

Where is shipping steering to?

Consolidation and Remote Controlled?

by

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Hamburg Tankers

Introduction

Two waves are challenging shipping

Consolidation

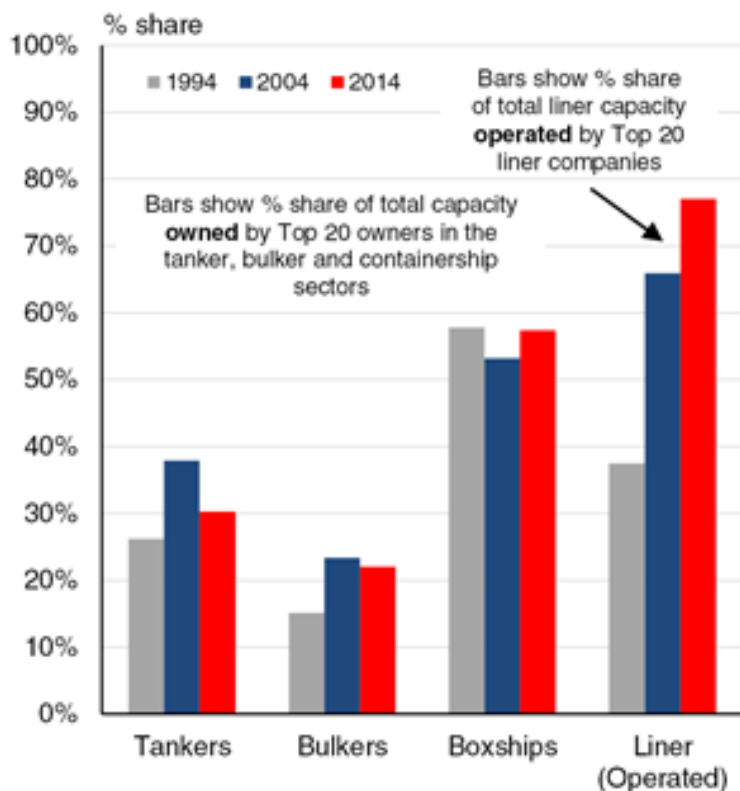


Market Share Top 20 Owners

Graph of the Week

Where's The Most Consolidation?

The first three sets of bars on the graph show the % share of total capacity accounted for by the Top 20 owners in the tanker, bulker and containership sectors (in terms of dwt for tankers and bulkers, TEU for containerships) as of March 1994, 2004 and 2014. The final set of bars on the graph shows the % share of total liner capacity ('container capable' capacity in TEU) operated by the Top 20 liner companies in each time period.



Source : Clarkson Research Services

Vessel Analysis

2017

World Fleet:

88,892 ships 24,267 owners

4 vessels per owner



145 owners > 50 ships

abt. 12,000 vessels

Container:

5,154 ships 622 owner

abt 8 ships per owner

Operator:

