SERVICES

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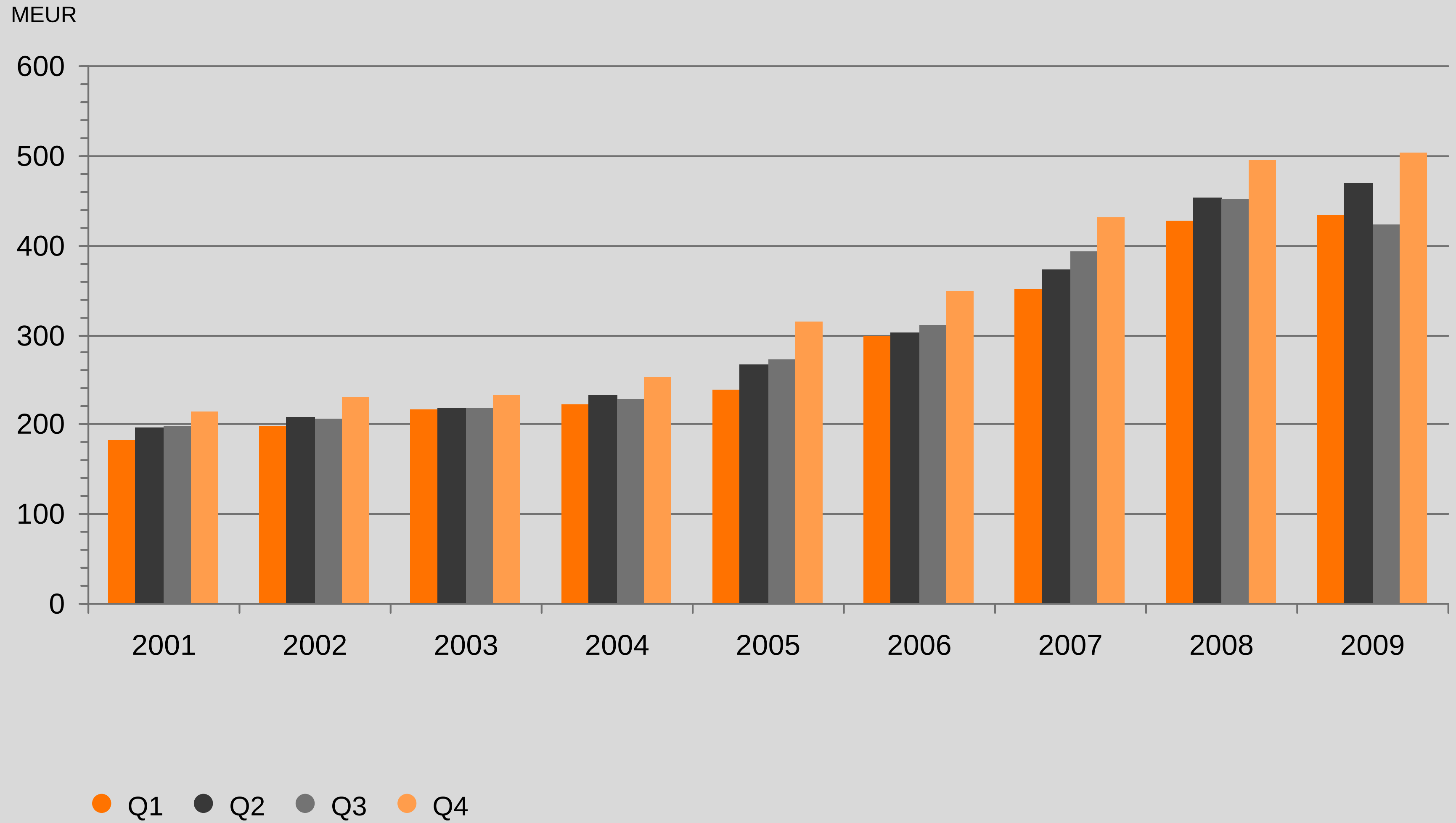
Services – Net sales per quarter



Fleet Development

Anchored* (Reported Navigation Status At Anchor)

