

DIGITAL INTEGRATION OF MANUFACTURING AT THYSSENKRUPP MARINE SYSTEMS

By Lars Wagner

The shipyard thyssenkrupp Marine Systems has commissioned PROSTEP AG's shipbuilding experts to draw up a roadmap for the shipbuilding production area in Kiel to digitally integrate manufacturing. The shipbuilders want to make the coordination processes in development, production and assembly more digitally integrated and thus accelerate manufacturing of steel construction.



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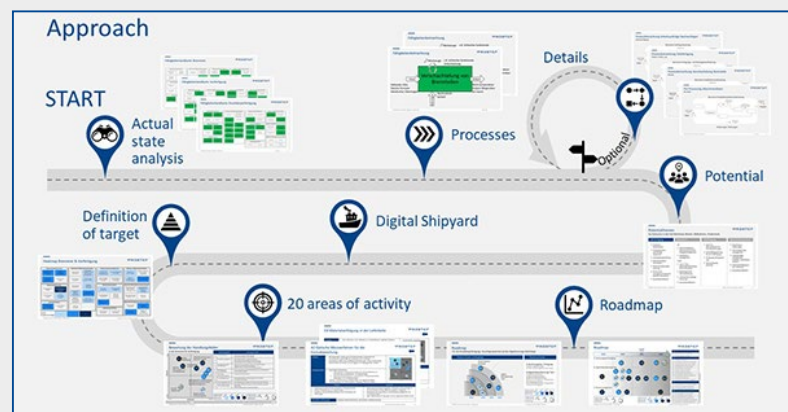
Today, the departments and companies involved in shipbuilding generally still exchange their product information on the basis of drawings and often even paper, which makes coordination time-consuming and error-prone. Consistent information models and the use of digital technologies can significantly improve the integration of cross-departmental processes. A prerequisite for this is the reliable identification of interruptions and bottlenecks in the information flows.

Starting from the existing enterprise architecture, PROSTEP used a standardized method of capability-based potential analysis, which is based on value stream mapping, to create a capability roadmap for shipbuilding production. In a sense, it describes the target status and allows our shipbuilding experts to identify potential for improvement in the information flow and IT support for the communication processes between design, work preparation and steel production.

Together with the project team at thyssenkrupp Marine Systems, PROSTEP's shipbuilding experts have identified three key areas of action with 20 concrete measures.

They are to be implemented in the next project steps:

- Firstly, the establishment of a digital twin of hull construction with the aim of being able to map and control the production processes digitally
- Secondly, the implementation of digital documentation processes for the quality inspections of welding processes and seams
- Thirdly, the digital connection of the semi-finished product and material suppliers to the digital production processes



The interdisciplinary team not only identified the measures, but also prioritized them and arranged them in a roadmap. After a project duration of only six weeks, it was able to present the project results to the central production management of the Kiel shipyard. This was a complete success for the shipbuilding production division, which hopes that it will be able to prioritize its digitization projects at the Kiel location more effectively.



Lars Wagner

+49 6151 9287-0
infocenter@prostep.com