5,154 ships 326 carriers

abt. 16 ships



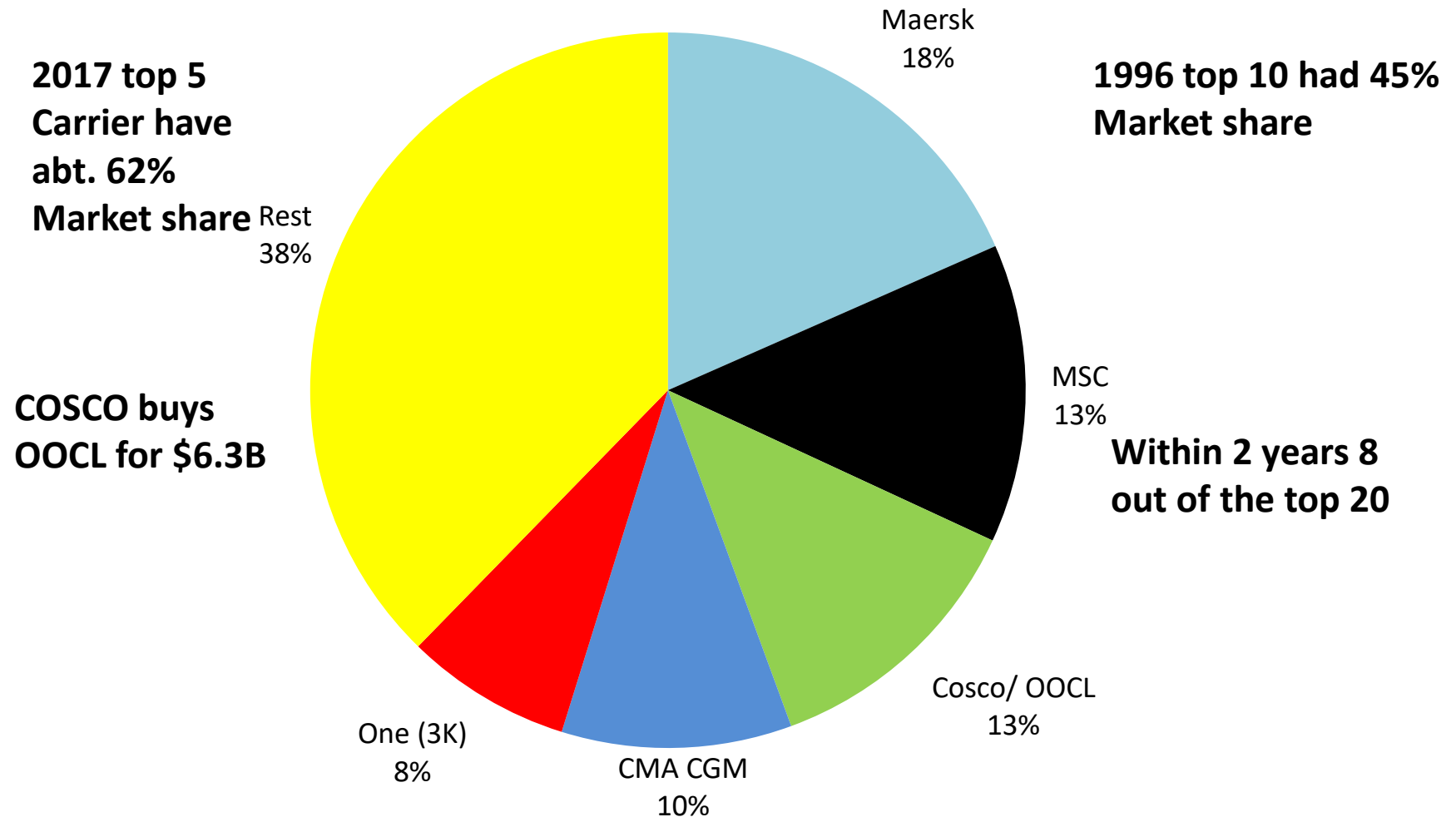
top 8 operators

> 100 ships

Consolidation Drivers

- **Economic Pressure** Carriers globally lost in aggregate \$10 billion in 2016
- **Market Shares**
- **Economy of Scale**
- **Synergies and Cost Saving**
- **New Markets, Globalisation**
- **Service Integration**
- **Ego, Size**

Market Share by TEU



Consequences of Consolidation

- **Size is King – Big Liner Operators dominate**
- **Price Pressure due to Market Share Fight**
- **Tramp Owners are left out**
- **Know How Losses**
- **Risk Concentration – To big to fail?**
- **Road to Sea Concept fails?**
- **Further Pressure by big Customers (Alibaba)**
- **Only Way to survive**

