Challenges in the world maritime industry.

Martin Stopford
President,
Clarkson Research

The view in the deep ocean
The world of 1966 - changing
In 1966 Blue Funnel’s Priam multi-deck was the latest thing in liners

For 100 years the ships improved by evolution but the system did not. The liner and tramp service continued unchanged. But the world changed and needed a different system – a “revolution”
In 1966 tramps were big business for shipbuilders

- The replacement of the liberty ships was a big issue in 1966.
- 30 designs were put forward to replace the 700 remaining Liberty Ships
- The SD14 and Freedom did best
- 350 SD14 built over next 20 years
S5: In 1966 the container “revolution” took its first step
Malcolm McLean “couldn’t remember where he got the idea!”

First international container service, purpose built *Fairlane* discharging Rotterdam May 1966

Martin Stopford, President CRSL 1 Dec 2016
In December 1966 the first VLCC, the Idemitsu Maru went into service (209,413 dwt)
50 YEARS LATER, MANY NEW CHALLENGES

1. Shipping cycles getting bigger
2. Sea trade growth slowing
3. Regional trade transformation
4. Shipyard capacity management
5. The zero emissions agenda
6. How to harness digital technology?
7. Is the business model serviceable?

Martin Stopford, President CRSL 1 Dec 2016
1. Shipping cycles getting bigger

In today’s simplistic business model, cycles are the drivers of change.
The Clarksea index shows the average earnings of tankers, bulkers, containerships & gas

Clarksea Index was $11,768/day last week

25 year average $15,582/day

Martin Stopford, President CRSL 1 Dec 2016
Looks like the longest dry cargo cycle since 1845!

Shows FIRST year of each cycle & length from beginning of peak to beginning of next peak

If the dry market recovers in 2020 this cycle will have lasted 17 years

Source: based on the MEFI index produced by Martin Stopford
The trend growth rate of trade on a slowing trend

2. Sea trade growth slowing
S6: World Industry growth rate to September 2016 – very sluggish

INDUSTRIAL PRODUCTION % PA

Dot.com Crisis
Credit Crisis

VERY WEAK INDUSTRIAL GROWTH SINCE 2009

World Industry growth rate to September 2016 – very sluggish

05/12/2016
Maritime Lectures – Guest Lecture 2: Shipping & Shipbuilding Market Outlook
12
Sea trade growth edges down - about 2.3% growth likely in 2016

Growth of sea trade 2000-2016 (annual % change)

- Sea trade growth edges down, with a forecast of about 2.3% growth likely in 2016.
- The chart shows the growth of sea trade from 2000 to 2016, with a decline in growth rates from 7.3% in 2000 to 2.6% in 2015.
- The growth rate is expected to remain at 2.3% in 2016.
The OECD trade share shrinking & owners moving offshore

3. Regional Trade Transformation

Martin Stopford, President CRSL 1 Dec 2016
In 1966 the Maritime World was dominated by the OECD

**Sea trade was growing very fast**

1. OECD imported 75% of cargo
2. Multinationals managed transport
3. They imported raw materials
4. And exported manufactures

**Bulk market - industrial shipping was developing**

5. Cargo owners lead the change
6. They built big, specialised ships &
7. Owned or chartered most of fleet
8. E.g. 80% tankers on timecharter

**Liners making move to containerisation**

9. Break-bulk liners struggling
10. Cargo handling costs escalating
11. Could not handle expending trade
12. First container service in 1966

Source: data collected by martin stopford from various sources, mainly United Nations and UNCTAD

Martin Stopford, President CRSL 1 Dec 2016
Sea trade growing but OECD losing market share

1. OECD now imports only 37% of cargo
2. China and Asia driving trade
3. Non-OECD 63% and maybe 75% soon
4. Non-OECD has six times the population

The bulkers & liners struggle with mature technology

5. The bulk & liner revolutions are over
6. Cargo owners have stepped away
7. Designers struggling to improve ships
8. Very big containerships disappointing

The future – another revolution desperately needed

9. Shipping investors need a new vision
10. World economy needs new services

---

Martin Stopford, President CRSL 1 Dec 2016
In 1966 only 13% of the fleet was flagged out. Today it is over 70%

- 1.3 billion DWT of “flagged out” tonnage
- Over 70% of the merchant fleet is now registered offshore
- Up from 42% at the end of the 1980s (see chart)
- Shipping now a global business

Martin Stopford, President CRSL 1 Dec 2016
4. Shipyard Capacity management

We need a better strategy for managing the supply of ships, but are not likely to get one.
Regional Shipbuilding Trends 1902-2015: different dynamics today

China’s shipbuilding strategy has changed from “getting bigger” to “getting stronger”

Martin Stopford, President CRSL 1 Dec 2016
Stage 1: (expand existing capacity)

Stage 2: (Build & sell contracts for new capacity)

Stage 3: orderbook slippage

Stage 4: (Close 581 uneconomic shipyards)

Stage 5: (Slow production & diversify in 423 active shipyards)

In 2009 there were 992 active yards
In 2016 there were 423 active yards

Martin Stopford, President CRSL 1 Dec 2016
Yamaha have a zero emission bike, but a zero emission cargo ship will need extreme technology.

5. The Zero Emissions Challenge
In 2066 seaborne trade could be 46 billion tonnes – or could it?

Source: data collected by Martin Stopford from various sources, mainly United Nations and UNCTAD

Martin Stopford, President CRSL 1 Dec 2016
Are we smart enough to use the information & communications technology (ICT) revolution to revolutionize sea transport?

6. How to harness digital technology
Three ways change the business Model

1. **Smart Ships** – with much better QA & efficiency standards;

2. **Smart Fleets** – which manage the smart ships like a transport factory (e.g. a BMW factory).

3. **Smart Global Logistics** – which integrate the whole thing door to door

Massively more efficient satellite communications are removing the 5000 year old need to treat the ship as the business unit
S10 : The Smart-Shipping “Toolbox” creates opportunities:

1. **Satellite communication**: new INMARSAT Ka band global systems (99% reliable) broad band data to be collected, processed & beamed ashore. Submarine cables too.

2. **Telematics**: "sensors" & FPGAs generate digital information about equipment & ship - cheaper and better than ever.

3. **Data Storage**: The cloud provides storage for data generated by sensors. Analyse “Big Data” to improve performance.

4. **Smart phone-style apps**: to do specific jobs without big computer systems & management information.

5. **Information systems**: management know exactly what’s going on and performance levels. “Deep learning” is getting better.

6. **Automation**: feedback loops allow automation of many tasks (navigation, maintenance, operations etc)
1: Smart Ships – smarter operations, better quality control

1. Propulsion plant control
2. Auxiliary power management
3. Auxiliary machinery operation
4. Ballast & trim management
5. Navigation & manoeuvring
6. Cargo handling operations
7. Administration of maintenance
8. Supply of spares management.

Alarm management

Connectivity + Semi-Automation + Dashboards, etc

Thruster control

On board communications

Martin Stopford, President CRSL 1 Dec 2016
2: The Smart Fleet – run a fleet of ships as a transport factory

Martin Stopford, President CRSL 1 Dec 2016

Source: Martin Stopford 2016
3. The Smart Global Network – integrated transport systems

- Integrating sea cargo and inland transport was a goal of the 1960s but it never happened.
- This vision is difficult for slim organizations.
- Smart Shipping can breathe life into the through transport system, opening up a new era of global trade.

The challenge is to generate new business by integrating sea transport into the global trade network.
7. Is the business model serviceable?

Weak personnel, little control and few technical solutions
A challenging time

The End