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Marketing & New Concept Development
Merchant Ships Business Unit

Latest Developments of Cruise Ship Design

IMAM 2017
International Maritime Association of the Mediterranean

9 - 11 October 2017
Lisbon – Portugal
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• Who we are

• Cruise Vessel Market Situation

• Latest Developments on Cruise Vessels Design
Who we are

Video clip

Littoral Combat Ship “Freedom”
US Navy
World’s fastest steel frigate
Fincantieri at a glance

#1 Western designer & shipbuilder(1) with 230 years of history & >7,000 ships built

- €4,429 mn revenues
- ~ €25.5 bln total backlog(2,3)
  - €20.4 bln backlog
  - €5.1 bln soft backlog

Revenues by geography
- Italy: €4,429 mn, 16% of revenues
- RoW: 84%

Employees by location
- Italy: ~19,200 employees
- RoW: 41%

- 20 shipyards across 4 continents
- ~19,200 employees
- ~80,000 subcontractors

Note: all figures reported at December 31, 2016, except for backlog and soft backlog which are referred to 1H 2017 (at June 30, 2017)
(1) By revenues, excluding naval contractors in the captive military segment. Based on Fincantieri estimates of shipbuilders’ revenues in 2015
(2) At June 30, 2017
(3) Sum of backlog and soft backlog; soft backlog represents the value of existing contract options and letters of intent as well as contracts in advanced negotiation, none of which yet reflected in the order backlog
Fincantieri market positioning

- World most diversified player active in all high value added segments
- Balanced exposure to Cruise, Naval and Offshore
- Significant share of revenues coming from foreign countries

Business diversification

<table>
<thead>
<tr>
<th></th>
<th>Cruise</th>
<th>Naval</th>
<th>Ferries</th>
<th>Mega-Yachts</th>
<th>Repair &amp; Conversion</th>
<th>Offshore</th>
<th>Equipment &amp; Systems</th>
<th>After sales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

2016 revenues breakdown

- By client’s country
  - Italy 16%
  - RoW 84%
  - €4.4 bln

- By end market (1)
  - Cruise 44%
  - Naval 25%
  - Offshore 20%
  - Equipment, Systems and Services 11%
  - €4.4 bln

Source: Company information
(1) Breakdown calculated based on revenues gross of consolidation effects
### Business units, products and positioning

<table>
<thead>
<tr>
<th>End markets</th>
<th>Main products</th>
<th>Positioning</th>
<th>Revenues 2016(4)</th>
<th>Backlog(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruise</td>
<td>• All cruise ships <em>(from contemporary to luxury)</em></td>
<td>• #1 worldwide (~45% market share(4))</td>
<td>€ 2,078 mln (44.2% on total)</td>
<td></td>
</tr>
</tbody>
</table>
| Naval       | • All surface vessels *(also stealth)*  
• Support & Special vessels  
• Submarines | • Leader:  
− #1 in Italy(2)  
− Key supplier for US Navy & Coast Guard(3)  
− Key supplier for Qatar Emiri Naval Forces | € 1,156 mln (24.6% on total) | € 18,512 mln (58 ships) |
| Other       | • High tech ferries  
• Large mega-yachts | • Leading player:  
− High tech ferries  
− Large mega-yachts | € 12 mln (0.3% on total) | |
| Offshore    | • OSV  
• Drilling units  
• Fisheries/aquaculture | • Leading player in high-end OSVs | € 960 mln (20.4% on total) | € 1,403 mln (44 ships) |
|             | • Offshore wind  
• OPV  
• Expedition cruise  
• Special vessels | | | |
| Equipment Systems & Services | • Marine systems, components & turnkey solutions  
• Ship interiors  
• Naval services  
• Ship repairs & conversions | • Leading player worldwide | € 495 mln (10.5% on total) | € 1,288 mln |
|             | | | | |

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(1) By oceangoing cruise ships > 10,000 gross tons ordered in the 2004 – June 2017 period (including VARD). Source: Fincantieri analysis based on IHS Lloyd’s Fairplay – Shippax data and Company press releases  
(2) For all the large ships and excluding minesweepers and small ships below 45 m in length  
(3) For medium size ships, e.g. patrol vessels and corvettes  
(4) Breakdown calculated based on revenues gross of consolidation effects  
(5) At June 30, 2017
### Cruise ships: Fincantieri, Vard products and clients

