SERVICES
CHRISTOPH VITZTHUM
GROUP VICE PRESIDENT, WÄRTSILÄ SERVICES
Services – Net sales per quarter

MEUR

2001 2002 2003 2004 2005 2006 2007 2008 2009

Q1  Q2  Q3  Q4

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CHRISTOPH VITZTHUM

24 March 2010
# Fleet Development

## Anchored* (Reported Navigation Status At Anchor)

<table>
<thead>
<tr>
<th></th>
<th># Ships</th>
<th>% Total Fleet</th>
<th></th>
<th># Ships</th>
<th>% Total Fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current</td>
<td>1 M Ago</td>
<td>6 M Ago</td>
<td>Current</td>
<td>1 M Ago</td>
</tr>
<tr>
<td>Crude</td>
<td>493</td>
<td>470</td>
<td>466</td>
<td>23.6%</td>
<td>22.6%</td>
</tr>
<tr>
<td>Oil product</td>
<td>344</td>
<td>349</td>
<td>347</td>
<td>24.0%</td>
<td>24.3%</td>
</tr>
<tr>
<td>LNG</td>
<td>54</td>
<td>57</td>
<td>82</td>
<td>16.5%</td>
<td>17.2%</td>
</tr>
<tr>
<td>LPG</td>
<td>116</td>
<td>121</td>
<td>115</td>
<td>22.7%</td>
<td>23.7%</td>
</tr>
<tr>
<td>Chemical</td>
<td>64</td>
<td>70</td>
<td>70</td>
<td>18.8%</td>
<td>20.3%</td>
</tr>
<tr>
<td>Bulk</td>
<td>1113</td>
<td>1103</td>
<td>944</td>
<td>17.3%</td>
<td>17.3%</td>
</tr>
<tr>
<td>Ore</td>
<td>22</td>
<td>18</td>
<td>16</td>
<td>19.4%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Vehicle</td>
<td>72</td>
<td>74</td>
<td>100</td>
<td>11.5%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Gen Cargo</td>
<td>677</td>
<td>642</td>
<td>617</td>
<td>14.9%</td>
<td>14.1%</td>
</tr>
<tr>
<td>RO-RO</td>
<td>31</td>
<td>28</td>
<td>41</td>
<td>6.8%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Container</td>
<td>606</td>
<td>583</td>
<td>623</td>
<td>13.6%</td>
<td>13.1%</td>
</tr>
<tr>
<td>Chem/oil</td>
<td>526</td>
<td>525</td>
<td>506</td>
<td>19.8%</td>
<td>19.8%</td>
</tr>
<tr>
<td>Passanger/Cruise</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>2.9%</td>
<td>3.4%</td>
</tr>
</tbody>
</table>

*Source Bloomberg (AISLive). More than 25,000 vessels (>299 GT) required to report their positions under coverage.

## Idle** (No Movement for 19 days for Containerships, others 35 days)

<table>
<thead>
<tr>
<th></th>
<th># Ships</th>
<th>% Total Fleet</th>
<th></th>
<th># Ships</th>
<th>% Total Fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current</td>
<td>1 M Ago</td>
<td>6 M Ago</td>
<td>Current</td>
<td>1 M Ago</td>
</tr>
<tr>
<td>Bulk</td>
<td>435</td>
<td>405</td>
<td>353</td>
<td>6.1%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Car Carrier</td>
<td>90</td>
<td>103</td>
<td>108</td>
<td>12.1%</td>
<td>13.8%</td>
</tr>
<tr>
<td>Container</td>
<td>613</td>
<td>613</td>
<td>614</td>
<td>12.8%</td>
<td>12.8%</td>
</tr>
<tr>
<td>LNG Carrier</td>
<td>25</td>
<td>21</td>
<td>33</td>
<td>7.4%</td>
<td>6.2%</td>
</tr>
<tr>
<td>LPG Carrier</td>
<td>135</td>
<td>124</td>
<td>116</td>
<td>11.3%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Reefer</td>
<td>118</td>
<td>126</td>
<td>165</td>
<td>14.4%</td>
<td>15.3%</td>
</tr>
</tbody>
</table>

**Source Lloyd’s MIU. Around 15,000 vessels (>299 GT) on line for the specified sectors.

## Vessels Broken Up

<table>
<thead>
<tr>
<th></th>
<th># Ships / Week</th>
<th>20</th>
<th>15</th>
<th>10</th>
<th>5</th>
<th>0</th>
</tr>
</thead>
</table>

## Fleet Average Speed

<table>
<thead>
<tr>
<th></th>
<th>Knots</th>
<th>10.8</th>
<th>10.6</th>
<th>10.4</th>
<th>10.2</th>
<th>10.0</th>
<th>9.8</th>
</tr>
</thead>
</table>

Note: Active Fleet = Total Fleet Less Anchored or Idle
Data from Bloomberg (AISLive) and Lloyd’s MIU (MIU)
Market Trends

- Repair not maintenance
- Large conversion projects / upgrades on hold
- Shipping companies focusing on reducing costs
- Especially larger owners interested in partnerships
- Environmental concerns due to tightening legislation
What it takes

Customer Understanding

Products

Customer Information

Local Presence
Services offering portfolio

- Engine Services
- Propulsion Services
- Electrical & Automation
- Boiler Services
- Environmental Services
- Operations & Management
- Training Services

Wärtsilä Services becomes the most valued business partner by understanding customers’ problems and assembling the appropriate solution to solve them.
Wärtsilä Services

70 countries • > 160 locations • > 11’000 people • > 7’000 field service forces
Current Field Manpower in Wärtsilä Services

70 countries • > 160 locations • > 11’000 people • > 7’000 field service forces
Offering adapted to customer’s needs

We have experience in assembling the appropriate products and services in customised solutions.

