ROAD AHEAD IN SHIP POWER

JAAKKO ESKOLA, GROUP VICE PRESIDENT
WE ARE THE LEADING PROVIDER OF SHIP POWER SOLUTIONS. WE COMMAND A STRONG POSITION IN ALL MAIN MARINE SEGMENTS AS THE SUPPLIER OF HIGHLY RATED SHIP MACHINERY AND SYSTEMS.
Solutions to minimize operating and voyage costs
• High fuel prices and shortage of skilled personnel are pushing up operating and voyage costs
• Solutions that minimize fuel consumption are demanded and there is a huge opportunity for automation and remote control systems that may reduce the need of personnel onboard ship

Reliability
• Introduction of new technologies to reduce emissions and fuel consumption calls for support and service

Safety is becoming more and more important
• Safety includes many different aspects: safety in cargo handling, safety of crew, safety during operations

Growth of Population
Increasing sophisticated customers
Alternative Energy sources
Environmental requirement and awareness
Environmentally sound solutions will be highly demanded:

- Solutions to reduce emissions (SO\textsubscript{x}, NO\textsubscript{x}, CO\textsubscript{2} and PM)
- Alternatives to HFO: gas, biofuels, fuel cells
- Flexibility in fuel usage: dual fuel
- Solutions to maximize efficiency of products and components
- Optimization of vessel design and operations - Not only is component efficiency important but the ships overall efficiency and performance must be optimized to reduce fuel consumption and emissions
Ship Power strategy

• Be a trusted partner through the life-cycle from design to services for all types of marine and offshore applications, we command a strong position in all main marine segments
• Create more value via increased understanding of customers’ businesses and needs
• Broaden our expertise and capabilities through organic growth, partnerships and acquisitions in areas of bridge, automation and ship design services
• Strengthen our position and be presence in key market areas especially in Asia and the other BRIC countries giving emphasis to lifecycle customer support
• Develop cost efficient and environmental sound superior solutions being strong on total energy consumption, operational performance and safety aspects

Example:
Acquisitions in the field of Ship Design, the latest being Conan Wu and Vik-Sandvik
Customer segments have proved to be a success

- Attractive value proposition implies deep knowledge about both customer’s and customer’s customer businesses and ability to generate solutions which help them to achieve their business goals.
- The strong believe in understanding our customers businesses, is getting stronger in these turbulent times in the financial world.
Wärtsilä has the most extensive value proposition in the industry

Segment specific
- Concepts
- Applications
- Project Execution Models
- System Integration Capabilities
- Engineering Services
- Third party supplies

R&D
- Ship design
- Product Engineering
- Strategic Purchasing
Design is key to early entry and full lifecycle presence

Wärtsilä’s envisaged lifecycle entry point

- Operator sees need(s) for vessel
- Owner decides to invest in vessel
- Owner contacts ship designer to discuss requirements and specifications to meet operator needs
- Designer develops concept design – new / demanding application may require several iterations; known ones may use existing designs
- Basic and detailed design follow
- Performance, cost, equipment and yard choices are discussed and decided
Wärtsilä in Ship Design

Among top three in
Offshore Service • Tugs and Workboats • Special Vessels • Targeted sub-segment within Merchant
Ambitions in Ship Design

Among top three in the world when it comes to global reach, presence, capabilities and offerings **No 1. independent Ship Design company in the world**

*Known for Energy, Environment and Economy*

⇒ #1 in Environmental Ships ⇒ #1 in Efficient Ships ⇒ #1 in Extreme Ships
Wärtsilä Ship Design can compete with a unique offering

<table>
<thead>
<tr>
<th>Wärtsilä offering</th>
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<tbody>
<tr>
<td><strong>Operators</strong></td>
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<tr>
<td>Offer ship design optimized for Wärtsilä equipment</td>
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<tr>
<td>• ‘Non-commodity’ vessel categories</td>
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<td>– First offshore, special vessels</td>
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<td>– Later selected ‘mission-critical’ merchant segments (e.g., container vessels)</td>
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<td><strong>Owners</strong></td>
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<td>• Allow change of equipment provider</td>
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<td><strong>Equipment and design also independently from each other</strong></td>
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<td><strong>Yards</strong></td>
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<td>Best-in-class design, detailed engineering and building support, with total equipment solutions (incl. 3rd party)</td>
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<td><strong>Ship designers</strong></td>
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<td>Support as equipment provider, more knowledgeable than before</td>
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Wärtsilä Ship Power’s offering covers all key segments

Merchant
Offshore
Cruise and Ferry
Navy
Special Vessels
Orderbook 30.9.2008

- Offshore: 36%
- Special vessels: 7%
- Cruise & Ferry: 7%
- Navy: 2%
- LNG: 8%
- Bulk: 8%
- Container: 9%
- Tankers: 9%
- RoRo: 3%
- Cargo: 12%
- Merchant: 49%
Ship Power market - vessel order development

Source data: Clarkson Research Services
The market is changing

Orderbook and Contracting

Shipbuilding

- Size of orderbook is on a record-high level:
- Current orderbook is over 4 times bigger that average 1996-2007
- Contracting activity has slowed down during 2008, but in a long-term perspective it remains strong:
- Average contracting 1996-2007 = 90,26 million DWT
- 2008 contracting = 142,85 million DWT
The market is changing