<table>
<thead>
<tr>
<th>Segment</th>
<th>Cruise Ships</th>
<th>Fincantieri</th>
<th>Vard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luxury Niche</td>
<td>Silversa Muse</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Le Lyrial</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Upper Premium</td>
<td>Viking Sky</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Riviera</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premium</td>
<td>Nieuw Amsterdam</td>
<td>39</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Majestic Princess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contemporary</td>
<td>Carnival Breeze</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Costa Diadema</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Crown Princess 1990

- Cruise ships: Fincantieri, Vard products and clients

**Main customers**

- Seabourn
- Regent
- Carnival
- Silversea Cruises
- Ponant
- Hurtigruten
- Hapag-Lloyd
- Oceania Cruises
- Viking Ocean Cruises
- Princess Cruises
- P&O Cruises
- Virgin Cruises
- MSC
- NCL
SHIPBUILDING – CRUISE SHIPS: PRODUCTION OVERVIEW (MAIN LOCATIONS) (1)

Italy

- 4 shipyards devoted to cruise Shipbuilding

Monfalcone
Area ('000m²): 787
Employees: 1,420
Dock: 350x56m
Quays: 1,065m
Crane capacity: 1,000/400t

- Large ships

Sestri
Area ('000m²): 242
Employees: 600
Dock: 284x42m
Quays: 900m
Crane capacity: 200t

- Medium / large ships

Marghera
Area ('000m²): 388
Employees: 1,010
Dock: 334x54m
Quays: 660m
Crane capacity: 400t

- Large ships

Ancona
Area ('000m²): 359
Employees: 535
Dock: 240x55m
Quay: 270m
Crane capacity: 500t

- Small ships

Source: Company information

(1) Employees as of August, 2016

- The same ship can be built simultaneously in different shipyards
- Different size of the shipyards allows for better utilization of production capacity
80 ships delivered
# Shipbuilding – Cruise

## Target Market / Positioning

- Worldwide cruise ships market
- Global leader with presence in all cruise market segments and niches
- Well established technological and project management capabilities

## Products

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luxury / Niche(1)</td>
<td>Cruise ships (10 – 60,000 Gross Tonnage and up to 750 passengers) expressly designed for exclusive cruises operated on less popular routes (e.g. high cultural / environmental value)</td>
</tr>
<tr>
<td>Upper Premium</td>
<td>Cruise ships (40 – 90,000 Gross Tonnage and 750 – 1,500 passengers) dedicated to destination-oriented cruises with upscale on board service on route / destinations out of reach for premium / contemporary ships</td>
</tr>
<tr>
<td>Premium</td>
<td>Large cruise ships (90 – 150,000 Gross Tonnage and 1,500 – 3,600 passengers) dedicated to a wide range of cruise routes with higher on board standards and services than contemporary ships</td>
</tr>
<tr>
<td>Contemporary</td>
<td>Largest cruise ships (over 130,000 Gross Tonnage and over 3,600 passengers) for mainstream cruises with standard routes and on board features representing the destination itself</td>
</tr>
</tbody>
</table>

(1) Terminology used in the cruise sector to indicate cruises with niche characteristics (e.g. arctic destinations, coastal routes, regional routes)

## Client Portfolio

<table>
<thead>
<tr>
<th>Category</th>
<th>Luxury / Niche</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SLABOURN</td>
<td>Holland America Line</td>
</tr>
<tr>
<td></td>
<td>Regent</td>
<td>PRINCESS CRUISES</td>
</tr>
<tr>
<td></td>
<td>Ponant</td>
<td>P&amp;O CRUISES</td>
</tr>
<tr>
<td></td>
<td>SilverSea</td>
<td>Celebrity Cruise Line</td>
</tr>
<tr>
<td></td>
<td>Hurtigruten</td>
<td>P&amp;O CRUISES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hapag-Lloyd Cruise</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Upper premium</th>
<th>Contemporary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oceania Cruises</td>
<td>Carnival</td>
</tr>
<tr>
<td></td>
<td>Viking</td>
<td>Costa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MSC</td>
</tr>
</tbody>
</table>

- **Italy:**
  - Monfalcone
  - Marghera
  - Sestri Ponente
  - Ancona

- **Romania:**
  - Tulcea

## Shipyards

- **Italy:**
  - Monfalcone
  - Marghera

- **Romania:**
  - Tulcea

- **Italy:**
  - Monfalcone
  - Marghera

- **Romania:**
  - Tulcea
Cruise Vessel Market Situation

MSC SEASIDE
Cruise vessel under construction
Monfalcone Shipyard - Italy
Cruise Ships: steady long-term passenger growth

**Dynamics of cruise market**

- The cruise industry has proven to be remarkably resilient, having continued to grow throughout the 2008-2010 economic crisis.

