SINGAPORE maritimeweek® 2022

Top speed ahead in decarbonisation push

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Clear regulation can help advance green agenda in maritime

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CAPTURING THE ESSENCE

Datuk Yee Yang Chien, President and Group Chief Executive Officer of MISC Group, speaking at the Accelerating Decarbonisation Conference.

The Need For Speed: Decarbonisation Must Go Faster

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Decarbonising the maritime industry will be both costly and risky, but bold and confident leadership can make a difference, even as the pressure to act spikes.

Leaders can set explicit goals, lay out the vision for smaller players, and push for change, said panellists at a dialogue yesterday during the Accelerating Decarbonisation Conference.

"To say that we have not progressed in our battle to decarbonise would be a disservice to the industry... The question is, is it fast enough?" said Datuk Yee Yang Chien, President and Group Chief Executive Officer of shipping conglomerate MISC Group.

"Because of my fondness for movies, I will quote Tom Cruise in Top Gun. We have a need for speed, we have a need for more speed," he said, referencing the oft-quoted line in the 1986 action drama flick.

While the discussion has often been focused on the technology aspect, he believes leadership will be key. Decarbonisation research centres that work on projects and seek out collaborators can play the role of leadership hubs.

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> **Datuk Yee Yang Chien**
> President &
> Group Chief Executive Officer,
> MISC Group

"We need more of them because each hub would create a ripple as they expand and rope in more players. Eventually, all these ripples will overlap. And when you intersect, that is when common practices will be introduced, which is the key to bringing costs (of decarbonisation) down," he said.

Bo Cerup-Simonsen, Chief Executive Officer of the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, pointed to three positive signs: the many research projects that are ongoing, the green corridor pilots being planned, and the agreements that are being inked.

He noted that "though there is a lot of ambiguity in the system", these signs all make clear that full decarbonisation is possible.

"This is where we need strong, visible leadership to stand out and create a vision for the industry," he said.

"The next big thing would be for leaders across the value chain to start putting out their decarbonisation targets and strategies... to be blunt and speak openly about what (they) are reaching for, how they will get to zero in 2050, and what (their) intermediate targets are in 2030, 2040."

SOLUTIONS FOR NOW AND LATER

A report by the Intergovernmental Panel on Climate Change (IPCC) released on Monday said global greenhouse gas emissions must peak before 2025, in order for global warming to be kept within the Paris climate agreement limits.

But the infrastructure and supply chain for green fuels will take some time to be developed, said Lynn Loo, Chief Executive Officer of non-profit organisation Global Centre for Maritime Decarbonisation (GCMD).

In the meantime, the industry needs to look at short- and mid-term solutions to improve energy efficiency, she added. These include the use of biofuels and Liquefied Natural Gas (LNG) as marine fuels, and investments into carbon capture technology to reduce emissions.

The GCMD is conducting a safety study on the use of ammonia as a bunker fuel in preparation for the scaling up of green ammonia.

"This is a no-regrets move, because we have to figure out the safety while others figure out the scaling and production (of ammonia). We can proceed in parallel," she said.

The safety study, she added, will provide the foundation for the formation of a regulatory sandbox to pilot ammonia bunkering in Singapore.

"There are a lot of one-off trials right now... but we need to move beyond one-off trials to look at route-based pilots. Then, we can begin to build the infrastructure and supply chain on both sides of the ports," she said.

Lars Kastrup, Co-President and Executive Director of container shipping line Pacific International Lines, added that while his company has placed orders for dual-fuel containerships, "there are tens of thousands of ships sailing out there for the next 15 to 20 years which will sail on conventional fuels".

"We should not underestimate the need to find solutions for conversion, for carbon capture, although there is still some way to go to achieve scale. These developments are important, if not we will fall short of our target," he said.

Another key aspect of readying the sector for greener fuels, said Mr Kastrup, is the training and development of the maritime workforce. Workers will need to be equipped with the skills to operate green vessels.

