



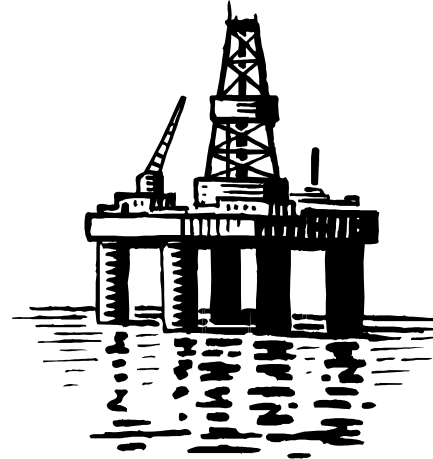
# Wärtsilä's Offshore Offering and Markets

Group Vice President, Wärtsilä Ship Power Jaakko Eskola

Capital Markets Day, 16 June 2006

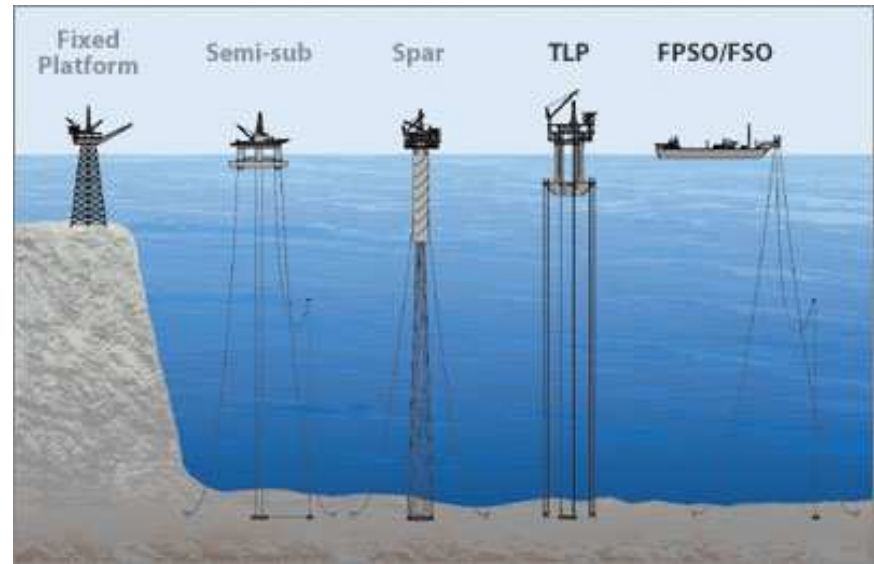
# Terminology: Offshore drilling

- Offshore drilling is basically divided into shallow water and deepwater.
- In shallow water, *jack-up* rigs, standing with their feet on the seabed are used to drill the oilwells.
- In deeper water, floating drilling units are used. There are two basic types; *Drillships* and *Semisubmersible* drilling rigs.
- The deepwater rigs keep their position using steerable thrusters and a redundant satellite guided Dynamic Positioning (DP) system.
- Modern deepwater rigs can drill in water depths of 12,000 feet (about 4 km) and can drill up to 15 km into the seabed.



# Terminology: Offshore Oil & Gas production

- Offshore oil production began in 1940's offshore Louisiana. Fixed platforms were initially used, but as developments have gone deeper, floating production facilities have become the main solution for offshore development.
- In addition to deepwater developments, FPSO/FSOs have a number of other applications such as remote locations and security of offshore storage.
- There are mainly four types of floating production facilities: *FPSO/FSO, TLP, Spar and Semi-submersible*.
- With increasing dependence on offshore energy resources, use of floating production facilities are growing rapidly.