- Cruise tourists on total tourists at only 2% and growing.

- Cruise penetration (cruise passengers on national population) is still very low: at a mere 5.3%, Australia has the highest penetration in the world.

- In view of the positive market outlook of the leisure industry and of the increasing penetration of the cruise sector, the latter is expected to significantly grow in the future, in particular thanks to the development of some emerging markets: China and Australia.

**Dynamics of global tourism and cruise passengers**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total tourists</th>
<th>Cruise tourists</th>
</tr>
</thead>
<tbody>
<tr>
<td>'08</td>
<td>1,360</td>
<td>24.7</td>
</tr>
<tr>
<td>'16</td>
<td>1,800</td>
<td>30.6</td>
</tr>
<tr>
<td>'20</td>
<td>49.0</td>
<td>49.0</td>
</tr>
<tr>
<td>'30</td>
<td>152</td>
<td>152</td>
</tr>
</tbody>
</table>

% cruise guests/tourists:
- '95: 1.1%
- '96: 1.4%
- '97: 1.6%
- '98: 2.0%
- '99: 2.3%
- '00: 2.7%
- '01: 2.3%
- '02: 2.7%
- '03: 2.7%
- '04: 2.7%
- '05: 2.7%
- '06: 2.7%
- '07: 2.7%
- '08: 2.7%
- '09: 2.7%
- '10: 2.7%
- '11: 2.7%
- '12: 2.7%
- '13: 2.7%
- '14: 2.7%
- '15: 2.7%
- '16: 2.7%
- '20: 2.7%
- '30: 2.7%

**Key source market penetration rate development**

- USA
- Australia
- UK & Ireland
- Canada
- Germany
- Italy
- Scandinavia
- Spain
- China

Cruise passenger growth: recently CLIA positively modified its 2016 projection to 24.2m ocean cruisers.

New emerging markets (China, Australia) should fuel demand, enabling the achievement of a 30.0 M passengers in 2020.
Cruise ships demand

- After a long period of high and constant level of orders characterized by a substantial balance between demand and production capacity of European yards, in 2008 the economic crisis caused a sudden and severe demand drop
- Due to the investment programs’ cuts and the complete freeze of the credit market, in 2008-2009 only 4 ships were ordered causing progressive workload reduction
- 2010-2013 was still a very challenging period characterized by:
  - ship-owners reluctance to order which caused shipbuilders to accept orders at challenging prices
  - introduction of new safety regulations, which make obsolete the previously developed projects, forcing shipyards to offer several prototypes, with substantial technological breakthrough and operational complexity

Cruise ship orders

### # of ships

<table>
<thead>
<tr>
<th>Year</th>
<th>Fincantieri</th>
<th>Other shipbuilders</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2005</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2006</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>2007</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>2008</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2009</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2010</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>2011</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>2013</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>2014</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>2015</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>2016</td>
<td>17</td>
<td>8</td>
</tr>
</tbody>
</table>

2014 - today: from «Buyer’s Market» to «Builder’s Market»

- Recovery in demand for cruises and increase of cruise prices in the "traditional" market in relation to the improvement of the US and European economic situation
- Opening of new cruise markets (e.g. China and Australia): major players decided to invest heavily in these markets, to get first mover advantages
- Replacement of vessels built in the years 1990-2000, now obsolete and less attractive for the final customers
- Entry of new cruise operators with strategic and innovative approaches, aiming to differentiate from competitors, delivering a new type of cruise experience to specific target customers
- Production capacity already filled through 2020: no slots available before 2023/2024
- For the shipyards, balanced ratio of prototypes vs sister ships
Cruise ships: demand cycles

NEW ORDERS: 2001 - 2016 (1)