To that, moderator Nicholas Brown, Chief Executive Officer of classification society Lloyd's Register, said the conversation on talent development is just starting to build pace.

Datuk Yee said the industry will require talents with diverse skill sets to navigate the decarbonisation journey.

"We don't just need marine engineers. We will also need chemical engineers and marine biologists," he said. ▪

In The Race To Curb Global Warming, Collaboration Will Be Critical

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As two of the world's leading maritime nations and long-time ocean partners, Singapore and Norway should cooperate to address challenges and grasp opportunities in the future of the maritime industry, said Norway Ambassador to Singapore Eivind S Homme.

In his keynote speech at the Accelerating Decarbonisation Conference, Mr Homme said a recent visit by Singapore's Minister for Foreign Affairs Vivian Balakrishnan to Norway concluded that the bilateral relationship between both countries is excellent – with only one challenge: "We should do even more together."

This is pertinent as Singapore and Norway share common ambitions to become frontrunners in maritime digitalisation and decarbonisation.

For instance, Norway has set in motion a national action plan for green shipping, with the goal of halving greenhouse gas (GHG) emissions from domestic shipping and fishing by 2030, compared to 2005. Singapore has also charted its long-term strategy in the Maritime Singapore Decarbonisation Blueprint 2050, among other initiatives.

Mr Homme cited the latest United Nations report on climate change, which warned that GHG emissions have to peak before 2025 at the latest, and be reduced by a quarter by 2030 – in order for the world to limit global warming to 1.5 degree Celsius, as agreed in Paris in 2015.

He added that in the Arctic part of Norway, Svalbard, global warming is happening three times as fast as the rest of the globe. The Arctic is particularly vulnerable to climate change.

"However, what happens in the Arctic does not stay in the Arctic. (This) will affect global warming and sea levels in all the places, such as in South East Asia, close to the equator – it is of utmost importance and is being researched in Singapore and Norway."

Singapore has been a small island observer state at the Arctic Council since 2013.

Today's climate challenges call for international and cross-sector cooperation more than ever, said Mr Homme. "I believe each of us must be champions of change in all our respective areas of responsibility."

To that end, the Maritime and Port Authority of Singapore (MPA) is also striking up new partnerships to drive decarbonisation forward. It inked three Memoranda of Understanding (MoU) with two green shipping consortiums on the ammonia value chain:

- **To establish an ammonia fuel supply chain, including an onshore and/or offshore facility and an ammonia bunkering ship in Singapore.**
  The MoU was signed with ITOCHU Corporation, ITOCHU Enex, MOL, Pavilion Energy, TotalEnergies Marine Fuels, and VOPAK Terminals. It is a key element of an integrated project that included the development of ammonia-fuelled bulk carriers by ITOCHU with other partners.
- **To establish a platform for the exchange of views and the harmonisation of ammonia bunkering safety guidelines in ports.**
  The MoU was signed with ITOCHU and 15 other port authorities, research and development centres, and shipping and energy companies.
- **For development works to establish an integrated ammonia supply chain, with a goal to commence ammonia bunkering within this decade.**
  The MoU was signed with the SABRE consortium, comprising the American Bureau of Shipping, Fleet Management, Kawasaki Kisen Kaisha (K-Line), Keppel Offshore & Marine, AP Møller – Mærsk, Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, and Sumitomo Corporation.

MPA Assistant Chief Executive (Industry) Kenneth Lim announced the three agreements at yesterday's conference, which was launched jointly with the International Maritime and Port Technology and Development Conference (MTEC) and International Conference for Maritime Autonomous Surface Ships (ICMASS).

He added that a consortium formed by PTT Exploration and Production, Air Liquide, YTL PowerSeraya, Oiltanking Asia Pacific, Kenoil Marine Services, and Maersk will also establish a green e-methanol value chain and produce green e-methanol in Singapore.

