

Extended Lean Enterprise

Reduces cost and cycle time by extending Lean to the customer and supply base

The Extended Lean Enterprise project was designed to build on the Lean Enterprise Model project, which focuses on internal shipyard processes both on and above the shop floor for naval and commercial shipbuilding and repair. The Extended Lean Enterprise project evaluated the processes between the shipyard and suppliers to improve productivity and decrease costs for both. The project also entailed a similar effort involving interaction between a shipyard and the customer during the pre-production period.

Several avenues of interaction, known as value streams, between the shipyard and suppliers were analyzed for improvement. Five value streams were specifically selected to be examined by public and private shipyards: customer pre-production, material supply, engineering design, engineering material definition and on-board construction and testing. Additionally, three vendors were chosen to participate. They represented steel services, outside services, and consumables. Workshops, on-site training, meetings, streamlining and rigorous execution at the deck plate level were some of the many ways that the project team worked to implement their findings.

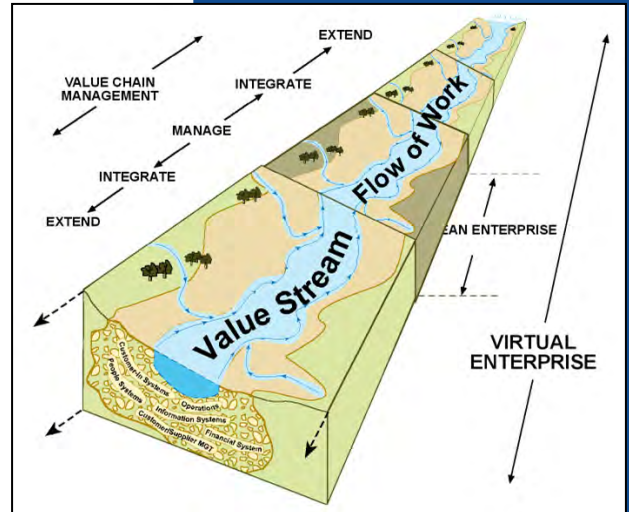
In customer pre-production, the focus was on U.S. Navy aircraft carrier maintenance in the Pacific Northwest as Todd Pacific Shipyards and Navy stakeholders pursued creation of an improved model of operations for Naval maintenance in public/private partnerships.

The project team addressed the engineering value stream by creating a Rapid Engineering Model through the application of lean manufacturing methodologies, particularly to the effective integration of outsourced engineering/design work and other related value streams. The principal objectives were to design waste elimination of the engineering value stream and institutionalize engineering/design management best lean practices into the design process.

In order to achieve significant competitive advantage and best value positions in the industry's materials value chain, lean principles were applied to remove waste in the stream of materials flowing through it. Specific focus was on the materials value chains associated with steel, consumables and services.

The project's efforts to apply lean principles to the standard engineered components value stream features two key cross-functional value streams that exert a high degree of leverage over total company performance: engineering/material standards and purchase specification material procurement.

Finally, the project addressed on-board construction and testing as a means of linking multiple independent value streams associated with various ship construction milestone events in order to obtain optimum work flows.



Objective

To complete a comprehensive model for the application of Lean manufacturing concepts to the extended value chain of the U.S. shipbuilding and repair industry.

Performing Activities

Atlantic Marine, Todd Pacific Shipyards, Bath Iron Works, Puget Sound Naval Shipyard, SUPSHIP Puget Sound, V2R Consulting, P. Jaquith & Associates, Malone Consulting Services, Hagemeyer North America, Moran Environmental Recovery, Namasco, Steve Streifer & Associates

Accomplishments

- Significant savings in man-hours, transaction time, billing cycle, paperwork transactions and other areas.
- Annual savings of \$450,000 for consumables alone at Atlantic Marine.
- The introduction of Lean concepts to some key suppliers involved in the project

Point of Contact

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INDUSTRY INVESTMENT: \$3.7M

NSRP ASE INVESTMENT: \$2.5M