The order-book of main European shipyards doubled compared December 2007 (8.9 Mil Gt vs 4.2 Mil Gt)

Global order-book in LB = 45% of Cruise fleet (225,000 LB vs 500,000)

Overcoming of the crisis (2010 - 2013)

Booming market (> 2014)

(1) MOA & LOI included. Option excluded
Cruise Ships: Owners – “evolution” over time from a few to many groups

Comparison between the 2004 and 2017 orderbook (#, excluding ships below 10,000 gt)

2004: there were 4 ship owners who had ordered new ships

2017: at the moment, there are 17 ship owners who have ordered new ships (31 brand!)
Shipbuilding – Cruise ships: competitive positioning

Market share(1)

Number of ships, Jan 2004 - Dec 2014
Tot. # ships 2004-2014 = 101

<table>
<thead>
<tr>
<th>Company</th>
<th>Market Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fincantieri</td>
<td>46.5%</td>
</tr>
<tr>
<td>Meyer Werft</td>
<td>26.7%</td>
</tr>
<tr>
<td>STX France</td>
<td>13.9%</td>
</tr>
<tr>
<td>Meyer Turku</td>
<td>7.9%</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>3.0%</td>
</tr>
</tbody>
</table>
**CRUISE SHIPS**

**Shipbuilders**

- Main European shipbuilders
- **Genting** acquires its own cruise shipbuilding yards to build its cruise fleet
- Small-Medium yards move into expedition/luxury cruise segment
- China shipbuilders
Focus on Next Cruise Ships
Cruise vessels dimensions during the years
Cruise: market clustering trends

Description

- **Clustering of ship sizes towards:**
  - Large ships (c.130k-180k GRT): addressed to premium and contemporary segments and focus on broadening on board entertainment. Demand on a large scale for ships > 200K Gt requires a “new structure / organization” of the whole cruise sector
  - Medium-small size ships (< 70k GRT): luxury, niche and upper premium segments

- **Evolution of service to clients:**
  - Higher passenger expectations for on board entertainment
  - Enrichment of “wow” features ("ship as a destination")
  - New premium with fee services (e.g. food, SPA and wellness)

- **Higher technological complexity due to:**
  - New safety rules (Safe Return to Port)
  - New strict environmental rules

Source: Shippax, Fincantieri analysis
## CRUISE SHIPS

### Order-book by size

<table>
<thead>
<tr>
<th>Size</th>
<th>%</th>
<th>Total Nr.</th>
<th>Total Lower Berth</th>
<th>Total KGT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expedition / Niche</td>
<td>17%</td>
<td>13</td>
<td>3.308</td>
<td>216.2</td>
</tr>
<tr>
<td>GT 40k-170k</td>
<td>60%</td>
<td>45</td>
<td>134.446</td>
<td>5.433,3</td>
</tr>
<tr>
<td>GT &gt;=170k</td>
<td>23%</td>
<td>17</td>
<td>87.384</td>
<td>3.274,4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>75</td>
<td><strong>225.138</strong></td>
<td><strong>8.923,9</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expedition / Niche</th>
<th>Total Nr.</th>
<th>Total Lower Berth</th>
<th>Total KGT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kleven</td>
<td>2</td>
<td>1.060</td>
<td>36,0</td>
</tr>
<tr>
<td>MV Werften</td>
<td>3</td>
<td>600</td>
<td>75,0</td>
</tr>
<tr>
<td>Uljanik Shipyard</td>
<td>1</td>
<td>228</td>
<td>16,0</td>
</tr>
<tr>
<td>VARD</td>
<td>7</td>
<td>1.420</td>
<td>88,7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>13</td>
<td><strong>3.308</strong></td>
<td><strong>216,2</strong></td>
</tr>
</tbody>
</table>
ANTARTIC –
Cruises to the Ends of the World
China Market Prediction

China: 1 million Chinese Cruise Passengers in 2015
(1)
2.3 million foresee in 2017 (2)
4.5 million foresee in 2020 (3)
8-10 million predicted in 2030 (3)

1) Cruise & Yacht Industry Association-CCYIA
2) Chart Management, may 2016
3) Chinese Ministry of Transport (MOT)
4) Star Cruises, may 2016

the 2030 value predicted is a still low Market Penetration Factor (0.5%-1%) (4) if compared with Cruise traditional ones (i.e. 3.5% in North America)
Why the “vessel of tomorrow” are different ....?