"These initiatives on ammonia and methanol will add to the multi-fuel bunkering ecosystem in Singapore and are important milestones to bring ourselves a step closer to decarbonising the global shipping industry," said Mr Lim.

In the same spirit of collaboration, the Singapore-based Global Centre for Maritime Decarbonisation (GCMD) also signed three partnership agreements to further maritime decarbonisation:

- bp became the first integrated company to sign on as a strategic partner, committing S$10 million in cash over five years.
- The Boston Consulting Group and Chevron will bring S$15 million in cash and in-kind contributions through impact partnerships. This, in addition to the S$130 million from the founding and strategic partners, will go towards strengthening GCMD's decarbonisation efforts, especially in conducting trials and pilots.
- The International Chamber of Shipping and the Singapore Shipping Associations signed on as coalition partners, which will allow GCMD to tap their extensive networks and expertise.

Mr Lim noted that this year marks the first time where the Singapore Maritime Week has a dedicated sustainability track – a timely initiative that will allow the industry to engage one another on this "complex and urgent issue".

"Decarbonising the shipping sector on a large scale has never been done before, but it presents inherent opportunities to countries and companies. Decarbonisation efforts are now widely seen as a critical aspect of global recovery as we begin to look beyond the pandemic," he said. ▪

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Green Champs

Touted as a "problem solving lab", Viswalab was one of four winners at the inaugural Maritime SG Carbon50 Awards yesterday. The firm, which specialises in fuel testing for shipping companies, is exploring the use of biodegradable materials instead of plastic to produce sample bottles for fuel testing.

The other award recipients were Jurong Port, with its port-centric and steel ecosystem that reduces truck trips, together with Hong Lam Marine and Victory, which are embarking on the use of biofuels and regular hull cleaning to reduce carbon emissions.

Organised by the Maritime and Port Authority of Singapore, Singapore Shipping Association, and Global Compact Network Singapore, the awards aim to recognise companies in the maritime sector for their efforts in carbon accounting adoption and emissions reduction.

Act Now To Secure A Greener Future: Panellists

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From left: Francois-Xavier Accard, Managing Director, CMA CGM; Takeo Akamatsu, Project Leader, Integrated Project for Development of NH3 Fuel Ship with Fuel Supply Chain, Marine Department, ITOCHU Corporation; and Sanjay Kuttan, Chief Technology Officer, Global Centre for Maritime Decarbonisation.

If shipping wants to realise its zero-emissions vision, there should be more doing and less waiting.

Instead of waiting for a perfect solution, there are options such as Liquefied Natural Gas (LNG) that organisations can utilise today, said panellists at the Accelerating Decarbonisation Conference yesterday.

For French container shipping company CMA CGM, investing in LNG vessels contributes to its goal of having 10 per cent of its global supply powered by alternative fuels in 2023. It currently has 27 such ships in its fleet and aims to have more than 60 by 2026.

"It's really about acting now," said Francois-Xavier Accard, the company's Managing Director. "LNG might not be the solution, but we have to use what is available as it's not only about carbon dioxide emissions, but people's health as well."

Companies, however, are grappling with a number of challenges as they embark on the road to cleaner fuels. One is having few options to choose from, with some fuels not making business sense to adopt.

Another is the lack of infrastructure to ramp up production of cleaner fuels quickly. For example, to produce green hydrogen, companies need renewable electricity, which, in turn, requires huge investments into wind and solar power.

"If we were to replace half the current fuel demand with hydrogen or methanol, we would need 1,000 gigawatts of renewable electricity," said Jerome Leprince-Ringuet, Vice-President of Marine Fuels of energy company TotalEnergies. "While it is a big number, it is not hard to achieve collectively."

This is where collaboration has a big role to play. Speakers on the panel firmly agreed that working together is shipping's best shot at decarbonisation.

Japanese trading company ITOCHU Corporation is already on the move. It is currently part of an integrated project to study the development of an ammonia supply chain in Singapore, which includes bunkering and offshore facilities.

