

Shipbuilding

Hyundai Heavy Industries

World's largest shipbuilder creates first digital shipyard environment to improve productivity in Korea

Products

Teamcenter, Tecnomatix

Business challenges

Fast-changing shipbuilding market

Keys to success

Digital shipyard environment created using Tecnomatix and Teamcenter

Single repository for all ship-related data

Digital manufacturing functionality for simulation of production processes

Results

More data sharing and re-use

Enhanced productivity

Less duplication of effort and high design quality

Fewer problems caused by scheduling errors

Using Siemens PLM Software technology, Teamcenter and Tecnomatix, HHI implemented the first PLM infrastructure specialized for shipbuilding, resulting in significantly improved information sharing and efficiency

World's number-one shipbuilder

Hyundai Heavy Industries' (HHI) Shipbuilding Division, based in South Korea, is the world's largest shipbuilding company. With ten large-scale docks and nine "Goliath" cranes, it has the ability to customize ships according to different needs, and continues to develop new shipbuilding technologies with its large research staff.

HHI produces oil tankers, chemical tankers, bulk carriers, oil product tankers, container ships, car carriers, gas tankers, floating production storage and offloading (FPSO) ships, drillships, special ships, battleships and submarines. In addition to the shipbuilding business, HHI is also a recognized global leader in the marine, plant, engine machinery, electrical and electronic, and construction equipment sectors.

In 2005, the shipbuilding division implemented a new 3D computer-aided design (CAD) solution, but there was no connection between the CAD system and the division's enterprise resource planning (ERP) system. Also, most of the design data was managed on personal computers (PCs), causing security problems and duplicate work.



"In the long term, we are considering expanding to a digital shipyard that also supports lifecycle services after ship transfer."

Seung-Seok Kim
General Manager
Hyundai Heavy Industries



These drawbacks pointed out the need for a change, and HHI began searching for an innovative strategy that would help the division react to the fast-changing shipbuilding market and maintain its competitive edge.

Creating a digital shipyard

The search led to product lifecycle management (PLM) technology from Siemens PLM Software, in particular its Tecnomatix® software for digital manufacturing and Teamcenter® software for product data management (PDM). The addition of these solutions allowed the division to achieve the integrated management of shipbuilding-related data and create an environment for design work and process innovation. "To deploy truly innovative product lifecycle management,

we have implemented Siemens PLM Software, which allows integrated management across the whole process of sales, design, production, and after-sale services," says Seung-Seok Kim, general manager at HHI.

Now, bills of materials (BOMs) and 3D JT data created using the CAD system are managed with Teamcenter, making the information easy to share as well as quickly identifiable for possible re-use. Also, the design process has been standardized, creating a solid foundation for enhanced efficiency and better management of design changes. The new approach minimizes errors and helps in keeping to the schedules by managing workflows and creating to-do lists (using Teamcenter).

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Solutions/Services

Tecnomatix

www.siemens.com/tecnomatix

Teamcenter

www.siemens.com/teamcenter

Customer's primary business

Hyundai Heavy Industries is the world's leading shipbuilding company, with marine, plant, engine machinery, electrical and electronic, construction equipment, and other business divisions.

english.hhi.co.kr/biz/ship_over

Customer location

Ulsan

South Korea

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PLM specialized for shipbuilding

The strong production simulation capabilities of Tecnomatix, in conjunction with the use of Teamcenter, have created a truly digital shipyard environment that has improved design and work efficiency. Changes to designs and schedules are automatically managed by the system, which also routes work to the relevant departments, eliminating omissions that previously might have caused extra work. HHI has also been able to enhance the quality of its designs through re-use of existing information.

HHI is proud to have implemented what it understands is one of the largest PLM systems in the world specialized for shipbuilding. Future plans include adding new functionality over time, such as support for mobile computing devices and bringing after-sale services under PLM management. Kim notes, "In the long term, we are considering expanding to a digital shipyard that also supports lifecycle services after ship transfer."

"Siemens PLM Software...allows integrated management across the whole process..."

Seung-Seok Kim
General Manager
Hyundai Heavy Industries

Siemens PLM Software

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