

Tanker Operator Conference

**Are we ready for the challenges of
the next 10 years ?**

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- History-How we got here
- The future
- 2020's stuck between the future and the past
- 2020's some issues
- More questions than answers

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How we got here

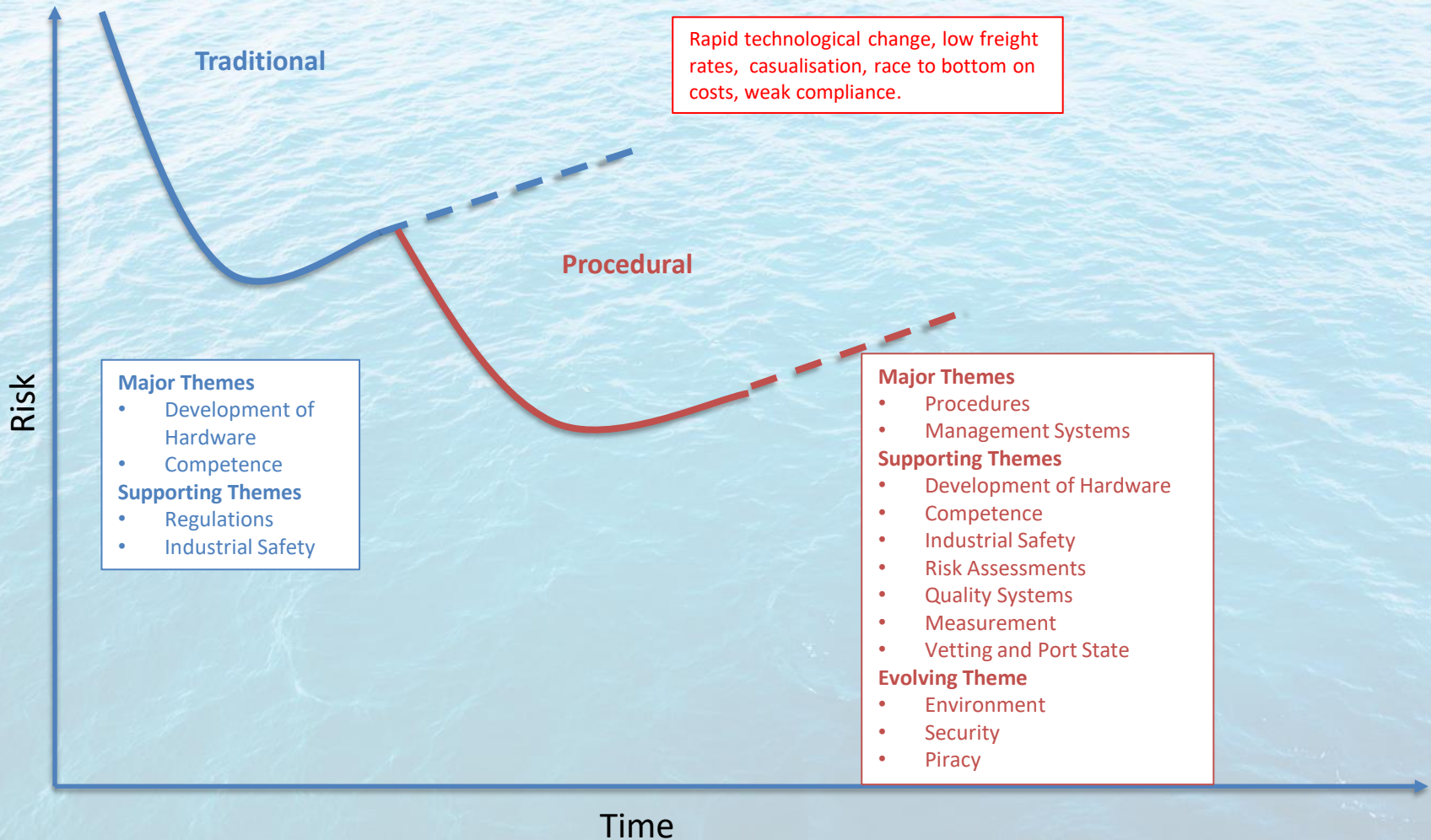
