

The situation is very different nowadays. Interest rates are low, fuel is costly in dollar terms and in environmental terms, the costs of combusting fossil fuels is becoming immeasurable. JIT is economically wasteful, environmentally harmful and out of date.

WIT (Warehouse-In -Transit) as a new logistical paradigm that is more in tune with economic conditions and environmental imperatives of the current time. Adopting any new paradigm is no less daunting than the disruption caused by its predecessors. There are, however, some real rewards to WIT and significantly, the proposed model is within our industry's current technological capabilities and provides a useful platform for ongoing improvement. WIT is based on five tenets:

1. Many Small Ships Means Fewer Large Ones:

Many Small Ships Means Fewer Large Ones, as ships become more automated, operating expenses will shrink with crew size and insurance expenses, thereby diminishing or eliminating one of the main arguments for economies of scale achieved by the building of larger units. Capital expenditures can be reduced by expanding the universe of potential builders. Voyage expenses can be lowered by reducing fuel consumption (since smaller displacements ships can derive a greater percentage of propulsive thrust from wind). From a shipper's or consignee's viewpoint, a reliable stream of smaller shipments can be advantageous, if no greater ocean freight expense is incurred.

2. Slower Speed Enables Greener Propulsion:

Shippers purchase the economies of the transport system. To match the throughput of mega and ultra-ships, a WIT-fleet would operate a larger number of smaller, slower ships. One advantage is that smaller, slower, lower displacement ships can derive a greater portion of their propulsive thrust from the free wind, compared to larger displacement ships. In some instances, it can be all of the required thrust. However, because wind is intermittent, it can at most be the prime mover in hybrid propulsive system. Nevertheless, this represents a major promotion for wind compared to the secondary role often assigned to it at present. It is in fact as much about restoration of wind propulsion and the fact that ships can be sized as readily to maximize propulsive power available in wind as power plants can be designed to propel sea-going behemoths of questionable economic value and out-size environmental harm.

3. Competitive Construction Means Lower CAPEX Capital Expenditures:

WIT-based fleets will be larger in unit numbers and the large number of shipyards able to quote on their construction should contribute to lower per ship ex-works delivered price. This is anticipated to be the case especially in countries that have both coastal and inland shipbuilding capacity.

4. Competitive Operation Means Lower Freight Rates:

The WIT paradigm provides a more progressive entry point into marine shipping that will create opportunities for aspiring industry participants, and hence serve to moderate freight rates by increasing competition.

5. Small is Beautiful:

A marine supply chain that is more resilient (greater numbers of smaller ships), more flexible (ships able to call greater number of ports), much greener (wind dominant propulsion), and on economic par of mega-ships, would indeed represent a paradigm shift in marine shipping, one that is needed sooner than later if the marine shipping industry to achieve its needed reductions in emissions of GHGs, in particular, CO₂.

Adoption of the WIT marine shipping model certainly would disrupt business-as-usual “bigger is better” that has dominated marine shipping since cheap, highly polluting manufactured power first put to sea in the 19th century. History teaches that change is never easy and often slow; resistance comes from inertia, fear and from powerful forces invested in the status quo. But now climate crisis accelerates the speed of change, and WIT changes the scale, providing entry opportunities for new participants in marine shipping across many sectors and trades. Adopted widely, the WIT model would set a course for marine shipping where the industry plays a leading role in solving the global climate crisis, rather than the current circumstance of incremental and insufficient response to it.

Footnote: WIT (Warehouse-in-Transit) was coined by TransTech Marine Co. under NYSERDA Agreement #25543 (*Assessment of Green Ship Technologies and Plan for Deployment on the Erie Canal / NYS Barge Canal System*, 2015). WIT is not trademarked and may be used freely to encourage widespread consideration and adoption. TransTch Marine Co. / ShipShares LLC do request the courtesy of proper attribution.