

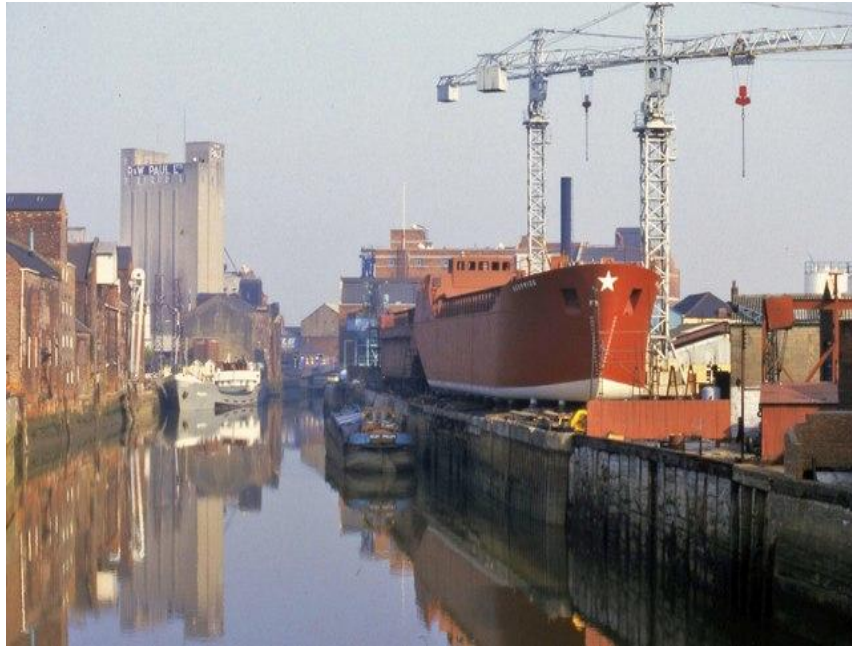
# How IFS Cloud for Shipbuilders Is Evolving With Tsunami Tsolutions

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Shipbuilding is a unique part of the broader manufacturing sector that enterprise resource planning (ERP) software and manufacturing resource planning (MRP) was initially designed for. Because of its focus on asset- and project-based industries, IFS Cloud has become a proven solution for this sector.

IFS Cloud and precursor IFS Applications can handle many of the demanding project-centric challenges faced by:

- An Inland dry dock and repair services on shallow water draft vessels
- Tier one defense contractors
- Dry dock services consultants
- Engineer-procure-construct contractors
- Public shipyards like Norfolk, Portsmouth, Puget Sound and Pearl Harbor
- Commercial shipbuilders or diversified conglomerates
- Floating wind capacity, offshore rig or FPSO fabricators
- Port authorities



Shipbuilding ERP across these subindustries needs to meet requirements that go beyond manufacturing approaches required by many aerospace and defense-related companies. Some of the issues shipbuilders face arise from constrained space for inventory and extended project timelines. Inventory needs shift over project duration, and fluctuating prices for raw materials must all be addressed by ERP.

For example, the US Navy's 2024 plan includes an increase of between 31 and 40 percent in active fleet vessels over the next five years according to the

[Congressional Budget Office \(CBO\)](#). The US Navy will purchase six CVN-78 Ford class aircraft carriers, including the USS Gerald R. Ford at \$13.3 billion which was authorized in 2008 [from dollars appropriated between 2001 and 2008](#).

That one vessel will come in at \$18.6 billion—27% more than when it was authorized in 2008. All shipbuilders, regardless of scale, need to manage cost and schedule variances, which places a premium on ERP's ability to adjust to a changing project plan as it unfolds.

### **The Tsunami Tolutions Approach to Shipbuilding ERP**

As a leading IFS partner focusing on the defense sector, Tsunami Tolutions has delivered and consulted on IFS software implementations and instances at multiple shipyards involved with the full spectrum of services from new vessel construction to refits and recertifications.

Building on the robust project-centric ERP capabilities of IFS Cloud, Tsunami Tolutions implements functionality for disciplines including:

- Finance
- Program financials controls
- Inventory management
- Procurement
- Manufacturing execution/fabrication
- Contract Management
- Earned Value Management reporting

Tsunami's implementation methodology incorporates best practices from other sectors, tailored to shipbuilding to provide customers a more feature-rich, quality product than other ERP solutions. This is in contrast to some software tools billed as "Shipbuilding ERP" which are actually just inventory planning tools. These must be integrated with other systems to allow for the broad functionality required by a shipbuilder, creating unintegrated silos of data.

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Using our domain knowledge and IFS skill sets, Tsunami Tolutions is extending and configuring IFS Cloud to meet the unique needs of our shipbuilding clients and companies like them to an even greater degree than IFS out of the box. And we are exploring new ways transformational technologies can solve problems for companies in this demanding industry.