"It's not a chicken and egg issue," said Takeo Akamatsu, Project Leader, Integrated Project for Development of NH_3 Fuel Ship with Fuel Supply Chain, Marine Department at ITOCHU Corporation.

"While we study infrastructure for bunkering, we are also discussing developing vessels that can run on ammonia, and talking to ammonia producers. The key is to do this at the same time."

These concurrent partnerships pave the way for a quick uptake in alternative fuels as the moving parts are put in place seamlessly.

At the same time, regulations are needed to give greater clarity to shipowners on what has to be done to reduce emissions. Some of the panellists suggested the use of carbon taxes, which can help level the playing field as well as serve as a foundation to support future fuels usage.

More importantly, the industry can circumvent the inertia that has resulted in a slow decarbonisation journey.

"This is a point where as an industry we need to be fast in setting up frameworks and be first movers of the project on low-carbon fuels," noted Mr Leprince-Ringuet.

Education will help society better warm up to the idea of alternative fuels like hydrogen and methanol, said David Lim, Vice President, Asia of hydrogen technology firm Element 1. One key concern surrounding methanol, for instance, is its perceived toxicity.

"I really think the most important thing is to educate the public and private sector through promotion and scientific data," he added. "Once we can get the message through, things will follow through."

Anticipating an abundance of green fuels to be available in the future, Danish shipping giant AP Møller – Mærsk has already focused on an existing one – methanol. It plans to have 25 per cent of its fleet running on such fuels by 2030.

"Methanol, in our view, is the only green fuel that has the potential to scale right now because the technology is there," said Jacob A Sterling, Senior Director, Head of Decarbonisation Innovation & Business Development at Maersk, who joined the discussion over a virtual platform.

"We're betting on methanol, but we are also seeing that to (scale), we need to establish not only interest but the production of green methanol." ▪

Clear Regulations Needed As Maritime Industry Transforms

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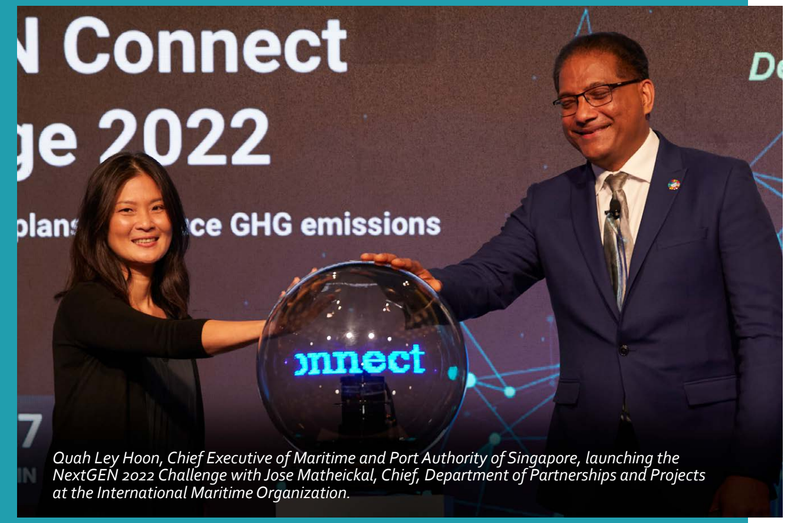

Quah Ley Hoon, Chief Executive of Maritime and Port Authority of Singapore, launching the NextGEN 2022 Challenge with Jose Matheickal, Chief, Department of Partnerships and Projects at the International Maritime Organization.

As the maritime industry pursues the crucial yet challenging role of reducing carbon emissions, the discussion has largely focused on technologies like alternative fuels and smart ships.

But regulations also play an equally important role, said panellists at the International Maritime Organization (IMO)-Singapore Future of Shipping Conference yesterday.

"Shipping is a global industry – we require global regulation or there'll be chaos," said International Chamber of Shipping (ICS) Deputy Secretary General Simon Bennett. "We (ICS) have announced a net zero target by 2050, but we should have no illusions of the incredible scale of ambition."