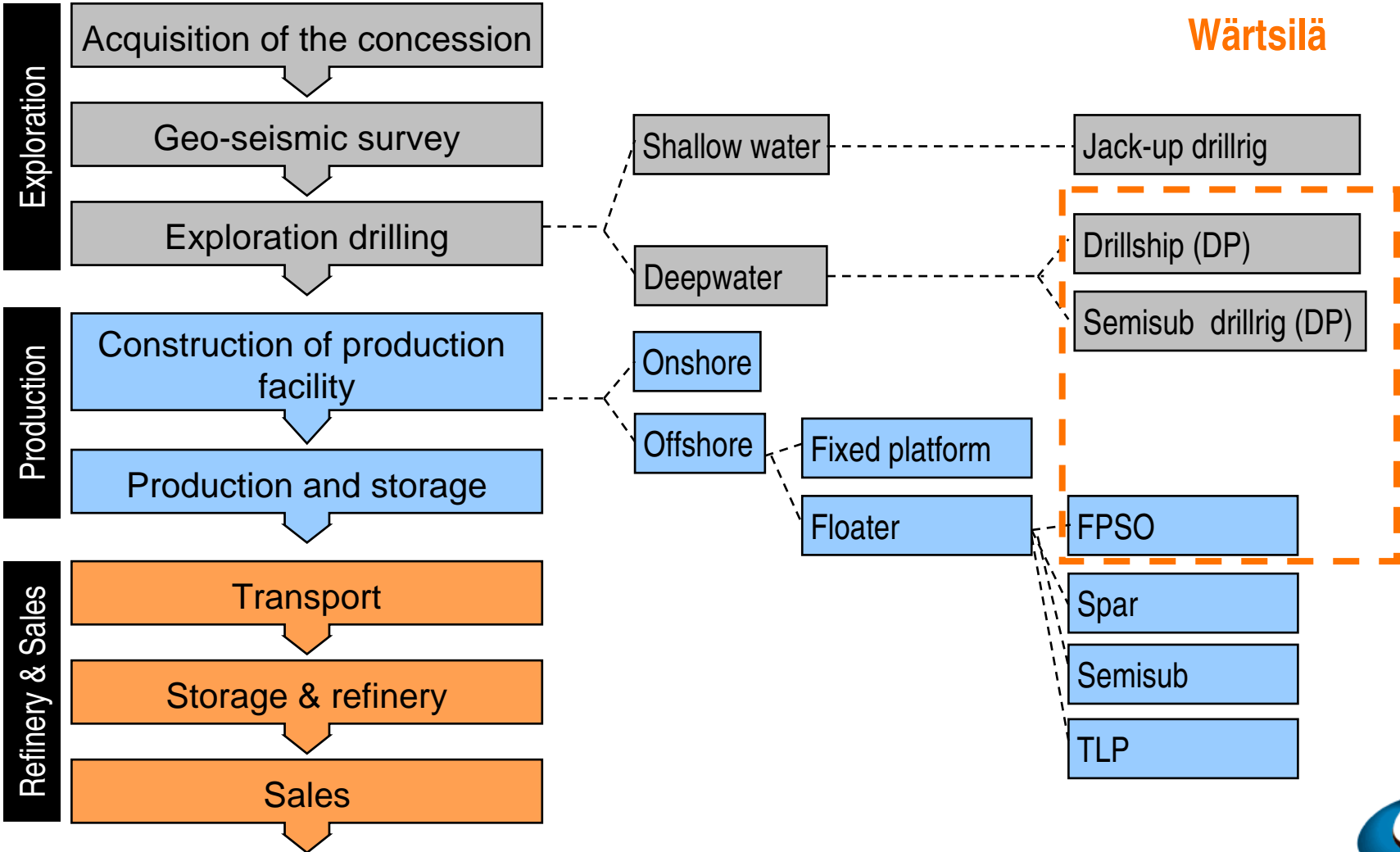
TLP = Tension Leg Platform

FPSO = Floating Production Storage and Offloading (vessel)

FSO= Floating Storage and Offloading (vessel)

# From "upstream" to "downstream"

Area of interest for Wärtsilä





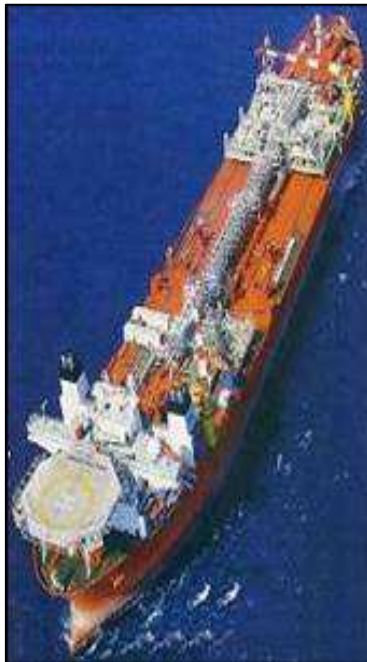
# Wärtsilä's Offshore Market Segment and its sub-segments

Offshore Drilling rigs



- ✓ Engines
- ✓ Thrusters
- ✓ Electrical & drives **NEW!**

Oil production vessels  
"FPSO"



- ✓ Engines
- ✓ Thrusters
- ✓ Electrical & drives **NEW!**
- ✓ Vessel automation **NEW!**
- ✓ Topside automation **NEW!**
- ✓ Complete commissioning **NEW!**