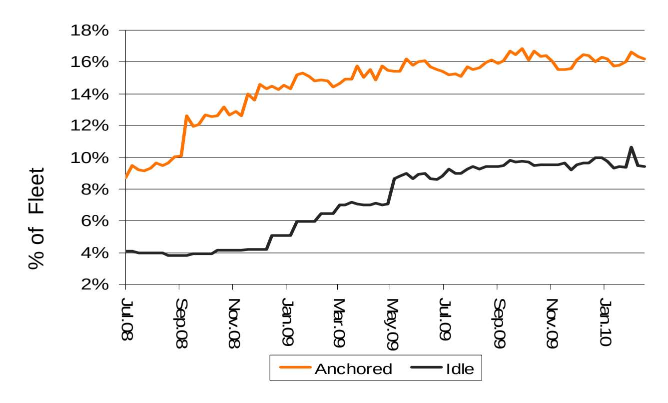
	# Ships			% Total Fleet		
	Current	1 M Ago	6 M Ago	Current	1 M Ago	6 M Ago
Crude	493	470	466	23,6%	22,6%	22,1%
Oil product	344	349	347	24,0%	24,3%	23,7%
LNG	54	57	82	16,5%	17,2%	25,4%
LPG	116	121	115	22,7%	23,7%	22,7%
Chemical	64	70	70	18,8%	20,3%	20,3%
Bulk	1113	1103	944	17,3%	17,3%	14,3%
Ore	22	18	16	19,4%	16,7%	18,0%
Vehicle	72	74	100	11,5%	11,9%	15,6%
Gen Cargo	677	642	617	14,9%	14,1%	13,5%
RO-RO	31	28	41	6,8%	6,1%	8,5%
Container	606	583	623	13,6%	13,1%	14,0%
Chem/oil	526	525	506	19,8%	19,8%	19,4%
Passanger/Cruise	5	5	1	2,9%	3,4%	0,7%

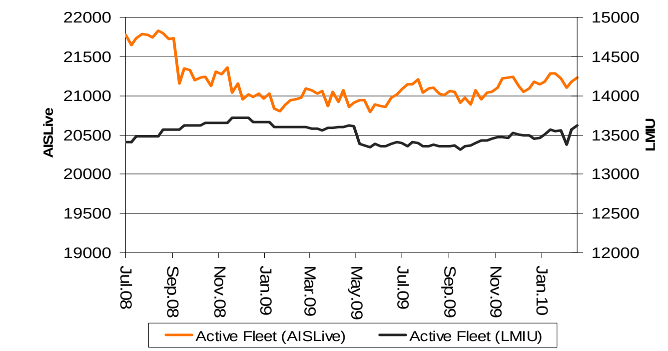
*Source Bloomberg (AISLive). More than 25,000 vessels (>299 GT) required to report their positions under coverage.

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

	# Ships			% Total Fleet		
	Current	1 M Ago	6 M Ago	Current	1 M Ago	6 M Ago
Bulk	435	405	353	6,1%	5,7%	5,1%
Car Carrier	90	103	108	12,1%	13,8%	14,6%
Container	613	613	614	12,8%	12,8%	12,8%
LNG Carrier	25	21	33	7,4%	6,2%	10,2%
LPG Carrier	135	124	116	11,3%	10,4%	9,8%
Reefer	118	126	165	14,4%	15,3%	19,6%

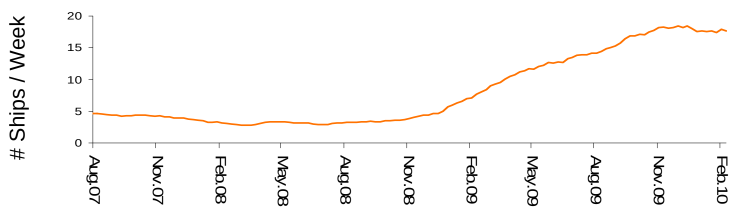
**Source Loyd's MIU. Around 15,000 vessels (>299 GT) on line for the specified sectors.



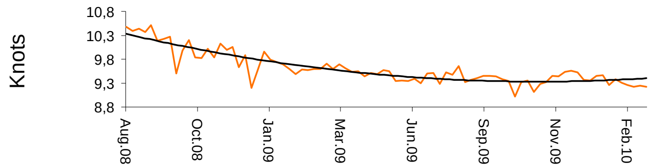


Note: Active Fleet = Total Fleet Less Anchored or Idle
Data from Bloomberg (AISLive) and Lloyd's MIU (LMIU)

