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### Decarbonising and digitalising shipping

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# Decarbonising and digitalising shipping

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*Targeted regulation and a mindset shift are necessary to transform the maritime industry*

When [the International Maritime Organization's \(IMO\) regulation for lower sulphur fuel content](#) came into effect at the beginning of 2020, there was predictable praise from environmental groups and even some shipping companies, such as Maersk. Given IMO's expectations of a 77 percent drop in sulphur dioxide emissions that amount to 8.5 million metric tonnes of the pollutant, the expected impact on addressing climate change is substantial.

Change, however, often comes with uncertainty and hand-wringing. For the shipping industry, there was the added spectre of considerable oversupply that had created extreme cost pressures.

"There's been an oversupply of assets which has driven charter rates down," explains **Perlin Chan**, Deputy CEO at Singapore-founded Berlitz Marine & Offshore Group. "When you're faced with cost pressure, climate change and green energy are not short-term objectives. But as long-term objectives, they are something that are needed.

"The maritime industry will enter a critical decade that will be driven by change. I see two big themes: green energy and digital transformation."

## DRIVING DECARBONISATION AND DIGITALISATION

Chan made those remarks at the recent International Trading Institute@SMU forum "Re-imagine Trade and Shipping: Digitalisation and Decarbonisation". **Serene Johnson**, Head of Decarbonisation at Royal Dutch Shell Group, picked up on the issue of green energy that Chan had highlighted.

"There was a lot of anxiety in the market about whether there would be enough low-sulphur fuel for bunkering, and if it would be really expensive," she recounts. "The reality was the industry came together and recognised the challenges and established a supply chain. Because of the regulation that was in place, it forced that action.

"Shipping is led by regulation. If you move too fast, then you're not competitive because you're too expensive. If you move too slow you're not seen as a thought leader and not demonstrating decarbonisation and energy transition. Regulations help."

She adds: "When we talk about market-based measures in the context of policy and regulation, that's what we mean. If IMO prices the emissions, it becomes part of the economics, it becomes part of the decision making principles for the ship owners to help move the sector forward."

While a cleaner fuel is the obvious place to start the decarbonisation conversation, older vessels that are currently in operation run on less environmentally friendly fuel. The economic imperative to maximise a multi-million dollar asset over its 20-year lifespan led to technology such as scrubbers to meet IMO regulations, but it also served as an opportunity to embrace digital transformation.

“While the vessels are in operation, you have to deploy technology to improve their energy efficiency, and also safety and operations,” Johnson notes. “Some include a digital twin to have a virtual reality representation of what’s happening on board the vessel. Are you able to use AI to predict climate conditions on a particular voyage to reduce the wind resistance on your vessel?”

“Energy efficiency also has a cost dimension on top of the climate dimension: the less fuel you burn, the more cost efficient the vessel will be. So I think there is a lot of opportunity to deploy very interesting technology to the shipping sector.”

“I think the industry as a whole needs a mindset shift,” Chan asserts. “I know the maritime industry is grappling with digital transformation but that is because we cannot see or touch our boats. They are out at sea, I can’t touch them. How can I drive change when I cannot even see or touch the ships? I think that’s why I think my industry is a bit lacking compared to other industries in terms of transformation.”

She adds: “How do I, in my situation, transform my organisation to be prepared for such a long-term change? How do I use AI to make sure there is ease of communication and that what happens on the vessels is the same thing as what I see sitting in the office?”

“We have been exploring such technologies for the last six months. We took advantage of the pandemic lull to explore new technology. We believe that when we improve the speed of communication and the ease of information sharing, it will ultimately result in a more positive bottom line.”

## IQ, EQ, AND AQ

As a result, Chan is actively recruiting people with skills and experience beyond the maritime industry. Specifically, she is looking for data analysts and digital strategists to “make sense of all this information [and] contributing to positive business outcomes”.

Beyond IQ and the much touted EQ, Chan believes Adaptability Quotient (AQ) is needed to roll with changes and be successful in the maritime industry. It was something **Aladdy Choo** found out during her internship at Klaveness Digital.

“I don’t think any company will turn you down if you are willing to learn,” says Choo, who is in her final year in the Maritime and Business & Operations (MBOT) track at SMU. “You might not think you have the capabilities to do the job but you don’t have to have the capabilities at that moment. Say ‘yes’, and then grow into the job. Daring to make the first step, and daring to be different from everyone else. Most people just want to go on a certain route that has been well-trodden. We have to brave enough to forge our own paths.”

"It's a fallacy to say shipping is a sunset industry," says **Tan Lay Lin**, Director of the International Trade Cluster at Singapore's Ministry of Trade & Industry. "There are actually opportunities in terms of decarbonisation and digitalisation. People with the right skills and mindset will still find opportunities.

"In government too. We will always be here. As the economy changes, as we look to new sectors for growth, the government also evolves."

*Perlin Chan, Serene Johnson, Aladdy Choo, and Tan Lay Lin were panel speakers at the International Trading Institute@SMU forum "Re-imagine Trade and Shipping: Digitalisation and Decarbonisation" that was held on March 26 2021. The discussion panel was moderated by Professor Annie Koh, Senior Academic Director of the International Trading Institute (ITI).*

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