Key trends and challenges for the future of shipping

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During the 2019 SAFETY4SEA Athens Forum, Mr. Stavros Meidanis, DPA/CSO, S&Q Manager, Capital Ship Management Corp shared his views on how shipping will look like in 2030 even 2050, focusing on implications for ship managers in the future.

There are a number of global ships reshaping the maritime world and the industry which has already started innovating in order to meet them. But how will shipping look like in 2030 or 2050? Which are the implications for the shipowners and the ship managers right now but also for the future?

The geo- economic outlook and Shipping trades and Patterns

The shipping industry has been hit by many geopolitical obstacles. We are all aware of the ongoing severe trade conflict between the US and China. Trade can not be seen as an isolation from the wider geopolitical developments, since the conflicts are indirectly or directly spillover into the flows. Increase of protectionism, linked to geopolitical shifts that could cause significant changes in international trade and impact the maritime industry Governments alone cannot manage the situation and create trading conditions that foster sustainable and inclusive growth. New Routes and Shipping Trades & patterns, as the Silk Road, Artic Circle, Northern Sea Route (NSR) are expanding the scope. As long as the ice melts, we have new routes open to sail out of the Arctic Circle and navigation through the NSR, which will be more possible in the future as the climate change continues to warm.

New Technologies & Innovation

Technology onboard vessels simplify the processes but also drives efficiencies. The industry is moving towards a digitalized, data-driven world with the challenge being finding the right long term technologies and link them with vessels at sea in an efficient way.

Industries across the spectrum are coming to terms with the fundamental changes that technological advances in areas such as Artificial Intelligence (AI), Robotics, Automation, Smart Ships, Autonomous vessels, will have the opportunities that they push.

The technological developments such as autonomous and smart ships are turning the rims of science fiction into a hard fact. All of us are aware of the terms 'smart shipping', 'autonomous vessel', as they are often discussed in several agendas.

The digital transformation will affect the cycle of regulatory and legal change. Regulators will have to rewrite the rules that have governed how vessels can and should operate safely, efficiently but also remotely. Of course these changes will not happen overnight. It will challenge

traditional business models and companies have to adapt in order to be able to survive and prosper.

At the same time, creating a culture of innovation is not an easy task. Innovation means new organizational methods, changes in business practices, changes in management strategy, customization, regular and cyclical changes, merger acquisition.

Regulatory framework and shipping decarbonization

In April 2018, IMO adopted an initial climate change strategy under which international shipping must reduce the GHG emissions by at least 50% by 2050. Thus, IMO identifies 4 major pathways towards emissions reductions:

1. energy efficiency;
2. sources of energy;
3. fuels with low carbon;
4. new technologies (reliability, regulatory constraints, Cost).
   Concerning that this is our target for 2050, all pathways are likely to play a part in the future of shipping.
   In depth analysis on decarbonization is crucial. Why?
   Improving the energy efficiency of vessels and deciding which strategy we have to adapt in order to reduce the GHG emissions are two very important initial steps for the path towards decarbonization.
   Conversation of the adoption of energy management solution centers around three keys:
1. reliability of technology;
2. regulatory constraints;
3. cost.

Priority of the most operators is to ensure that they stay up to date, comply with the rules-regulations, and carry incoming environmental rules.
Definitely, decarbonization is a number one challenge that we have to deal with as an industry, citing three key elements to accelerate pace:

1. Higher efficiencies are required than today;
2. Logistics should be improved, in order to optimize chains, including ports and not only ships;
3. Carbon neutral fuels & LNG.

We've heard a lot of things about LNG fuels, what we're going to do, how we're going to adopt. Again, to fully understand what it will take to fully adapt to alternative fuels globally, we can compare as an example the LNG as a fuel, in certain circumstances, solutions same to mitigating one type of solution which may cause other problems. For example, improving the combustion efficiency of ship engines to reduce carbon dioxide can result to an increase on NOx emissions.

Digitalization

Digitalization is referring to ongoing improvement and transformation of business operations, functions, approaches, models leading to a more efficient exchange of information within and among companies, vessels adapting this transformation.

Digital technology can be an enabler of growth and innovation. The maritime industry is looking for ways to apply new digital technologies to conventional and new business models and making headlines with announcements of maritime companies partnering up to deck firms.

High reliability organizations (HROs)

HROs were developed as a conclusion that accidents were inevitable in some systems, organizations due to their characteristics. Having recognized that the world is a complex, stable and unpredictable, HROs perspective maintains reliance to the specification to the traditional risk assessment.

The main attention of the HROs is given to the real world going on the frontline of the operations, by paring those doing the actual work, operators have the possibility to solve the situations themselves, based on their own experience and knowledge. This is in contrast to traditional safety management as we know it up to now, from the era of human factors with focus on the control of human behavior.

It's acknowledged that high reliability is depending on how things are done on daily work and is a result of good teamwork and cooperation. If somebody fails, it is seen as an opportunity to learn both from the crew and the shore management. Everybody is constantly trying to improve reliability, implying high flexibility encouragement to critical views.

Concluding, the transition to a low-carbon and low-emission future is not an easy process. The industry has to find solutions that are not only commercially viable but also technically feasible and safe.

Since we are a in an efficient mode of transportation, we have achieved recently improvements in design and operation and will be difficult to find further and meaningful GHG related gains only by using existing technologies.

If we are looking to the future, although the industry is contributing small to climate change, it comes with growing scrutiny. The industry needs to increase the preparedness for climate change, risk engineers need to understand there is awareness and how we can deal with new regulations.

Above text is an edited version of Mr Stavros Meidanis' presentation during the 2019 SAFETY4SEA Athens Forum.

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