the scientists to test how to deploy the isothermal skirt around the iceberg.

A VIABLE ALTERNATIVE TO REAL-LIFE TESTING

"Through virtual simulation, we were able to test many scenarios in a short amount of time, something that would have taken years and considerable resources if we were to do this in the real world," Simard said. "It is easier to manipulate a 7 million ton iceberg with 3D virtual technology and to perform analyses that are very close to reality."

Virtual simulation can also be used to train people to install the protective skirt around the iceberg, or to pilot the boat while towing it. Training scenarios can be repeated as often as necessary and varied by modifying test parameters at will and at no extra cost. "It's safer and less expensive than training people on a real tow boat out in the ocean," Simard said. "Virtual simulation also has environmental advantages since even the wildest ideas can be tested without any adverse effects on the environment."

For Mougin, seeing his project come to life for the first time is a major step forward. The results were an encouraging sign for him to continue with a real-life prototype operation sometime in the near future. His plan is to "catch" a real iceberg, wrap it with a protective skirt and tow it a few kilometers. "What I imagined 35 years ago is finally on its way to becoming reality," Mougin said. "Although there are still some technical aspects to be explored, virtual simulation has proven that this project is technically feasible and not such a wild dream after all."

For more information:
www.3ds.com/icedream

Simulation made it possible to determine:

- the optimum departure date.
- the number of days it would take to tow the iceberg from Newfoundland to the Canary Islands (approximately 140 days with favorable weather and ocean conditions).
- that only one boat would be required to tow the iceberg and the quantity of fuel consumed.
- the best strategy to adopt when facing storms, gusts of wind and whirlpools.
- that the iceberg would lose one third of its mass along the way - enough to provide a city with a population of 50 000 with fresh water for a year.

SUCCESS STORIES

Enquip Tecnologia & Qualidade

TECMES®

To promote collaboration and innovation and maximize the use of its manufacturing equipment assets, industrial equipment maker Enquip chose Dassault Systèmes' CATIA and ENOVIA. The company has standardized manufacturing processes, reduced overall manufacturing costs, and realized significant gains in productivity, thereby shortening product delivery times.

Enquip improves manufacturing performance by 30% with CATIA and ENOVIA

Brazilian company Enquip, located in the southeastern state of Rio de Janeiro, develops and manufactures industrial equipment for use in cargo handling solutions and products, including hydraulic winches and electric or pneumatic telescopic cranes used in the energy, shipbuilding and construction industries. Certified ISO 9001, Enquip has invested in technology solutions with an eye toward sustainable development.

In its efforts to optimize manufacturing processes and use of existing hardware and machines, Enquip faced a key challenge – how to expand and improve management of its engineering data, a function that was previously limited due to integration and programming issues with production equipment. In 2009, Enquip chose CATIA and ENOVIA SmarTeam to improve its technology in the areas of product design, finite element simulations, kinematics analysis, and parametric detailing in production. Enquip required an integrated PLM solution that was robust, came with technical support, and was easy to integrate into existing software solutions. The implementation and rollout of these solutions was done by Dassault Systèmes and Tecmes, its business partner in Brazil.

PERFORMANCE IMPROVES BY 30%

With the Dassault Systèmes PLM solution, Enquip now manages the development of manufacturing equipment virtually, but also validates manufacturing operations first using simulation to test the operation of the machines and the processes beforehand. "With CATIA and ENOVIA, we noticed a 30% improvement in overall manufacturing performance and a significant step forward in the quality of our products, all resulting in the improved use of our machines," said Marcello Pecci, Plant Manager, Enquip. The optimization of CNC programs has also resulted in better use of machine resources and a more dedicated and trimmed production cycle.

By integrating all manufacturing processes into a single workflow, the company now has a "best practices" model that protects its intellectual property and allows Enquip to reuse successful manufacturing processes in other areas. The Dassault Systèmes' PLM solution also allows Enquip to quickly alter product designs throughout manufacturing in order to comply with any last-minute market changes or industry requirements.

OPTIMIZED USE OF RESOURCES

With an accurate design plan, which was tested virtually, Enquip made better use of its raw materials and avoided environmental waste. Complex geometric models that before required a great deal of programming time became easier to execute. As a result, the machining cycle per part produced was cut significantly. The time savings translate into increased resources that can be invested in the development of new products. "The results attained were exceptional and exceeded expectations," Pecci said. "The new PLM rollout was a success and it positively impacted the entire organization."

For more information:
www.enquip.com.br
www.3ds.com/industrial-equipment

Enquip hydraulic hoist

By Lisa Roner

Blu Homes rethinks green design with CATIA and 3DVIA

Blu Homes needed 3D design and visualization tools that supported its goals of building quality, green, affordable prefabricated homes with a high level of buyer personalization. Blu Homes chose CATIA and 3DVIA from Dassault Systèmes to help realize its vision of making the homebuilding process more predictable, affordable and enjoyable.