He was one of five experts speaking at a panel that discussed solutions to address gaps in the maritime sector's decarbonisation efforts.

The panellists had a key message: clear regulations are needed for these solutions to bear fruit.

"To support and accelerate energy transition, we need regulatory certainty so that investors know what the regulatory environment is, and how it's going to look like in five to 15 years so that they can make their business plans," said Dominik Englert, Economist for Global Transport Knowledge and Expertise at the World Bank.

To sustain this transition long-term, there also needs to be a level playing field between zero-carbon fuels and fossil fuels. "We need to close the price gap between conventional and alternative fuels," added Mr Bennett.

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>
> **Dominik Englert**
> Economist
> Global Transport Knowledge and Expertise,
> World Bank

This is where market-based measures like carbon pricing and levies are critical. The finances raised from such measures can be substantial. A World Bank report published this month estimated that carbon revenues could reach an estimated US$1 trillion to US$3.7 trillion by 2050, or US$40 to US$60 billion annually.

Carbon revenues should be used strategically, said Martin Humphreys, Lead Transport Economist at the World Bank. The report noted that the revenue could be used to help developing countries that are lacking the resources to reduce shipping emissions, for instance.

Such a move affirmed what panel moderator Sturla Henriksen, Special Advisor (Ocean) to the United Nations Global Compact, believes in: that the fight against climate change underscores the need for stakeholders to work across national boundaries.

The regulations should also be complemented with a comprehensive plan of action – more specifically, a route-based action plan.

Describing it as a business plan in the start-up world, Chai Kah Hin, Associate Professor at the National University of Singapore Centre of Maritime Studies, said that the method focuses more on the outcome of reducing carbon emissions, rather than being preoccupied with technologies or infrastructure involved.

This allows for an aggregation of progress. "We are making the problem a lot less complex. The context will be a lot more specific…discussions will be a lot more convergent," he said.

These suggestions on how to decarbonise the maritime sector are timely as the shipping industry continues to struggle to reduce carbon emissions.

In fact, international shipping emissions went up by 5 per cent last year, pointed out Lynn Loo, Chief Executive Officer of the Global Centre for Maritime Decarbonisation. "We need to take action now," she said. "We need to do what we can now with what we have."

Her remarks echo the message made by Minister for Transport and Minister-in-charge of Trade Relations S Iswaran in his welcome address before the panel discussion.

Describing climate change as the "defining challenge of our times", he said: "Its impact on lives and livelihoods are already being felt around the world. It is a global emergency that calls for urgent, resolute and collective action."

These challenges, however, also open up opportunities for the maritime sector to collaborate for a greener future, added IMO Secretary-General Kitack Lim.

At the conference, two sustainable initiatives were launched to further boost the sector's green efforts.

The first project unveiled was the IMO Coordinated Actions to Reduce Emissions from Shipping, or IMO CARES. This initiative looks to accelerate the development and deployment of green technologies that are targeted at helping bolster the economic growth in developing nations.

The second was the NextGEN Connect Challenge 2022, a programme jointly launched by IMO and the Maritime and Port Authority of Singapore that looks to establish a global ecosystem for maritime decarbonisation initiatives.

"The transition of a decarbonised maritime sector cuts across all aspects of shipping… we need everyone to be active in sharing their knowledge and experience to support the implementation of strategies and measures adopted by IMO," said Mr Lim. ▪

How Digitalisation And Decarbonisation May Lead To Disputes

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As the maritime sector moves to achieve digitalisation and decarbonisation, it may be timely to take stock of the challenges ahead.

The challenges, from potential missteps and confusion to rising disputes, were discussed during a virtual panel organised yesterday by the Singapore Chamber of Maritime Arbitration.

Punit Oza, Chief Executive Officer-Designate at digital freight forwarder Wiz Bulk, warned how digital transformation is driving irreversible change in the industry.