Construction vessels



- ✓ Engines
- ✓ Thrusters
- ✓ Electrical & drives **NEW!**

Anchor handlers



- ✓ Engines
- ✓ Thrusters
- ✓ Electrical & drives **NEW!**

Supply vessels

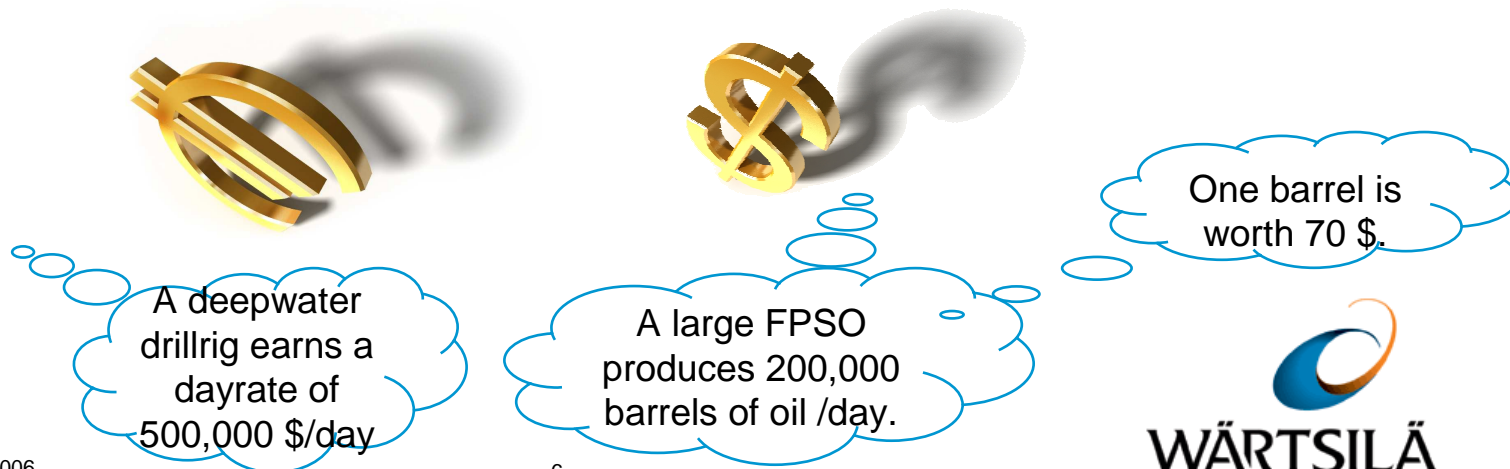


- ✓ Engines
- ✓ Mechanical propulsion

# Wärtsilä value added in the oil & gas segment

## RELIABILITY

- The offshore industry is a very **capital intensive industry** with huge economic impact in case of downtime.
- Even more important is the **safety** aspect. Reliable machinery systems is a prerequisite to run a safe operation.
- Wärtsilä has a **track record of proven reliability** in the offshore industry



# Wärtsilä value added in the oil & gas segment

## ABILITY TO SERVE CUSTOMERS ANYWHERE

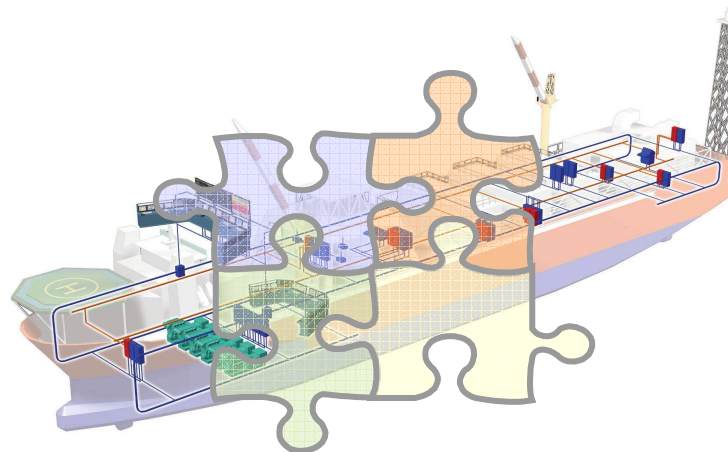
- Supports long term availability and reliability of the operation.
- Offshore rigs **operate in remote areas** (Nigeria, Angola, west of Shetland, Brazil, etc.).
- Wärtsilä has a **truly worldwide professional service organisation** that can respond to the service needs of these customers in terms of quick response and service operations in line with the safety requirements of the Oil & Gas customers.
- Wärtsilä has **trained field engineers with** the required **safety training certification** in the relevant network companies.



# Wärtsilä value added in the oil & gas segment

## ABILITY TO UNDERTAKE LARGER SYSTEM DELIVERIES

- Wärtsilä is taking distinct steps to grow the capabilities to **serve the market with larger system deliveries**.
  - The addition of Wärtsilä Automation Norway adds key products to our portfolio (Power distribution systems, Power drive systems, automation systems) plus a stronger relationship to some key customers in the offshore sector.
  - The co-operation with Emerson Process Management further strengthens our value proposition specifically in the floating production segment. Through this, we can offer also the topside automation and safety system.
  - The addition of Total Automation significantly strengthens our capabilities to undertake complete commissioning of large systems.
- Wärtsilä has **capabilities to manage large and demanding projects** professionally.
  - Has been our role in the Power business for many years. Now possible to leverage these abilities wider in the Ship Power market.