Use your smartphone to learn more about Blu Homes.

87%

CATIA's high levels of design precision allow Blu Homes to meet tolerances of no more than 0.0625 inches (0.15mm), 87% more precise than the 0.5 inch (1.27cm) variances typical of stickbuilt homes.

Blu Homes is combining prefabricated, eco-friendly and affordable homes with marketing tools that give buyers unsurpassed abilities to personalize and visualize their choices. The Massachusetts-based startup credits its use of CATIA and 3DVIA – 3D design and visualization solutions from Dassault Systèmes (DS) – with allowing it to completely rethink not only how its homes are designed and built, but also how they are sold.

Design precision is critical for Blu Homes. Houses constructed board-by-board onsite can tolerate variances of as much as 0.5 inches (1.27cm), but Blu Homes' unique folding designs require variances of no more than 0.0625 inches (0.15mm). Typical architectural software cannot manage that level of precision, but CATIA can.

"It's necessary for us to be able to manage and visualize assemblies and sub-assemblies with tens of thousands of unique parts," says Dennis Michaud, Blu's Vice President of Product Development. "CATIA is crucial for making that possible. The kinematics we employ for folding our homes for shipping demand a fairly abnormal level of precision compared to what the building industry is used to. I believe CATIA is the only tool that allows us to design the house in its entirety in full precision."

POWERING ECO-SUSTAINABILITY

With CATIA, Blu Homes is designing homes that are 40% wider than other prefabricated homes after they're unfolded, but with a transportation footprint comparable to a typical modular home. This allows Blu Homes to ship across the country more economically than other modular builders can do in-state. "That's a difference of tens of thousands of dollars we can pass on to our customers," comments Josh Appleman, Digital Tooling Manager at Blu Homes.

The CATIA model feeds all of Blu Homes' downstream processes. This allows design changes to be reflected in updated renderings and marketing documentation, which is created with CATIA Photo Studio Optimizer to eliminate the time and expense of physical mockups and custom photography. Bills of material (BOMs) generated directly from the model streamline procurement and allow home buyers to quickly see how their design choices affect the total cost of the home. By facilitating direct integration between design and manufacturing, CATIA also helps to ensure that the designed geometries are buildable, cost-effective and eco-friendly.

INNOVATING HOME MARKETING WITH 3DVIA

"One of the really important aspects of our business model and competitive strategy is making the whole process of buying a home much more predictable and much less chaotic," Appleman says.

Blu Homes' online configurator, driven by 3DVIA, helps create a positive experience for buyers. Starting with a 3D XML model output from CATIA, 3DVIA organizes and presents the assembly in a format that allows homebuyers to experiment with tile, cabinets, flooring, window styles and paint color options, and then virtually "tour" their home to verify their choices before construction. "With the 3DVIA-based configurator, we try to show customers exactly what they're getting before they spend a penny," Appleman explains.

Blu Homes works with two DS partners who specialize in the solutions they represent: Mecanica for CATIA, and 3DCalifornia for 3DVIA.

The modular design of Blu Homes allows for substantial creativity. In this photograph, three Origin models were combined to create a distinctive home addition.

Photorealistic image of the interior of an Element model home designed with CATIA Photo Studio Optimizer

"Mecanica has been a highly valuable partner in helping us to locate and use the right DS products for our needs," Michaud says. "They have knowledge of CATIA best practices for the use of catalogs, skeleton models, power copies and Knowledgeware, and we've used these capabilities in totally rethinking how a house is designed and built."

Appleman credits DS business partner 3DCalifornia with helping Blu optimize the 3DVIA configurator. "They've been instrumental in making a scalable tool for us using 3DVIA, and that's a critical part of our marketing plan. Our designs are constantly improving, so we needed a tool that ensures what the customer sees is up-to-date and visible quickly. We simply couldn't do this without 3DCalifornia's help."

FUTURE PLANS

Blu Homes expects to drive its automated NC machining directly from its CATIA models in the first half of 2011, particularly to make optimal use of high-waste sheet goods such as drywall. The company also is evaluating additional CATIA modules to further enhance eco-efficiency, cost and design productivity.

Michaud hopes the company's success will inspire other architects to adopt 3D. "DS solutions are helping Blu Homes build better quality homes and provide average homebuyers a custom home-buying experience at a reasonable price," he says. "That's something that could benefit the whole industry."

To read an extended version of the article: www.3ds.com/contactmag-extra

For more information:
www.bluhomes.com
www.3dCalifornia.com
www.mecanicasolutions.com
www.3ds.com/construction

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Dennis Michaud
Vice President of Product Development, Blu Homes

IDE Technologies improves information flow with ENOVIA V6

By Dora Laîné

Image courtesy of IDE Technologies Ltd.