moams **The Teens-they were Great!**

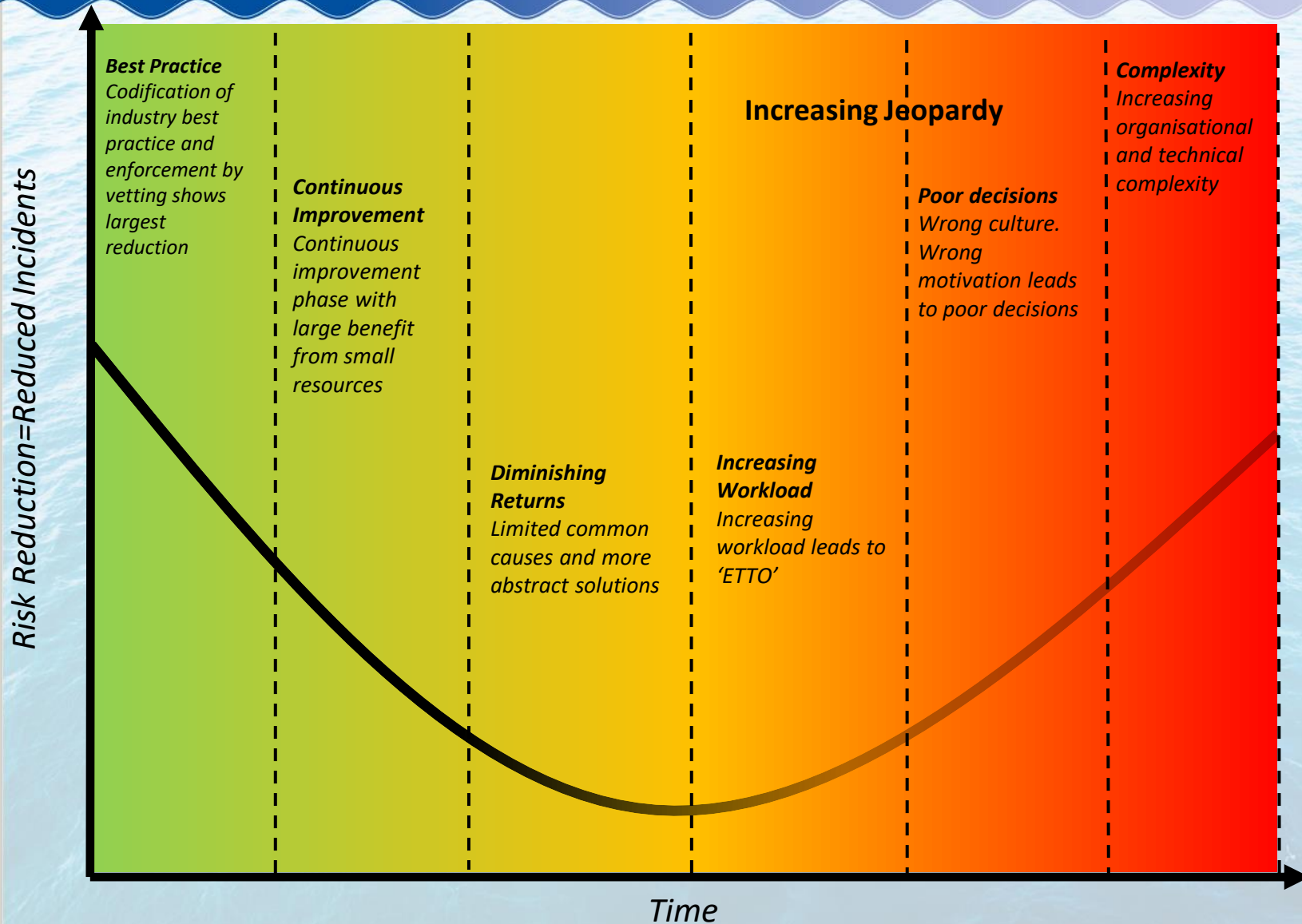
Assumptions

- Globalisation Works
 - Economics beats world dominance
 - Ricardo was right
- Cheapest is best
 - Steady State
 - Optimisation
 - Who needs stock?
- Environment Comes First
 - Emissions
 - BWT
 - GHG
 - Oil is dead
- Digitalisation
 - will change the world for the better