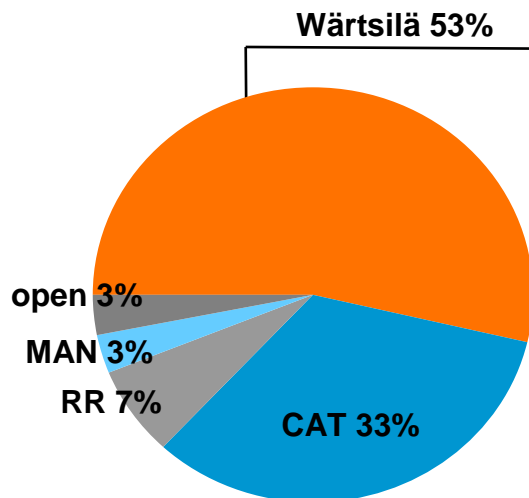




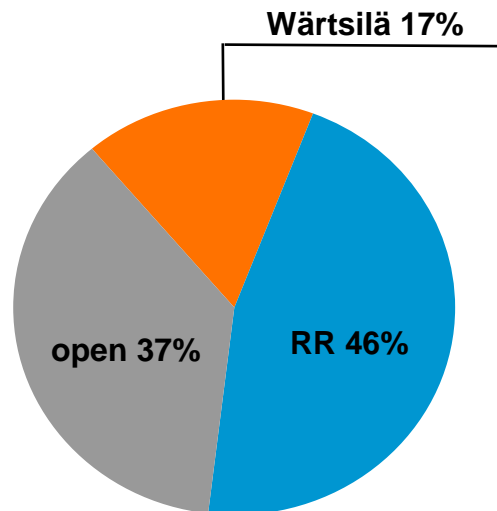
Newbuild market activity May 2005- May 2006:

- 9 drillships
- 21 semisub drillrigs

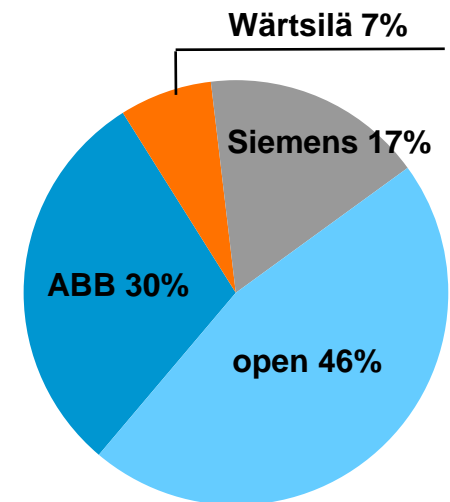
## Engines



## Thrusters



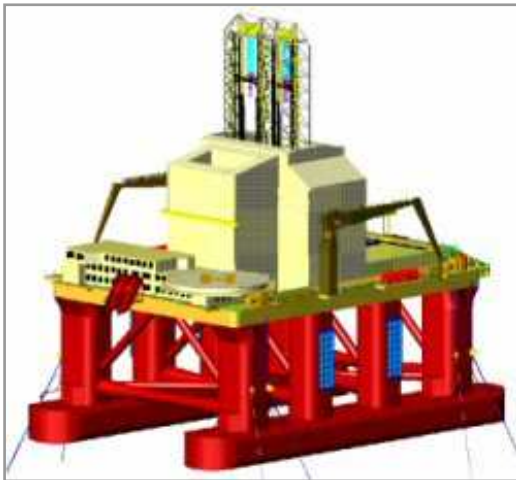
## Electric & Drives



Total business ~230 MEUR

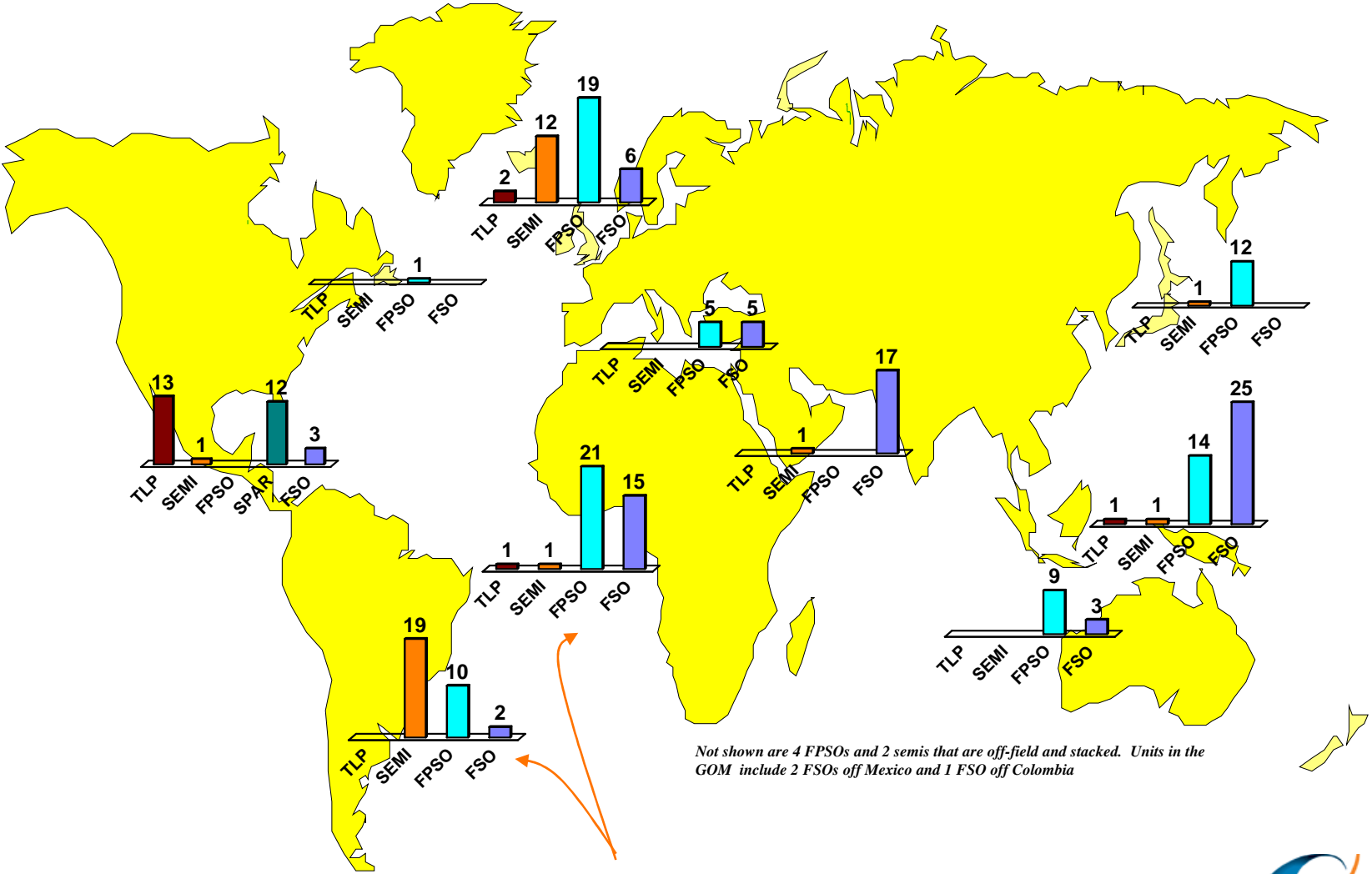


- Maersk Drilling “DSS21”
- Keppel FELS NB280 & 281
- Wärtsilä scope:
  - 8 x 16V26 gensets
  - 8 x FS2500 steerable thrusters



- Aker Drilling “H6e”
- Aker Yards
- Wärtsilä scope:
  - Electrical power distribution
  - Thruster drives
  - Vessel automation

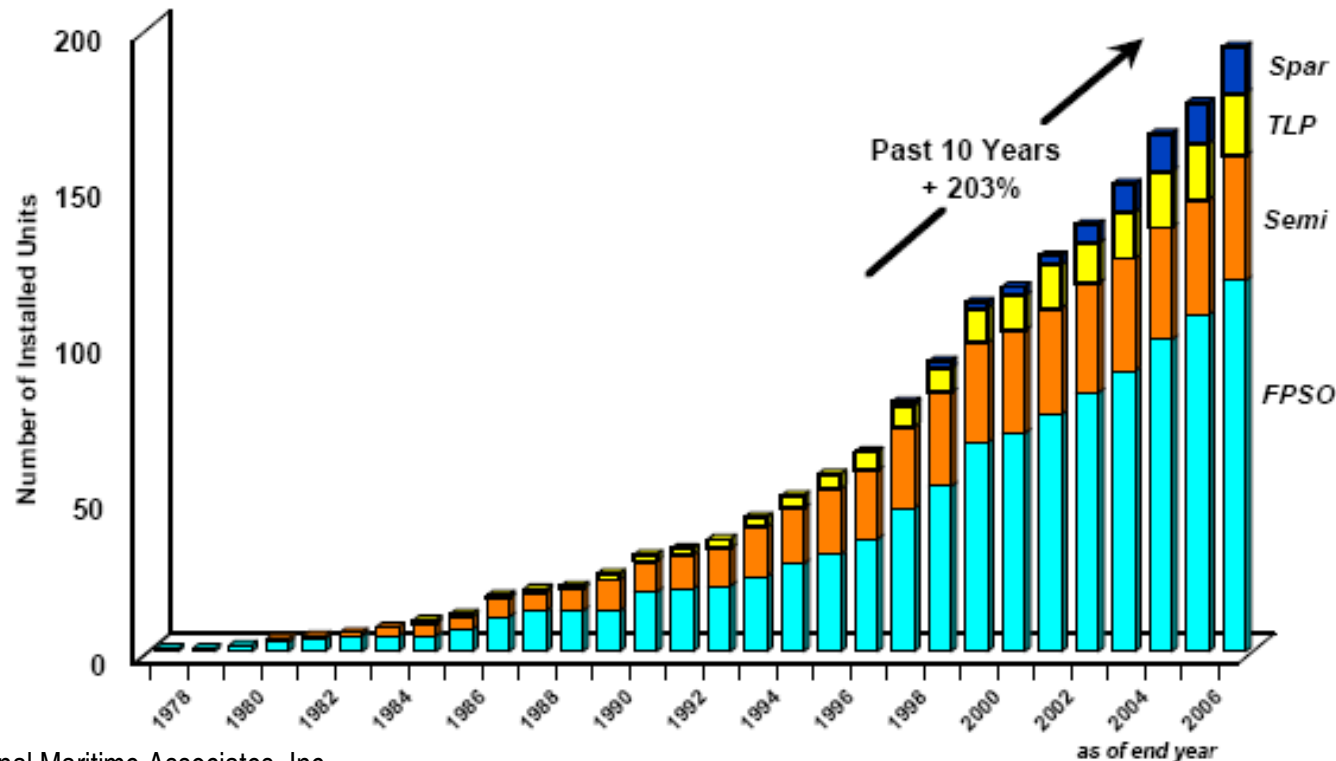
# Global spread of Floating Production Systems