- Increase in Safety
- Environment & Sustainability
- Energy efficiencies & Management
- International & National Rules and Regulations
- New available technology
- Economic’ Factors
Increase in Safety

Safe return to port (SRTP)

Probabilistic damage stability vs Deterministic

SOLAS Alternative Design

Lifesaving Technology

Polar Code
GLOBAL ATTAINED INDEX TO BE SATISFIED

With adoption of SOLAS 2020 the new required index \( R \) to be satisfied depends on number of persons on board only.
As a consequence for a passenger ship the capability to survive in case of damage shall be higher for ships with high LSA

<table>
<thead>
<tr>
<th>Persons on board</th>
<th>( R )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( N &lt; 400 )</td>
<td>( R = 0.722 )</td>
</tr>
<tr>
<td>( 400 \leq N \leq 1,350 )</td>
<td>( R = N / 7,580 + 0.66923 )</td>
</tr>
<tr>
<td>( 1,350 &lt; N \leq 6,000 )</td>
<td>( R = 0.0369 \times \ln (N + 89.048) + 0.579 )</td>
</tr>
<tr>
<td>( N &gt; 6,000 )</td>
<td>( R = 1 - (852.5 + 0.03875 \times N) / (N + 5,000) )</td>
</tr>
</tbody>
</table>

Where:

\( N = \) total number of persons on board.

To satisfy the probabilistic requirement

\[ A \geq R \]

**Attained Index**
Based on stability performance of the ship

**Required Index**
Based on persons on board
ATTAINED INDEX  
\[ A = 0.2 \cdot A_L + 0.4 \cdot A_P + 0.4 \cdot A_S \]

The Attained Index is calculated at minimum, partial and maximum draught of the vessel

For each draught the Attained Index is calculated according the following formula:

Thousands damage scenario shall be investigated and for each damage case \( p \cdot r \cdot v \) are to be calculated based on the dimension of breach. These factors are based on damage statistics

Factor \( s \) represent the capability of the ship to survive after flooding due to the damage case under investigation. Here following some examples of actions to improve the \( s \) factor:

- Increase the Beam
- Increase the height of bulkhead deck
- Reduce the length of watertight compartments
- Reduce the VCG
**Environment & Sustainability**

- **Green Design**
  - "pollution reduction" ➔ develop new products characterized by low emissions of harmful substances and noise with better environmental compliance;
  - New Rules and Regulations about
    - the CO2 emissions,
    - the energy efficiency design index,
    - the switch to low sulphur fuels,
    - the radical amendments to MARPOL VI (NOx, SOx and particulate),
    - the extension of ECA (Emission Control Area), …

---

Aree ECA (Emission Control Areas) existing and under discussion

- **North American ECA**, came into effect from 1 August 2012 (200 nMile)
- **Baltic and North Sea** already ECA since 2010
- Mediterranean under discussion (presumably not before 2015)
Regulations imposing sulfur limits according to Annex VI by MARPOL

- Low Sulfur fuels
- Scrubbers
- SCR
- ...
Engine Casing

**BEFORE**

- Silencers (Compact Type)
- Exhaust Gas Boiler

**AFTER**

- Scrubber bypass valve
- Common Scrubber
- Silencer
- Exhaust Gas Boiler
- SCR Reactor
- Urea Mixing Pipe

Fincantieri
• Energy efficiencies & Management

Energy Efficiency Design Index (EEDI):

Mandatory for new ships
Use of more energy efficient equipment and engines
Performance-based mechanism

- Specific Formula

\[
\left( \prod_{f} \left( \frac{1}{\eta} \sum_{P_{\text{mech}}} \sum_{\text{SFC}_{\text{mech}}} \right) \cdot \text{P}_{\text{ele}} \cdot \text{SFC}_{\text{ele}} \right) \cdot \left( \sum_{f} \left( \sum_{P_{\text{prop}}} \sum_{\text{SFC}_{\text{prop}}} \right) \cdot \text{C}_{\text{prop}} \cdot \text{SFC}_{\text{prop}} \right) \cdot \left( \frac{\text{DWT}}{\eta} \right)
\]

Ship Energy Efficiency Management Plan (SEEMP):

Mandatory for all ships
Manage and improve ship and fleet efficiency performance
Best practices for fuel efficient ship operation
• Energy efficiencies & Management

![Power Distribution Pie Chart]

- Propulsion Systems: 48%
- E.R. Auxiliaries: 20%
- Air Conditioning & Vent.: 15%
- Heating, cooling, ventilation: 10%
- Hull/Hotel Services: 5%
- Electrical systems: 2%
- Lighting: 2%
- Safety: 1%

Energy saving performances as a main design target.

