

Breaking new ground

Hong Kong
3-4 October 2018



GLOBAL
MARITIME
FORUM

the COMBINED GDP of CHINA and INDIA will EQUAL that of the OECD COUNTRIES

DIFFERENCES in GDP PER CAPITA will PERSIST. US GDP PER CAPITA will be TWICE AS HIGH AS in CHINA. In 2010, it was 5 TIMES HIGHER

1974 ~ 2014 SEABORNE TRADE VOLUMES

GROW AVERAGE 3% ANNUALLY.

WHAT will the FUTURE GROWTH RATE BE?

2050

KEY OPPORTUNITIES

- IMPROVED GOVERNANCE and BETTER EDUCATION → BOOST GROWTH in EMERGING ECONOMIES.
- REFORMS and INVESTMENT in INNOVATION and INFRASTRUCTURE COULD BOOST GROWTH in OECD COUNTRIES

ASIA will be the CENTER of ECONOMIC GRAVITY

GLOBAL ECONOMY

ECONOMIC GROWTH

will be 經濟增長 將變得 緩慢

WORLD GDP GROWTH will be AROUND

2%

LOWER

DUE to DEMOGRAPHIC FACTOR

CAN the WORLD ECONOMY KEEP GROWING FOREVER... within a FINITE ECO-SYSTEM PROSPERITY

SEABORNE TRADE

MORE: BUT HOW MUCH MORE?

- A RISE of PROTECTIONISM and GEOPOLITICAL CONFLICT COULD PUT a BRAKE on TRADE GROWTH
- NEW FREE TRADE AGREEMENTS COULD INCREASE TRADE GROWTH
- INVESTMENTS in INFRASTRUCTURE will ALLOW EMERGING ECONOMIES TO INTEGRATE into the GLOBAL ECONOMY

AUTOMATION and RESHORING COULD REDUCE the NEED for MARITIME TRANSPORT.

REACHING UN CLIMATE GOALS REQUIRES a REPLACEMENT of FOSSIL FUELS with RENEWABLES SUCH AS SOLAR and WIND

INCREASED PROSPERITY COULD REDUCE TRADE/GDP RATIO as SERVICES MAKE UP a BIG PART of DEMAND

WORLD POPULATION 7.6 bn / 2018 → 9.8 bn / 2050

Aha!

What factors that could

INCREASE ? REDUCE

IMPROVED RESOURCE EFFICIENCY COULD REDUCE the NEED for RAW MATERIALS PER UNIT of GDP

demand for seaborne trade are missing?



LARGE and GROWING MARKET

VAST NATURAL RESOURCES

CREATING and JOBS for POPULATION

IMPROVING GOVERNANCE and RULE of LAW

IMP EDU and HU

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Foreword

It is with great pleasure that I present the Global Maritime Forum report “Breaking New Ground” that presents the results of the discussions and work that took place at the Global Maritime Forum’s inaugural Annual Summit in Hong Kong on October 3-4, 2018.

The meeting gathered around 200 leaders from the global maritime spectrum as well as thought leaders and experts from outside the industry. At the Annual Summit, we discussed the trends that will impact the maritime industry in the future, and we worked collaboratively to develop concrete actions that can shape the future of global seaborne trade and increase sustainable economic development and human well-being.

I was impressed by the engagement, ambition, and desire to work together to solve the common challenges facing our industry that was very visible at the Annual Summit. I must admit, it also made me proud, since it shows that we as an industry want to be an active player in building a better and more sustainable future.

However, the engagement and high ambitions expressed at the Annual Summit also represent a challenge, since we must now work together to deliver on the great ideas that were created at the meeting. As I said in my closing remarks: We must make sure that what happens in Hong Kong doesn’t stay in Hong Kong.

This is not something the Global Maritime Forum can do on its own. This will require partnership and collaboration that involves stakeholders from the broader maritime spectrum and beyond. Because – as it was succinctly put by an Annual Summit participant in the closing session – alone we can do so little, together we can do so much.

So please reach out to us, if you want to join us in unleashing the potential of the global maritime industry.

Peter Stokes
Chairman

[Global Maritime Forum](#)

Executive summary

The Global Maritime Forum's inaugural Annual Summit in Hong Kong convened leaders from across the maritime spectrum for two days' intense discussions and collaborative work on addressing the key challenges facing the maritime industry.

The backdrop for the discussions at the Summit was the rapidly **changing geo-economic outlook** with the world on the brink of a severe trade conflict between its two biggest economies the US and China. At the Summit, this rise of protectionism was discussed and linked to more fundamental geopolitical shifts that could lead to significant changes in international trade and thus impact the maritime industry.

A key message in the discussions was that the maritime industry can and must play an active role in shaping **the future of trade**, since in these times of uncertainty, it cannot be expected that governments alone will manage to create trading conditions that foster sustainable and inclusive growth.

Another important development that informed the agenda at the Annual Summit was the decision at the IMO in the spring of 2018 to set out clear and ambitious goals for the **decarbonization of shipping**. The general consensus amongst participants was that fulfilling the IMO's goals requires urgent and coordinated action that involves all maritime stakeholders.

The importance of decarbonizing shipping was also reflected in the working groups where several groups chose to tackle shipping's decarbonization. The strong desire of the maritime industry to play an active role in addressing climate change was also illustrated by the launch of a **Call for Action** that has been signed by more than 50 CEOs and industry leaders from across the global maritime industry.

The impact of **digitalization** was also in focus at the Annual Summit, where issues such as big data, data sharing, the rise of artificial intelligence, and the impact of digitalization on trade and maritime business models were at the center of the discussions. Moreover, cyber security was identified as a key risk that the maritime industry feels unprepared for in the **Global Maritime Issues Monitor 2018**, launched at the opening of the Summit.

The question of how the maritime industry can become better at sharing data emerged across several working groups, since **data sharing** could improve the efficiency and performance of the industry. One key recommendation was to explore how the sharing of data could improve maritime safety. Participants argued that improving safety is an area with broad support across the industry, which would make collaboration easier.

Safety was indeed another topic that found broad support at the Summit, resulting in the articulation of a common vision of creating a zero-accident industry. The discussions on safety were inspired by the experience of the airline industry, where a strong tradition of collaboration and sharing of safety information has led to impressive improvements in safety performance.

Among other issues discussed at the Annual Summit was the question of how the maritime industry can attract **the talent of the future**; how **regulation** can support innovation and reward first movers and how **ship recycling** can become more transparent and sustainable.

Looking across these topics a few overarching themes stand out:

- First, a need to increase **transparency** in the maritime industry was highlighted in discussions related to attracting talent, improving environmental performance, sharing data, regulating, and improving safety. This development reflects broader societal changes, where it is no longer enough for companies to deliver their products and services within the confines of the law; they are also expected to take an active and positive role in creating a better and more sustainable future – in social, economic, and environmental terms.
- **Uncertainty** was another recurring theme. It was most prominent in discussions on the changing geopolitical environment and the future of trade, but it was also evident in the discussions on how to achieve the ambitious climate goals for shipping and on how to handle the digital transformation. Uncertainty was also a key finding in the Global Maritime Issues Monitor 2018. This survey found that maritime decision makers do not feel prepared to deal with the issues that they believe will have the greatest impact on the industry in the coming 10 years.
- Finally, the Summit demonstrated that leaders from across the maritime industry want to work together to tackle the issues facing the industry. This focus on **agency and collaboration** was most clearly articulated in the closing session of the Summit, where many concrete and ambitious actions were laid out to improve the performance of the industry and its contribution to sustainable long-term economic development and human well-being.

The discussions and ideas generated at the Global Maritime Forum's inaugural Annual Summit will guide the activities of the Global Maritime Forum in 2019 and beyond. The Global Maritime Forum will continue to work together with industry leaders and other stakeholders to create tangible results that can be presented and shared with the broader maritime industry and the general public, at the Global Maritime Forum's Annual Summit in Singapore on October 30-31, 2019.

Our shared journey

The ambition is that the discussions at the Annual Summit give birth to decisions that make a real difference, not only for the industry, but for society as well. The meeting gathers those who have the drive and the influence to make change happen, and it is purposefully designed – through deep dialogue, critical reflection and creative thinking – to lead to truly new solutions and informed, collaborative action.



2 Looking into the future

Peter Stokes, Chairman of the Global Maritime Forum, kicked off the Annual Summit 2018 by welcoming the 200 participants from industry, government, and civil society and introducing the theme of this year's Annual Summit, "Breaking New Ground: How can the industry collaboratively shape the future of global seaborne trade".

Then the Hon Carrie Lam Cheng Yuet-ngor GBM GBS, Chief Executive of Hong Kong SAR delivered her opening remarks on the importance of the maritime industry for the world and the role of Hong Kong as an important maritime trading hub and gateway to China.

Following this, Gillian Tett, US Managing Editor of the Financial Times and chair of the Annual Summit 2018, led a spirited opening plenary discussion on the trends that will shape seaborne trade in the years to come. Panelists Victor K. Fung, Group Chairman of Fung Group, Meredith Sumpter, Head of Research Strategy and Operations at Eurasia Group, and Alicia Garcia-Herrero, Chief Economist at NATIXIS each provided their view on the current geo-economic landscape. This was followed by an expansive conversation about the risks and opportunities that lie ahead for the global maritime industry.

3 Developing a shared maritime future

Following the opening plenary, participants split into groups tasked to create a vision for the future maritime industry. Imagining the maritime industry being presented with a Lifetime Achievement Award in 2030 for its contribution to humanity, participants were asked to draft an acceptance speech on what the industry had collectively done to merit the award. Reconvening in plenary, teams shared and discussed their respective visions, thus co-creating a shared picture of what the industry is striving to become – and hopes to be recognized as.

Before leaving the plenary session, participants were asked to write down the one important issue facing the industry today that they wanted to start working on immediately. The issues were clustered into topics and participants were invited to choose one topic to work on for the remainder of the Summit.



1 Broadening our horizons

Arriving at the Kai Tak Cruise Terminal, participants were invited to explore the world in 2050 in a physical Knowledge Space outlining megatrends as well as industry-specific questions and challenges.



8 Moving the world

In the closing plenary, Gillian Tett invited a representative from each working group to share the outcomes of their work, focusing on the actions needed to successfully address each issue and immediate next steps to take their ideas forward. Gillian Tett wrapped up the conversation by offering her observations on the discussions throughout the Summit and how participants might work together to move the industry forward. Peter Stokes closed the Annual Summit by thanking participants for their contributions and collaboration and invited all to continue the work in the year ahead. He ended his remarks by announcing that the next Annual Summit of the Global Maritime Forum will take place on 30-31 October 2019 in Singapore.

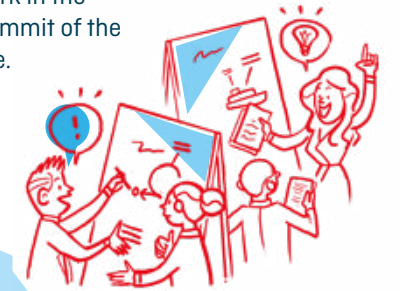
4 Learning from experts

4 Learning from experts

In two rounds, the participants joined one of twelve sessions with experts from inside and outside the industry on topics ranging from Africa's development dynamics to the potential and limits of AI.

5 On a high note: The maritime industry in 2050

Marking the end of a successful first day and building on discussions earlier in the day, IMO Secretary-General Kitack Lim, in conversation with Gillian Tett, offered his vision of the maritime industry in 2050, focusing on cross-sector collaboration, decarbonization, and digitalization.



7 Work in groups

Subsequently, participants joined their group and started working on the topic they had chosen on the first day of the Summit. In the first round of work, participants took some time to scope their topic and to define a path to solving the issue at hand. The goal for each group was to develop concrete proposals on how to address their topic through collaborative action across the industry, to be presented in plenary at the end of the day.



6 Ignite talk

Bestselling author Steven Johnson kicked off the second day by sharing his research on where good ideas come from, providing participants with practical perspectives and tools to tackle for making decisions that matter.