"It's a bit like milk becoming yoghurt, you cannot revert," he said, drawing a chuckle from moderator Paul Aston, Consultant at international law firm Holman Fenwick Willan.

The issue with digital transformation, especially when it is accelerated during COVID-19, is how it could result in a potential series of mistakes that create catastrophic results for stakeholders, noted Mr Oza.

"That is where the legal challenges really lie," he said, pointing to processes like carbon measurement and algorithmic ship routing as examples which may be prone to legal challenges if they are not well-tested.

> "In the coming years and decades, there's going to be ever-increasing legislation with ever-tightening regulations."
>
> **Andrea Skeoch**
> Deputy Director (FD&D),
> North of England
> P&I Association

For Mr Oza, this means industry players like him have a role to ensure digital evolution is robust enough to withstand legal challenges and failures.

FORMULA FOR CONFUSION

The discussion, which also touched on topics such as carbon emission calculation and the European Union Emissions Trading System (EU ETS), took a mathematical turn when a complicated formula was flashed on the screen.

Andrzej Jasionowski, Director and Forensic Naval Architect at marine forensic firm SophusQuorum, was showing the calculation used for the Energy Efficiency Design Index (EEDI), a mandatory measure for new ships to promote more efficient equipment and engines.

Zooming in to the figure on Specific Fuel Oil Consumption in the formula, Dr Jasionowski shared that the number has a 10 to 20 per cent deviation for measurements in shop tests in the laboratory compared with sea trials.

"My point is that even the most sophisticated method we have is faulty," he said, noting that the International Maritime Organization has unveiled legally binding targets on reducing greenhouse gas emissions based on such measures. "There will be a headache for legislation and everybody involved."

Believing that flawed calculations could create more disputes, Dr Jasionowski instead proposed a blanket ban on the speed of ships to reduce carbon emissions.

EVER-TIGHTENING REGULATIONS

In response, Sanjay C Kuttan, Chief Technology Officer at the Global Centre for Maritime Decarbonisation, said such views on carbon calculations do reflect ground sentiments. However, commercial pressures from producers and customers mean that slower ships may not be the best solution.

Instead, he suggested that no-carbon or low-carbon fuels be the "key driver" in decarbonisation. In such a case, there may not even be a need for carbon measurements as carbon is out of the equation – quelling the debates over how it is calculated.

But such debates will probably never go away, and may only intensify with increasing regulations. "In the coming years and decades, there's going to be ever-increasing legislation with ever-tightening regulations," said Andrea Skeoch, Deputy Director (FD&D), North of England P&I Association.

For members of her protection and indemnity association, the concern has been the EU ETS, which aims to include shipping in its carbon trading market, forcing shipowners to buy ETS permits. She said the association advises members on the regulations amid uncertainty, such as how it affects voyages that involve port calls outside the EU.

Wrapping up the discussion, moderator Mr Aston brought up the case late last year of environmental organisation Friends of the Earth suing the United Kingdom over the financing of a Liquefied Natural Gas (LNG) project in Mozambique, as the project was deemed to be against the Paris climate agreement.

Highlighting how LNG is a major fuel type in shipping, he alluded to how the industry may face such legal challenges in the future.

"Issues like climate litigation is something that is going to affect us all," he concluded, leaving the audience with some food, if not fumes, for thought. ▪

Collective Action Required To Fight Off Cyber Attacks

Valerie Ang

On a quiet afternoon in June 2017, staff at AP Møller – Mærsk started to receive strange messages that their files were being encrypted. The demand: US$300 in bitcoin to unlock the data.

Within hours, networks started to fail, while files across the company were being destroyed. By the end of the day, the NotPetya malware had crippled the company's entire computer network. Maersk later estimated that the attack, which paralysed their operations for weeks, had cost them about US$300 million in lost revenue.

The incident was cited by panellists at the MarineTech Conference's New Frontiers in Cyber Security discussion as a key turning point for the maritime sector – where cyber security became a top priority.