Two waves are challenging shipping

Consolidation

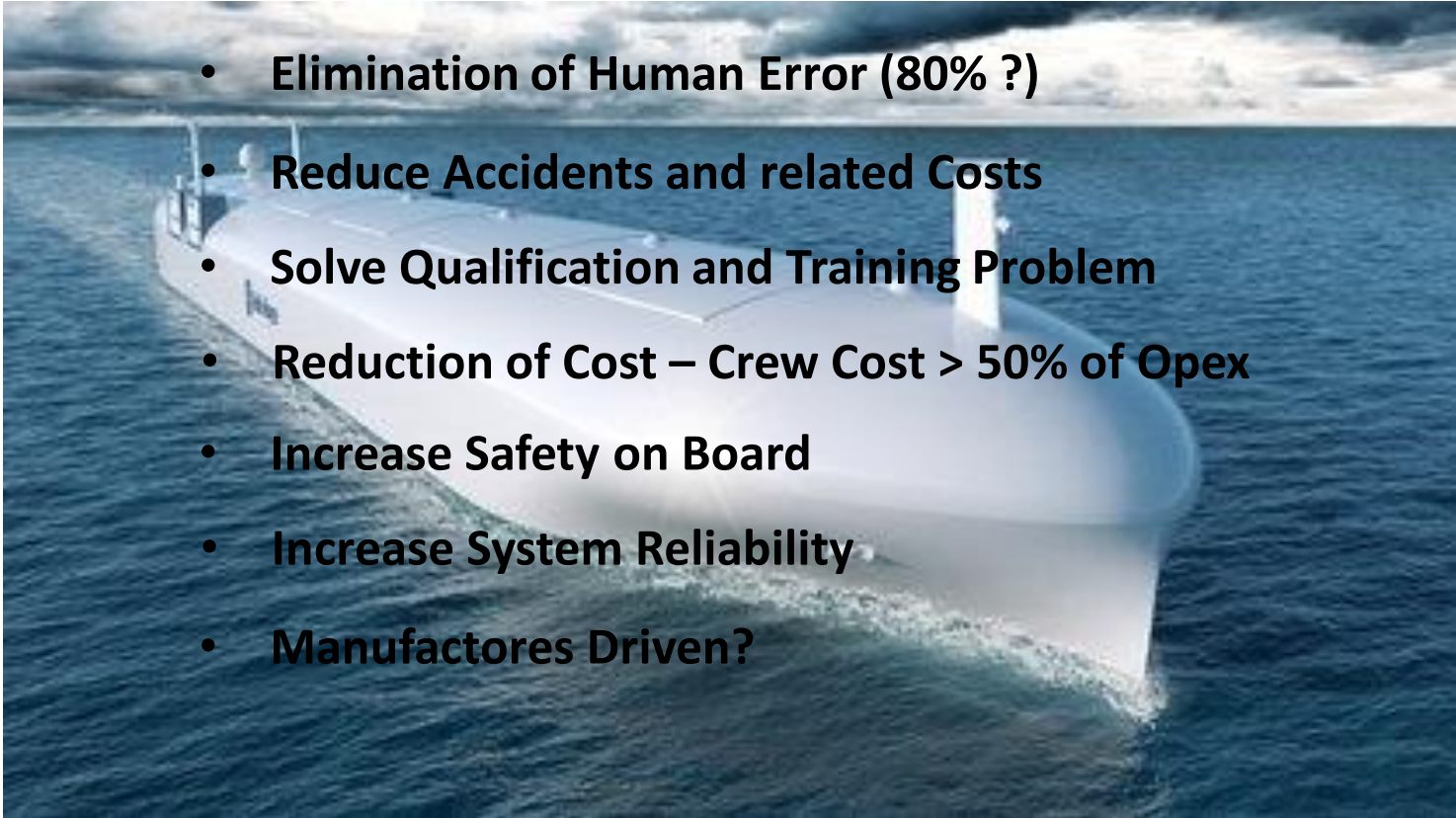


**Autonomous Shipping -
Benefits & Downsides**



Autonomous Shipping

Why?

- 
- Elimination of Human Error (80% ?)
 - Reduce Accidents and related Costs
 - Solve Qualification and Training Problem
 - Reduction of Cost – Crew Cost > 50% of Opex
 - Increase Safety on Board
 - Increase System Reliability
 - Manufactures Driven?