Looking into the future

“ More than ever, it's cooperation and partnership at the regional and global levels that will help us overcome external challenges. It is my Government's determination to connect with the world and to look for opportunities to collaborate with other economies. ”

The Hon Mrs Carrie Lam Cheng Yuet-ngor,
GBM GBS, Chief Executive, Hong Kong SAR



Looking into the future



In a world of geopolitical upheaval and erosion of multilateralism, where the future of trade seems uncertain, how can the maritime industry chart its own course forward? Changing trade flows, environmental concerns, and emerging technologies were key challenges discussed in the opening plenary of the Global Maritime Forum's Annual Summit 2018, chaired by Gillian Tett, US Managing Editor of the Financial Times.

Drawing from her experience as Chair of the Danish Maritime Forum in 2016, Gillian Tett opened the discussions by offering her observations on how the world has changed since 2016, pointing toward:

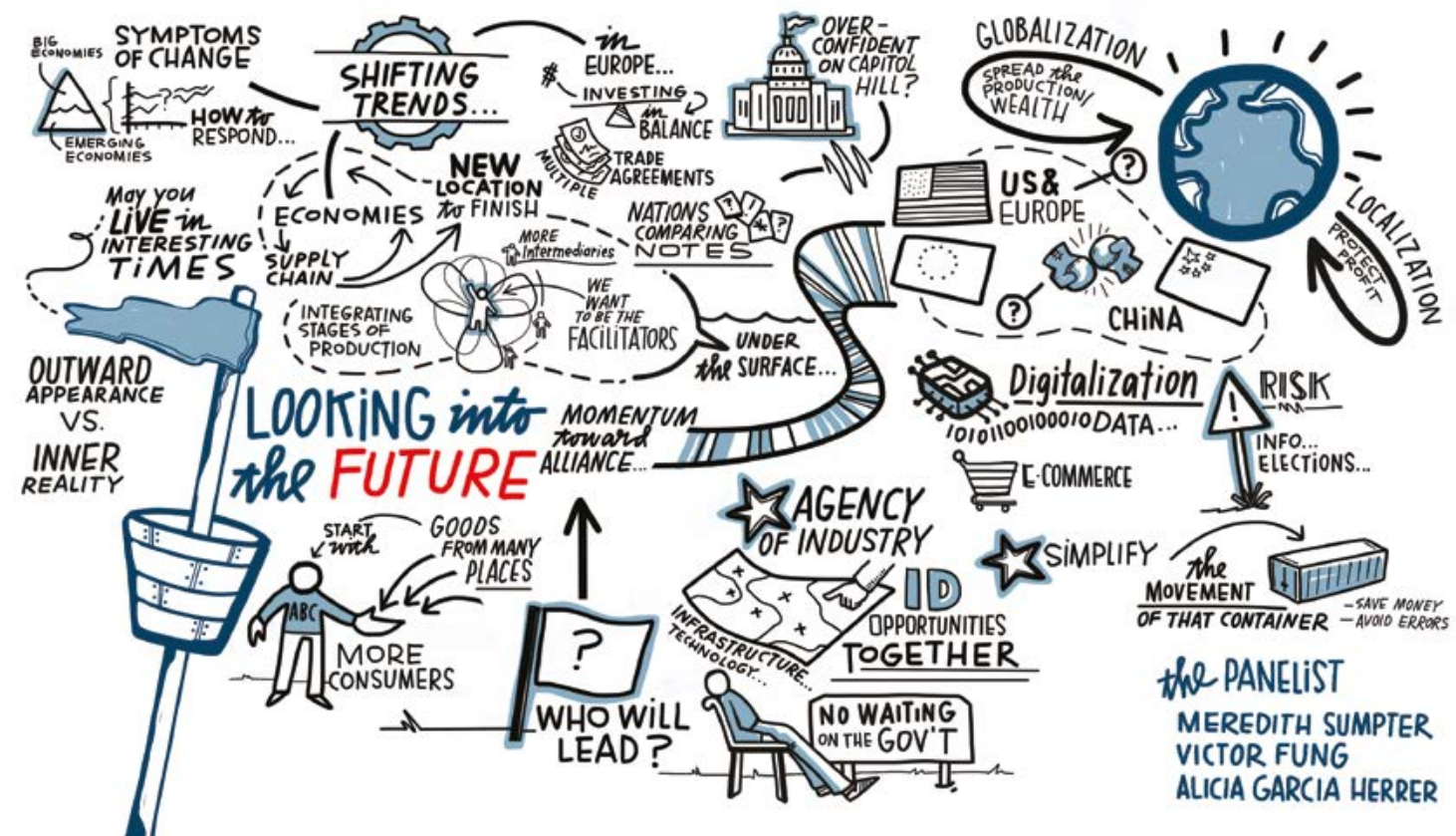
- Risks to economic growth
- Increasing environmental concerns
- Digitalization as a disruptive force
- A global rise of populism, patriotism, and protectionism.

Gillian Tett then invited to the stage three panelists who offered their insight on how these forces will impact the maritime industry in the future.

Victor K. Fung, Group Chairman of Fung Group, focused on the issues from a practical, business point of view, commenting that a shift in supply chains has been underway during the last ten years, but that it has been greatly accelerated by the recent US-China trade conflict.

This constitutes an opportunity for the further integration of emerging economies into global supply chains, as countries look for alternatives to where to produce, which could contribute to a change in trade routes. Among other things, he also mentioned that the current break down of multilateralism could be the right moment to rethink the current global trade system in order to improve it.

Meredith Sumpter, Head of Research Strategy and Operations at Eurasia Group, pointed out that for the first time in 20 years, developed economies are the cause of high levels of political risk, principally exemplified by protectionist measures.



However, Meredith Sumpter argued that this goes deeper than trade, and that we are witnessing the rise of politicized industrial policy, which will have consequences on where companies invest and manufacture. Due to the current erosion of multilateralism, the maritime industry should not expect governments to take the lead in addressing global challenges. Instead, Meredith Sumpter urged maritime leaders to consider the agency that they possess as a group to take the lead in tackling important issues themselves.

Alicia Garcia-Herrero, Chief Economist at NATIXIS, addressed Europe's role in the US-China trade conflict by bringing to the audience's attention that Europe has the power to tilt the balance in the favor of either one or the other. Alicia Garcia-Herrero, however, does not find it likely that Europe will support the US as long as the country acts unilaterally, nor is it likely to join forces with China, since Europe shares some of the concerns raised by the US.

Meredith Sumpter pointed out that the likelihood of the US having to reconsider its current stance increases if President Trump imposes all of his tariffs and still does not achieve the results he is aiming for. Alicia Garcia-Herrero added that the next planned tariffs will hit low-end intermediary goods, which will entail a great deal of reshoring and the regionalization of trade, and consequently a shortening of the trade routes. She advised the maritime industry to be flexible in its operations.

Several interesting points also arose in discussion with participants. **Claus V. Hemmingsen**, Vice Chief Executive Officer of A.P. Møller - Mærsk, suggested that the maritime industry should simplify its operations, which would allow it to be nimbler, no matter what the geopolitical situation. He also touched upon the topic of cyber risk, which he characterized as a substantial threat due to the complex flows of data that take place between numerous maritime parties and thus expose the entire business. Claus V. Hemmingsen and **Tan Chong Meng**, Group Chief Executive Officer of PSA International, both stressed the need for companies to focus not only on preventing cyber-attacks, but also ensuring that they can recover quickly from them.

Tan Chong Meng pointed to the importance of data and technology for the industry, which he referred to as "underlying perpetuals", unchanging regardless of the political situation or shifting trade routes. He highlighted collaboration across the industry as prerequisites to reaping the full benefits of data.

Finally, **Christine Loh**, Chief Development Strategist of the Institute for the Environment at Hong Kong University of Science and Technology, elaborated on the role China will play in the future of shipping, urging business leaders to familiarize themselves with the country's ambitious plans and policies, as many of them revolve around the maritime sector.

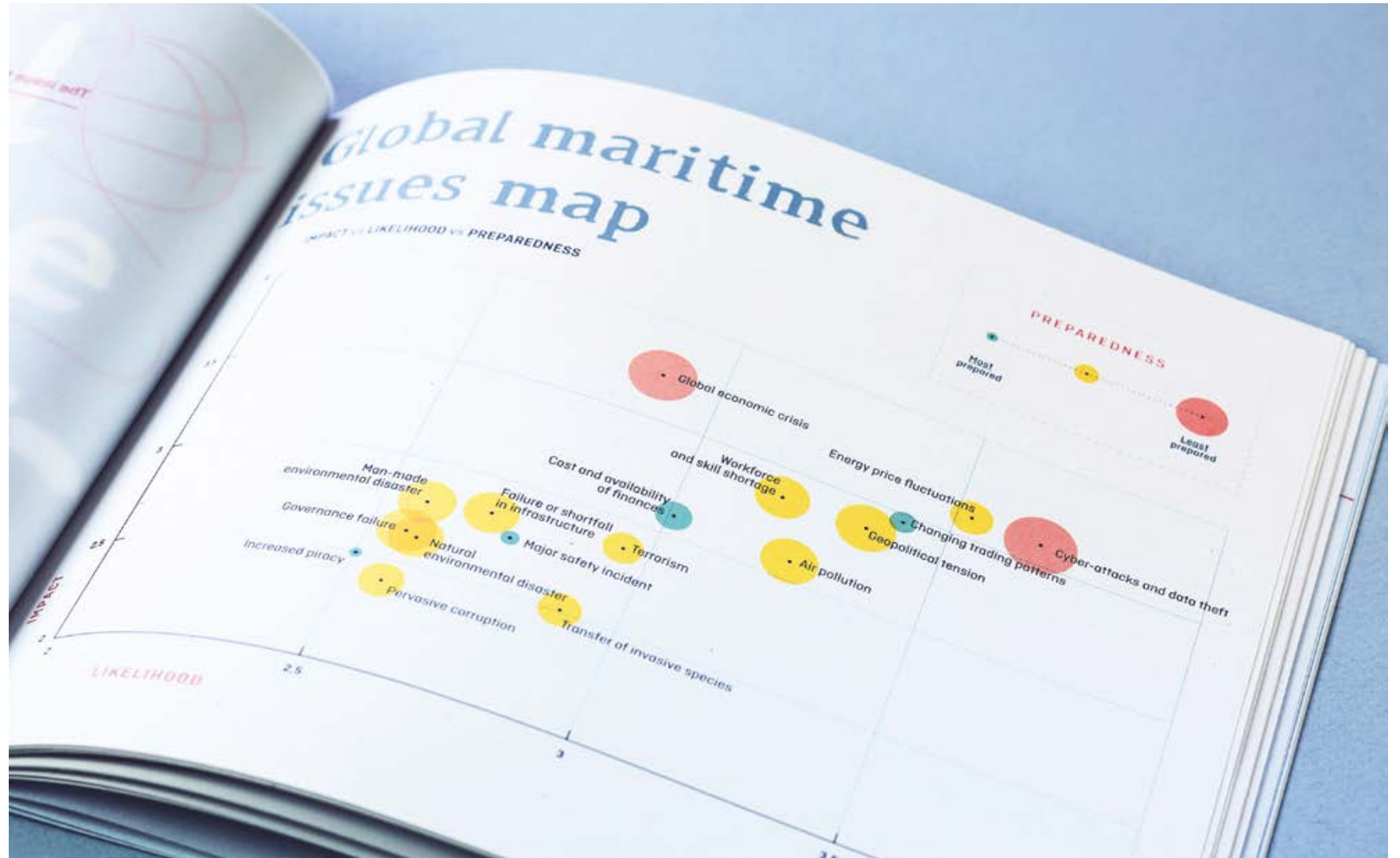
Before inviting participants to a series of breakout groups dedicated to these and other major issues on the maritime agenda, Gillian Tett summed up the plenary discussion by commenting that, at this moment, no single entity seems to be likely to lead the way to a new multilateral world order and urged the participants to consider what they can do for the future of the maritime industry themselves.