Growth markets

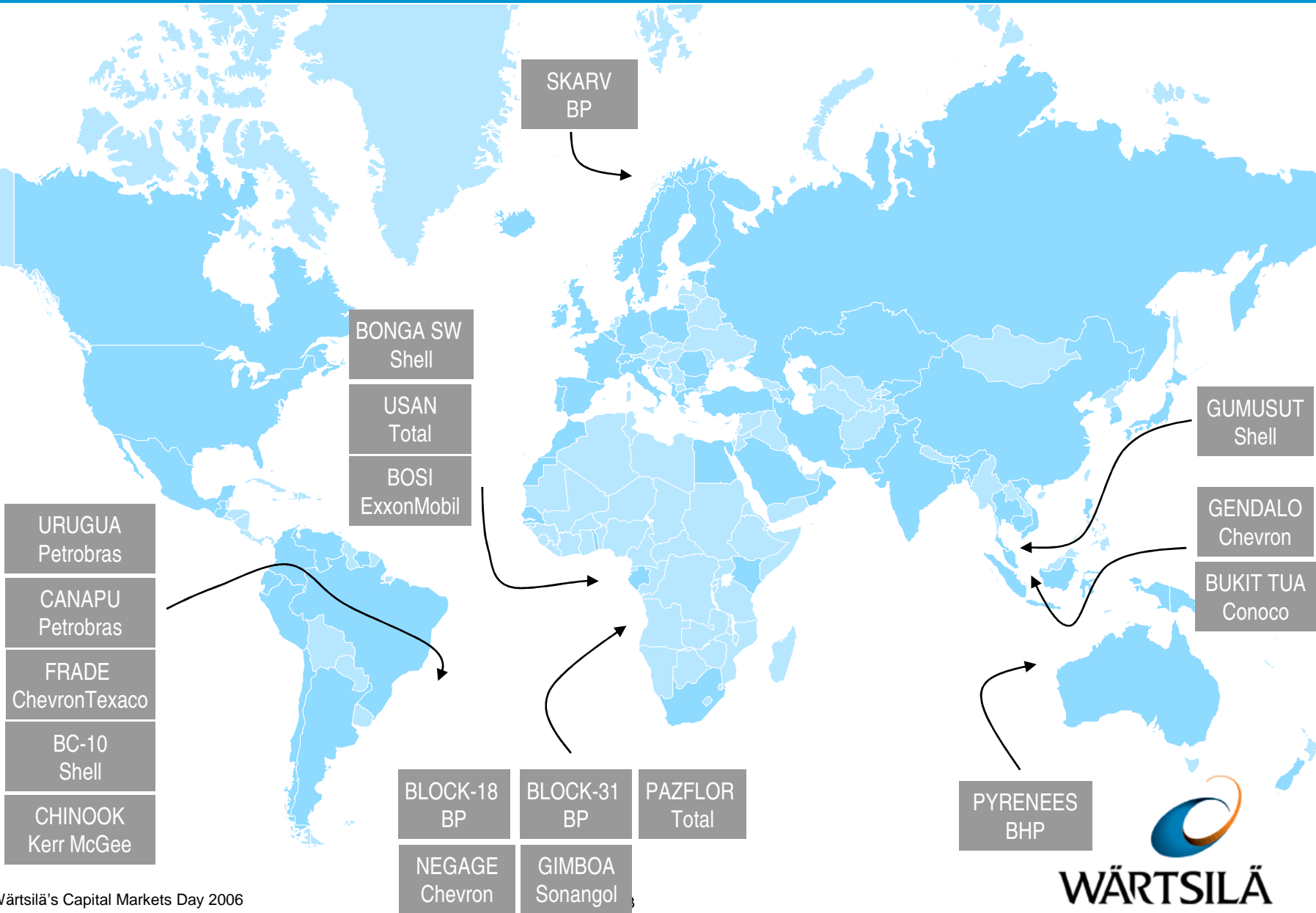
# Offshore oil production is a growing market

” We believe this market has a long way to run before losing steam. In our recent study of the floating production market, we forecast orders for 103 to 130 production floaters over the next five years. This figure includes 75 to 95 additional units that will be purpose-built or converted from existing hulls and 28 to 35 redeployments of existing units. These orders are expected to generate capital expenditures of \$35 to 44 billion over the five year period. In addition, orders for 25 to 35 floating storage units will generate another \$1.5 billion in capital expenditures for conversion or construction. ”



Source: International Maritime Associates, Inc.

