



Smooth Sailing: CNB Transforms its Bill of Materials for Customized Yachts

CNB Yacht Builders

Who doesn't dream about taking a leisurely cruise along the Mediterranean or to a tropical location? If you ever decide to take the plunge and invest in your dream of sun and relaxation, most likely the boat you'd buy – whether it be sailboat, yacht, or powerboat – was manufactured by BENETEAU Group.

Business Challenge

While a major market differentiator, having customizable yachts makes the product development process much more complicated. A completely unique one-off product requires planning for its unique specifications – and must still be delivered on-time to the customer.

“If we have multiple orders from customers that need to be completed at the same time, not only do we need to juggle the process planning for each product, but we need to be able to keep track of each product’s specifications from the time we design it, on the factory floor, until the finished product is delivered to the customer – on time and within budget,” said Wilfried Cadiou, PLM & CAD Manager, BENETEAU Group.

CNB’s Manufacturing Journey

With PTC, CNB has embarked on a journey to transform the way that it engineers and manufactures its yachts. CNB identified three keys to completing this transformation:

- Combine engineering, manufacturing, quality, and service data into a unified digital thread
- Implement consistent KPIs and corporate-wide performance benchmarking to identify and implement best practices
- Digitally design the manufacturing process and process plans

To achieve these goals, CNB deployed PTC’s product lifecycle management (PLM) solution, Windchill, which became a key enabler in supporting CNB’s product development process. Windchill made it possible for a single engineering tool to maintain the complete product definition for each of its products.

CNB implemented PTC Windchill completely Out of the Box (OOTB) with no customization. This made it possible for the solution to be quickly implemented and allowed the team to focus on a fast adoption of the solution and immediately see improvements in their engineering process, starting with lean collaboration through the different activities and organization, and managing product configurations.

About the Customer

BENETEAU Group is the international leader in sailboats, as well as an industry leader in powerboat manufacturing. Founded over 130 years ago by the Beneteau family, BENETEAU Group currently boasts 7,000 employees worldwide and owns 10 global brands including the most prestigious name in custom high-end yachts: CNB.

Construction Navale Bordeaux (CNB) is a very successful division of BENETEAU Group with lines of yachts that are nearly completely customizable. Based in Bordeaux, France, CNB is growing at a double digit rate resulting in the number of employees increasing as well.



In addition to maintaining all relevant product information in a unified system of record, CNB used Windchill MPMLink to digitally link information from engineering to manufacturing. Using a 3D digital mockup of the product (designed using PTC Creo technology), engineers are able to choose parts to be put into the engineering Bill of Materials (eBOM). MPMLink allows the information in the eBOM to be transformed to the manufacturing Bill of Materials (mBOM) in a format that the manufacturing stakeholders need to build the product on the assembly line. This gives CNB the digital continuity that enables parallel design and manufacturing planning. Early access to information stored in the eBOM cuts down on the cycle time required to manufacture a product.

Windchill MPMLink is also used to help create a process plan definition from the mBoM and 3D data that is made up of information on the work center, time, and cost. Process plan instructions are defined in Creo Illustrate with Creo View used to visualize the product on the shop floor. Not only does this make it possible to avoid modifying the digital mockup, but it makes it possible to create a manufacturing-specific view directly in an Internet browser: a virtual assembly line. This virtual assembly line is fully digitally defined with all stations on the assembly line represented.

Finally, to keep all of its systems connected, data stored in Windchill is transferred to CNB's enterprise resource planning (ERP) system using its convenient ERP connector.

Results

Transforming how it manufactures products has proven to be profitable for CNB and its customers. With Windchill MPMLink and work instructions, it has become easier for CNB to deliver a boat on time and on budget. "Even though we do the process planning work for each and every single unit," said Cadiou, "we find a lot of value in the tools that allow us to do it efficiently." In addition, with a complete digital process, CNB has the speed and flexibility to deliver custom luxury yachts at a lower price point than their competitors. "Through parallel work streams and a consistent digital thread of information running through our product's lifecycle, we have been able to reduce production time and errors – which has resulted in a more competitive market price for our customers. In addition, we have been able to reduce our stock of product components due to the precision introduced into the manufacturing process."



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PLM & CAD Manager, BENETEAU Group



With Windchill MPMLink, CNB has found it easy to unify design, manufacturing, planning, and resources together on a single source. They have been able to streamline the development of process plans by leveraging virtual product representations, and have optimized manufacturing planning across products and work sites.

CNB is looking ahead to continuing its manufacturing transformational journey. In the near term, it is looking to implement PTC's ThingWorx Internet of Things (IoT) platform. ThingWorx will allow the company to create change report dashboards as well as new product information dashboards. ThingWorx will also enable the use of role-based applications that will make it possible for CNB employees to easily access the data that they need when they need it.

CNB is now working on a Digital Engineering transformation by configuring its eBOM, managing its Options & Variants, and continuing to refine the change management-making dynamic - fast-paced, coordinated changes to the Bill of Materials (BOM) throughout the product lifecycle to ensure all stakeholders are accessing the most up-to-date product information.

Next steps include implementing Universal Data Access with Navigate, making data available for all stakeholders.

Interested in learning more about how CNB was able to transform and link its eBOM and mBOM? Be sure to join us for a special session on CNB's End-to-End Digitalization Journey at LiveWorx – May 22nd-25th. [Click here](#) to discover how your organization can embark on its own Digital Engineering Journey.

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J9044-CNB-Yacht-Builders-CS-EN-0317



We have already come so far on our journey to transform the way that we manufacture. And we have a clear vision of how we want to conduct our digital transformation from Engineering to Manufacturing."

Wilfried Cadiou
PLM & CAD Manager, BENETEAU Group