Legacy

- Changing Trade Patterns
- Loss of Resilience/fragile supply chains
- Wrong ships?
- Unruly Technology
 - Scrubbers/IMO2020
 - Ballast Water Treatment
 - CII
- Organisational Complexity
- Proceduralisation reduces resilience

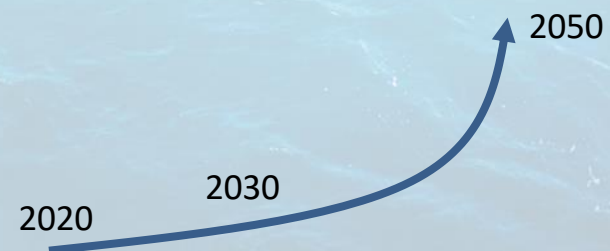


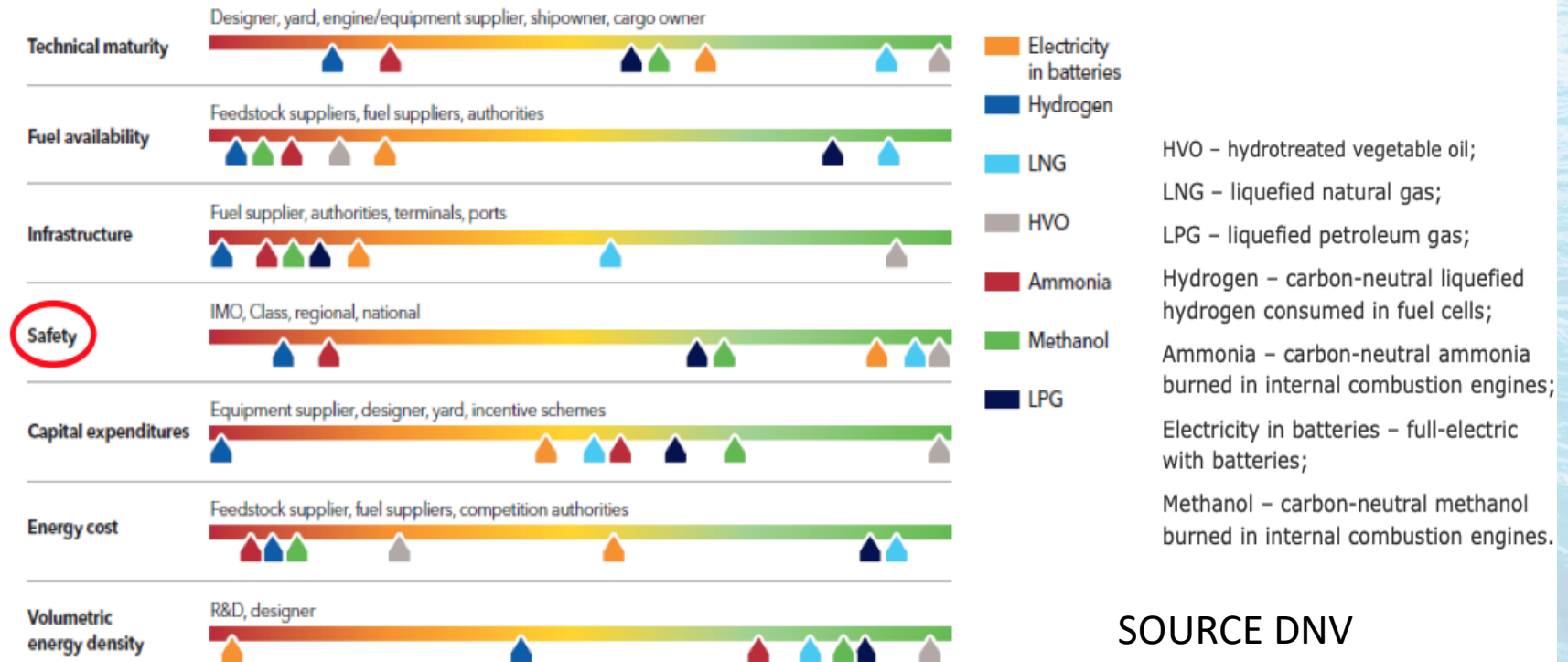


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The Future

- Some elements not clear-Carbon Intensity Indicator
- Market Based Instruments-border carbon taxes
- Assumptions based on teen operations
- Zero Carbon Shipping by 2050
 - 30% non carbon by 2030 (IMO forecast)
 - Currently 1% in service
 - 10% of ships on order but they will not constitute 10% of emissions
- The Hockey Stick Curve
 - It all happens at the end





moams Case Study-lessons from history



What do these ships have in common?