## **Inventory Traceability**

In our work with IFS customers, Tsunami Tsolutions has helped shipbuilders increase inventory traceability from shipbuilders' distribution warehouses around the yard to the point of issue.

Our clients face inventory portfolios consisting of raw steel, couplings, pipe and cable. These materials are then turned into specific parts through bending, cutting, assembling a block, and palletizing and preparing and then transporting that block to the point of use, which could be a remote port during routine maintenance or an upgrade.

In this setting, it is difficult to ensure ERP can preserve data on the parts and materials as well as the work involved in turning those parts and materials into a finished product or component. Tsunami Tsolutions has addressed this by tying the IFS Project Deliverables module in with shop orders and work orders. This results in an efficient bill of materials encompassing a work package that provides full visibility.

This simplification is essential in a larger project like construction of a naval destroyer or amphibious assault ship, where the volume of parts and subassemblies and the work orders and shop orders number into the thousands. Users can migrate engineering product data into an engineering part structure and wind up with an engineering bill of materials and a drawing list. This data can then flow into IFS Engineering Part Navigator where each can be assigned to individual bills for each hull or section.

## **Efficient Shipbuilding Materials Procurement**

In shipbuilding and maritime industries, inventory management and procurement functionality must be flexible enough to manage inventory, capital and warehousing capacity given long project timelines involved.

In many shipbuilding environments, procurement will be front-loaded at the beginning of the project. This creates three problems. The first is that the design may change as work proceeds, either at the request of the end customer or due to issues revealed after the project commences. This leaves a shipbuilder or maritime organization with excess inventory that may not be usable. Up-front procurement also creates the need for storage and warehousing capacity that increases operating cost. Some shipbuilders will also want to avoid tying up capital in inventory and parts that will not be used for months or years, preferring to keep that for operating capital or other purposes.

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In repetitive manufacturing, lean practices for just-in-time (JIT) inventory pegs procurement against demand from the shop floor. In shipbuilding, with multiple dependencies between project activities, the window within which materials or parts are required will fluctuate. Materials requirements planning (MRP) software for shipbuilders must allow for this.

Tsunami Tsolutions has helped evolve IFS Applications and IFS Cloud to go deeper into project MRP, addressing this need.

Specifically, shipbuilders can now enjoy enhanced part netting capabilities with the added dynamic of priority. With the Tsunami Tsolutions configuration, a shipbuilder can now see their inventory position for a specific project with inventory items arranged by priority given current stock levels and the current timeline. This enables them to stagger procurement and avoid overspending.

### **Streamlining Internal Transactions**

Tsunami Tsolutions, in our work for clients, has added rigor to IFS CLOUD's abilities to tie project requirements in with procurement and shipping. Shipping functionality may be used to send a finished product, assembly or palletized system to an external customer. But internal transfers from one part of a multi-company group to another also must be optimized not just from an inventory location standpoint but from a financial standpoint given unique relationships that may exist between internal divisions or subsidiaries.

IFS Cloud software has long offered strong capabilities for intra-company transactions. In shipbuilding, unique demands placed on both intra-company and customer-facing transactions demand deeper capabilities, and in our work with clients Tsunami Tsolutions has addressed this.

We have consulted with our clients on an enhanced shipment tool that declutters internal relationships and net costing between sites. IFS Cloud users can use the shipment functionality to combine various components, parts or other deliverables into a handling unit so they can be transferred together.

Tsunami Tsolutions has also enhanced the underlying IFS Cloud functionality for inventory reservations for internal transactions. This solves problems caused by internal inventory reservations by adding an internal supplier relationship to the equation rather than just pegging inventory to a specific project.

This has increased efficiency in shipbuilders using IFS Cloud, most notably when dealing with components like cabling. If a reservation process is too rigid, it prevents inventory on a reel from being used for an immediate need when it will not be required under a reservation for months. The most common solution currently is a

telephone tree as procurement and the shop floor piece the puzzle pieces together to see a full picture of inventory availability. The delay and inconvenience of a telephone tree leads some workers to simply take the inventory, leading to potential stock-outs and related delays.

With this enhancement, Tsunami Tsolutions enables our clients to go beyond the hard reservation with the addition of functionality to identify and package inventory items into a handling unit—which using reservations would prevent.

### **Tsunami Tsolutions for Shipbuilders**

Tsunami Tsolutions implements and consults on IFS customers' instances of IFS Cloud. With its specialty in aerospace and defense, Tsunami Tsolutions can go deeper into project- and asset-intensive business models, including shipbuilders and maritime businesses, solving more problems and creating more value than a generalist IFS partner. We forge long-term partnerships with our clients, working with them to determine their unique needs, and pinpointing the best possible solution – be it an off the shelf product or a custom-built solution.

*As Manager of ERP Implementation for Tsunami Tsolutions, Russell Moen has immersed himself in shipbuilding and maritime industries of all sizes and business models. He has been working with IFS Cloud in project-and asset-intensive industries, primarily on the customer side, for more than 10 years.*