Hadera, Israel, 127 million cubic meters (27.9 billion US gallons) per year: the largest operating SWRO (Sea Water Reverse Osmosis) desalination plant worldwide.

IDE Technologies Ltd. uses ENOVIA Version 6 (V6) to manage its engineering processes and data and to render this information available to various departments in the company. Easy, secure access to a 'single version of the truth' will provide employees, suppliers and partners with the most accurate and up-to-date information, reducing costs and ensuring data integrity from the design office all the way to the construction site.

Solving the world's water needs is a global challenge. It can take many forms: providing safe fresh water to the more than one in six people around the world who lack this basic requirement*, equipping water-intensive industries with systems to process their waste water, satisfying the cooling needs of mining installations, or even bringing snow to ski resorts dealing with reduced snowfalls and warmer weather.

Proposing innovative solutions to solve these challenges is IDE Technologies' goal. Faced with diverse customers' needs, and to ensure prompt and successful delivery of its solutions to its customers, IDE Technologies had to reassess and streamline its engineering processes. "With the exception of our design tools, our engineering processes were not up to par, which often forced us to perform many of our activities manually," said Lizi Gottesman, IT Manager, IDE Technologies.

The company's project methodology has improved since IDE installed ENOVIA V6, avoiding misunderstandings between the design department and the engineers working at the construction site. "Designs are now stored in one location, making it easy to find the right information, at the right time, by the right people, reducing costs and saving time," Gottesman said.

ROBUST MULTI-CAD PLATFORM

In order to achieve its goals, IDE Technologies needed to implement a reliable platform that would unite all data from its engineering activities and manage its processes. "Once we decided to adopt a PLM solution, we took the time to define all our needs and to compare the different systems available on the market," Gottesman said. "Since we use multiple CAD systems such as AutoCAD and Inventor for our design work, we chose ENOVIA V6, the solution that presented the best multi-CAD integration capabilities."

*Source: World Health Organization (WHO) and United Nations Children's Fund (UNICEF) Joint Monitoring Program on Water Supply and Sanitation (JMP)

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>
> **Lizi Gottesman**
> *IT Manager, IDE Technologies*

Dassault Systèmes Services Israel and Dassault Systèmes' partner Technia managed the implementation of ENOVIA V6 at IDE Technologies. Dassault Systèmes partner YAEL Software and Systems managed legacy data input and training.

RAPID IMPLEMENTATION

In only seven months, ENOVIA V6 was deployed in departments including engineering, purchasing, manufacturing, planning, and maintenance, and all with a minimum of configuration. "We basically used the system out of the box," said Jacky Ben Yaish, Engineering Manager, IDE Technologies. "What we did customize was linked to the way we work with our homegrown legacy ERP system that we have been using for years."

All parts, as well as the specifications and drawings related to some of its main ongoing projects, were transferred from its ERP system to ENOVIA. "Service personnel have seen major improvements when at a customer site," Yaish said. "With only an Internet connection, they can access drawings and specifications related to a customer's installation. This makes maintenance smoother."

With ENOVIA V6, IDE Technologies can define its engineering processes using workflow management capabilities to model repeatable business practices and eliminate non-value-add activities. The company plans to improve its ECO-ECR cycle time by using ENOVIA V6 to measure the time it takes to transform an ECR (engineering change request) into an ECO (engineering change order).

IMPROVED DESIGN RE-USE

With all data residing in ENOVIA V6 and no longer stored in different computers, finding information pertaining to designs that were completed up to ten years ago will no longer be a problem. "With ENOVIA, design re-use will be possible, reducing development time considerably," Yaish said. "Dispersed project information also made it more difficult to provide management visibility into a project's status in terms of planning, resources and costs. Now anyone in the company can access and share information and work together more efficiently."

ENOVIA V6 enables IDE Technologies to be more accountable to prospects and customers by demonstrating clear and organized project management and rapid access to data. "Delivering a plant on time and meeting required specifications is a major competitive advantage and illustrates to our customers that they are in good hands," Gottesman said. "It shows that we are a reliable and serious partner."

IDE Technologies

IDE Technologies is a world-leading desalination company. Since 1965, the company has built 400 desalination plants in 40 countries worldwide, with a cumulative installed capacity of more than 2,000,000 cubic meters (528 billion US gallons) per day. IDE's technologies for optimized, high-end thermal and membrane (reverse osmosis) desalination are recognized as among the most advanced in the world. The company designed, built and currently operates the world's largest SWRO desalination plants. Its customized desalination plants provide high-quality water for use in industries, mines, refineries and power stations, as well as for drinking water and agriculture. IDE is jointly owned by two of Israel's largest industrial enterprises: ICL Group (50%), one of the world's leading fertilizer and specialty chemicals companies, and Delek (50%), the leading energy and infrastructure group based out of Israel.