Slow take up of LNG Fuelling due to Chicken and Egg

- Suppliers won't build a bunkering network without customers
- Owners won't build future fuel ship without bunker network
- Liner and based trades first generally smaller ships

Both Dual Fuel

Early Steam vessels had dual power. Steam and Sail until a reliable global network of coaling stations was developed. then the sails disappeared.

Chicken and Egg 19th century style

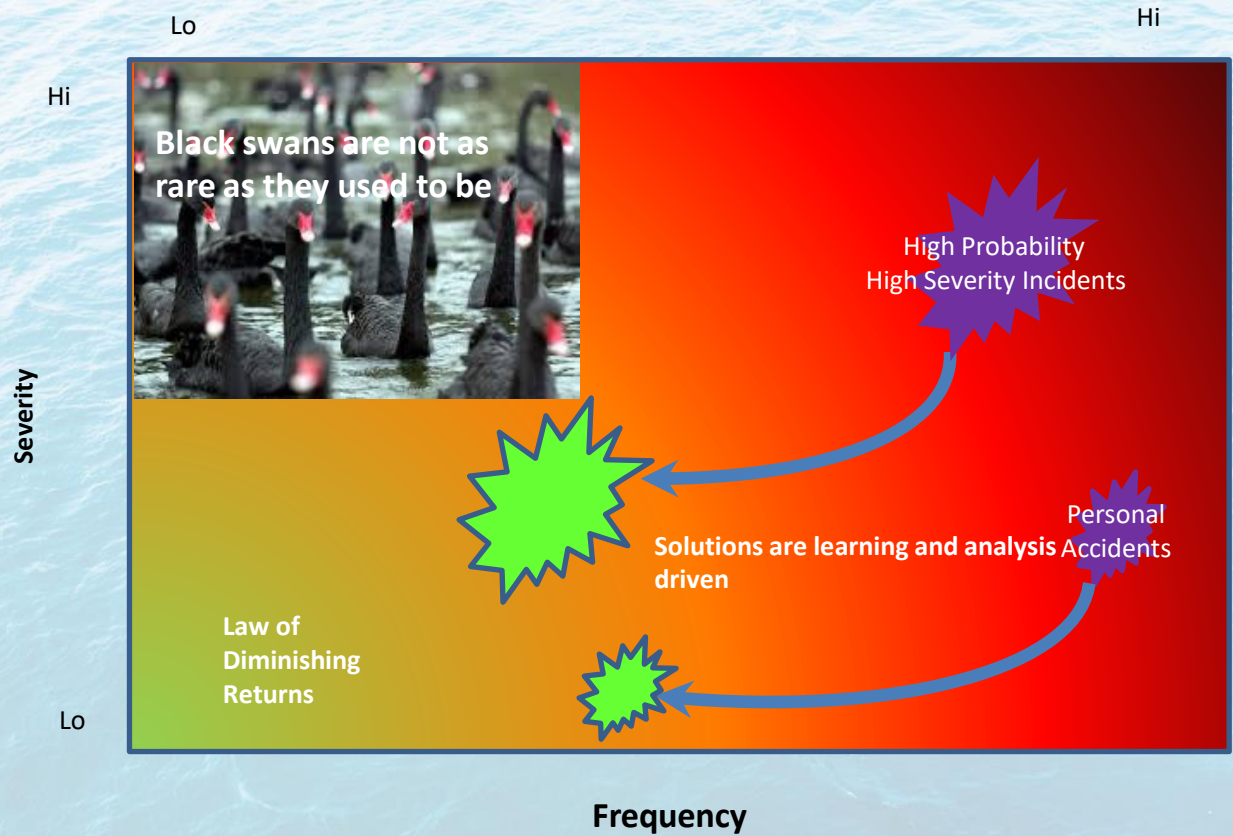


- Market \$12 Billion by 2030..probably not going to reduce demand for seafarers but does the uncertainly reduce supply?
- Natural for sub sea exploration and military use and other niche uses
- No general financial case as yet-gets worse
- No social case-unemployment in developing world
- Safety case is flawed-based on last century safety blame culture
 - Increasing hull and machinery casualties
 - Seafarer prevented incidents
 - Regional and flag accident hotspots
 - A small proportion of the proposed autonomous investment could improve manned ship safety dramatically
- Not a 2020's issue