Samples of Developments

Rolls - Royce



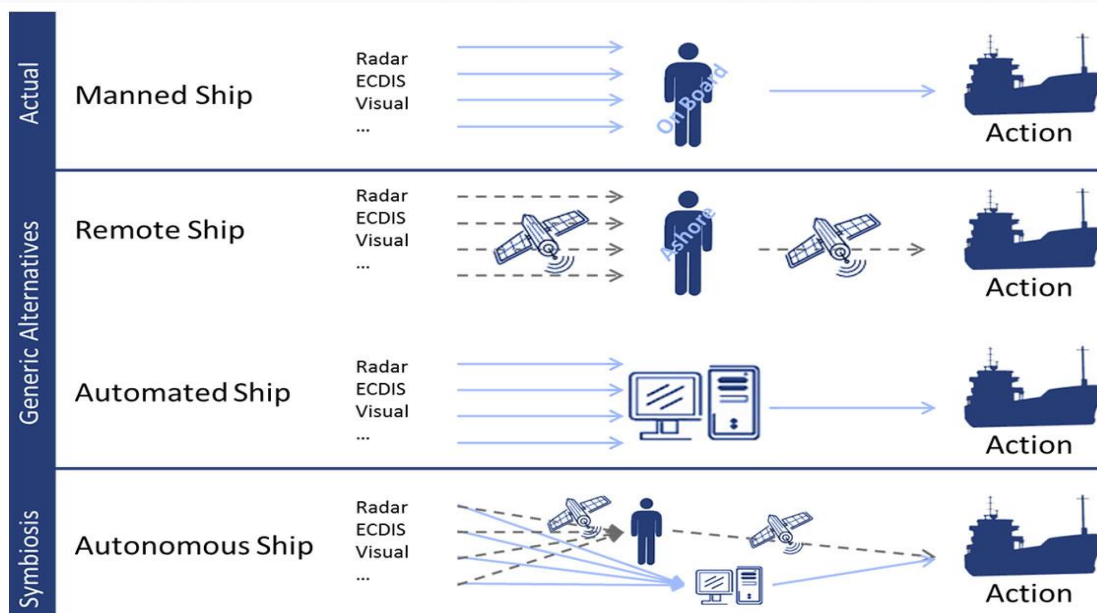
THB 5.10. Google goes for Autonomous Vessels - Cooperation with RR