And as the sector continues to digitalise, the threats of cyber attacks will only grow, said Ong Chin Beng, Chief Information Security Officer of the Maritime and Port Authority of Singapore.

"Last year, we experienced an escalation in the sophistication of ransomware. The threat actors have shown their improved capabilities in trying to breach the systems and protection that we have put forth. Rightly put, ransom is no longer a ransomware, it's probably a ransom war. There is more importance for us to work collectively when facing these challenges," he said.

The problem is not trivial, with companies potentially facing millions of dollars in losses in the event of a cyber attack, said Daniel Ng, Chief Executive Officer of CyberOwl, a cyber security consulting firm.

"One of the key findings is that the average cost of a cyber attack to a shipping company is about US$1.8 million a year. This is on par with a cyber attack on any other sector," said Mr Ng.

COMBATTING CYBER THREATS

The threat is an insidious one. But the industry's best weapon against it will be to work together. As Leslie Yee, General Manager of Information Technology at Pacific International Lines (PIL) put it during the discussion yesterday, fighting cyber threats requires collaboration, controls, and coordination.

Said Mr Yee: "Because cyber threats are always evolving, we need to be able to work together to form a formidable defence as a community."

Mr Ong cited the example of a set of guidelines produced by the International Association of Ports and Harbors. The report, with contributions from 22 of its member ports, has helped ports around the world get up to speed on how to deal with cyber threats.

Mr Yee said that it is also crucial for ship operators to ensure that every vessel has Very Small Aperture Terminal (VSAT) infrastructure and network equipment in place, and that they are working effectively. This will enhance satellite communication to help offshore officers better monitor and manage onboard computing and activities.

"It is important to source for VSAT providers that include integrated cyber security solutions," he said. "This is so that we have a single point of contact for network connectivity, firewall, and end-point antivirus-related issues."

Finally, panellists also stressed that coordination between offshore officers and on-board crew members remains key to responding to cyber attacks effectively. This allows companies to quickly react should their ships get targeted by cyber attacks, for instance.

The industry is as strong as its weakest link. This means that everyone has an interest to ensure that all systems are in place, said Chew Poh Chang, Consulting Systems Engineer at cyber security company Fortinet.

"The interconnectivity of the system increases our exposure, which will result in more damage if we do not step up cyber security." ▪

TODAY'S HIGHLIGHTS

Thu
April 7

Maritime Services Leaders Forum
9am - 12.40pm
Hybrid (Marina Bay Sands, Level 4, Orchid Ballroom)
Engage in high-level conversations on key issues such as finance, dispute resolution and risk management to address the challenges and opportunities faced by the maritime services ecosystem.

SMOU: Charting The Direction For Singapore Maritime Manpower Transformation
2pm - 5.30pm
Marina Bay Sands
This seminar will allow the industry to understand how the Company Training Committee (CTC) can help the tripartite partners in the transformation of the Singapore maritime workforce.

Moore Stephens Singapore Shipping Forum 2022: The Sustainable Industry
2pm - 6pm
Virtual

SMU Leadership Conference: Entrepreneurship – From The Schumpeterian Hero To The Critical Process
3.30pm - 5.30pm
Singapore Management University
Is there a distinct contradiction between extensive public welfare and competitive private entrepreneurship? This fundamental question is the point of departure for the leadership conference by Martin Jes Iversen, MPA Professor in Maritime Business.

MTEC/ICMASS Conference
9am - 5pm
Marina Bay Sands

Gard Singapore Charterers & Traders Webinar 2022: Taking Stock – The Ukraine Crisis
4pm
Virtual
After Russia's invasion of Ukraine, shipping and trade have been disrupted, ships and crews have been trapped, additional war risks premiums have soared, and global sanctions on Russia have started to bite. 40 days in, Gard's Risk and Charterers & Traders teams take stock.