For more information:
www.ide-tech.com
www.3ds.com/industrial-equipment

Designing energy-producing underwater kites with CATIA PLM Express

By Dora Laîné

Minesto uses CATIA to design innovative tidal energy solutions. The flexibility and rapidity with which it can create its designs enables Minesto to show potential customers design variations based on their requirements. Compared to its previous CAD system, model size is no longer a problem, allowing Minesto to work on complex models and assemblies of its products.

With CATIA, we can work on more complex models and assemblies with all the related details. Model size is no longer a problem.

Arne Quappen
Development Manager, Minesto

Minesto
Tidal Energy Solutions

semcon

Marine energy comes from two main sources: waves, which originate from wind; and tides, which are caused by the gravitational pull of the moon and sun. One of the benefits of harnessing tidal currents is that, unlike wind and waves, they are predictable and offer an ecologically friendly and reliable source of energy.

Minesto has developed a new kind of tidal energy solution based on its Deep Green concept, which uses low water speeds to create energy. This revolutionary concept makes it possible to install and operate plants in areas where no other known technology can operate cost effectively, thus expanding the number of sites where tidal energy can be generated.

A GROUNDBREAKING AND UNIQUE SOLUTION

The Deep Green technology converts energy from tidal stream flows into electricity by way of a novel principle: an underwater kite. The kite consists of a wing, turbine and generator, and is attached by a tether to a fixed point on the ocean bed. The speed of the kite determines the flow velocity to the turbine. Electricity is transmitted onshore through a power cable inside the tether.

“What makes our technology unique is that we can extract energy, in a cost-efficient way, from low stream velocity,” said Arne Quappen, Development Manager, Minesto. “Our competitors use tidal streams that are habitually 2.5 meters/second (8.2 feet/second), whereas we can use tidal streams between 1.5 and 2 meters/second. Another advantage of our system, compared to our competition, is that their installations are bigger, heavier and more difficult to install,” he said. The technology developed by Minesto is lightweight and small compared to other tidal solutions, resulting in reduced costs in material, transport, installation, service, maintenance and disassembly.

“We have to compete with other more established energy sources such as coal or nuclear,” Quappen said. “The fact that we are not as established as traditional energy producers is a tough challenge and one that we have to meet by improving the reliability and cost- effectiveness of our solutions.”

CATERING TO THE NEEDS OF POTENTIAL CUSTOMERS

Minesto is currently developing and testing prototypes of its solution before going to production. “Our objective is to create a robust design of our kite that we can then adapt to the needs of our customers,” Quappen said. “As a development company we are in discussion with potential customers to collect their requirements and to implement them in our commercial products.”

In 2010, Minesto chose CATIA PLM Express from Dassault Systèmes for its 3D design work and for drawing production. “Our previous solution lacked the design precision and flexibility we needed,” Quappen said. “During this initial product development phase, it is important for us to create different design variations quickly and to show them to potential customers before converging on the right design. With CATIA, as opposed to our previous solution, we can work on more complex models and assemblies with all the related details. Model size is no longer a problem.”

Semcon, a Dassault Systèmes’ partner, helped Minesto implement CATIA and provided training and consulting services. “Semcon’s industry know-how and extensive knowledge of CATIA accelerated our learning curve,” Quappen said.

Use your smartphone to learn more about Minesto’s underwater kites.

Minesto

Minesto, based in Gothenburg, Sweden, is a spin-off of the Saab Group. Formed in 2007, the company develops technology for a new type of tidal power plant. After validating the cost-effectiveness and viability of its designs, Minesto was chosen by the Carbon Trust to participate in its Marine Energy Accelerator program. Minesto was recently granted £350,000 from the Carbon Trust to deploy the first prototype of its Deep Green underwater kite. Carbon Trust´s programs support those companies that are most promising in the development of alternative energy solutions.

For more information:
www.minesto.com
www.3ds.com/energy

A major player in the design and manufacture of high precision aerospace parts, Asco will migrate from ENOVIA SmarTeam V5 to ENOVIA Version 6 (V6) in order to streamline industrial processes, optimize collaboration across its three global sites, and enable it to become a key V6 partner in the aviation industry.

Asco transforms its business model with ENOVIA V6

By Corinne Hirzel

Asco Headquarter, Zaventem, Belgium

A global leader in the design and production of high-precision assemblies and subassemblies for major aircraft programs, Asco is a family business founded in 1954 with 1200 employees and headquartered in Zaventem, Belgium (800), with two production sites : Gedern, Germany (200) and Vancouver, Canada (200).