“ Governments will seriously consider industry views. Don't wait for government. Look for opportunities as an industry to lead. ”

Meredith Sumpter,
Head of Research Strategy and
Operations, Eurasia Group, USA







The first industry report of its kind, the Global Maritime Issues Monitor 2018 – launched in conjunction with the Annual Summit – takes a global look at the major issues that are likely to impact the global maritime industry over the next 10 years.

The Global Maritime Issues Monitor 2018 is based on a survey of senior maritime leaders from more than 50 countries on their perceptions of 17 major issues, specifically on their impact and likelihood and the industry’s preparedness for them. Relevant stakeholders have been asked to comment on the survey findings to contextualize the data used in the Issues Monitor. The report also undertakes deep dives into emerging trends in digitalization and decarbonization.

Main findings:

- The maritime industry does not appear to be prepared to deal with major global issues. Worryingly, this is amplified by the fact that the issues the industry is least prepared for are the ones deemed to have potentially the biggest impact on the sector.
- Economic issues dominate the maritime agenda. The impact of a future ‘global economic crisis’ ranked as the most severe in a 10-year outlook.
- ‘Cyber-attacks and data theft’, ‘energy price fluctuations’, and ‘changing trading patterns’ are deemed most likely to occur, whereas maritime leaders seem less concerned about the ‘increasing influence of non-maritime disruptors’.
- Viable solutions to decarbonization are still perceived as something that will only be found beyond the 10-year horizon of the Issue Monitor.

The Global Maritime Issues Monitor 2018 is published by the Global Maritime Forum in collaboration with the global insurance broker and risk advisor Marsh and the International Union of Marine Insurance (IUMI).

Learn more:
www.globalmaritimeforum.org/publications/global-maritime-issues-monitor-2018

Call to action in support of decarbonization

34 CEOs from across the maritime value chain and from all around the world signed a call to action in support of decarbonization at the Annual Summit. They are **committed** to support the IMO strategy and stand ready to work with their peers, the IMO, and governments to help this succeed.

- **Evidence-based.** They accept the scientific rationale for urgent action presented by the IPCC and in the IMO GHG Studies, and they are committed to addressing climate change.
- **Ambitious but achievable.** They recognize that this will require significant reductions in the carbon intensity of vessels to accommodate expected growth in global trade.
- **Innovative.** They believe that a shift to a low-carbon economy by 2050 has the potential to create new opportunities for business through both technological and business model innovation.
- **Leading by example.** They are already pursuing emission reductions in their operations. They will continue to pursue further emission reductions and accept the need for transparency to help drive change.

They **recommend** that core principles of the “Road map” be:

- **Ambitious.** The Strategy should be consistently in line with the Paris agreement’s temperature goals.
- **Predictable.** Regulations should provide long-term certainty for financiers, builders, owners, and charterers to make the required investments in low-carbon technologies.
- **Market-oriented.** Emissions reduction objectives should be met at the lowest possible cost, and the industry should explore the use of carbon pricing and other mechanisms that can create economic value from GHG emission reductions.
- **Technology-enabling.** The Strategy should accelerate the use of low-carbon technologies and fuels by encouraging significant funding flows for research, development, and deployment.
- **Urgent.** Certain mid- and long-term measures will require work to commence prior to 2023, including the development of zero-emission fuels to enable the implementation of decarbonization solutions by 2030.
- **Coherent.** Solutions implemented should build on and reinforce existing technical, operational, and energy efficiency measures while maintaining or enhancing safety standards. In this context, it is critical that all IMO environmental regulations be compatible with future 2050 regulations.
- **Enforceable.** Legally binding, enforceable actions set by the IMO and enforced by member countries are required to compel the industry to shift.

They support private sector engagement in the continued improvement of the Strategy. They encourage the creation of a concrete agenda of public-private cooperation and they invite other CEOs and maritime industry leaders to join them in seizing the opportunity to innovate and lead the transition to a new shipping industry for the 21st century.

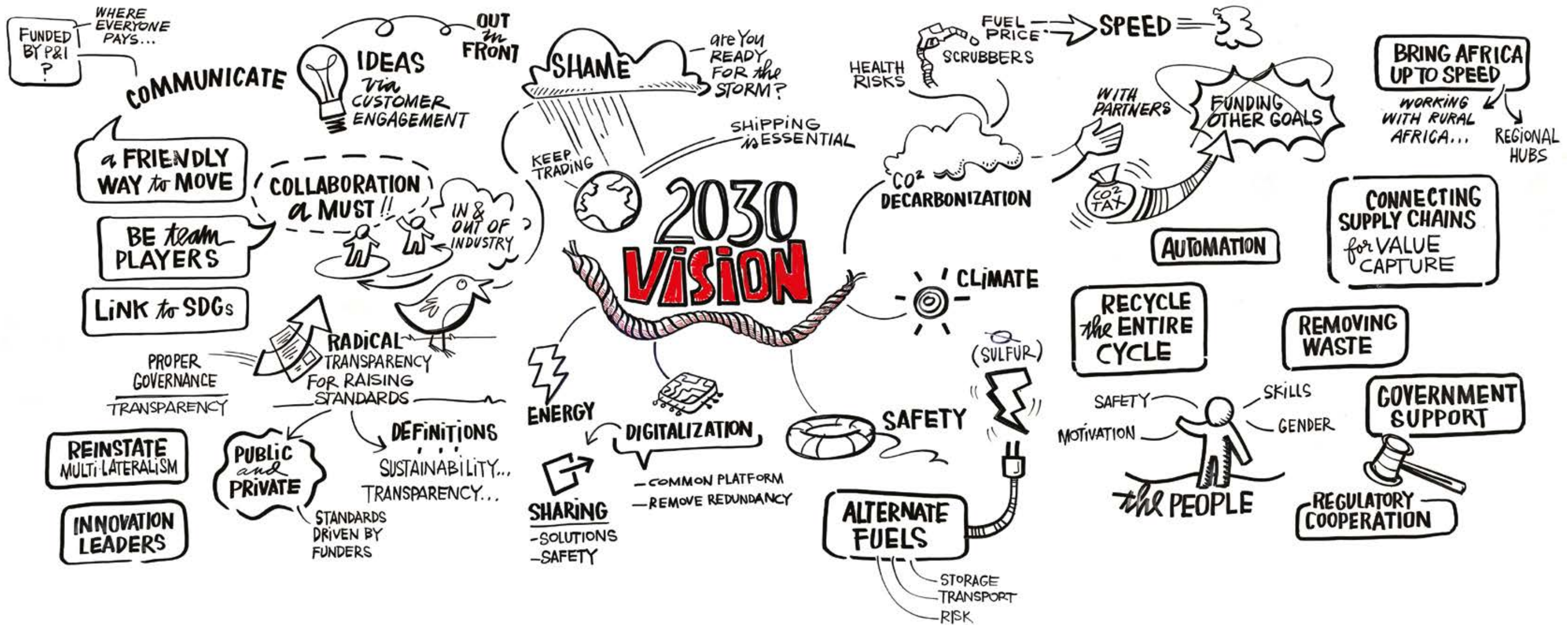
Learn more:
www.globalmaritimeforum.org/initiatives/decarbonization



“ *Global seaborne trade’s transition to a low-carbon future will propel both technological and business model innovation. The right incentives for accelerated investment into R&D can only come about if we get a global IMO based regulation. We invite stakeholders from the entire maritime spectrum to join us on this new journey.* ”

Claus V. Hemmingsen,
Vice CEO of A.P. Møller - Mærsk, Denmark

Developing a shared maritime vision



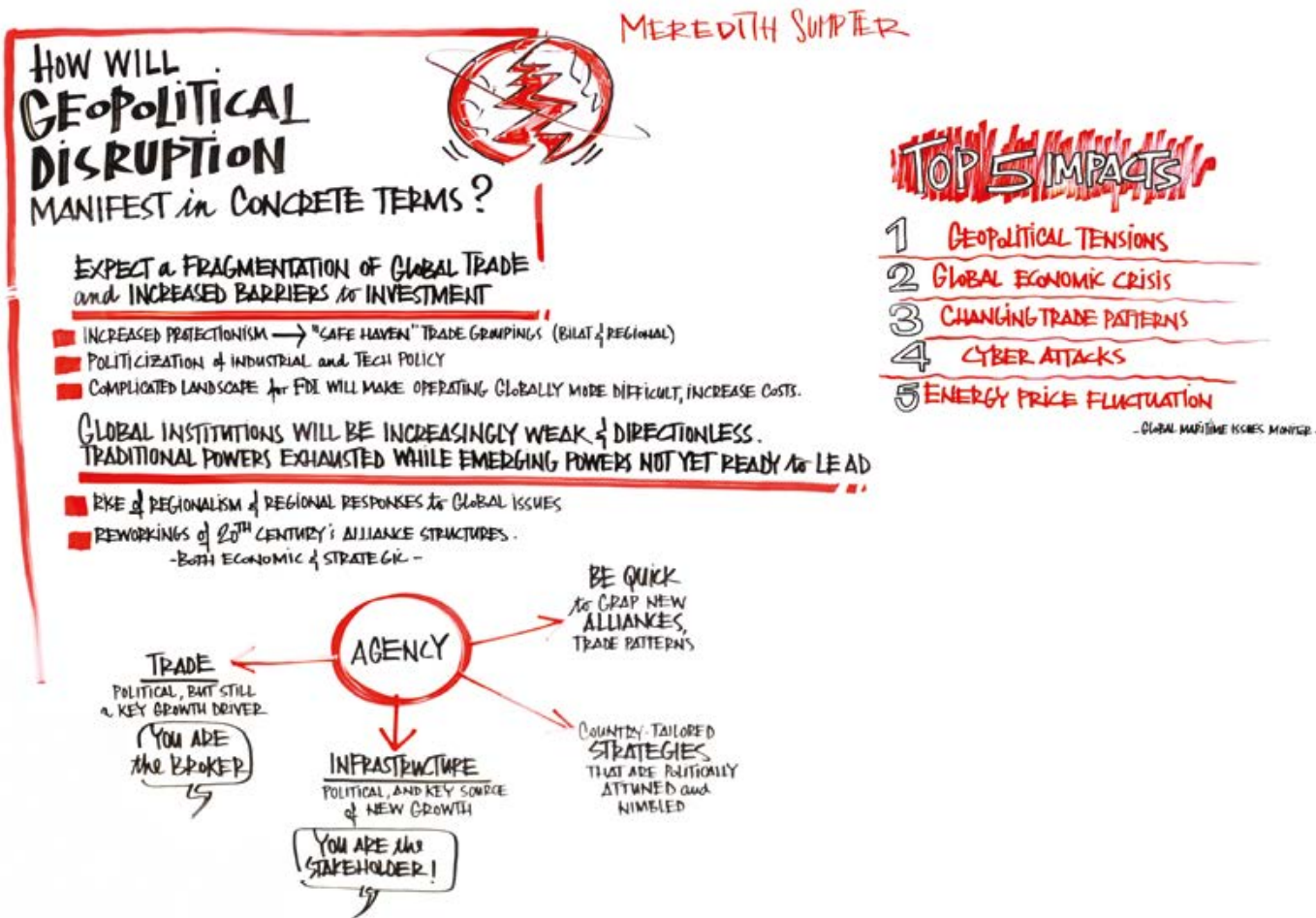


Learning from experts

Navigating geo-economic tensions

In a rapidly changing geopolitical landscape with shifting political and economic allegiances and strategies, what is the future of global trade and economic integration?

Meredith Sumpter, Head of Research Strategy and Operations, Eurasia Group, USA



With isolationism and protectionism on the rise and a seeming breakdown in the post-World War II global order, the outlook for further global economic integration appears bleak. Meredith Sumpter offered her perspective on these developments and how they might impact the maritime industry.