Commodity markets

- Commodity indexes have declined during the last months
- Uncertainty about world economy and demand for commodities in the future
The market is changing

Main competitors have been investing in increasing production capacity

• MAN Diesel's plans to increase annual production by two fold to 500 units by 2011 and reduce production time. The target is to triple the capacity in the long run
• Rolls Royce is expanding its premises for Bergen engines and upgrading its Brazilian unit
• Caterpillar to invest USD 300 million in doubling annual production capacity
• Niigata, Schottel, Brunvol, Texas Thrustmaster and Rolls Royce have been investing in capacity expansion for production of propellers
The market is changing

Commodity markets
- Commodity indexes have declined during the last months
- Uncertainty about world economy and demand for commodities in the future

Competition
- Main competitors have invested in expansion of production capacity

Shipbuilding
- Size of order-book is on record-high level
- Contracting activity slowed down during 2008

- Countercyclical ordering for specialized vessels can be expected
- Market fundamentals for Offshore and Special Vessels remain strong
- Head to head competition is increasing, giving Wärtsilä the opportunity to differentiate and show the different thinking in terms of Solution provider
We have experienced a unique and interesting period in shipping

- The market has seen the biggest boom ever
- Expansion of the Chinese and other emerging economies (India, Brazil) created huge demand for raw materials and a huge surge in export of manufactured goods
- Freight rates and time charter earnings were very strong during the last years

The present and the future

- Uncertainty about the global economy has increased
- Uncertainty has clearly impacted investments in new vessels as well as plans to invest in new yards
- Importance of environmental issues with enforcement of regulations at global and local levels is increasing
- Energy and fuel prices expected to stabilize—in the long term—at relatively high levels
- Expansion of fleet creating demand for skilled personnel
Cancellations, delays and financing risks…

- Financing of orderbook: difficulty in assessing what percentage of the orderbook has secured financing, different actors estimate that 50 to 75% of the current orderbook might need financing (Morgan Stanley, Clarkson)
- Delays in deliveries seems to be a bigger issue than cancellations, 20-25% of projects in orderbook are expected to be delayed (Clarksons)
- Identified risk areas for cancellations:
  - Small tankers < 20,000 DWT
  - Small and midsized bulk carriers
  - China greenfield yards, Korean second tier yards, India, Vietnam, Turkey
Identified cancellations in 2008 are roughly 1% of the orderbook – same level as in the previous years – could rise up to 5% in 2009/2010.

Cancellations as a % of orderbook have been in historical low levels in the past 3 years, a rise in cancellations as predicted (5% of orderbook) would be “back to normal”.

Source: Clarkson Research Services
Four major areas of uncertainty

Environmental Issues
How will environment related legislations affect shipping and ship equipments?

Global and Regional Economic Development
How will the world economy and regional economies develop and how will this affect trade and globalization?

Energy Sources and Fuels
Which will be the fuels used to power ships in the future?

Marine Technologies and Ship Design
Which kind of propulsion machinery will be used in the future? What will the Ship of the future look like?

Wärtsilä is well positioned to meet the future

- R&D activities strongly committed and proactive in developing sound environmental solutions
- A highly diversified customer base ensures that risk from business cyclicality is mitigated
- A global network ensures that we are present in regions with strong economic development
- Fuel flexibility is among our competitive edge’s
- Ship Design and R&D constantly innovating
Recent successes for Ship Power
Wärtsilä Ship Design unit has also completed designs for a new anchor handling vessel, a platform supply vessel, and a bulk carrier, all of which afford fuel consumption reductions of as much as 25 percent.
Major ship design orders from China

A Deepwater Engineering Survey Vessel, a Multi-Purpose Support Vessel, a Diving Support Vessel, and an Emergency Towing Vessel will be designed.
Wärtsilä has signed a contract with AGB Shipyard in India. The contract includes total system deliveries for three, new large Multi-Purpose offshore support vessels of VS 483-design.

Scope of supply:
4x 6L26 Generatingset
2x FS275 Steerable thrusters
3x FT250 TunnelThrusters
1x FS175/MNR Retractable thruster

Total diesel electric system, including:
Integrated Automation System (IAS) , Power Management System (PMS), Frequency Converters, Electrical Motors Switchboards
The Low Loss Concept was developed by Wärtsilä to save both fuel and installation costs, as well as reducing emissions and the amount of space required for component installation.

This innovation also delivers greater redundancy in the electrical propulsion system, and makes commissioning work easier.

It has already established considerable support from owners in the offshore vessel segment.

95m passenger / vehicle / container vessel will be the first ever application of the Low Loss Concept (LLC) in a passenger vessel.
Wärtsilä propulsion packages for Wilson bulk carriers, to reduce NO\textsubscript{x} emissions. Shandong Baibuting Shipbuilding will also arrange space for the future installation of Wärtsilä Selective Catalytic Reactor (SCR) units.
Wärtsilä to supply energy efficient systems to Aker Yards for five vessels: one LNG-fuelled Platform Supply Vessel, two Anchor Handling Tug Supply Vessels and two Platform Supply Vessels
Where is the world going?