"SLAT AND FLAP" EXPERT

As a partner of some of the world's leading aircraft manufacturers that include Boeing, Bombardier, Airbus, Spirit, Messier and Goodrich, Asco has developed cutting-edge know-how which is internationally recognized, particularly in the manufacture of guidance rails for slats (movable portion of the leading edge of the aircraft wings), support for deploying flaps (movable portion of the trailing edge of the aircraft wings), and landing gear parts. Slats and flaps are aerodynamic surfaces which, when deployed, produce a higher coefficient of lift. When extending these high-lift devices, the resulting larger wing will provide more lift, reduce stall speed and reduce takeoff and landing distance. Slats and flaps are retracted in normal flight to minimize drag.

Currently, with approximately 100 CATIA users designing and machining parts, 80% of Asco's work focuses on the production of parts designed by its customers ("build-to-print") and 20% on the design and manufacture of parts produced using specifications provided by manufacturers ("build-to-spec"), a business area that is growing dramatically and requires changes to be made in the Zaventem design office.

A "PLM MASTER" VISION

To meet these new goals for growth in the overall context of optimizing cost management, Asco sought out a new collaborative online repository that brings together all the users throughout the product's lifecycle. "We wanted to capitalize on the expertise of our Belgian site in order to benefit our two production sites in Germany and Canada," says Steve Verheyden, CAD-PLM and Configuration Manager at Asco. "We also had to better manage all data items and classifications, while controlling and optimizing the management of the many changes affecting these parts. This meant controlling their impact to enable us to carry out an analysis using qualitative and quantitative indicators for all phases of the project implementation, across multiple sites."

> We estimate that as a result of the introduction of ENOVIA V6, we will boost our productivity by 20% in the future, in terms of global configuration management, for the company overall.
>
> **Steve Verheyden**
> *CAO-PLM & Configuration Manager, Asco*

The company stores its data in an ERP (Enterprise Resource Planning) system, and industrialization information is entered manually as text; they are neither linked to one another nor are they structured. The aim is to position the PLM platform upstream of the production cycle to manage all research and industrialization phases so that they can be automatically integrated into the ERP. PLM creates a link between the data from the project launch onwards and allows models to be managed from the design phase. "As part of our 'pull and lean manufacturing' system, our approach is resolutely 'PLM Master' focused. PLM data will become the benchmark in the company, in order to eliminate stock and to accommodate the specific requests made by customers, all while saving time," Verheyden said. "PLM is at the core of the lean manufacturing initiative. We estimate that as a result of the introduction of ENOVIA V6, we will boost our productivity by 20% in the future, in terms of global configuration management, for the company overall."The PLM solution will centralize, analyze and send the information to the ERP system. The design office, which is equipped with 50 CATIA stations managing all customer specifications, will soon have access to ENOVIA V6 Designer Central to manage their CATIA V5 data. The manufacturing data will be added to ENOVIA. Therefore, in addition to the configuration details, there will be data on tooling, machining programs and monitoring for each item.

INNOVATION IN INDUSTRIAL PROCESSES

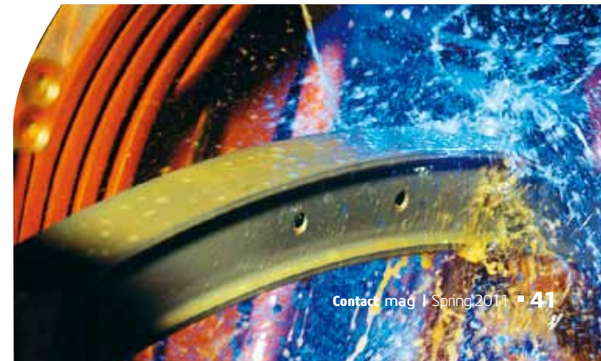
Asco's success is based on the effective management of the coordination between the ECR (Engineering Change Request) — or analysis — and the ECO (Engineering Change Order) — or the implementation of the modifications of parts managed through ENOVIA Engineering Central for BOM management. "We chose ENOVIA V6 to build our programs referential," explains Brieuc Spindler, Engineering Director at Asco. "We are already preparing our users for this new technology in an attempt to streamline our industrial processes to facilitate collaborative innovation internally, in real-time with our teams spread across three sites, as well as externally with our subcontractors and subsequently with our clients. Utilizing 3DLive as a 3D universal language, and its intuitive user interface, will enable a real connection to be established between all project participants and allow them to capitalize on the intellectual contribution made by each individual across the extended enterprise. ENOVIA V6 really boosts innovation." ENOVIA V6 transforms the structural models currently in use in the company. Indeed, the analysis of industrial processes can actually redirect the role of many departments, which have had to redefine, for example, the machining or assembly range directly into the product structure. It also has the advantage of encouraging autonomy and responsibility.