Meredith Sumpter pointed out that the maritime industry is an important stakeholder on the global stage and as such is not simply at the mercy of these forces. The industry has agency, and by working together it could have considerable influence on its operating environment.

According to Meredith Sumpter, broader structural changes are at the root of the current high level of political instability, and thus we should expect them to continue for decades to come. She pointed to the example of increasingly weak and directionless global institutions caused by the traditional powers being exhausted while emerging powers are not yet ready to lead. Developed economies have been a stabilizing force in world politics up until now, but with the rise of China and India their position has been weakened.

This is especially relevant with respect to the future of trade. Trade will – despite its increasing politization – continue to be a key driver for growth, and the maritime industry has an important role as broker in this domain. Likewise, infrastructure development another important driver of economic growth and trade, which despite having always been political, it is an arena where the maritime industry can play a vital role.

This is also evident in the breakdown of the global consensus surrounding globalization and the Western model of market economy and free trade. However, with the success of the Chinese model, it is increasingly seen as a viable alternative for other emerging economies. In effect, this means that different economic models seem to be competing in the world arena, and developing economies – for example in Africa – are looking at the US, Europe, and China and wondering which economic model is more suitable for their growth.

In order to succeed in a changing and volatile global marketplace, companies should be quick to grab and act on changing trade patterns and new alliances. Companies should also develop politically attuned strategies that are tailored to the realities of each country and are nimble enough to deal with changing circumstances. If so, they will be more likely to succeed in managing a changing and increasingly challenging global landscape.

Where all silk roads lead

How China's One Belt, One Road initiative will reshape global trade.

Alicia Garcia-Herrero, Chief Economist, NATIXIS, Hong Kong SAR

The One Belt, One Road project launched by China aims to improve cross-border trade across Asia, Europe, and Africa. In this session, Alicia Garcia-Herrero shared her understanding of the potential impact of the Belt and Road initiative based on findings from two recent research projects.

One of the Belt and Road's key objectives is to enhance cross-border trade. Better transport infrastructure lowers the cost of transportation between China and partner countries, which in turn reduces the price of imported goods and thus increases their competitiveness, leading to trade growth.

According to Alicia Garcia-Herrero, this reduction in transportation costs should benefit most EU countries, especially those that are landlocked. Should China seek to establish a free trade area with its Asian neighbors, this calculus would clearly change, since EU exports would be less competitive vis-à-vis their Asian competitors.

Alicia Garcia-Herrero estimated that the Belt and Road initiative could lead to a reduction in transport cost of 50% for railways vis-à-vis 10% for shipping. This could result in a changing transport mix with railroad transport becoming more attractive for some trades relative to shipping.

It is often assumed that China will finance investments in the Belt and Road project. It is, however, uncertain if China has the financial muscle to do it alone in the current economic climate, leaving room for other actors to take on a greater role. This could be especially relevant for Europe, which has the most to gain from many of the Belt and Road investments.

In the discussion, issues such as the long-term impact of the Belt and Road initiative on the development pathway and values of the project partners, such as Pakistan and Malaysia, were raised. There was broad agreement that the Belt and Road initiative is valuable to the countries involved and that it could stimulate economic growth and development in Asia, Europe, and Africa.

Where all Silk Road Lead

-ALICIA GARCIA HERRERO-



Learning from experts

Africa's development dynamics

What potential and challenges lie ahead for growth and development in Africa, and what are the implications for the maritime industry?

Arthur Minsat, Head of Unit, Africa, Europe & Middle-East, OECD Development Centre, France

Between 2000 and 2017, the African economy grew by 4.7% annually, making it the second fastest growing region in the world and, therefore, a market of growing global significance, including for the maritime industry. Arthur Minsat presented some of the key findings from "Africa's Development Dynamics 2018", a report by the OECD and the African Union Commission.

He identified five key megatrends affecting Africa's development and integration into the global economy, and thus highly relevant to understand for maritime companies wishing to establish or expand their presence on the continent.

First, global wealth is shifting. Emerging countries produce more than half of the global output and new partnerships with Africa are on the rise. Between 2000 and 2016, Africa tripled its trade with the rest of the world, from US\$ 276 billion to US\$ 806 billion, and a large part of this is with emerging partners like China and India.

Second, the so-called "next production revolution" could entail opportunities for African producers to compete globally if the right skills and organizational capacity is in place.

Third, the continent's population boom could create a powerful "demographic dividend". Today, Africa has the second largest workforce in the world after Asia, and between 2015 and 2050, Africa's working population will increase by 902 million people, about 69% of the total increase across the world.

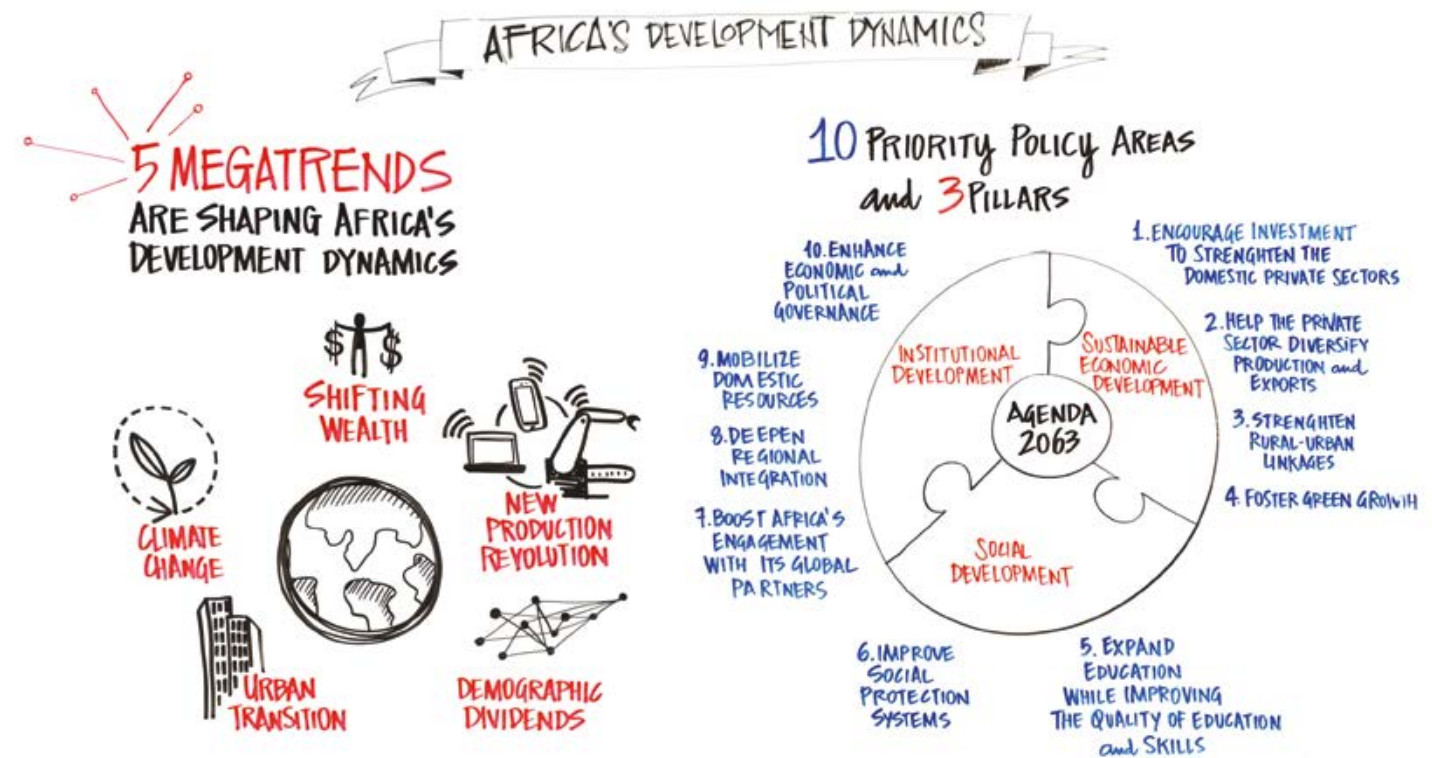
Fourth, rapid urbanization is changing economic structures and posing new challenges. From 1995 to 2015 Africa's urban population has doubled to 472 million, and it is expected that before 2040, more than 1 billion Africans will live in cities. This means an increased market opportunity in African cities, but this also creates a need for significant investment in expanding urban infrastructure.

Fifth, many African countries need "green growth" strategies to adapt to climate change, since they are among the most vulnerable to the consequences of climate change.

Arthur Minsat also touched upon some of the key challenges that must be overcome to achieve sustainable and inclusive growth in Africa. There is a need to improve governance, administrative efficiency, and to reduce corruption. Creating stable conditions for investments both from domestic sources and from outside investors is another important issue. Reaping the benefits of the demographic dividend depends on the ability to create more quality jobs, which requires a sustained focus on training and educating the workforce, especially for women.

Participants with experience from operating in Africa agreed that there was a large and growing potential for maritime companies, but also that there are challenges to be overcome. Not least when it comes to political leadership and improving governance as well as getting access to people with the right qualifications.

Another important point in the discussions was the need to build long-term partnerships with local partners both from the public and private sector, which is necessary to create sustainable growth both for Africa and for global companies operating in the continent.



The next 50 years in global trade

Lessons from half a century of the Review of Maritime Transport

Jan Hoffmann, Chief, Trade Logistics Branch, UNCTAD

The 50th edition of UNCTAD's Review of Maritime Transport was launched at the Global Maritime Forum's Annual Summit. Jan Hoffman discussed five key trends that have shaped seaborne trade in the last 50 years and gave his view on how these trends may develop in the years to come.

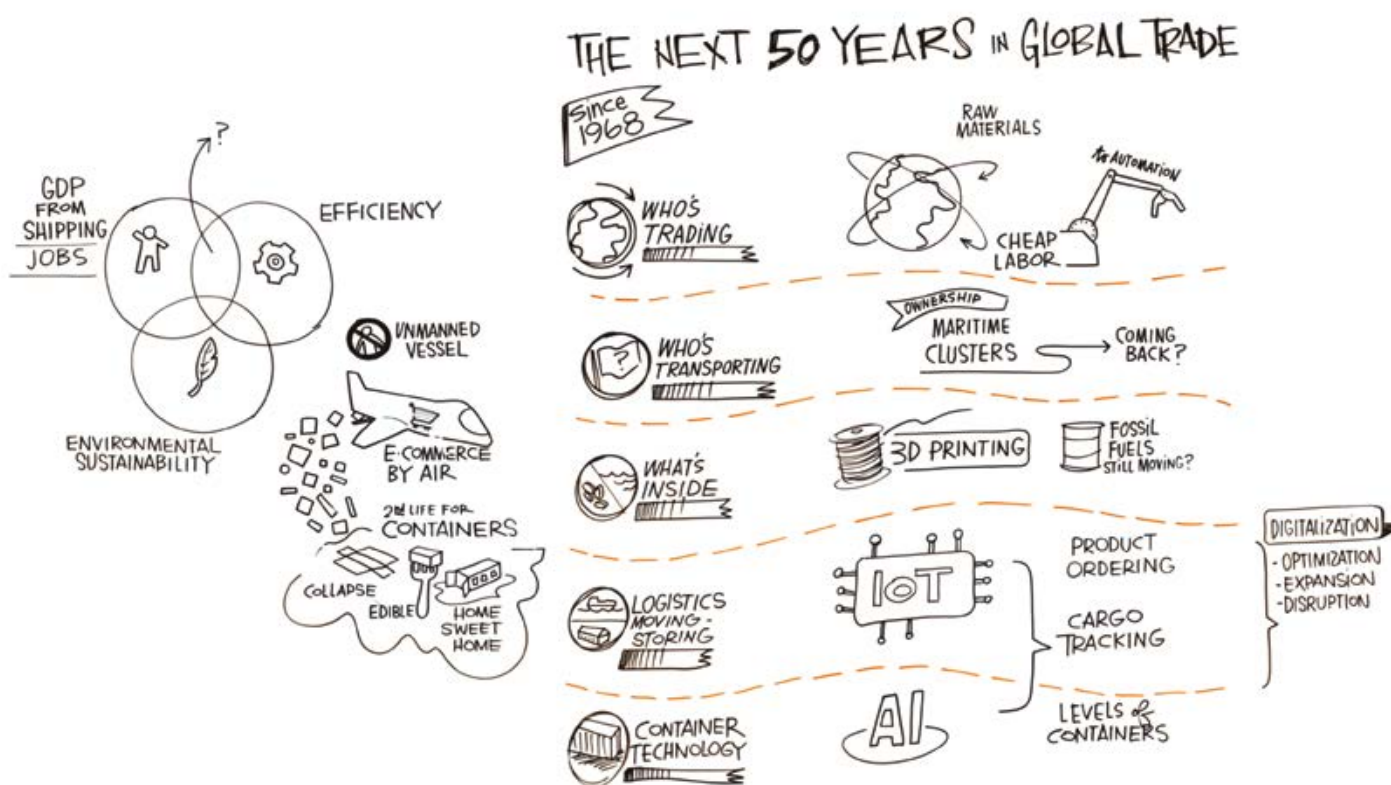
First, the transformation of global trade flows. While there used to be a clear divide between less developed countries exporting raw materials and the developed world exporting manufactured goods, today, this picture is almost turned upside down with manufacturing having moved to emerging economies such as China. As part of this process, emerging economies have experienced substantial growth, reducing income disparities between developed economies and emerging economies. The shift of manufacturing from the developed economies to China was driven by lower labor cost. As wages in China continue to rise, manufacturing may shift to other parts of the world in future.