Vessels Broken Up



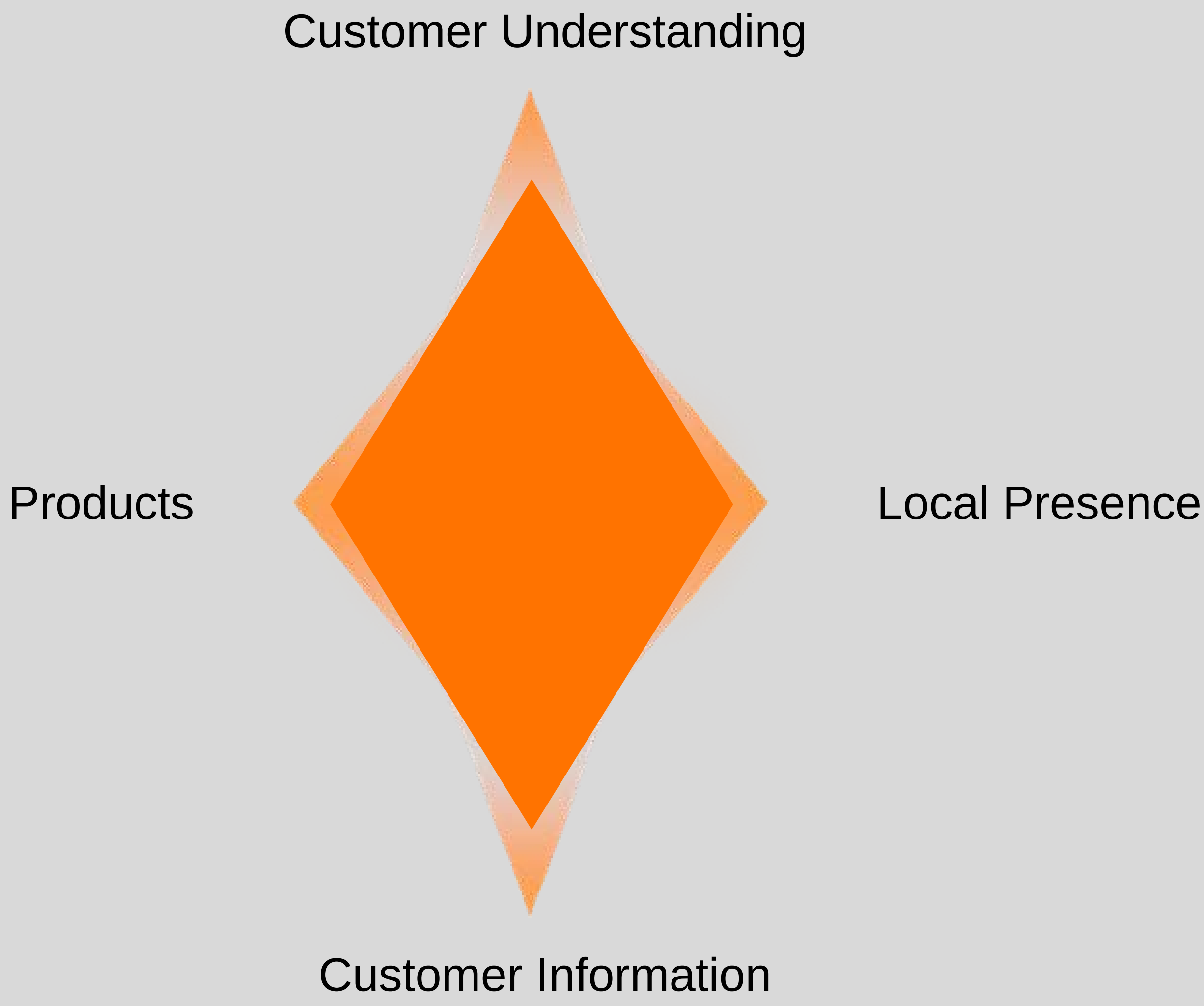
Fleet Average Speed



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



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Services offering portfolio

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Wärtsilä Services

70 countries • > 160 locations • > 11’000 people • > 7’000 field service forces

Current Field Manpower in Wärtsilä Services

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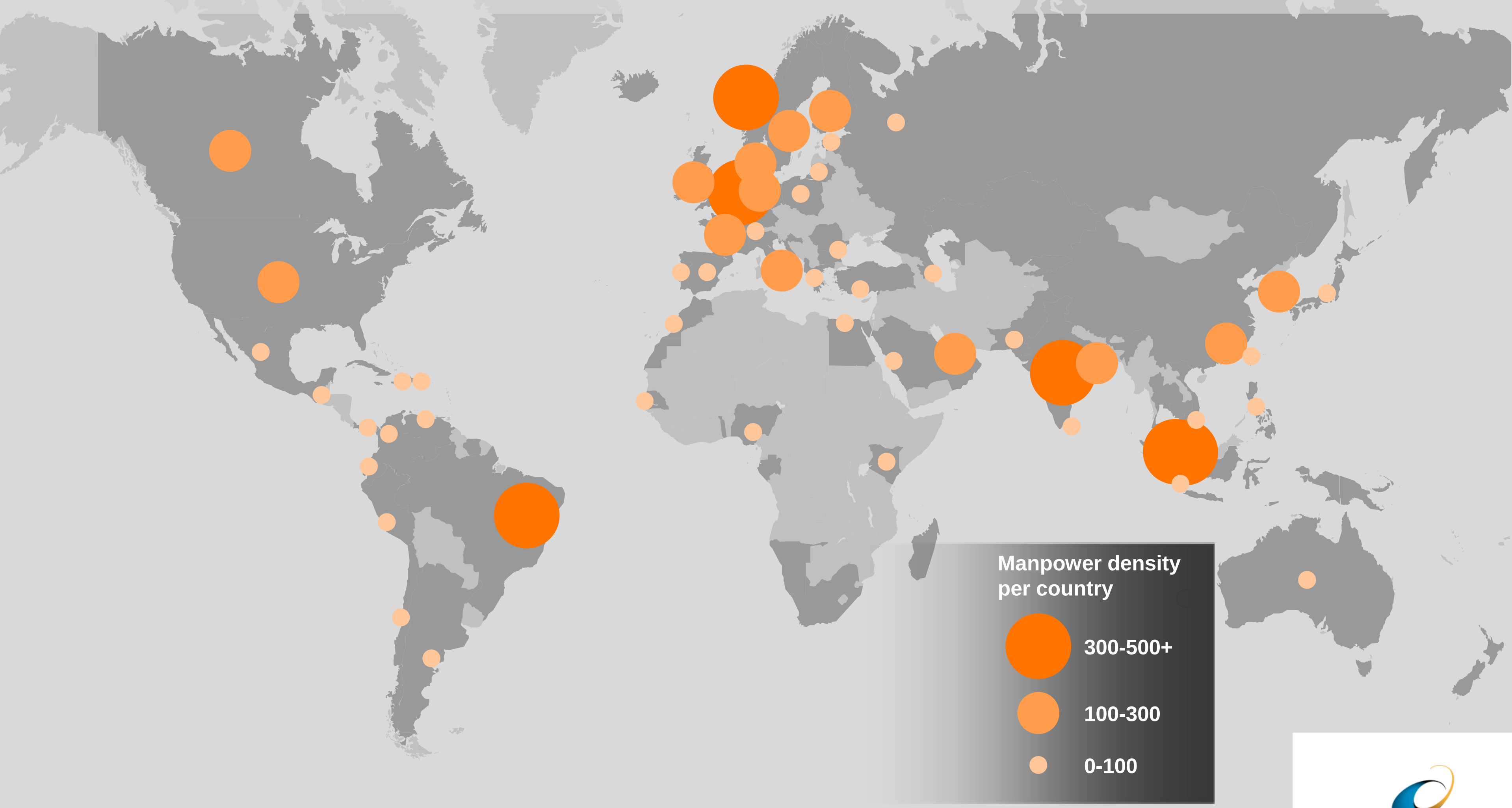

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Offering adapted to customer's needs

Solution Complexity

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

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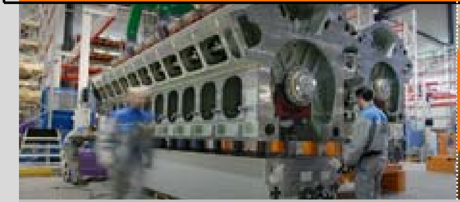			
Basic Products and Services • Spare Parts • Field Services • Technical Services	**Packages** • Service Products • Standard Packages	**Solutions & Agreements** • Advanced Packages • Project & Contracting • Service Agreements	**Partnerships & Integrations** • 'Trend setter' • Integration into customers' value chain

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Focus on the Customer and on Value