The success of the Asco brand is based on its business expertise and its long-term innovation strategy. Constantly evolving enables Asco to stay ahead of its competitors, and being the preferred technological partner is a new challenge that the teams are ready to face. The group's philosophy is to bring together designers, engineers, technicians, partners and clients, and to foster a relationship of trust through a collaborative online platform to create the product as a team.

For more information:
www.asco.be
www.keonys.com
www.3ds.com/aerospace

Keonys

Dassault Systèmes' European partner Keonys is helping the aerospace, defense and automotive industries adopt the V6 collaborative platform. Keonys consultants have assisted Asco for many years and are a reliable and trusted Asco partner. "In this new landmark event, the Keonys ENOVIA team is standing side by side with Asco to assist the company with the new challenges it is facing and helping to identify the main development pathways of PLM. Keonys is guiding Asco through this PDM V5 to PLM V6 transition process in order to speed up their transformation," says Tom Kalkman, Director of Keonys Benelux.
www.keonys.com



Slat track: Magnetic particle inspection of potential cracks

Clarion Malaysia shortens design time by 20% with V6 PLM Express

We have always been a Dassault Systèmes supporter because of the capability and value that its solutions deliver. V6 PLM Express provides us a new way of doing things, is aligned with our objective, and offers great scalability at a competitive price.

Toshiyuki Nakazaki
Deputy Managing Director
Clarion Malaysia

Facing the twin challenges of rapid technological advancements and lower-cost products from the competition, Clarion Malaysia chose Version 6 (V6) PLM Express from Dassault Systèmes to improve productivity, innovation and creativity. With V6 PLM Express, Clarion Malaysia has shortened design time by 20%, inspired innovation among its designers and sharpened its competitive edge.

Formed in 1970, Clarion Malaysia (CM) designs and manufacturers automotive audio and video products and accessories. It is a joint venture between Japanese firm Clarion and Tone Trading Sdn Bhd of Malaysia. CM develops in-car entertainment (ICE) systems for customers in Asia (excluding Japan and China), India, the Middle East, Commonwealth of Independent States, and South Africa. Among its key customers are Nissan, General Motors, Tata, and Malaysian automakers including Proton, Perodua and Naza. While most Japanese companies serve mainly Japanese customers in their region, CM is unique in that about 70% of its business is generated with foreign companies in Malaysia.

Clarion offers a broad range of speakers and subwoofers with various types of design, power handling capabilities and acoustic characteristics that best suit each automobile.

INCREASINGLY COMPETITIVE BUSINESS ENVIRONMENT

CM ventured into research and development (R&D) in 1993 and began using Dassault Systèmes' (DS) product lifecycle management (PLM) software in 2000. As a progressive company that is constantly looking at ways to innovate, the company sought to improve its design process and reduce design time. Rapid technological advancements were making the market more competitive. Substitute products from players outside the industry were penetrating the market, leading customers to demand lower-cost products. "We are aware that technology is a key factor than could increase our productivity and give us the competitive edge," said Toshiyuki Nakazaki, Deputy Managing Director of CM. "Hence we began looking for a solution that could help us in improving productivity, innovation and creativity."

V6 PLM EXPRESS WINS IN PRICE AND SCALABILITY

As a CATIA user since Version 4 and a company looking for a data management system, CM decided to explore all options available in the market. After short-listing three possible solutions and evaluating their capabilities, the company selected V6 PLM Express based on significant improvements in terms of efficiency and cost, and the enablement of industrial, mechanical and electronic design groups, as well as other departments, to work together concurrently in real time via a simple Web connection, in a completely secured environment. Designed for small and medium-sized companies, DS' V6 PLM Express, including CATIA, DELMIA, ENOVIA, SIMULIA and 3DVIA, delivers a single PLM platform and out-of-the-box solutions for all PLM business processes, available to anybody, anywhere. Spanning engineering groups, business and end users, V6 PLM Express enables rapid deployment, ease of use, scalability and low total cost of ownership. Users benefit from the intuitive V6 interface. They manage PLM business objects and documents within ENOVIA using Microsoft Windows Explorer and its familiar "cut and paste" and "drag and drop" functions, as well as benefit from design methodologies similar to those found in V5.

"We have always been a Dassault Systèmes supporter because of the capability and value that DS delivers," Nakazaki said. "V6 PLM Express has a lot of new functions, is aligned with our objective and offers great scalability at a competitive price. Having a pre-defined data customization and ready-to-use PLM environment, the solutions have been implementing in just a few weeks' timeframe."