Samples of Developments



Maritime Unmanned Navigation
through Intelligence in Networks



Samples of Developments



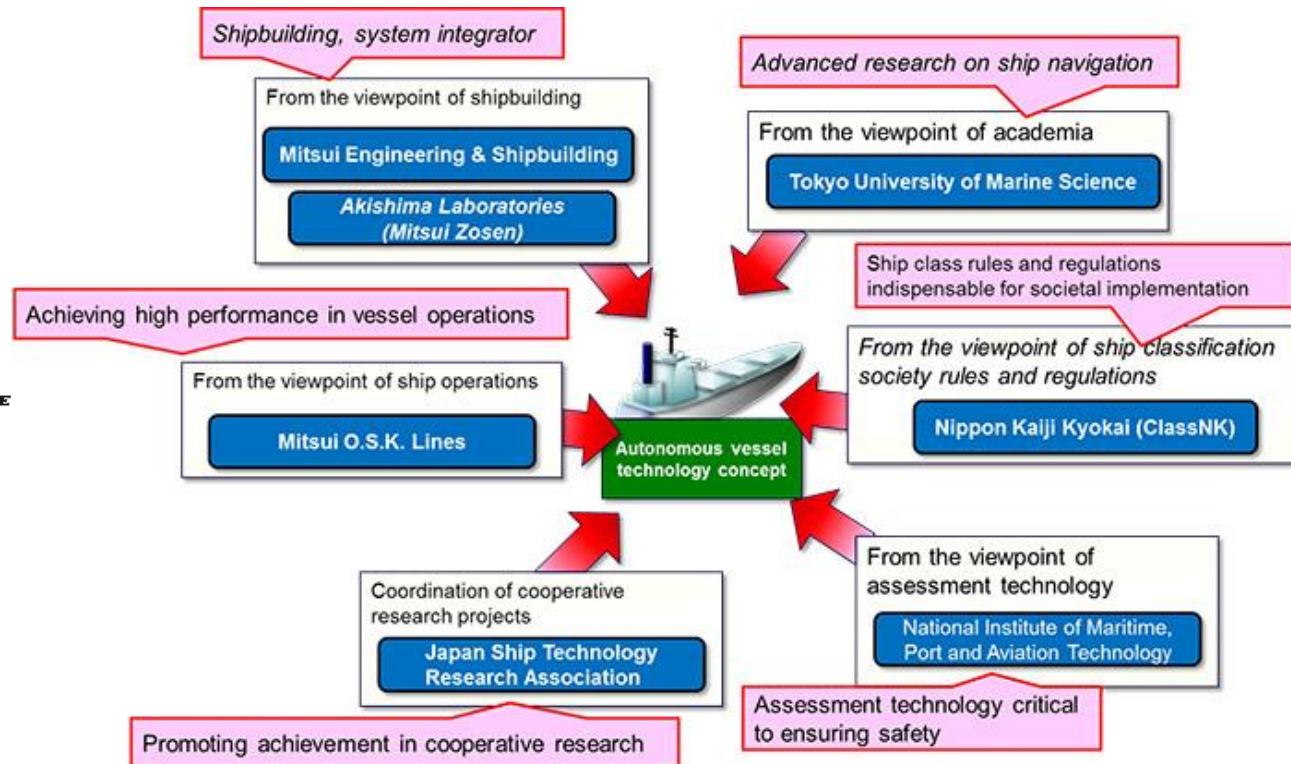
KONGSBERG



17 mio
USD

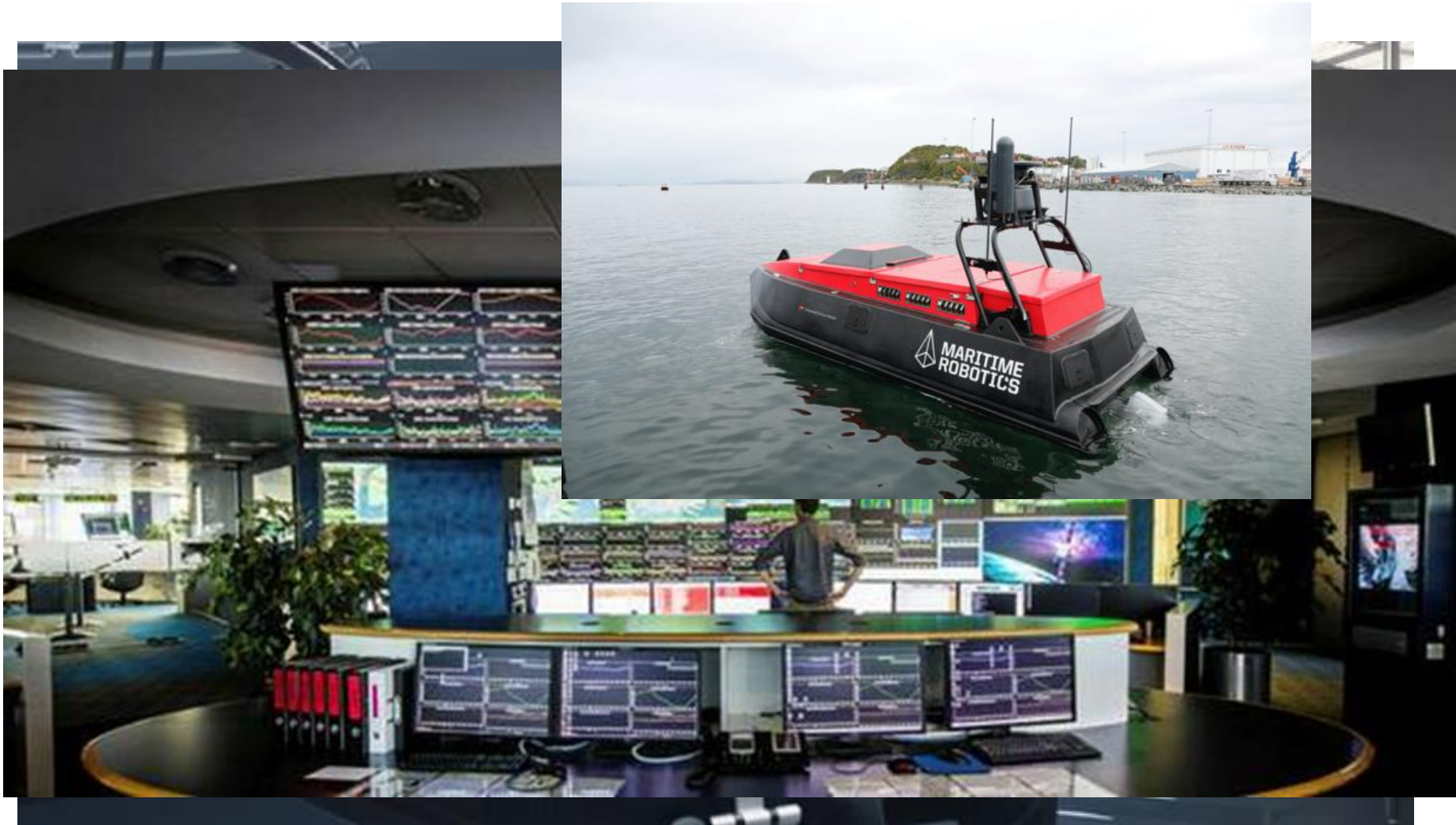
**Starting 3Q 18 manned, thereafter remote and in 2020 fully autonomous,
fully electrically Yara cargoes from Porsgrunn to Bervik and Larvik**

Samples of Developments



Japan plans to launch a fleet of 250 self-driving cargo ships by 2025, to cost hundreds of millions of dollars that could half of the roughly 2,000 maritime accidents per year.