Image Kongsberg

**2020's-
Stuck between the Future and the Past**



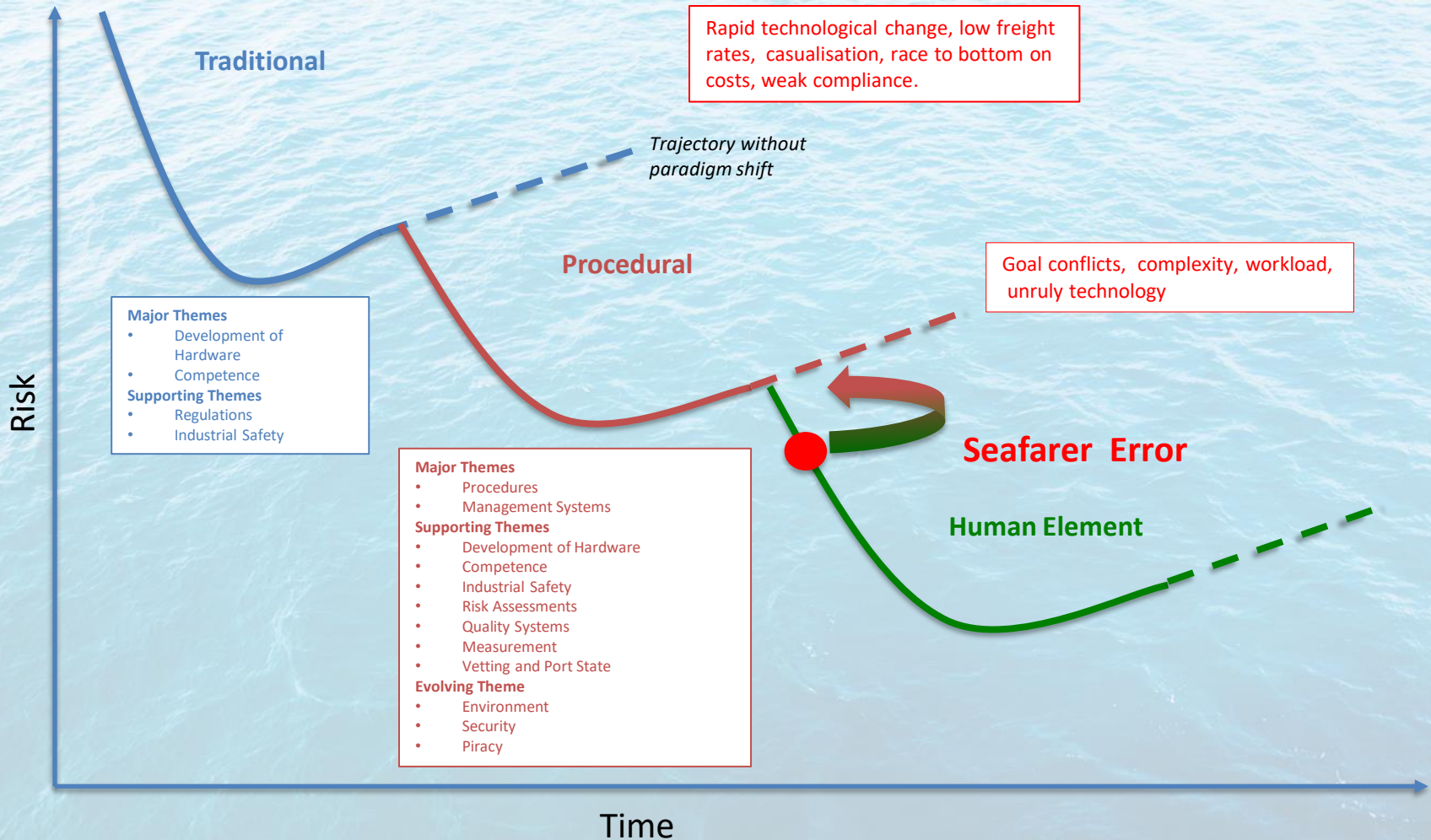
- COVID –continuing relief and manning problems
- Geopolitics
 - War in Europe
 - Disrupted Supply Chains
 - Change in Global Trade
 - Tectonic plates-two competing systems West vs Russia/China
- Environment
 - Consequences of Emissions Rules-Unruly Technology
 - Consequences of BWT-Unruly Technology
 - Consequences of Zero Carbon-Unruly Technology and optimistic assumptions
- Design
 - Poor Ship Design and Construction
 - Cheap digital not-human centred
 - Digital Transformation-Marketing or Onboard Benefit
- Lack of Resilience in ships systems and crews
- Business Model rewards low standards