Solution Complexity

Basic Products and Services
- Spare Parts
- Field Services
- Technical Services

Packages
- Service Products
- Standard Packages

Solutions & Agreements
- Advanced Packages
- Project & Contracting
- Service Agreements

Partnerships & Integrations
- ‘Trend setter’
- Integration into customers’ value chain
Focus on the Customer and on Value

From technical to COMMERCIAL ENGINEERING

From focus on CAPEX to FOCUS ON OPEX

From total cost of ownership to TOTAL PROFIT OF OWNERSHIP
• Traditionally segmentation has been done based on geography, industry or product
• Shift towards segmentation based on customers’ needs
• Few enough segments to enable standardisation / modularisation
Grouping, packaging and commercialisation of offering

• Potential analysis by need segment
• Offering potential and gap analysis
• Grouping of services
• Development of services
• Commercialisation

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Global Support

Wärtsilä’s local resources
- Field Manpower
- Workshop
- Local expertise
- 3rd party

Onboard expertise
- Safety manning level onboard
  - chief & engineers
  - electrician
  - automation/telecom
- Assistance from onshore
- Warehouse / logistics fixed agreement

Wärtsilä’s Expertise
- Central database
- Back-office experts

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How does Wärtsilä do it?

When we can measure and analyse, we can optimise the operation and predict the maintenance need.

**Data from equipment**
- Send the data to centralised database

**Operating Crew reporting**
- Wise LT report
- Inventory
- Work done
- Unscheduled
- Water, Fuel & Lube oil analysis

**Measurements**
- Execution of inspections according to schedule
- Report findings

**Maintenance Planning**
- Analysis from:
  - CBM reports
  - Measurements
- Based on analysis update
  - Work cards
  - Spares scheduling
  - Workforce scheduling
  - Logistics and coordination
- After updates report:
  - Recommendations
  - Actions needed

**Send the data to centralised database**

**Online Report**

**Risk evaluation with Contract Manager and Customer**

**When we can measure and analyse, we can optimise the operation and predict the maintenance need.**

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1. Air emissions

- **EU SO\(_x\) regulation / 1.5 % sulphur in fuel/ passenger ships in EU + all ships in SECA**
- **Differentiated tonnage tax / NO\(_x\)/ Norway**
- **Differentiated fairway & harbour fee / NO\(_x\), SO\(_x\)/ Sweden**
- **EU SO\(_x\) regulation / 0.1 % sulphur in fuel/ EU ports + all inland waterways**
- **IMO SO\(_x\) regulation / Sulphur in fuel/ SECA 2010 & 2015, globally 2020**
- **Marine CO\(_2\) cap / IMO Energy Efficiency Operational Index**
- **Marine CH\(_4\) cap / CH\(_4\) slip/ marine gas engines**
- **US-EPA Tier III & IV / NO\(_x\), PM, THC/ US flagged, eng<30 l/cyl**
- **IMO Tier III on NO\(_x\)/ new ships in NECA**

2. Ballast water

- **2004-02 Convention for the Control and Management of Ships Ballast Water & Sediments was adopted by consensus at the IMO Diplomatic Conference (London, 13th February 2004).**
- **2009-10 ratified by 18 countries representing 15 % world tonnage.**
- **2010 The estimate year for ratification, after which a vast majority of ships will need to install Ballast Water Treatment system**

3. Oily water separation (OWS)

- **IMO Marpol Annex VI MPEC 107 (49) : OWS required on all vessels > 400 GWT**
  - Oil content in discharged water less than 15 ppm
### Pollution streams

#### Opportunities and focus areas for Wärtsilä Services

<table>
<thead>
<tr>
<th>Air</th>
<th>Water</th>
<th>Soil</th>
<th>Solid Waste</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>Oily water</td>
<td>Contamination</td>
<td>Waste gener.*</td>
<td>Noise</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>Black water</td>
<td>- Chemical</td>
<td>Incineration of waste from ship</td>
<td>Radio</td>
</tr>
<tr>
<td>CO</td>
<td>Grey water</td>
<td>- Alteration</td>
<td></td>
<td>Light</td>
</tr>
<tr>
<td>PM</td>
<td>Ballast water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO\textsubscript{2}</td>
<td>Sludge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoke</td>
<td>Water Ionisation and evaporation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each of these pollutions have their remedies/technologies:

- **Green**: Today's active areas of product/solution developments in Wärtsilä
- **Green with dot**: Immediate focus
- **Orange**: Discovery
- **Blue**: Follow-up

* Incineration of waste from ship

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