From technical to **COMMERCIAL ENGINEERING**

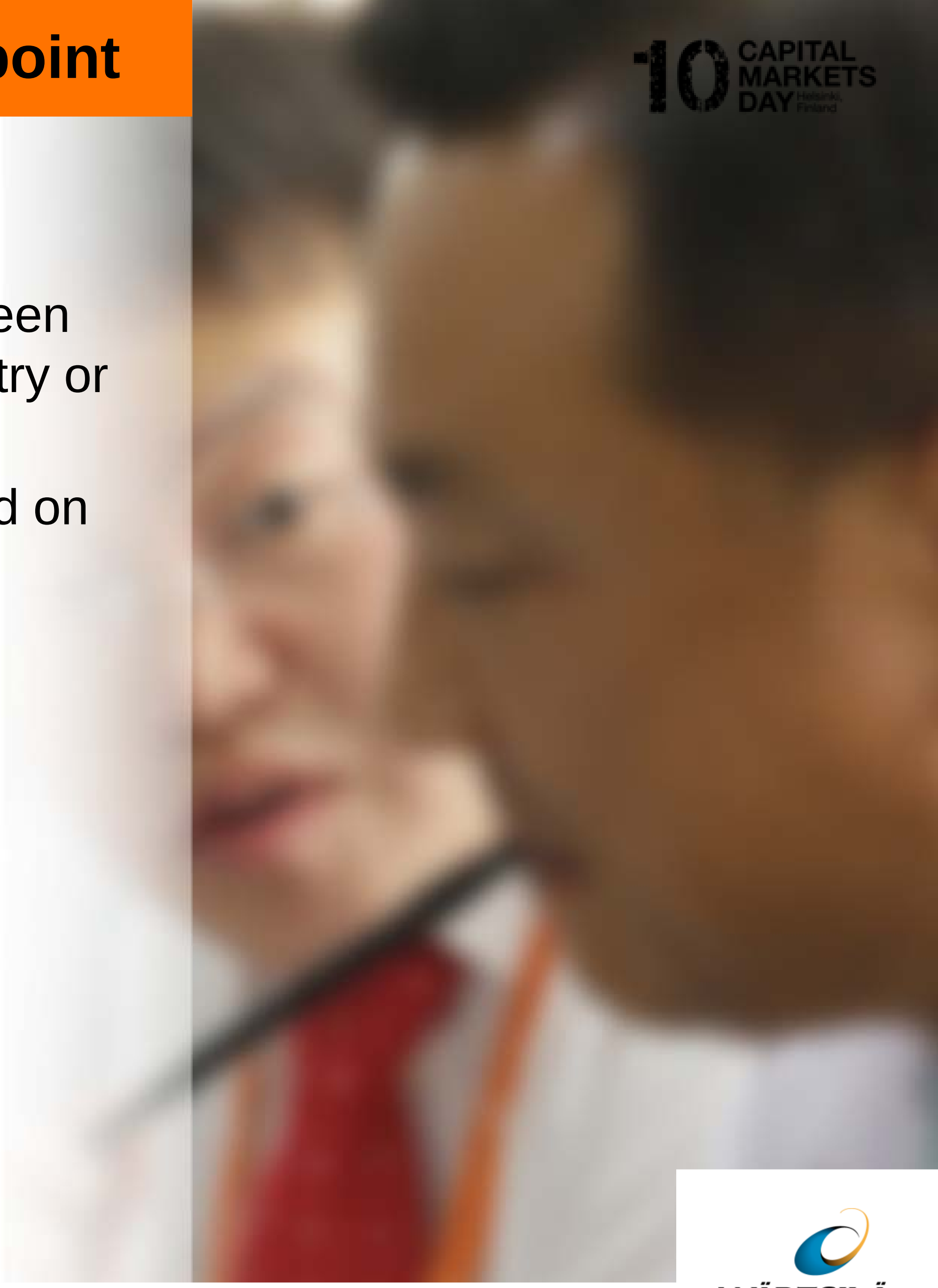
From focus on CAPEX to **FOCUS ON OPEX**