Second, the globalization of the maritime sector. In the past, maritime countries would typically manage all parts of the maritime value chain. They would export their own products, on nationally flagged ships with their own seafarers. Now, production is globalized and there is no uniform model for how vessels are owned, operated, and whose raw materials or products they carry. In light of rising protectionism and regionalization, it is possible that there will be a retrenchment of globalization, which could lead to more national or regional maritime value chains rather than one globally integrated industry.

Third, the transition from general cargo vessels to a containerized fleet, which has changed the dynamics of international trade flows. Looking ahead, more changes could be on their way in the composition of maritime trade flows. 3D printing and automation could affect where goods are finished or produced. At the same time, efforts to address climate change could significantly reduce or entirely eliminate the need to transport fossil fuels within the next 50 years.

Fourth, improvements in the efficiency of global supply chains. In 1980, the US spent more on inventory costs than on transport. Today, the US spends twice as much on transport as on inventory costs, despite the fact that transport is cheaper, not more expensive. This is mainly due to improvements in the efficiency of supply chains, which has reduced the need for large inventories. Looking ahead, it remains to be seen what the impact of digitalization on logistics will be, both as a driver of efficiency but also as a source of disruption to maritime transport, for instance related to the growth of e-commerce.

Finally, the rise of the container and its standardization represents the biggest technological change in the maritime industry in the last 50 years. According to Jan Hoffman, it had a greater impact on trade growth than trade liberalization. However, since the introduction of the container, not much technological innovation had taken place, and the question is whether the next decades will see any big changes in this regard, e.g. related to the size, use, and composition of containers.



Learning from experts

Northern exposure

As sea ice retreats, new shipping routes could transform the Arctic. What possibilities and challenges lie ahead for Arctic shipping?

Nalân Koç, Research Director, Norwegian Polar Institute, Norway

The Arctic is warming about twice as fast as the global average. Nalân Koç laid out the effects of climate change in the Arctic environment and what this might mean for the development of new shipping routes.

According to Nalân Koç the Arctic is changing so rapidly that it is now frequently referred to as the “New Arctic”. Temperatures in most parts of the Arctic have increased substantially in the past few decades. In fact, records show that the Arctic is warming twice as fast as the global average. This is mainly because melting of snow and ice exposes a darker surface that increases the amount of solar energy absorbed in these areas. This leads not only to the warming of the Arctic atmosphere but also to warming of the oceans. Moreover, the oceans are warming through a deeper depth of the water and not just the surface. This leads to the continued loss of sea ice and the melting of snow caps as the ocean beneath the ice is also warming.

The extent of the sea ice cover has decreased sharply over the past 30 years, and the ice is disappearing faster than the climate models have been able to project. Satellite images of the Arctic show a sharp decline of ice caps especially during the summer months. This decline is not only in coverage but also the depth of the sea ice. Nalân Koç pointed out that earlier climate modeling predicted a nearly ice-free Arctic ocean in summer before the middle of the century. However, the latest modeling indicates that the Arctic ocean could be largely free of sea ice in summer as early as the late 2030s. Previous models also indicated that the Arctic Ocean will always have sea ice in winter, but researchers are now skeptical even of this.

Warming has also resulted in changes to weather patterns in the Arctic. This includes an increase in storms during the winter months, increased mobility of the ice as a result of more free space between the snow cap as well as increased waves.

Nalân Koç pointed to three main Arctic routes: the Northwest Passage, the Northeast Passage, and the Central Passage. According to the latest modeling, shipping lanes will penetrate toward the center of the Arctic Ocean by the middle of the century. However, it remains highly uncertain whether it is the Northeast or the Northwest Passage that will open more substantially in the meantime.

The unprecedented rate and global reach of these changes highlight the pressing need to prepare for and adapt to the New Arctic, and to carry out more diligent and intensive monitoring of the area. Nalân Koç highlighted in particular the operational risks to shipping due to high ice mobility and increased storms. Participants agreed that these risks should be assessed, and controls should be implemented to prevent incidents and to ensure sustainable operations.



Getting to zero

Assessing the technology options to achieve Zero Emission Vessels by 2030 and the drivers that need to be in place to make them competitive.

Katharine Palmer, Global Sustainability Manager, Marine & Offshore, Lloyd's Register, United Kingdom

In April 2018, the IMO announced its Initial GHG Strategy with the goal to reduce the industry's emissions by at least 50% by 2050. This ambitious strategy will require zero emission vessels to be entering the fleet in 2030 and form a significant portion of newbuilds from then on.

Katharine Palmer presented some of the key findings from a recent report "Zero-Emission Vessels 2030" prepared by Lloyd's Register in collaboration with academic partner UMAS. The report aims to demonstrate the viability of zero-emission vessels by identifying the drivers that need to be in place to make them a competitive solution for decarbonization.

Katharine Palmer compared this paradigm shift away from technologies that aim to increase efficiency and optimize conditions for conventional engines, to an overarching global aim of ending all use of fossil fuels as similar to one already occurring in the automotive and energy sectors. In the global maritime industry, this means the adoption of zero-emission vessels that can truly emulate the logistics provided by current fleets, but with no operational emissions.

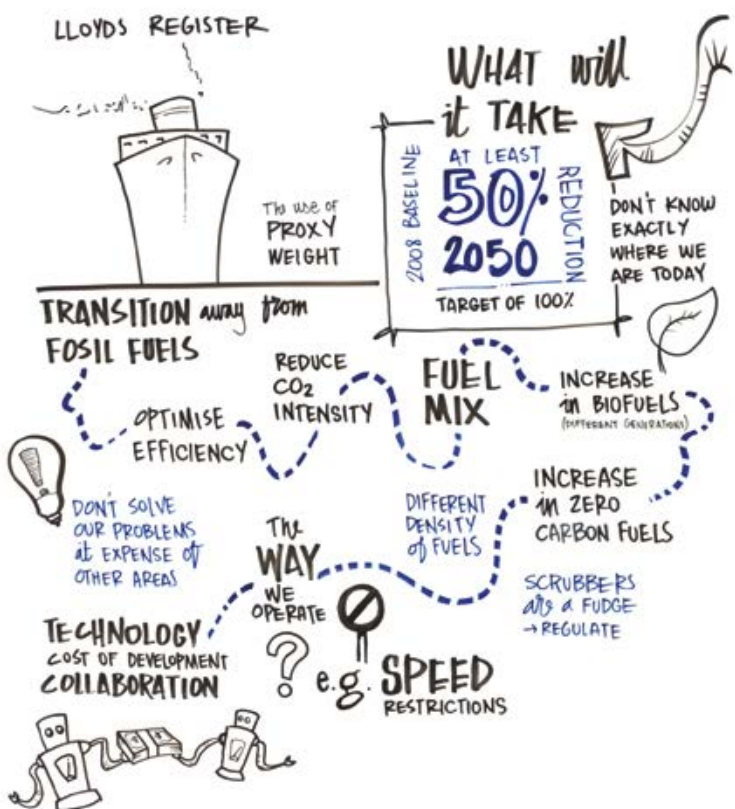
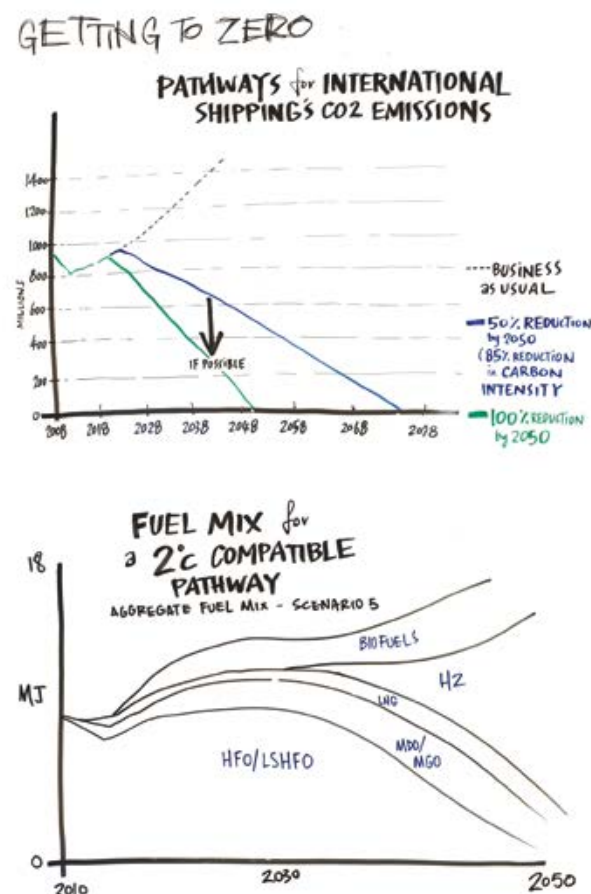
In their report, Lloyd's Register and UMAS examined seven technology options applied to five different case study ship types, and across three different future scenarios. These options consisted of various combinations of battery, synthetic fuels - such as hydrogen and ammonia - and biofuel for the on-board storage of energy, coupled with either a fuel cell, motor, or internal combustion engine.

The choice of technologies was based on their ability to feasibly replace a conventional ship's propulsion requirements without major alterations to voyage times, routes, or cargo-carrying arrangements and, crucially, that they could also be considered genuinely zero-emission.

According to Katherine Palmer, the study concluded that biofuel is the most profitable zero-emission solution, followed by synthetic fuels with internal combustion machinery. Hybrid and electric solutions, which require large quantities of batteries at high capital cost, were deemed to be the least competitive. This is due to the fact that biofuel generally requires no significant extra capital cost when using conventional ship machinery and storage; and the capital costs of the other six options are not sufficiently balanced by higher through-life efficiencies or lower fuel/carbon costs.

Although advanced biofuels appear to be the most attractive zero-emission vessel solution currently available, they present significant challenges of sustainability and availability. Synthetic fuels appear to be the most competitive alternative. However, ultimately, none of the zero-emission options in their current specifications are likely to be profitable relative to a baseline heavy fuel oil ship, though there is certainly potential for a significant portion of the competitiveness gap to be closed as the enabling technologies and infrastructures are further developed.

