

Constructions Mécaniques de Normandie

Marine & Offshore Case Study



Challenge

In the highly competitive marine industry, Constructions Mécaniques de Normandie (CMN) needed to satisfy demanding customers for vessels tailored to their requirements while keeping budgets and delivery schedules under control.

Solution

CMN implemented Dassault Systèmes' 3DEXPERIENCE Platform including CATIA for design, ENOVIA for collaborative innovation and DELMIA to pilot its cutting machines.

Benefits

CMN employees can collaborate on the most up-to-date version of a model, reducing costly errors and time to market. Rapid access to information leaves more time for innovation.

Already highly competitive, the Marine industry is becoming even more challenging due to the global economic slowdown and competition from emerging economies. As ships are some of the most complex machines built, they require multiple stakeholders that include owners, suppliers and shipyards across globally dispersed locations for their construction. Historically, the Marine industry has relied on paper and manual exchange of data to bring a vessel to completion. In a highly competitive digital age, these archaic methods are simply unsustainable. Every actor participating in the design and manufacture of a ship needs quick and reliable access to a vessel's data throughout its entire lifecycle, starting with design all the way to end of life. "At Constructions Mécaniques de Normandie (CMN), information technology is more than just computing and software," said Frédéric Bréhier, chief information officer, CMN. "It is a global infrastructure that supports our industrial processes. As IT director, my job is to provide all of our employees with solutions that will facilitate their work."

CMN is famous for its military vessels although it has diversified its activities to include construction and repair of all types of vessels, steel and aluminum welding work, and design office expertise for commercial and military vessel projects. "When a nation's defense department awards a military contract to a shipyard, I can assure you it makes heavy demands," Bréhier said. "We are constantly juggling between meeting their technical specifications and keeping costs down. This is the only way we can beat our competitors, particularly from emerging nations." Many governments are now demanding more from their military vessels and CMN is adapting to respond to their changing requirements. "As they are increasingly employed in border patrol, we must use lighter materials to ensure that our boats can move faster than 50 knots and carry arms."

Catering to customers' requirements

"We make it a point to listen to our customers so that the resulting vessel fulfills their expectations in every way," Bréhier said. "Translating our customers' requirements into features requires powerful solutions and a partner that understands our business. While the story of CMN and Dassault Systèmes (3DS) began 30 years ago, it has evolved into more than a simple client-vendor relationship." "Both 3DS and I were young at the time but some of our colleagues remember that even back then CMN recognized the potential benefits of using digital design in shipbuilding," Bréhier said. "We were one of the first shipbuilding companies to implement 3DS digital technology and over the years our relationship with Dassault Systèmes evolved into a partnership. 3DS was attentive to our needs and incorporated specific marine features in subsequent software releases, transforming this technology into an essential part of our success."

CMN adopted the 3DEXPERIENCE Platform, including CATIA and ENOVIA for design and collaborative innovation, and DELMIA to virtually link design to production. "Working in a unique virtual environment facilitates the flow of information from our design office to our manufacturing facilities. DELMIA uses our 3D geometry to generate the files we need to pilot our plasma cutting machines, which cut the six to eight mm-thick steel plates that make up a ship's structure," Bréhier explained.

3D - a competitive advantage

While much of the sector is still anchored in a two dimensional approach to ship design, CMN decided to take another route. "3D gives us a competitive advantage," Bréhier said. "It also makes designing a more intuitive and enjoyable experience. We can eliminate a lot of the guesswork and misunderstandings that sometimes go hand in hand with flat, 2D drawings."

Even though CMN is a single-site installation, its 40 designers did not always find it easy to collaborate on a design. "Accessing and working on the same 3D model really boosts our productivity," Bréhier said.



"As information is centrally managed with the 3DEXPERIENCE Platform, designers spend more time innovating and less time searching for information. This helps us to cut costs and time to market and to stay ahead of the competition."

Frédéric Bréhier, Chief Information Officer, CMN



Interceptor model, a high speed vessel of 32 meters for maritime security, designed by CMN with CATIA



« One » is the concept of a 60 meters yacht completely designed by CMN with CATIA

“ENOVIA makes cross-discipline collaboration possible and designers are confident that they are working on the latest geometry and on the most up-to-date version of the design. Moreover, if someone moves a piping element, the entire design office is informed. This is a huge time and money saver since we avoid costly mistakes.”

As vessels become bigger, more sophisticated and tailored to specification, it is essential for customers to provide feedback at the earliest stages of a project, when modifications are still acceptable in terms of cost and planning. “With the 3DEXPERIENCE Platform, we can show our customers their boat in a 3D virtual environment complete with interior textures and layouts before we begin production,” Bréhier said. “Our designers and customers can easily exchange ideas and make modifications to designs relatively quickly. It is an exciting time because future owners see their vessel take shape right before their eyes. We recently showed a customer a virtual representation of his boat in the water for a more realistic effect, complete with a simulation of a helicopter lift-off from the landing pad. While still in the virtual stage, 3DEXPERIENCE made the dream a reality.”

Innovation by design

CMN designers are enjoying a fourfold reduction in time spent on producing isometric piping plans. “While impressive, this still is not the greatest advantage,” Bréhier said. “We are most proud of being able to work on a full 3D Digital Mock-Up. This is a truly great accomplishment in a paper-based industry. As information is centrally managed with the 3DEXPERIENCE Platform, designers spend more time innovating and less time searching for information. This helps us to cut costs and time to market and to stay ahead of the competition.”

Focus on CMN

France-based shipyard specialized in the design and construction of civil and military naval ships.

Products: Civil and military vessels
Employees: 400
Headquarters: Paris, France

For more information
www.cmn-group.com

Focus on Keonys

Keonys is a key player providing consulting and integration of Product Lifecycle Management (PLM) solutions. For over 20 years, Keonys helps industrial customers, of all sizes and in all sectors, to innovate in order to optimize and accelerate the development of new products and services.

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