The Numbers Game: How Data Can Reshape Maritime

THE SPARK - GO BIG ON DATA, ZERO ON EMISSIONS

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The disruptions from the COVID-19 pandemic may have momentarily pushed global shipping's net zero agenda to the backburner, but as normalcy resumes, so have discussions on decarbonisation – and with more urgency.

In fact, researchers from Nanyang Technological University found that emissions surged in major seaports from July 2020 to July 2021.

But even as the sector looks at different pathways and technologies to accelerate the move towards sustainability, there is one big, crucial weapon it has yet to exploit fully: data.

Analytics can catalyse successful green efforts as organisations gain valuable insights on how to streamline port operations or improve fuel efficiency to realise a zero-emissions dream.

LESS FUEL, LESS EMISSIONS

Shipping has long been a carbon-intensive industry that grapples with the need to balance both financial and environmental commitments.

In the world of business, a cost-effective decision is typically one that overlooks the impact on nature. But data analytics could change this – by paving a way for profitability and sustainability to co-exist.

Here's how: when industry players use advanced technologies like artificial intelligence (AI) to integrate different types of information, they can optimise travel routes and buy cleaner fuel to reduce their carbon footprint.

This approach is built on an avalanche of data generated daily from every facet of the logistics journey. From shipment volume and distance, to weather patterns and traffic, AI-powered systems can make sense of the numbers to shape organisations' strategies towards lower carbon emissions.

For instance, data can point out if a certain route is prone to delays, thereby consuming more fuel, or whether a certain brand of fuel produces more greenhouse gases (GHG) compared to another.

"Leveraging this data in order to spot inefficiencies (in) their networks and to automatically suggest improved routes on-demand can be a quick way for many shipping operators to reduce their emissions," wrote Oliver Gindele, Chief Innovation Officer of Datatonic, a data analytics firm, in a blog post.

It solves two huge challenges shipping is facing: improving the bottom line and by extension, avoiding excessive emissions. The International Maritime Organization aims to halve the carbon emission levels in global shipping by 2050, from 2008 levels.

Using big data to boost fuel efficiency can be a way for industry players to buy time as they continue to make the transition to greener ships or retrofit older ones with clean technology.

But while data is key, there is still a conspicuous gap within the industry: companies may not want to share data or information on their operations with their competitors so easily.

Similarly, the lack of interoperability between different data providers is an obstacle. With companies using different standards of data, it can be difficult for data sharing to take place even if they are willing to do so.

Said Markus Mannevaara, Senior Director, Rapid Innovation at maritime digital technology firm Wärtsilä Voyage: "Data impacts every aspect of our industry, from machinery to cargo and crewing ships. Data standards will make a lot of things easier."

SMOOTH SCHEDULING

But shipping organisations should not hold the sole responsibility for delivering the promise of data. Port authorities and governments also have a part to play in this vision.

For example, earlier this week, Singapore announced the development of OCEANS-X, an API (application programming interface) marketplace that facilitates data exchange, helping different parties link up and share datasets.

Ports will also benefit from strong data visibility. A rescue operation underpinned by big data can alleviate the situation. Amid unpredictable scheduling conflicts caused by COVID-19 outbreaks, analytics can help synchronise arrivals and departures in real time.

This is known as port optimisation, where data guides a dynamic system to prevent congestion at terminals. Incoming ships will be alerted to an available berth and be able to unload their cargo in time for the next one to enter. Vessels need not dock any longer than they should, or waste time waiting for a free spot to open up.

Using data analytics at ports can be a big boost for fuel efficiency in the wider emissions conversation. Simply put, a decrease in waiting time means that ships will use less fuel, lowering pollution at ports.

"Whilst it is not the ultimate game-changer, port call optimisation definitely is one of the low-hanging fruits that will help in decarbonising the maritime sector," said Patrick Verhoeven, Managing Director at the International Association of Ports and Harbors, in February 2020.

"Its multiple advantages include increased safety and efficiency, so there is really no excuse for stakeholders in the nautical chain not to get involved and make it happen." ▪