From total cost of ownership to
TOTAL PROFIT OF OWNERSHIP

Customers Value

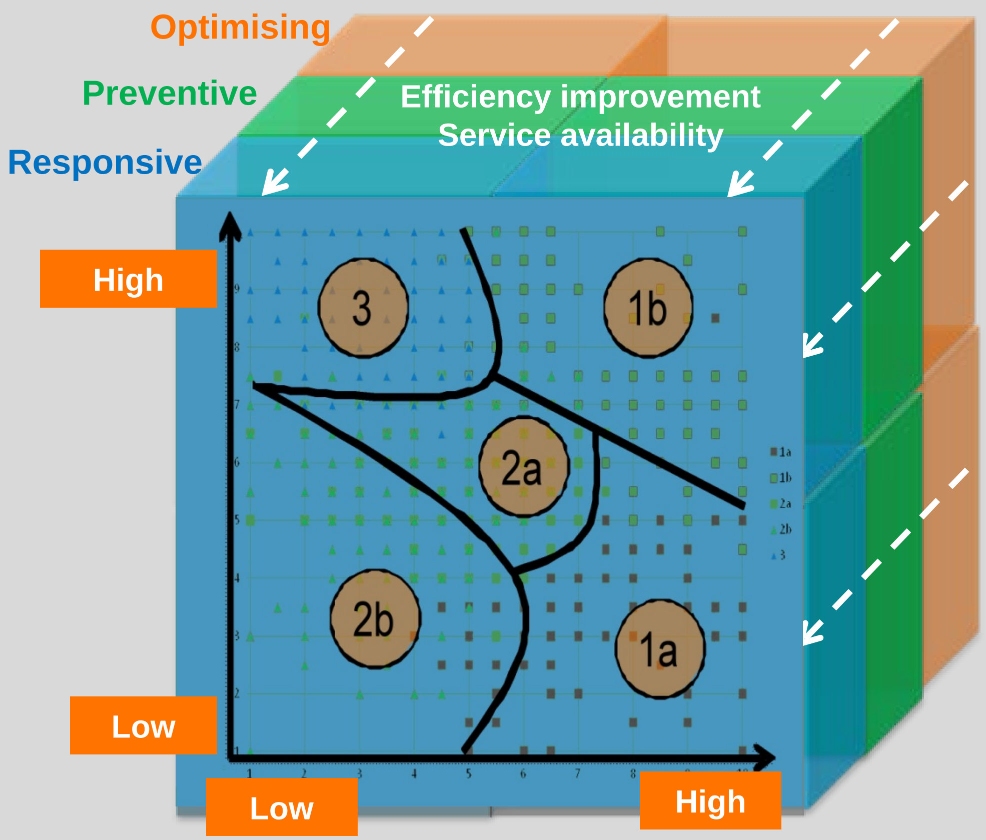
Segmentation key starting point

- 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



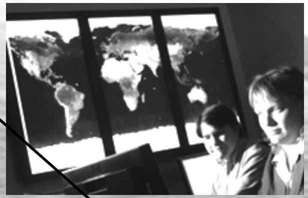
Global Support

Wärtsilä's local resources

- Field Manpower
- Workshop
- Local expertise
- 3rd party

Wärtsilä's Expertise

- Central database
- Back-office experts



Onboard expertise

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

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How does Wärtsilä do it?

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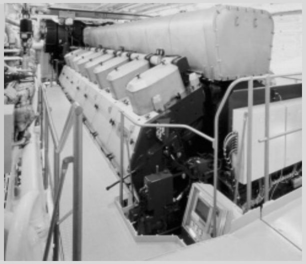
When we can measure and analyse, we can optimise the operation and predict the maintenance need.

Data from equipment

Send the data to centralised database



Operating Crew reporting

Wise LT report
Inventory
Work done
Unscheduled

Water, Fuel & Lube oil analysis

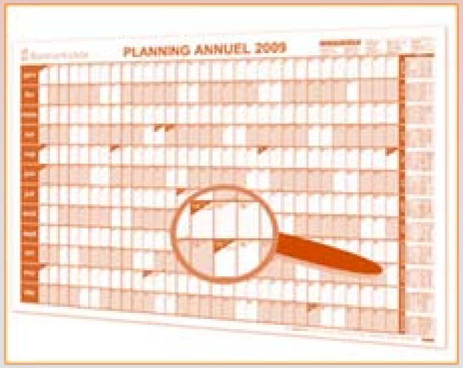
Measurements

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



Online Report

Risk evaluation with Contract Manager and Customer

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Legislation changes / Marine

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1. Air emissions

2006 2008 2010 2012 2014 2016 2018 2020

Foreseen, not yet in place

- **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**

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Pollution streams

Opportunities and focus areas for Wärtsilä Services

Air	Water	Soil	Solid Waste	Others
NO_x	Oily water	Contamination	Waste gener.*	Noise
SO_x	Black water	- Chemical	Waste handling at source	Radio
CO	Grey water	- Alteration	Collection, transfer and transport	Light
PM	Ballast water		Disposal	
CO_2	Sludge			
Smoke	Water Ionisation and evaporation			

Each of these pollutions have their remedies/technologies.

- **Today's active areas of product/solution developments in Wärtsilä**
- **Immediate focus**
- **Discovery**
- **Follow-up**

* Incineration of waste from ship

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