Katharine Palmer pointed to policy and regulation as important drivers for change where market forces alone appear to be insufficient to close the gap. The industry needs levers that encourages them to invest in greener shipping, as first movers are, otherwise, not likely to profit from such investments. She also emphasized the need for cross-industry collaboration on technological development and investment required to reach the 2050 goals.



Learning from experts

Putting a price on pollution

What are the options for carbon pricing in the maritime sector?

Ian Parry, Principal Environmental Fiscal Policy Expert, Fiscal Affairs Department, IMF, USA

In April 2018, the IMO set a target of reducing the sector's GHG emissions by at least 50% by 2050. Carbon pricing, i.e. putting a price on GHG emissions, counts among the key policy options under consideration to help reach this target. To lay out the options for carbon pricing in the maritime sector, Ian Parry presented the findings of a recent IMF research paper on the topic.

According to Ian Parry, one approach to carbon pricing in international maritime transport is a carbon tax on maritime fuels. From an environmental point of view, a carbon tax provides a clear incentive to increase energy efficiency and set a price signal making low-carbon technologies more attractive. From a fiscal perspective, it raises substantial amounts of revenues to be reinvested in the industry or to be used for international climate finance. Furthermore, a carbon tax appears more effective compared to other mitigation instruments, such as efficiency standards, offset schemes, and emissions trading systems.

Given the high mobility of the tax base and the imperative on non-discriminatory treatment, Ian Parry suggested that a carbon tax in the maritime sector would ideally be applied at the global level, collected from ship operators, and administered by the IMO, and that revenues could go to a new fund.

There are two design options, either a pure carbon tax or a revenue-neutral carbon tax. In the first case, everybody simply pays a charge equivalent to the carbon content of the fuel consumed multiplied with the corresponding price level. In the second case, an average carbon intensity benchmark level is set across the industry and ships, which perform worse than this average, pay the tax, while ships that perform better receive the revenues as a subsidy.

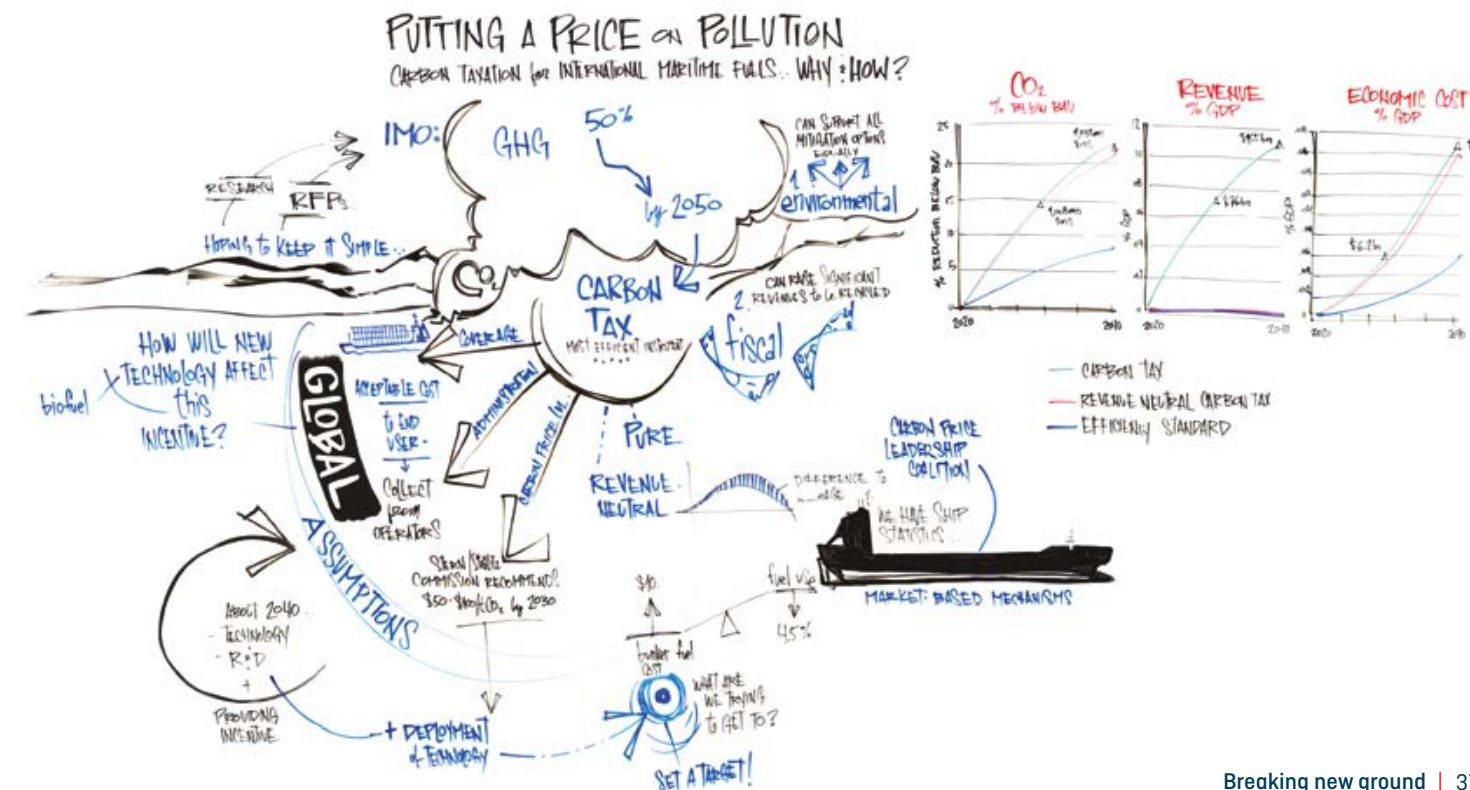
Modeling shows that a 10% fuel price increase results in a 4.5% reduction in fuel use. Using the purely illustrative example of a carbon price of \$75/tCO₂, GHG emissions could be lowered by about 15% and 25% by 2030 and 2040, respectively, compared to a business-as-usual scenario. Of course, these scenarios are still far away from halving emissions by mid-century as prescribed by the IMO's GHG Strategy. The revenues raised would amount to \$76 bn in 2030 and \$155 bn in 2040 and would result in an increase of the average shipping costs at a global level by 0.005-0.075% of global GDP in 2030.

Ian Parry concluded by making the case that, thanks to its effectiveness, a carbon tax on international maritime fuels deserved further consideration, but that revenues should only be raised if they can be used productively and should ideally be linked with investments in research and development for clean shipping technologies. The subsequent discussion focused on whether the shipping industry could pass on the carbon price to the end consumer. Several participants suggested that under current depressed freight rate, full pass through would be an economic imperative for the industry to remain profitable.



Another question related to the need for compensation for countries vulnerable to increased shipping costs. According to Ian Parry, the additional costs are generally expected to be manageable, but a complementary transfer scheme financed by the IMO fund could also be imagined. To ensure good governance, the details of the fund administration – both in terms of investments in R&D or compensatory transfers for countries – would need to be carefully worked out.

Several participants suggested that a fund not only support research and development in new technologies, but also the deployment of existing technologies, since transitory subsidies would be useful to reward pioneers and early movers.



Improving safety performance

What can the maritime industry learn from the airline industry on safety?

Ruben Morales, General Manager, Corporate Safety, Hong Kong Airlines, and Vice Chairman of IATA's Accident Classification Technical Group.

While safety in shipping has improved, on average 100 ships are still lost every year. Shipping also continues to have a high number of work-related injuries and fatalities compared to other industries. One industry that has managed to significantly improve its safety performance is the airline industry, reducing incidents by 70% in the last 10 years. In his presentation, Ruben Morales shared some of the best practices and collaborative experiences that has allowed the airline industry to make such impressive progress.

Ruben Morales started by highlighting the similarities between shipping and airlines, not least the global nature of both industries, leading him to conclude that the experiences of the airline industry were relevant to shipping.

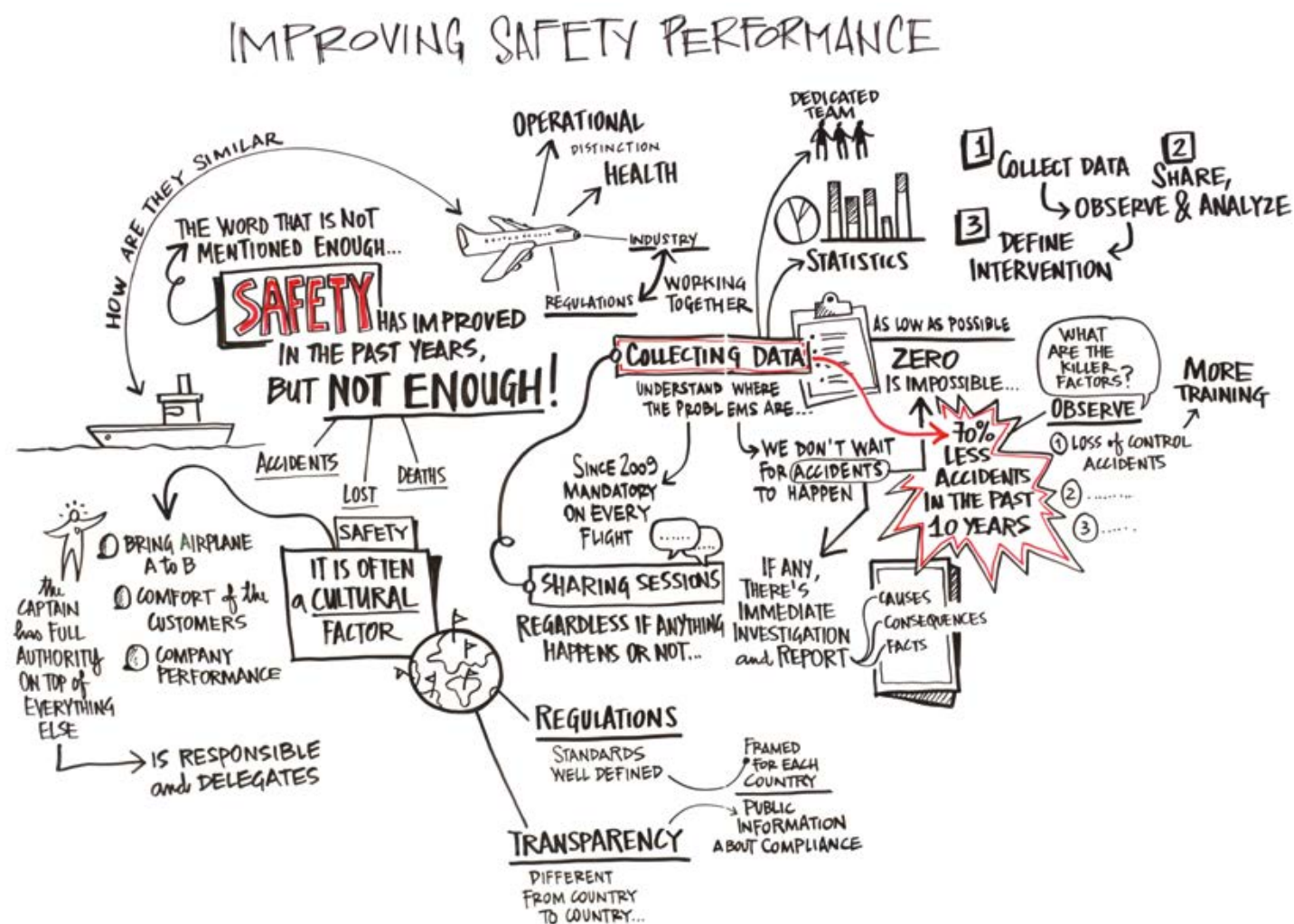
According to Ruben Morales, the most important factor in improving airline safety is the industry wide collection and sharing of operational data by IATA, an independent industry association.

Data is collected on an ongoing basis, irrespective of whether incidents occur or not. In addition, incidents trigger a requirement to rapidly produce a report that contains all facts about the causes and consequences. Together, the relevant findings are then incorporated in safety procedures across the industry.

