Accelerating Shipbuilding Business Transformation through Digital Continuity

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Our Audience

- Offshore Owners & Operators
- Maritime Business Services
- Fleet Owners & Operators
- Classification Societies
- Ports & Terminals
- Engineering Procurement Construction Installation
- SHIPYARDS
- Marine Design & Engineering Suppliers
- Naval Architects
- Equipment & Systems Suppliers
- Research & Universities
- Electronics & Software Suppliers
- Electronics & Software Suppliers
- Ports & Terminals
Business transformation drivers...

Business Drivers

Factors leading U.S. Navy to change its way of doing business

- Fleet readiness and availability
- Governments asking for total cost reduction
- Industry 4.0 initiatives
- Sustaining qualified workforce
- New mission requirements to address emerging situations
- Cyber security
… leading to challenges to solve...

Business Objectives
Challenging transformation to overcome

**HOW TO...**
Improve shipyard efficiency & productivity

**HOW TO...**
Improve collaboration across all stakeholders

**HOW TO...**
Maintain & develop technological advancements (knowledge & know how)

**HOW TO...**
Retain & recruit skilled workforce

**HOW TO...**
Increase naval ship capabilities and fleet size

**HOW TO...**
Integrate state of the art IT technologies and security
... through business processes reengineering

BREAKING SILOS
DIGITIZED BUSINESS PROCESSES
BUSINESS PROCESS AUTOMATION
PREDICTIVE SIMULATION & ANALYTICS
STANDARDIZATION & MODULARIZATION

FOR END-TO-END DIGITAL CONTINUITY
Technological pillars of digital transformation

ENSURE END-TO-END NAVAL SHIP LIFECYCLE PROCESS CONTINUITY

PEOPLE

DISCIPLINES

PROCESSSES

SYSTEMS

COLLABORATION

Online Collaborative Business Platform

3D

Unique Ship Master Model

SIMULATION

Integrated Multi-Scale Simulation

INFORMATION

Data-Driven Management
Online Collaborative Platform

CONNECTING PEOPLE...

AND IT SYSTEMS

Dassault Systèmes | The 3DExperience® Company
Leverage the Asset Master Model to define operation, maintenance and repair tasks to perform.

Data Analytics and Dashboarding
Real-Time monitoring of assets' condition and usage.

Digital Simulation
Evaluation the conditions of Marine & Offshore assets.

Unique Ship Master Model (1/2)

Online Digital Collaboration
Accessibility for all stakeholders internally and externally - connectivity to other IT legacy systems.

Real Life Data Capture
Enriching of the Asset Master Model with data captured from sensors.

Digital/3D Work Instructions
Leverage the Asset Master Model to define operation, maintenance and repair tasks to perform.
Unique Ship Master Model (2/2)

Model-Based Enterprise (MBE) – one single digital model

- **Model-Based Concept and Systems Engineering**
- **Model-Based Engineering Design and Simulation**
- **Model-Based Production Planning and Manufacturing Execution**
- **Model-Based Operations and Maintenance Activities**
Integrated and multi-scale simulation

PRODUCT SIMULATION

SYSTEMS BEHAVIOUR

PHYSICAL SIMULATION

ROBOTIC SIMULATION

SHIPYARD SIMULATION

PRODUCTION SIMULATION
Data-Driven Management

- On-Premise Data
- Structured Data
- Future Data
- Off-Premise Data
- Unstructured Data
- Legacy Data
Naval Ship Lifecycle Solution Experiences

Smart Sea Operations
Run safe, reliable and cost effective maritime operations

Build For Sea
Optimize execution of your manufacturing operations

On Time To Sea
Plan, manage, track, and connect at anytime and from anywhere

Winning Bid For Sea
Efficiently innovate and sell new marine concepts

Designed For Sea
Design, optimize, validate, and certify – Efficiently shape your marine project DNA

Optimized Production For Sea
Efficiently plan your marine project manufacturing

Next generation Asset Integrity Management to reduce CAPEX and OPEX exposure of operators

Build For Sea
Optimize execution of your manufacturing operations
Digital Continuity across Naval Ship Lifecycle

Integrating 3DEXPERIENCE solutions for the ship lifecycle:

1. Concept Development
   - Idea / RFP
   - Winning Bid For Sea

2. Basic Design
   - Concept Frozen
   - Designed For Sea

3. Detailed Design
   - Contract Award
   - Optimized Production For Sea

4. Production Planning
   - Class Approval
   - Production Start

5. Production Execution
   - Production Start
   - Build For Sea

6. Commissioning
   - Hand-Over
   - End of service

7. Sea Trials
   - Sea Trials
   - End of service

8. In Service
   - Smart Sea Operations
   - End of Life

9. Decommissioning
   - End of Life

Digital Continuity across Naval Ship Lifecycle

Winning Bid For Sea

Designed For Sea

Optimized Production For Sea

Build For Sea

On Time To Sea

3DEXPERIENCE Marine & Offshore Digital Continuity

- Hull geometric reference
- General arrangements
- System architecture
- Initial discipline designs
- Simulation information

- Structure basic and detail design
- Piping logical/physical design
- Electrical logical/physical design
- Accommodation design
- Design coordination information
- Simulation information

- Production planning
- Work preparation information
- Work instructions
- Robot / machine instructions

- Production schedule
- Work orders
- Quality reports
- As built design

- Operational history/records
- Maintenance history/records
- Inspection history/records

Ship concept ➔ EBOM ➔ PBOM, MBOM ➔ SBOM
Key Driving Partnerships