moams Will it get any better-Geopolitics?

- COVID still out there and COVID rules still cause problems
- Complex world problem where different countries do different things
 - West opening up
 - China locking down
- China unreliable supplier leading to trade route changes
- Supply Chains will continue to be disrupted onshore and at sea affecting ships.
 - Lack of storage
 - Lack of resilience CII
- Ukraine invasion
 - Energy security and food security over environment and globalisation
 - Will war stop any time soon?
 - Will sanctions stop any time soon?
 - Will access to Russian and Ukrainian seafarers improve any time soon?

2020's some Issues

- Shipyards expanding for anticipated demand!!
- No 'fourth wave' large scale cheap shipbuilding nation
 - Japan, Korea, China
 - Where that has an educated workforce, space and large capital availability for mass production?
- Replacement ships will be more complex
- Who pays for the new autonomous carbon zero ships?
 - Shipowners.. but obviously they will get higher charter rates from friendly customers 😊
 - Balance of what you have to pay for and what you might want to pay for
 - Will you build a 2050 compliant tanker 27 years early when there might not be a tanker industry?
- First mover advantage or disadvantage



- Many years of talking about it but little action even confusion as to what it is
- 100% of accidents are cause by human error
- Opportunity with IMO strategic direction and ISM amendments
- HEIG
- Time Pressure
- The good news...the skills that support the human element can help you deal with uncertainty and change
- **More important not less**

moams Time Pressure-A Titanic Problem



The myths-blue riband

The enquiry '.... the loss of the said ship was due to collision with an iceberg brought about by the excess speed at which the ship was being navigated'

'... which other skilled men would have done in the same position. However, the practice itself was faulty and it is to be hoped that the last has been heard of this practice. What was a mistake in the case of the Titanic would without doubt be negligence in any similar case in the future?'

Other Examples

- Torrey Canyon
- Rena
- Herald of Free Enterprise
- Hoegh Osaka
- Thames Incident
- Time pressure can be identified in:-
 - Collisions and Groundings
 - Mooring, Cargo, Maintenance and Enclosed Space incidents

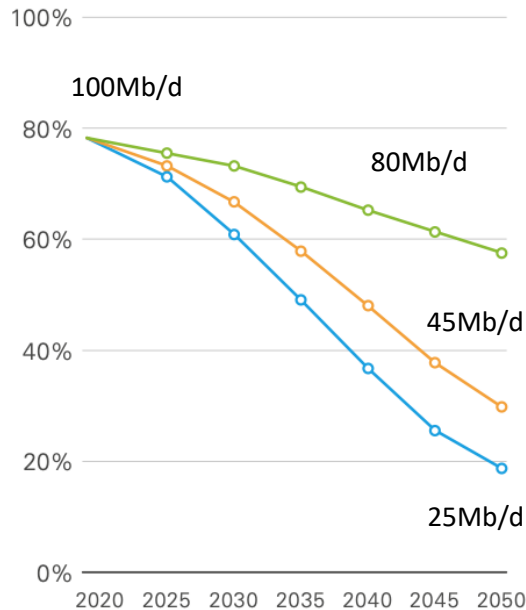
- Optimisation reduces costs by:-
 - Minimising manning-both quality and quantity
 - Reducing margins by modifying assumptions as to what can go wrong
 - Assumes that procedures can cover all scenarios and that
 - Centralisation
- Resilience is the ability to recover from an unexpected situation which needs:-
 - Good quality manning and good decision makers
 - Space to make decisions in the front line
 - Spare (adaptive) capacity to maintain operation and recover
 - Enough manning
 - Ability to repair which means maintenance skills and training
 - More old fashioned autonomy
 - Decentralisation