Industry collaboration alone is not enough; there is also a need for binding regulation. National regulation based on a framework issued by the International Civil Aviation Organization (ICAO), an international organization like the IMO ensures that relevant safety measures are implemented by all airlines. Ruben Morales argued that close cooperation with the industry in developing and drafting regulation guaranteed that it is as efficient as possible.

Finally, Ruben Morales emphasized the importance of a strong safety culture. This requires a team solely dedicated to safety issues, training, and empowering employees when it comes to safety. As an example, Ruben Morales pointed out that airline captains always have the right to refuse to fly if they for any reason consider it unsafe.

In the subsequent discussion, there was a clear consensus amongst participants that shipping would benefit from building on the experiences of the airline industry in striving for a zero-incident industry.



Learning from experts

The digital transition

Digital technologies are transforming all sectors of the economy. How does this digital transition impact the maritime industry and what does it mean for maritime business models?

Christopher Rex, Head of Innovation, Danish Ship Finance, Denmark

Christopher Rex started his presentation on the impact of digitalization on the maritime industry by highlighting that the most significant change in the last 30 years is the amount of information available about physical assets. He pointed to the example of container freight, where a container can easily be followed from shipper to consignee through digital tools. If this information flow is efficient, middlemen will become increasingly obsolete.

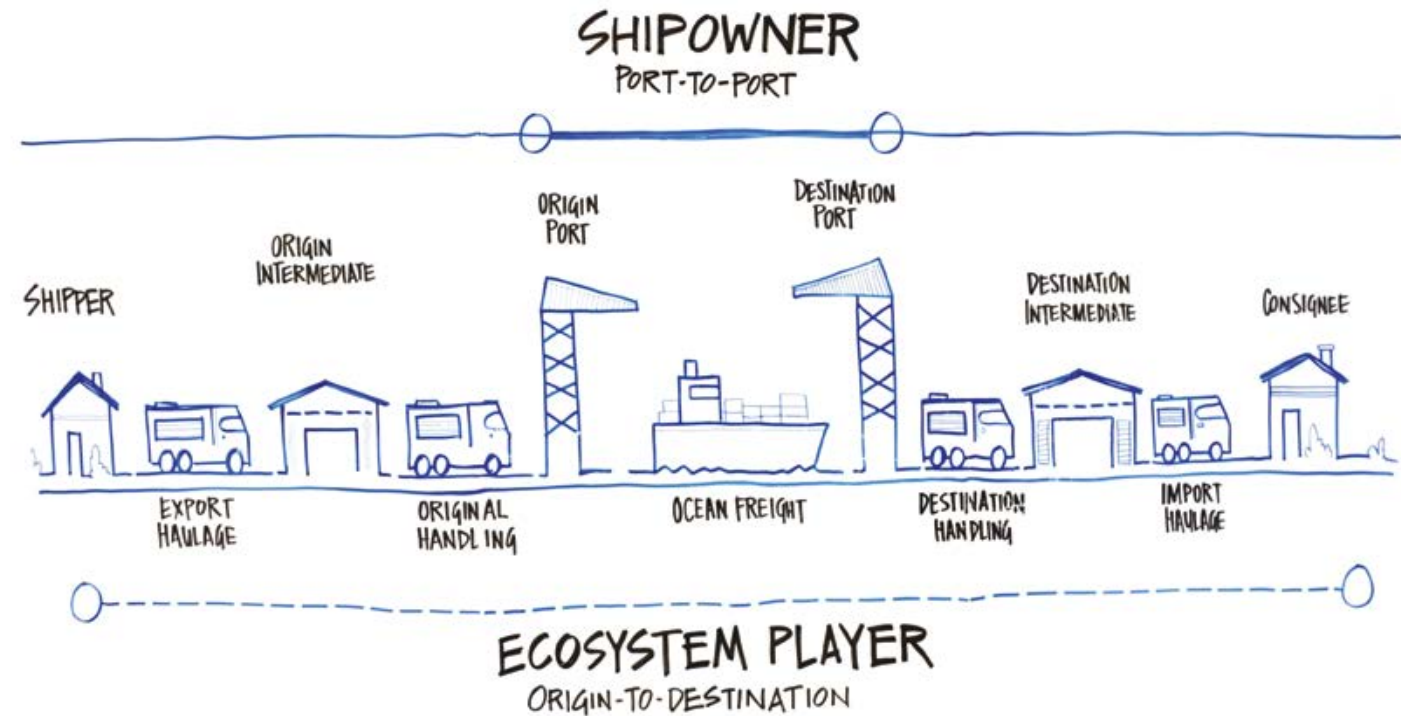
In Christopher Rex's view the barrier to the free flow of information is no longer technology; it is the mindset of the industry with regards to data sharing. Moreover, leaders in the industry have discovered that data holds value and the protective attitude has only increased. According to Christopher Rex, this is the wrong attitude. He argues that data will become available whether you want it or not, and data that is not shared is worthless.

If the industry is not willing to reinvent its current operating model, Christopher Rex expects that digital disruption will come from outsiders. With this in mind, he proposed that the industry look at freight (of any type) from origin to destination with a view to questioning all aspects of the current shipping business model.

As part of this process, even the ownership of vessels should be reviewed as the return on investment on ships is coming increasingly under pressure. He suggested that ship owners consider "ship as a service" business models, similar to the mobility-on-demand model in the aviation industry. In this case, the role of the ship owner might be reduced solely to asset ownership.

Sensors, IoT, big data, and performance management are only the first step in this digital transition. According to Christopher Rex's, companies should not be afraid to rebuild processes around digitalization. While for some this may look like a threat to the current players in the industry, it also represents an opportunity. A new value pool is created, both for incumbents and for new players. As in asset consolidation, digitalization is about the consolidation of access to customers.

In Christopher Rex's view, the biggest threat to incumbents is an unwillingness or inability to adapt to the changes that the digital transition will inevitably bring to the maritime industry. One way of overcoming this barrier is to start with smaller projects, which could bring valuable lessons that can then be used to launch bigger projects. And no matter what strategy a company chooses in the digital transition, it is important that companies are ready to start experimenting.



ARTIFICIAL INTELLIGENCE

OPPORTUNITIES for MARITIME INDUSTRIES

with DR. ANDY CHUN

EVOLUTION of AI

INTERNET of EVERYTHING + BIG DATA
+ LOW-COST CLOUD COMPUTING

AI EMPOWERS DIGITAL TRANSFORMATION

ENABLES ORGANIZATIONS TO BE HIGHLY OPTIMIZED and EFFICIENT

AI PREDICTIVE ANALYTICS ALLOWS BETTER and MORE EFFECTIVE PLANNING

NATURAL LANGUAGE PROCESSING & COGNITIVE COMPUTING AUTOMATES COMMUNICATION

BLOCKCHAIN



OPPORTUNITIES TO LEVERAGE AI

PERSONALIZED SERVICES through BETTER UNDERSTANDING of CUSTOMER NEEDS

STREAMLINE COMMUNICATION through NLP and CHATBOTS

AUTOMATION of SERVICES through ROBOT PROCESS AUTOMATION (RPA)

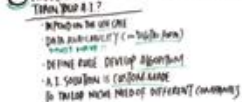
RETENTION of EXPERTISE & KNOWLEDGE

HANDLE TIME-CRITICAL COMPLEXITY with AI OPTIMIZATION

PREDICTING DEMANDS, WEATHER, MAINTENANCE etc.



AI vs. HUMAN? REPRESENTATION? IDENTIFICATION?



The potential and limits of AI

Learning from experts

AI-enabled technologies stand to deliver substantial benefits across all sectors. What will be the impact on the maritime industry, and will the benefits outweigh the risks?

Andy Chun, Regional Director, Technology Innovation, Prudential Corporation Asia

The rise of AI has been made possible by the development of several supporting technologies. The so-called Internet of Things, where devices and people are connected digitally has resulted in a massive expansion in the availability of data. Coupled with the low cost of powerful cloud computing it has become possible to analyze very big data sets, further contributing to the rise of development and application of AI.

Andy Chun noted that the AI concept covers a number of different tools including, for instance, machine learning, and that the exact type of AI that is relevant depends on the problem at hand. He also pointed out that there are some concerns about the deployment of AI technologies due to the risks related to data security and the risk of a loss of control. One potential way to address data security is by using blockchain technology that comes with complex encryption algorithms.

Andy Chun highlighted several areas where AI can be of use in the maritime industry. First, considering the complexity of maritime logistics, AI could be applied to the analysis of very big data sets, enabling optimization in resource allocation and cost reductions.

In the subsequent discussions, it became clear that the use of AI technologies is still a relatively new topic in the maritime industry, and that more work needs to go in to understanding the technology and how it can bring benefits to this particular industry.

AI can also be used to develop predictive analytics, where potential future problems and opportunities are identified based on current and historic data patterns. In this way, AI allows for more effective planning as well as the prevention or mitigation of potential accidents and risks.

In addition, AI is increasingly being used to perform natural language processing. Not only can AI help overcome language barriers, and thus reduce the risk of misunderstandings, it can also improve the customer experience e.g. through chatbots, which can be available to customers 24/7 at a negligible cost.



Learning from experts

The talent challenge

There is a global war for talent as employers strive to build teams for the jobs of the future. How can the maritime sector compete for the best and the brightest?

Nia Joynson-Romanzina, Director and Founder, iCubed, Switzerland

The long-term success of the maritime industry depends on its ability to attract talent, which will require an understanding of the needs and desires of a global and diverse workforce. In this session, Nia Joynson-Romanzina shared her perspective on how leaders can build the companies of the future and manage complex diversity.

According to Nia Joynson-Romanzina, success in the international market for talent will require companies to have an organizational culture that creates a sense of belonging, where people feel valued, accepted, and seen. A sense of belonging fosters loyalty, trust, and motivation among employees – all important factors for success.

An element in creating a sense of belonging is to effectively manage complex diversity. Complex diversity is based on the realization that diversity cannot be reduced to a few simple characteristics such as gender or nationality. In this sense, there is no such thing as non-diversity, since every individual is unique.

The value of having a diverse workforce comes from having different perspectives in the room. Research shows that diverse groups consistently outperform homogeneous groups in problem solving. Managing complex diversity is, therefore, a way to improve company performance and competitiveness.

