MSI's Container Ship Planning Service (CSPS) consists of two distinct yet complementary products:

1. The **CSPS Forecasting Model** is a fully interactive menu-driven Excel-based modelling system, providing easy access to historic and forecasted data for over 800 key container market annual timeseries. It is a powerful analysis and simulation tool that enables the use of alternative assumptions to test market sensitivities and primary risks by modifying a wide range of macroeconomic, supply and demand inputs, and users can evaluate specific vessel cash flows, NPV, IRR and payback against both MSI and user-generated market scenarios.

2. The CSPS model lays the foundation for the 70-80 page quarterly **CSPS Market Reports**, which provide a comprehensive, independent guide to medium-term market developments, complementing historical and forecast data with in-depth text and charts highlighting and analysing market dynamics and risks.

### MSI Sector Forecasting Model Flow

- **(1) Economic Assumptions**
- **(2) Cargo Demand**
  - (Consumption, Production, Trade)
- **(3) Supply Response**
  - (Contracting, Scrapping, etc)
- **(5) Trading Efficiencies**
  - (Speed, Ports, Canals)
- **(7) Market Balances**
  - (Employment Rate, Earnings, Prices)
- **(8) Shipbuilding Model**
  - (Capacity, Productivity, Costs, Prices)
- **(6) Vessel Operating Costs**
- **(4) Fleet Availability**
  - (Deliveries, Storage, etc)
- **(9) Valuation Model**
## Economic Assumptions

- GDP development
- Population trends
- Inflation
- Industrial production
- Foreign exchange rates
- Interest rates

## Cargo Demand

- Analysis of hub and spoke versus direct services
- Disaggregation of tradeflows to a sub-regional or country level
- Cargo projections by route for a specific port, based on projected trends and analysis of local industries
- Berth demand analysis for a port based on cargo flows, turnaround time and queuing analysis
- Analysis of impact of infrastructure improvements (Panama Canal, port infrastructure improvements) on both cargo routings and overall trade volumes
- Translation of cargo demand by route into vessel demand by ship size band based on voyage economics, physical infrastructure constraints and market concentration of service providers
- Short-term tradeflow analysis based on port throughput trends, customs statistics and liner company reporting
- Bespoke cargo demand model construction according to client specifications
- Assessment of offshoring/reshoring dynamics
- Commodity-wise breakdown of tradeflows, future cargo flow projections based on predicted trends in commodity trades
- Calculation of average cargo weights and implications for homogenous intake adjustments on a tradelane basis
- Analysis of trends in containerisation in breakbulk, minor bulk or refrigerated cargoes

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### Loaded Container Lifts by Region (Primary and Transhipment):

- North America
- Latin America
- Western Europe
- East Asia
- South East Asia
- China
- Africa
- South Asia
- Middle East
- Other Asia
- Oceania

### Bilateral Trade Volumes in TEU:

#### Headhaul

<table>
<thead>
<tr>
<th>Region 1</th>
<th>Region 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia-Europe (W/B)</td>
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<td>N America-Oceania (N/B)</td>
<td>N America-Oceania (S/B)</td>
</tr>
</tbody>
</table>

### Intra-Regional Trade Volumes in TEU:

- Intra-Asia
- Intra-L America/Caribs
- Intra-Europe

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## Container Ship Planning Service (CSPS)

**Standard Model and Report Content**

- **(3) Supply Response**
  - **Standard fleet segments covered:**
    - 0.1-1.3k TEU
    - 1.3-2.9k TEU
    - 2.9-3.9k TEU
  - **Supply variables covered by segment:**
    - Newbuilding orders
    - Newbuilding cancellations
    - Newbuilding slippage
    - Vessel deletions
    - End-year Fleet
    - End-year orderbook
    - Fleet age profile
  - Breakeven analysis on potential newbuilding investments
  - Disaggregation of ordering trends by vessel design and vessel owner/charterer
  - Scrapping candidate evaluation based on vessel design, owner and age
  - Subdivision of fleet by engine, hullform design, builder in order to identify potential acquisition candidates

- **(4) Fleet Availability**
  - **Newbuilding vessel deliveries for the following segments:**
    - 0.1-1.3k TEU
    - 1.3-2.9k TEU
    - 2.9-3.9k TEU
    - 3.9-5.2k TEU
    - 5.2-7.6k TEU
    - 7.6-12k TEU
    - 12k+ TEU
  - Total fleet capacity in lay-up
  - Impact of sensitivity analysis based on slippage and cancellation
  - Deliveries disaggregated by design and shipyard
  - Analysis of the vessel cascade, incorporating both physical constraints and voyage economics, to determine vessel demand by region and size band

- **(5) Trading Efficiencies**
  - Average number of voyages per year by trade route.
  - Route by route analysis of trading patterns to determine average distances by tradelane
  - Use of vessel movements data to determine average time spent in port by route, region and vessel type
  - Comparison of vessel movements data and sailing schedules to determine average vessel speed by route

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**On Demand / Consultancy Services**

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Container Ship Planning Service (CSPS)

Standard Model and Report Content

(6) Vessel Operating Costs

- Vessel operating costs broken down by component and vessel size:
  - Crewing
  - Repair & Maintenance
  - Insurance
  - Administration / overhead
  - Lubes & Stores
  - Peer group analysis / benchmarking of client vessel operating costs

