Navantia is a Spanish state-owned shipbuilder that can trace its founding to the mid-18th century. It designs, constructs, integrates, repairs and modernizes ships for both the military and civil sectors. The ninth largest shipbuilder in the world, Navantia boasts a line of products ranging from aircraft carriers and supply ships to patrol boats and submarines.

**Business Challenge**

Navantia’s product development process was disjointed. Instead of keeping track of the changes being made during the product development process, the team would just release new drawings for each change. Not only did this lead to confusion as to which version product developers should use, but it also kept stakeholders across the organization from realizing the full implications of a change they were proposing. In addition, information from various enterprise systems, such as Navantia’s ERP solution, SAP, were not connected – leaving knowledge gaps in the complete product development picture.

**Solution**

Navantia was already using Windchill, PTC’s PLM solution, to help manage its vast amount of product information. However, it now had the opportunity to expand its use of the solution to other use cases. One capability was particularly attractive: Windchill offers advanced out-of-the-box integration with SAP. Navantia was also pleased that Windchill allowed them to define a configured product structure using 3D models and drawings.
“Being able to visualize a ship in 3D is key for all stakeholders throughout the product lifecycle to understand even the most minute details,” says Alfonso Olmos Marin. For instance, manufacturing engineers can use the 3D model for re-grouping the design into different packages according to the building strategy of the vessel and then release these packages into SAP for production management.

Results

“Before change management, it was difficult to realize the impact changes would have on other parts of the product development process,” explains Olmos Marin. “Since implementing a change management process with Windchill, changes must be approved by a small committee of people who are able to easily determine all implications the change will have. Because of this process, many changes that would have ended up hurting the product down the line are now selected. Changes are now systematically approved and automated providing teams across the enterprise with the most accurate, real-time information.”

With the integration of SAP, Windchill has also made it possible for all product and process data to be funneled into a consolidated platform. This has enabled Navantia to significantly improve the standardization of its product development processes across its various shipyards.

Now that Navantia has consolidated its various enterprise systems, it is looking ahead to improve process coordination between engineering and manufacturing using Windchill MPMLink. MPMLink gives manufacturing engineers the tools they need to design and manage all of their process plans while the design team is still finalizing their own models – reducing time to market and improving accuracy and transparency between engineering and manufacturing.

“We have been impressed with the functionality that Windchill allows and are currently expanding our environment with Windchill MPMLink,” says Olmos Marin.

Next Steps

Navantia is continuing to drive its digital transformation through a new initiative that will bring Industrie 4.0 technology to the shipbuilding industry. The 4.0 Digital Shipyard initiative will include the development of a new frigate – the Spanish Navy F110 – that will be designed with smart, connected technology, systems, equipment, operational functions, and services. Says Olmos Marin: “With Windchill, we have now firmly established the foundations which will allow us to implement new technologies and procedures for achieving the Digital Shipyard.”

Click here to learn more about PTC Windchill.