SHORTENED DESIGN TIME

The new solution is designed to run on "on-the-web" through a collaborative infrastructure available for all internal departments, allowing people to work concurrently in real time and make the right decision faster, helping to cut product development time. "We can now have total control over the entire PLM system and communicate better with our customers and suppliers. As a result, product design time has reduced by 20%," Nakazaki said. Thanks to a combination of significant improvements in terms of usability, functions and sharing their knowledge and ideas in real time, engineers can also learn quickly from their mistakes and reduce the number of errors for future projects.

CATALYST FOR INNOVATION

With its ease of use and lifelike aspects of 3DLive, all actors of the company – including top management – can see through a 3D dashboard the maturity level of the various projects in a matter of minutes, as compared to a few days or weeks in the past. The solution has proven to be a catalyst for innovation. "One of the key benefits is that it provides us a new way of doing things," Nakazaki said. "The solution inspires our design engineers to try out new things in new ways, which is really critical for business today."

The solution inspires our design engineers to try out new things in new ways, which is really critical for business today.

Toshiyuki Nakazaki
Deputy Managing Director
Clarion Malaysia

SHARPENING ITS COMPETITIVE EDGE

Upgrading to V6 has given CM the competitive edge it needed. The ability to share data and design quickly keeps the company ahead of the competition. "Being online enables faster and effective communication and, more importantly, gets our team ready for cloud computing," said Nakazaki. CM is now able to create new products with better time to market. Its customers who also are using V6 appreciate the initiative on technical collaboration. "We are very impressed with DS for its cutting-edge solution and courage to challenge the status quo," Nakazaki said.

For more information:
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Automobile supplier Hella optimizes its processes with V6

By Heike Blödorn

Hella KGaA Hueck & Co., a long-time CATIA user since the mid-1980s, investigated adopting adopting Dassault Systèmes V6 solutions early in 2010. Through a series of workshops, together with Dassault Systèmes and Transcat PLM GmbH, Hella evaluated Version 6 (V6) both from a strategic and methodological point of view.

Hella KGaA Hueck & Co. is an automotive supplier that develops and manufactures automotive lighting systems, including headlamps and rear lamps, as well as electrical systems, including sensors and actuators or driver-assistance systems. It employs more than 23,000 people worldwide distributed across 70 production sites, fully owned subsidiaries and joint-ventures in 30 countries. More than 3,500 engineers and technicians are dedicated to research and development throughout the group.

Hella has an installed base of 1,300 CATIA seats worldwide, dedicated to the development of products that include headlights, lighting and front-end modules as well as body electronics, driver-assistance and climate-control systems. With CATIA, designers often manage assemblies that contain thousands of parts and subassemblies.

ALWAYS ONE STEP AHEAD

To help it meet a temporary surge in workload, designers working at Hella's headquarters in Lippstadt, Germany, are assisted by teams working in India, China, the US and across Europe. In this way projects can be rolled out in a continuous manner, 24 hours a day.

Dr. Ulrich Kertscher, who is responsible for the Design Methods & Tools used at Hella explained: "Our vision of responding to market demands faster than our competition and anticipating future requirements are what motivates us." This is why the automotive supplier has decided to turn its attention to V6. "V6 provides a complete PLM environment with significantly more process information available than we had before," Dr. Kertscher said. "Even though this is new territory for us, we are excited to apply its many benefits to our work and to demonstrate these benefits to our management."

OVERVIEW OF THE THEMES AND MODULES

Working with Dassault Systèmes and its partner Transcat PLM, Hella therefore decided to carry out a "V6 Starter Kit" pre-project. The starter kit involved a test installation with several test licenses of CATIA V6, DELMIA V6 and ENOVIA V6, and the implementation of 13 workshops, which lasted between one and two days each. V6 key topics and solution modules were presented to a total of ten IT, software development, design, production and shop floor planning representatives and complemented with hands-on demonstrations to reinforce each topic.

Workshops focused on installation, configuration and user interface as well as concepts such as change management, bills of material management, requirements management and the SAP interface. Specialists examined, for example, whether the V6 functionalities available in CATIA for integrated product design, DELMIA for digital manufacturing and production, and ENOVIA for global collaborative innovation, met Hella's requirements, and whether the company's existing processes could be optimized. The aim of the first evaluation was to be able to ask pertinent questions regarding the implementation procedure. "We wanted to know what to expect in terms of customization, which interfaces we should implement, and how we will need to manage structures in the future," Dr. Kertscher explained. "It was also necessary to clarify how we exchange SAP objects with V6 through migration, conversion or infrastructure."

The validation phase lasted two months. Improvements were recorded in the CATIA environment, including advantages in how design data can be delivered and accessed, in simplified processing of large assemblies as well as better support for multi-site development. The potential use of V6 for requirements management is facilitated by its comprehensive set of functions as well as ability to trace and manage requirements across the different functional, logical and physical views. Hella could therefore use it to avoid having to resort to a separate solution for mechanical development.