How it may looks



First Application in the Race?



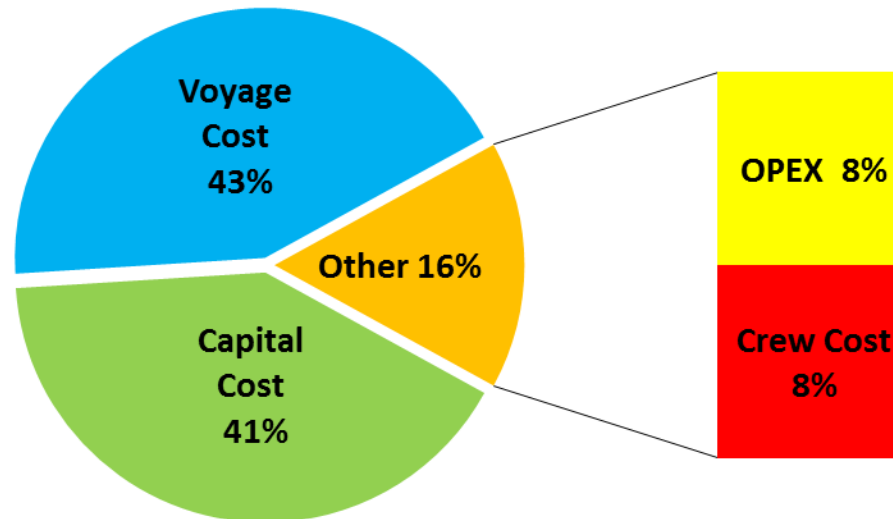
Introduced in 2016, the two battery driven, double-ended ferries between Anda and Lote on route E39 in Western Norway.

In 2018 the Ferry MM 103 FE EL will make her first autonomous voyage accross the 2.4 km fjord but still manned.

Cost Saving?

Very ambitious figures have been published:

- Allianz Study: Human Errors were responsible for 1.6 billion USD damages in 5y – **will they disappear in total?**
- RR claims to save abt 22% Cost per transported Tonne based on a 20.000 DWT vessel



Risks

- **Cyber Attacks**

The NotPetya attack in late June on AP Moller-Maersk shut down 76 terminals around the world and caused disruption for more than two weeks. Cost of \$200m-\$300m Maersk's estimation.

On 15.10. the next attack on the servers of BW Shipping was reported – damage still unknown

- **Data Accuracy**

Tesla released remotely extra battery capacity for 30 mile range boost to allow owners to escape from the Hurrican Irma in Florida

GPS Data Accuracy – International Conflicts

- **Sustainability**

Different Business models – ship@ 25 years / software@ 6 months

Risks

- **Social Responsibility**

Abt. 1.65 mio Seafarers, 20% from Philippines sending \$ 5.5 billion home every year.

Heavy impact on surrounding industry, Schools, Training Centers, Agents

- **Human responsibility**

Up to end of May 60.000 refugees crossed the Med, 9.500 needed to be Rescued

Sailors

- **Insurance and Legal**

How to insure an Autonomous Ship?

Who will be responsible for Damages - Software, System Supplier, Interface maker, Builder, Control Center?

Future of Autonomous Ships

Yes!

- **Dedicated Application** – Pier to Pier Operation
- **Partical Application** – Engine Operation, Auto Pilot, Deep Sea
- **Mixed Application** – Manned, Remote Controll, Autonomous, AI
- **No „All Inclusive“ Application** – Pilotage, Mooring – all Vessels

Outlook

Industry 4.0
Block Chain Application
Online Booking

- **Shipping needs to develop itself**

Too fragmented, old fashion industry with a High Risk Profile, but little Self Innovation

- **Shipping needs intelligent solution**

Instead of populist approaches, suitable solutions need to be developed, like leasing models, system lifetime extensions etc.

- **Shipping needs a holistic approach**

All parties need to be included in the innovation and development circle, manufacturers, builders, owners, operators customers

This are only my thoughts to stimulate the discussion

Thank you