- IMO MSC focussed on COVID, Ukraine, MASS
 - Meetings offline
 - Lot of items delayed
- Human Element Strategic Direction
 - But HE Definition Confused
 - Review of HE at IMO
 - HEIG riving Change
 - ISM Amendments
- HEIG Human Element Checklist Revision approved.
 - Decade without Management of Change Process
 - Delayed two years by COVID
 - Ensuring regulations can be implemented safely

Gradual shift in energy demand: declining role for hydrocarbons, rapid expansion in renewables and electrification

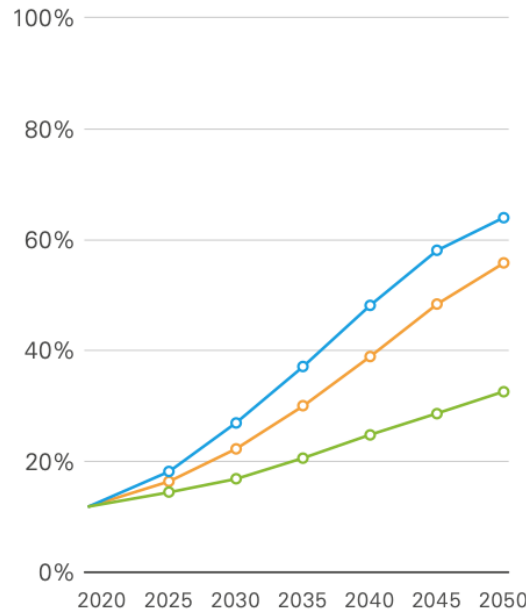
Fossil fuels

Share of primary energy



Renewables*

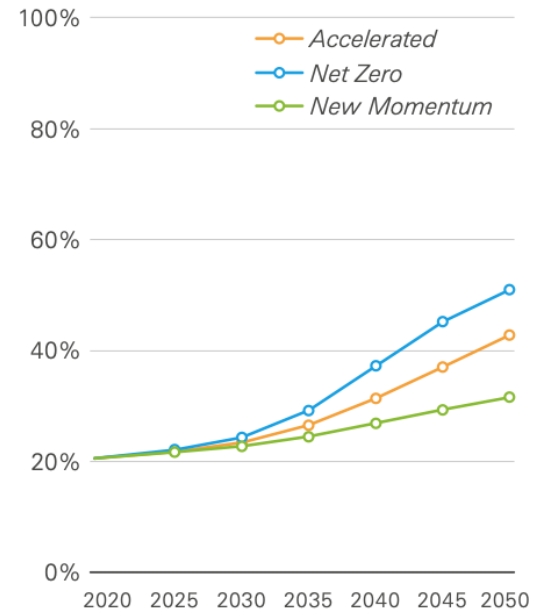
Share of primary energy



* Includes wind, solar, bioenergy and geothermal

Electricity

Share of total final consumption



Source BP Review of World Energy 2022

- COVID may be reducing (for this year) but travel restrictions unlikely to change
- Is the issue people being too long aboard or those ashore not getting any pay and finding other employment?
- Irrespective of the direct impact of the Russian invasion of the Ukraine:
 - When will sanctions and restrictions on Russian seafarers end?
 - When will restrictions on Ukrainian joiners end
 - Mixed nationality crews
- Is there another new quality manning source waiting out there?
- What has happened to that carefully nurtured pool of experienced and loyal seafarers?
- Ships are complex and casualisation not an option (UK ferries)

- What ships do you buy now?
 - How flexible and resilient will they be?
 - How do you build in carbon efficiency?
- Expect to replace first generation environmental solutions (scrubbers and BWT)
- Worry more about earnings and availability than cost you need to access the opportunities and minimise the downside
- Hang on to your people
- Simplify and look at process
- Plan for climate change

**To get to tomorrow you need to
survive today**

Questions please

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