(7) Market Balances

- 1-year T/C rates for Eco and non-Eco vessels by size:
  - 1.0-1.1k TEU
  - 1.6-1.8k TEU
  - 2.0-2.1k TEU
  - 2.5-2.8k TEU
  - 3.2-3.6k TEU
  - 4.2-4.4k TEU

- Vessel-specific forecasts for earnings and values, based on ship, fuel consumption, reefer capacity and other vessel specifics
- Sensitivity analysis for eco-premia based on bunker price, homogenous intake, operational flexibility etc
- Sensitivity analysis on asset pricing based on newbuilding prices, scrap prices, vessel life expectancy, macroeconomic scenarios and supply side responses
- Impact of technical and regulatory changes on pricing for existing assets
- Analysis of the differential impact of cascading on earnings and prices for each vessel size segment of the containership fleet
- Freight rate analysis, disaggregating freight rates into vessel costs, fuel costs, voyage costs and terminal handling charges. Modelling impacts of higher bunker prices or charter rates on freight rates on a route-by-route or operator-by-operator basis

(8) Shipbuilding Model

- Newbuilding, secondhand (5 / 10 / 15 / 20-year old) and scrap values for Eco and non-Eco vessels by size:
  - 1.0-1.1k TEU
  - 1.6-1.8k TEU
  - 2.0-2.1k TEU
  - 2.5-2.8k TEU
  - 3.2-3.6k TEU
  - 4.2-4.4k TEU
  - 4.8-5.2k TEU
  - 6.5-7.0k TEU
  - Asset values for larger vessels can be found in the model only.

- The CSPS Model contains a powerful vessel valuation tool that allows users to evaluate specific vessels, including asset values, cash flows, NPV, IRR and payback against both MSI and user-generated market scenarios.

MSI's Shipbuilding Model (SHIPS) is a fully interactive, menu-driven Excel-based modelling system, forecasting newbuilding contracting volumes and prices across all shipping sectors. Further information about this service can be found here.

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Containership Valuation Model Inputs

**Vessel Characteristics**
- Vessel Name
- Nominal Capacity (TEU)
- Size (Deadweight Tonnnes)
- Quoted Price (Min USD)
- Reefer Capacity (TEU)
- Homogenous Intake at 14 Tonnes (TEU)

**Technical Specifications**
- Geared or Gearless
- Ice Class
- Eco or Non Eco
- Fuel Saving (%)

**Flag and Price**
- Vessel Flag
- Shipyard Tier

**Chronological Aspects**
- Year of Build
- Acquisition Year
- First Trading Month
- Vessel Life Expectancy (Years)
- Disposal Year
- Last Trading Month

**1. REFERENCE DATA FOR A #### TEU VESSEL**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Newbuilding Contracting Price</td>
<td>($ Mn)</td>
</tr>
<tr>
<td>0 Year Old Price</td>
<td>($ Mn)</td>
</tr>
<tr>
<td>5 Year Old Price</td>
<td>($ Mn)</td>
</tr>
<tr>
<td>10 Year Old Price</td>
<td>($ Mn)</td>
</tr>
<tr>
<td>15 Year Old Price</td>
<td>($ Mn)</td>
</tr>
<tr>
<td>20 Year Old Price</td>
<td>($ Mn)</td>
</tr>
<tr>
<td>Scrap Price</td>
<td>($ Mn)</td>
</tr>
<tr>
<td>1Yr T/C Rate (k/Day) - Modern Vessel</td>
<td>($ k/Day)</td>
</tr>
<tr>
<td>Operating Costs (k/Day) - Modern Vessel</td>
<td>($ k/Day)</td>
</tr>
</tbody>
</table>

**2. PROJECT DATA FOR: ####**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Age (Years)</td>
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<tr>
<td>Resale Value</td>
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</tr>
<tr>
<td>Depreciated Value</td>
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</tr>
<tr>
<td>(i) COST FORECASTS ($ Mn/pa)</td>
<td></td>
</tr>
<tr>
<td>Crew</td>
<td>Repair &amp; Maintenance</td>
</tr>
<tr>
<td>Lubes &amp; Stores</td>
<td>Administration</td>
</tr>
<tr>
<td>P &amp; I Insurance</td>
<td>Total Operating Cost</td>
</tr>
<tr>
<td>H &amp; M Insurance</td>
<td></td>
</tr>
<tr>
<td>(i) EARNINGS COMPONENTS</td>
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<tr>
<td>Vessel Resale ($ Mn)</td>
<td>Op. Costs ($ k/day)</td>
</tr>
<tr>
<td>Offhire (Days/Year)</td>
<td>User Cost of Capital (%)</td>
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<tr>
<td>1 Yr T/C Rate ($ k/day)</td>
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<tr>
<td>(ii) INCOME/EXPENSE ($ Mn/pa)</td>
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<tr>
<td>Operating Revenues</td>
<td>(+) Vessel Resale</td>
</tr>
<tr>
<td>(-) Operating Expenses</td>
<td>(+) Net Cash Flows</td>
</tr>
<tr>
<td>(-) Capital Outlay</td>
<td>Cumulative Balance</td>
</tr>
</tbody>
</table>

| (iii) FINANCIAL RATIOS   |                        |
| Price to Earnings        | NPV by Year ($Mn)      |
| IRR by Year              |                        |

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Select Scenario and Continue
Back to Container Valuation Main Menu