Thanks to the new database concept in V6, the product models are filed using metadata and are up to date; link management is significantly improved; and distributed engineering is optimized. In addition, Hella now benefits from an easier management of large assemblies, as different users can now load, edit and store them simultaneously. Users no longer risk accidentally overwriting sections, and concurrent changes can now be easily merged.

The integrated visualization features of V6 may lead to a reduction of data transfer rates and could significantly reduce network peak loads.

> V6 provides a complete PLM environment with significantly more process information available than we had before.
>
> **Dr. Ulrich Kertscher**
> *Design Methods & Tools*
> *Hella*

This is extremely important for Hella as it wants to improve international collaboration.

NEXT STEPS

Hella believes that the Starter Kit provides excellent support for the introduction of V6. "We wanted to evaluate V6 capabilities as well as identify what effort we would have to expect to customize the solution according to our needs," Dr. Kertscher said. "The Starter Kit allowed us to get a feel for this and now we know which modules of the V6 PLM environment will be useful for us." The automotive supplier has also expressed its great respect for the contribution made by the Dassault Systèmes and Transcat PLM employees: "Everybody involved was highly motivated in helping us learn more about V6." Hella therefore believes that the validation process was well worth the investment. Two more projects are planned in the future.

In the near future, the deployment roadmap will be defined, including an assessment of the cost involved for a "start up". In the first phase, a detailed project evaluation will be carried out. Additionally, the overall benefits for Hella in the field of requirements management will be evaluated.

The automotive supplier is already a step ahead of the competition: "We want to introduce V6 because we are convinced it will enable process improvements," Dr. Kertscher said. "We also want to be prepared as the first OEMs and partners adopt V6."

For more information:
www.hella.com
www.3ds.com/automotive

SUCCESS STORIES

FERNO When It's Critical

Microsoft

Ferno-Washington is a leading manufacturer of medical devices, ambulance cots, stretchers and related products for emergency, mortuary and healthcare markets. Because collaboration is critical to its global engineering design teams, Ferno relies on Dassault Systèmes SolidWorks Enterprise PDM powered by Microsoft SQL Server 2008 data management software.

Ferno designs for success with SolidWorks and Microsoft SQL Server

Sharing data and design files across multiple time zones can keep even seasoned executives awake at night. But not at Ferno-Washington. Ferno relies on SolidWorks Enterprise PDM for its product data management (PDM) system, which uses SQL Server 2008 and runs on the Windows Server 2008 operating systems. With high availability and real-time data access, this flexible solution gives Ferno design engineers and its other employees the ability to easily collaborate across its 14 locations worldwide.

REAL-TIME ACCESS TO DATA AND FILES

All engineering groups at Ferno get speedy access to data through a centralized PDM vault in Wilmington, Ohio, and three archive servers on three different continents. The archive servers contain replicated copies of everything in the PDM vault, including the CAD, CAM and CAE files, while a virtual private network provides round-the-clock connectivity.

Because SQL Server 2008 supports the extensive use of metadata, employees who log on to SolidWorks Enterprise PDM can search for files using several different terms, which makes finding information a snap. When an engineer checks out a file from the PDM vault, SolidWorks Enterprise PDM sends the file from the closest archive server. The application then locks the file, records who has it, and updates its status within the vault and on the archive servers. Other employees can view only the most recently saved copy until the file is checked back in. “We now have a global engineering force that has the capacity to share workloads,” says Jon Brunke, CAD/CAM Administrator at Ferno-Washington.

Ferno engineers can easily reuse parts by viewing plans from others and quickly modifying them, eliminating the need to transfer files. Exchanging data with suppliers is also easy. “Most of our suppliers can read SolidWorks files,” Brunke says. “If not, we save the files using the eDrawings format.”

INCREASED PRODUCTIVITY WITH REDUCED UNSCHEDULED DOWNTIME AND COSTS

Since its deployment in 2008, the SolidWorks PDM solution has helped Ferno raise productivity while dramatically cutting downtime and costs. “We have had zero unscheduled downtimes,” Brunke says. He estimates the company has saved $10,000 through improved productivity by eliminating FTP file transfers, and has cut costs by $15,000 annually in Wilmington alone, from time saved in file searches. With only one database to update—compared to several before—administrative expenses have fallen too. And software maintenance costs have declined by 4%, even though Ferno has upgraded its design capabilities with finite element analysis (FEA) and 2D and 3D prototyping.

Today, no one at Ferno is losing sleep over sharing files and data. Instead, they have embraced the SolidWorks Enterprise PDM system with SQL Server 2008. Brunke put it succinctly: “It’s wonderful. The system just runs.”

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