# FPSO prospects





# Wärtsilä Networks



# Wärtsilä's traditional market offering

## Product areas




- 2-stroke engines
- 4-stroke engines
- Propulsors
- Gears
- Seals & Bearings

## Related services

- Design
- Engineering
- Project management
- Commissioning
- Lifetime support

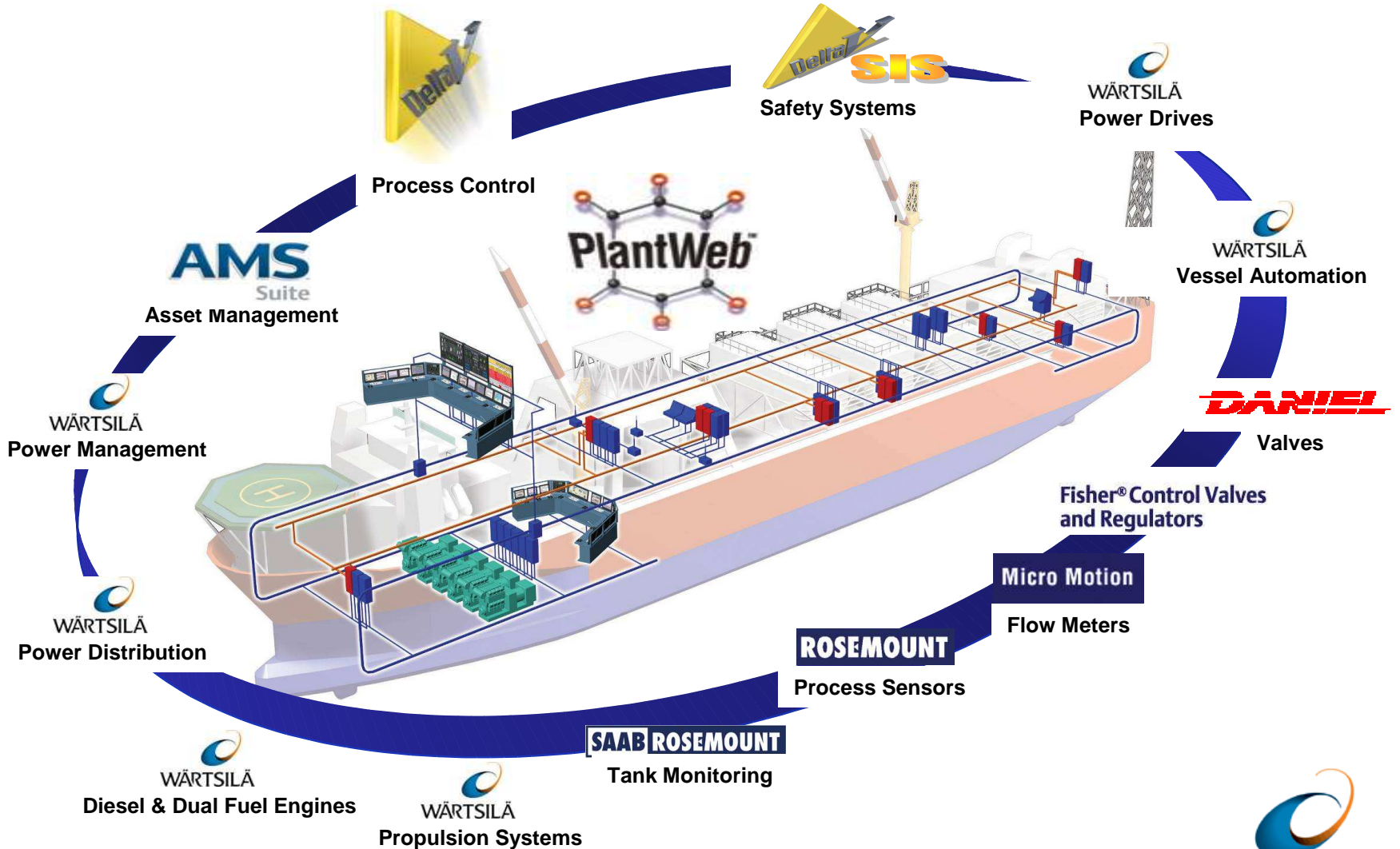


# Some **NEW!** products and solutions

	Key Products	Key Capabilities	Examples	
<b>Automation Systems</b>	<ul style="list-style-type: none"> <li>■ Vessel control</li> <li>■ Power management</li> <li>■ Process control</li> <li>■ Dedicated control</li> </ul>	<ul style="list-style-type: none"> <li>■ Application knowledge</li> <li>■ Automatic control</li> <li>■ Dynamic simulation</li> <li>■ Operational support</li> <li>■ Network, communication and seamless integration</li> </ul>		Powerful control systems with a large number of applications and niche products
<b>Power Systems</b>	<ul style="list-style-type: none"> <li>■ Switchgears/panels</li> <li>■ Transformers<sup>1</sup></li> <li>■ VAr control<sup>1</sup></li> <li>■ Generators<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>■ Switchgear systems</li> <li>■ Smart Motor Control</li> <li>■ Integrated Power Distribution and Control systems</li> <li>■ Enhanced Maintenance system</li> </ul>		A family of well proven low, medium and high voltage switchgear systems