...more than 150 potential energy savings interventions in several areas have been identified:

- Hydrodynamics
- Heating, cooling, ventilation
- Electrical systems
- Mechanical & thermodynamics
- Hull service systems
• Micro Bubble air lubrication
• Optimization of combustion in large diesel engine
• Development of small size dual fuel diesel engines
• High efficiency heat recovery systems
• Hybrid engines (Lithium and Hydrogen batteries)
• Non propulsive hotel loads optimization
• Fuel cells
• POD propulsion / Diesel-Electric Propulsion
LNG as Fuel: ENVIRONMENTAL BENEFITS

Is SAFE
Safety Record System Design

Is RELIABLE & SECURE Technology Reserves
( North America, Russia, Africa, ME, etc)

Is GREEN and CHEAPER
Zero SoX, almost No NoX, Reduced CO2, No visible smoke, no sludge …
➢ Greater volumes required for LNG storage, since the energy density of LNG is around 60% of the value relevant to the fuel oil,

➢ Variability of the natural gas characteristics

➢ Lack of a fueling infrastructure in many ports.

➢ Safety requires the compliance with stringent Rules

LNG on board containment systems

LNG is transported in liquified state. At atmospheric pressure means -162° C
IGF Code

- New mandatory code for ships using gases or other low-flashpoint fuels entered into force on 1 January 2017
- The IGF Code aims to minimize the risk to ships, crews and the environment
- New training requirements for seafarers

80 cruise ships reported on order

13 cruise ships LNG-fuelled on order
Cruise Ship Development Trends

Yacht-like Ships

Panamax

Post Panama

Handy Size 40-60,000 GT

Contemporary 120-160,000 GT

Mega Ships
Impact on design and operation with a potential increase of sizes and building cost

Higher costs can be justified only by higher profitability and better return of investment

Creativity, outstanding Design capability, Investment on R & D ....

INNOVATION!
Safe Harbor Statement

This Presentation contains certain forward-looking statements. Forward-looking statements concern future circumstances and results and other statements that are not historical facts, sometimes identified by the words “believes,” “expects,” “predicts,” “intends,” “projects,” “plans,” “estimates,” “aims,” “foresees,” “anticipates,” “targets,” and similar expressions. The forward-looking statements contained in this Presentation, including assumptions, opinions and views of the Company or cited from third party sources, are solely opinions and forecasts reflecting current views with respect to future events and plans, estimates, projections and expectations which are uncertain and subject to risks. Market data used in this Presentation not attributed to a specific source are estimates of the Company and have not been independently verified. These statements are based on certain assumptions that, although reasonable at this time, may prove to be erroneous. By their nature, forward-looking statements involve a number of risks, uncertainties and assumptions that could cause actual results or events to differ materially from those expressed or implied by the forward-looking statements. If certain risks and uncertainties materialize, or if certain underlying assumptions prove incorrect, Fincantieri may not be able to achieve its financial targets and strategic objectives. A multitude of factors which are in some cases beyond the Company’s control can cause actual events to differ significantly from any anticipated development. Forward-looking statements contained in this Presentation regarding past trends or activities should not be taken as a representation that such trends or activities will continue in the future. No one undertakes any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Market data used in this Presentation not attributed to a specific source are estimates of the Company and have not been independently verified. Forward-looking statements speak only as of the date of this Presentation and are subject to change without notice. No representations or warranties, express or implied, are given as to the achievement or reasonableness of, and no reliance should be placed on, any forward-looking statements, including (but not limited to) any projections, estimates, forecasts or targets contained herein.

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Pursuant to art. 154-Bis, par. 2, of the Unified Financial Act of February 24, 1998, the executive in charge of preparing the corporate accounting documents at Fincantieri, Carlo Gainelli, declares that the accounting information contained herein correspond to document results, books and accounting records.