

The background of the slide is a night-time photograph of a large shipyard. Numerous industrial cranes and structures are illuminated with warm lights, creating a stark contrast against the dark sky and the dark water of the harbor. Several ships are visible in the water, some with their own lights on.

INNOVATING THE FUTURE OF DEFENSE WITH STRATEGIC SOLUTIONS

CASE STUDY

About the Customer

Our customer is an engineering and defense technologies leader. Recognized as one of the largest shipbuilders in the world, they have a history of trusted partnerships for the advancement of U.S. national security spanning over 130 years. The company also delivers critical capabilities, including building the most powerful and survivable naval ships ever built, unmanned systems, intelligence, surveillance and reconnaissance (ISR) systems and AI applications.

Project Summary

To continue building the world's most advanced ships, our customer had to acknowledge the increasing complexity of their design, manufacturing and construction processes. They partnered with IndX to address these looming challenges. Through the implementation of Design Automation, Model-Based Definition (MBD), Computer-Aided Design (CAD), Product Lifecycle Management (PLM), Product Manufacturing Information (PMI) and Visual Work Instructions (VWI) by our Digital Engineering experts, the customer was able to significantly enhance their ability to manage the complexity of shipbuilding projects, ensuring high quality and efficiency.

Project Activities

- Implemented Siemens NX for Computer-Aided Design (CAD) and configured tool to automate the ship design and analysis process.
- Integrated the automated Siemens NX application to interface with Siemens Teamcenter foundational PLM database.
- Automated the addition of model-based Product Manufacturing Information to product design geometry set.
- Enabled dynamic associations from PMI to product design model.
- Enabled the automated creation of up-to-date visual work instructions in PLM leveraging model-based definition data.
- Migrated design and engineering data from customer's old Product Definition Management (PDM) platform and CAD into Teamcenter.

Business Drivers

- **Ensure Design Consistency:** Create a single source of truth for product data to streamline operations, reduce errors and improve quality.
- **Enhance Competitiveness with Advanced Technologies:** Use the latest technology to develop complex parts and lead industry innovation.
- **Maximize Software ROI:** Generate multi-functional code to boost software efficiency and return on investment.
- **Reduce Costs and Time-to-Market:** Improve design and manufacturing planning to lower costs and speed up time-to-market.
- **Facilitate Collaboration:** Enhance communication and coordination for successful project outcomes.

More About the Project

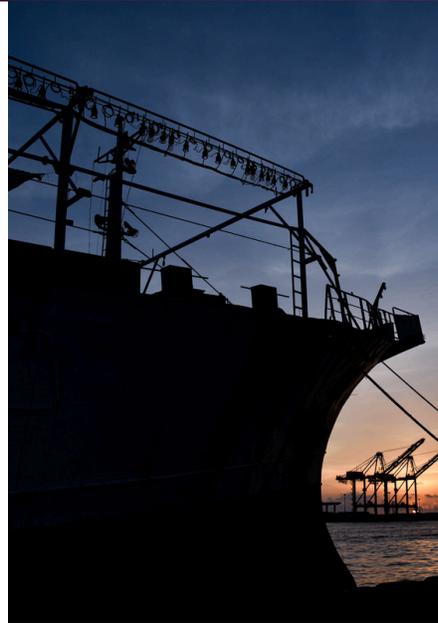
As one of the world's largest shipbuilders looking to enhance their operational efficiency, the customer realized the potential for improved design processes, reduced errors, higher return on investment (ROI) and seamless collaboration through an investment in digital design technologies. They identified their main pain point as the labor-intensive process of creating VWIs, which significantly affected their production schedule for carriers. As a leading expert in digital transformation for Industry 4.0, IndX partnered with the customer to deliver innovative solutions that drove significant strategies leading to design process cost-savings and reduced lead times.

The project aimed to automate Model-Based Definition creation for Visual Work Instructions. The customer determined that VWIs would provide significant benefits in the shipyard but greatly underestimated the effort to manually create them. Their production schedule for carriers was impacted by the lack of VWIs. Knowing our Industries eXcellence team had automated VWIs for a wide range of companies within the same industry, they requested our expert support.

Key project activities included implementing Siemens NX CAD and configuring the tool to automate the ship design and analysis process. Our specialists integrated the application with the Siemens Teamcenter foundational PLM database and automated the addition of model-based PMI to the product design geometry set. Our experts also enabled dynamic associations from PMI to the product design model and facilitated the automated creation of up-to-date visual work instructions in PLM leveraging model-based definition data. Additionally, our team migrated the design and engineering data from the customer's old PDM platform and CAD into Teamcenter, ensuring a smooth transition and enhanced operational efficiency. Overall, the project was accomplished ahead of schedule and resulted in a huge success, ultimately saving the day for carrier production.

IndX's Advantage

Many Aerospace, Space & Defense manufacturers struggle with digital transformation due to limited expertise and resources. With over 10 years of experience, IndX offers unmatched expertise in industry-specific challenges and solutions. Partnering with us ensures a thorough system assessment, gap identification and seamless solution implementation, supporting your journey from start to finish.



IndX is the global division of the Engineering Group specialized in the development, integration and implementation of holistic digital transformation solutions covering the end-to-end lifecycle and supply chain of all industrial products and processes. A leader in digital transformation, the Engineering Group is a global software maker, a system integrator and a leading provider of technology solutions and services. With an annual revenue of over \$1.7 billion and around 15,000 professionals across 70 office locations worldwide, the Engineering Group manages projects in over 50 countries by designing, developing and implementing innovative solutions for the business areas in which digitalization is having the biggest impact today.



Delivering the Digital Thread for Industry X.0



Global System Integrator for All Industrial Sectors



End-to-End Technology Solution & Service Capabilities

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