<b>Power Drives</b>	<ul style="list-style-type: none"> <li>■ Frequency converters</li> <li>■ Motors<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>■ Power electronics</li> <li>■ Control software</li> <li>■ Smart drive solutions</li> <li>■ World class w.r.t controls, space, weight and performance</li> </ul>		3 <sup>rd</sup> generation low voltage water-cooled power drives with new advantages for marine and oil & gas applications

<sup>1</sup> Delivered by international partners

# Alliance with Emerson Process Management Systems

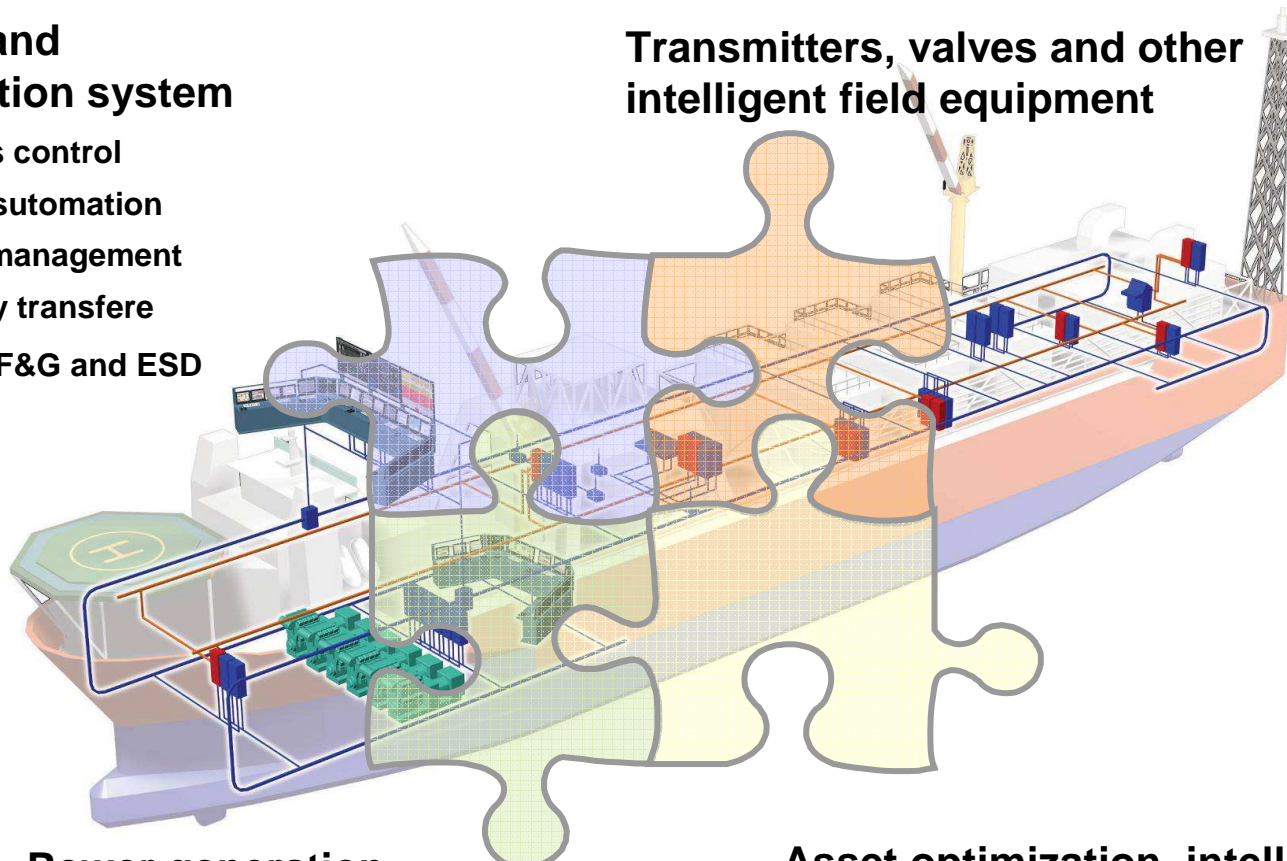


# Strength of the alliance: One system supplier

## Safety and automation system

- ➔ Process control
- ➔ Vessel automation
- ➔ Power management
- ➔ Custody transfers
- ➔ Safety, F&G and ESD

## Transmitters, valves and other intelligent field equipment



**Power generation and distribution, and power drives**

**Asset optimization, intelligent device manager, performance monitor, machinery health**





**Power to Rely on!**