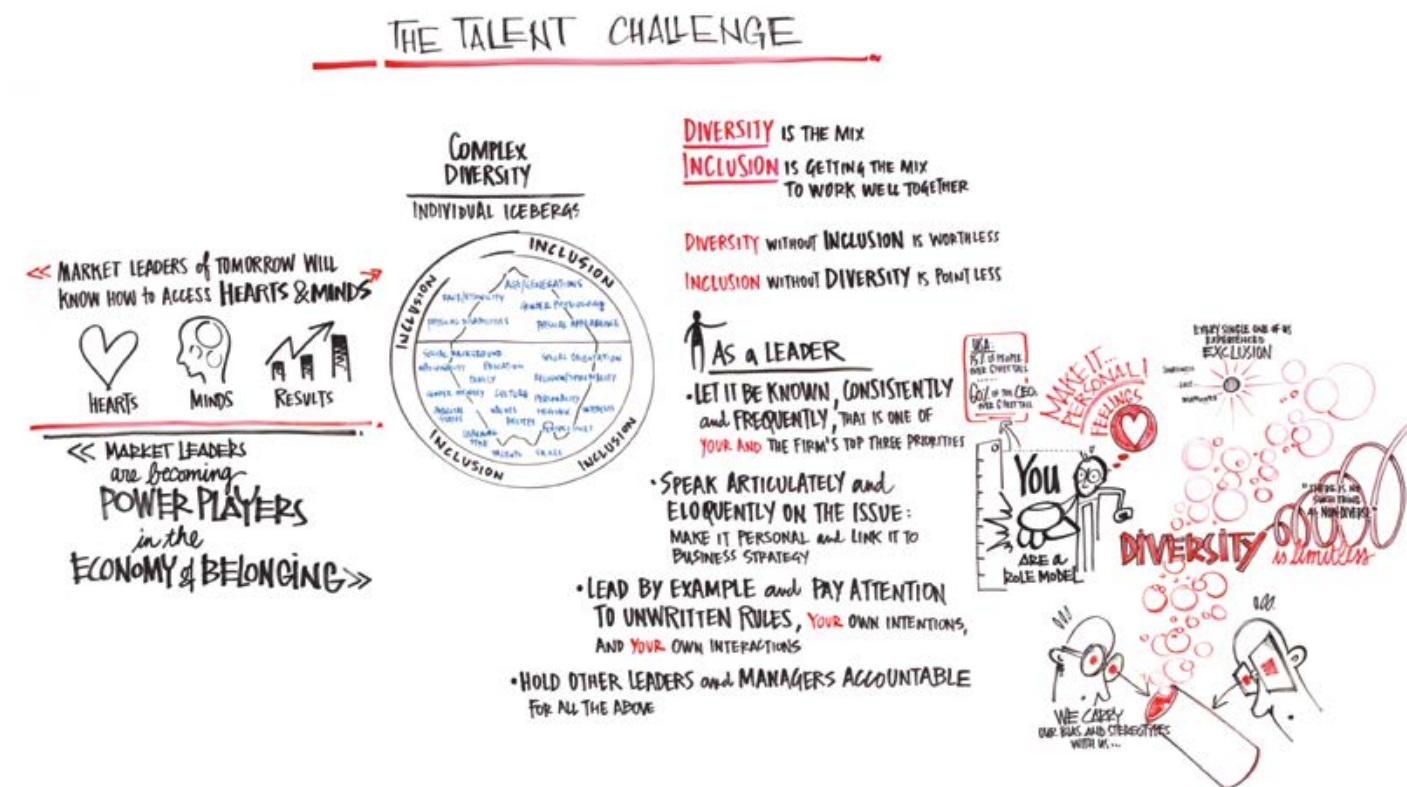
But how can companies manage complex diversity? To Nia Joynson-Romanzina, the key is to understand what inclusion means. In a metaphor, if diversity is the mix, then inclusion is getting the mix to work well together. Diversity without inclusion is worthless; inclusion without diversity is pointless.

In practice, inclusion is difficult to realize, and leaders need to think and work hard toward improving inclusion in an organization. Here, a key challenge is overcoming unconscious biases, which can lead to misjudgments and sometimes serious consequences. For instance, it could lead to the working performance of different employees not being fairly judged or to the failure of recruiting the employees that could bring the most value to the company.

Nia Joynson-Romanzina gave a number of simple techniques that can be used to deal with unconscious biases. Examples included the use of standardized and objective assessment criteria for performance evaluation, the use of diverse hiring panels, and changing job description to make them gender balanced.

Another key point was the important role that leaders play in shaping their organization and the organizational culture – both intentionally and unintentionally, and the numerous steps that leaders can take to be an attractive and diverse workplace, such as:

- Let it be known, consistently and frequently, that creating and attractive and diverse work place is one of your and the firm's top-three priorities.
- Make it personal and link it to business strategy.
- Lead by example and pay attention to unwritten rules, your own intentions, and your own interactions.
- Hold other leaders and managers accountable for all of the above.



THE FUTURE OF RESPONSIBLE SHIP RECYCLING



The future of responsible ship recycling

Learning from experts

How can stakeholders across the maritime industry work together to make ship recycling more sustainable?

Andrew Stephens, Executive Director, Sustainable Shipping Initiative, United Kingdom

The poor practices in ship recycling have a significant negative impact on social, safety, environment, and health issues as well as on the public perception of the maritime industry. Andrew Stephens shared his view on the future of responsible ship recycling.

He pointed to the tradeoff between cost and sustainability as an important driver in ship recycling. For a single ship the cost difference between very sustainable and unsustainable recycling practices could be up to \$9 million.

Inadequate regulatory structures create confusion about which regulations to follow. The Hong Kong Convention, which could provide a global regulatory framework for ship recycling, has only been ratified by six countries, far short of what is needed for it to go into effect. EU regulation goes beyond the Hong Kong Convention to also cover social factors, and stipulates that only approved yards can recycle vessels flagged in the EU.

A lack of sustainable ship recycling facilities exacerbates the problem. Only 21 yards have been certified to recycle EU flagged ships, which is insufficient to meet the needs of the fleet. In addition, China has closed its doors to non-domestic recycling, taking further recycling capacity offline.

Most ship recycling is currently done in South Asia – specifically India, Pakistan, and Bangladesh, where 80% of the total world tonnage is recycled. Typically, these facilities do not meet international standards, although some progress is being made. India is working with the ILO to improve practices and some yards are seeking certification in compliance with the Hong Kong Convention and EU standards. Out of 150 Indian recycling yards, 70 have made moves to be declared Hong Kong Convention compliant.

Andrew Stephens argued that transparency is a key element in incentivizing sustainable recycling. Access to information allows for more informed decisions to be made. In addition, transparency about ship recycling practices allows investors and cargo owners to choose shipping companies that recycle ships responsibly, thus rewarding responsible practices.

To this end the Sustainable Shipping Initiative has launched the Ship Recycling Transparency Initiative, a one-stop shop for information on ship owners' recycling practices via voluntary disclosure. The initiative is open to companies wishing to improve transparency and work for more sustainable ship recycling.





TALENT & DIVERSITY

the IMPACT OF TECHNOLOGY

INCREASED NEED FOR SKILLED WORKERS, but DECREASED NEED FOR LOWSKILLED WORKERS DUE TO AUTOMATION

DECREASED ISOLATION OF SEAFARERS ON BOARD and INCREASED ATTRACTIVITY OF THE JOB

the CASE for MORE WOMEN

MORE THAN 50% OF STUDENTS in HIGHER EDUCATION ARE WOMEN

18.3% in 2025



How WILL TECHNOLOGICAL DEVELOPMENT affect the MARITIME WORKFORCE of the FUTURE?

RETHINK WORK CULTURE

Possible SOLUTIONS

EXPAND the RECRUITMENT BASE

RE-SEARCH SHOWS CORRELATION between DIVERSITY in TOP MANAGEMENT and FINANCIAL PERFORMANCE

in MARITIME, WOMEN ARE MOSTLY FOUND in SUPPORT, but NOT in LEADERSHIP POSITIONS

WOMEN REPRESENT JUST 2% OF the CURRENT WORKFORCE at SEA

What CAN BE DONE to BRIDGE THE GENDER Gap in the MARITIME INDUSTRY?

SHORTAGE OF SEA-FARERS

an Aging Work-force
LACK of NEW RECRUITS

LOSS of EXISTING PERSONNEL to OTHER INDUSTRIES

COMPETITION FOR THE TALENT OF THE FUTURE

the MARITIME INDUSTRY has to COMPETE with other INDUSTRIES THAT HAVE HIGHER VISIBILITY to GET the RIGHT MIX of TALENT!

IMPROVE IMAGE and SHOWCASE COMPANY VALUE

a DIVERSE WORKFORCE IS KEY

IN which OTHER WAYS CAN THE MARITIME INDUSTRY ATTRACT MORE SEAFARERS?

The maritime industry in 2050

To mark the end of the first day of the Summit, IMO Secretary-General Kitack Lim presented his vision of the maritime industry in 2050.

In his address, the Secretary-General drew two parallels between what he saw as the focus of discussions at the Summit, and the primary focus areas of the IMO: decarbonization and digitalization – and that the success of the maritime industry depends on greater collaboration, both inside and outside the industry.

With regards to decarbonization, Kitack Lim highlighted the IMO Initial Strategy on Reduction of GHG Emissions from Ships as a landmark decision that was made possible through collaboration and support from the industry – even in the face of difficult market conditions. He stressed that this commitment to the Paris Agreement is just the first step in a tremendous undertaking that would take continued willingness and commitment from industry to act on environmental issues, such as was evident in the discussions at the Summit and at the IMO.

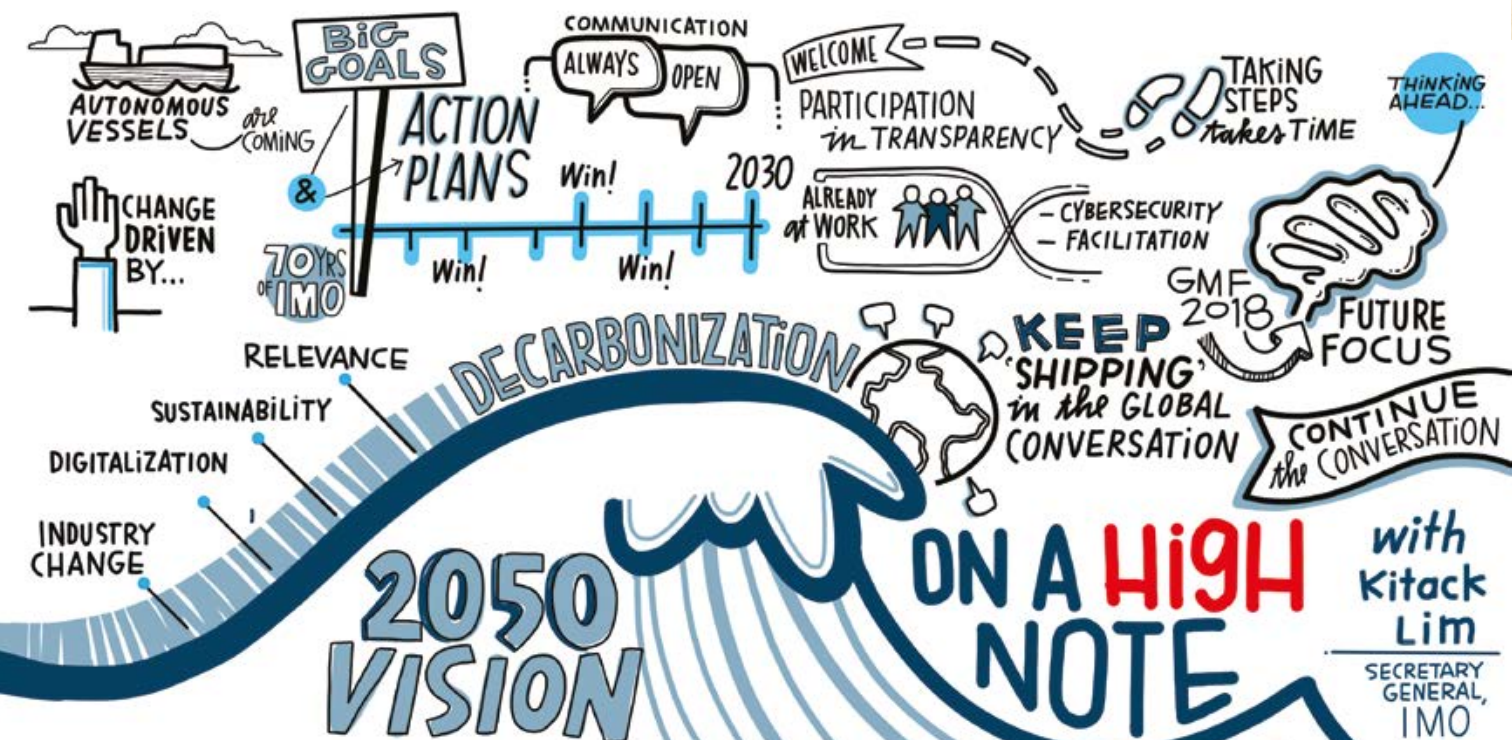
Next, Kitack Lim pointed to the transformational role of digitalization, which has the potential to revolutionize all of the aspects of shipping and enable the achievement of the UN Sustainable Development Goals as well as the IMO’s own regulatory objectives. However, he urged that digitalization must not compromise safety, security, and environmental protection. The IMO is working to ensure that these challenges are addressed proactively, but success will depend on increased collaboration between all stakeholders.

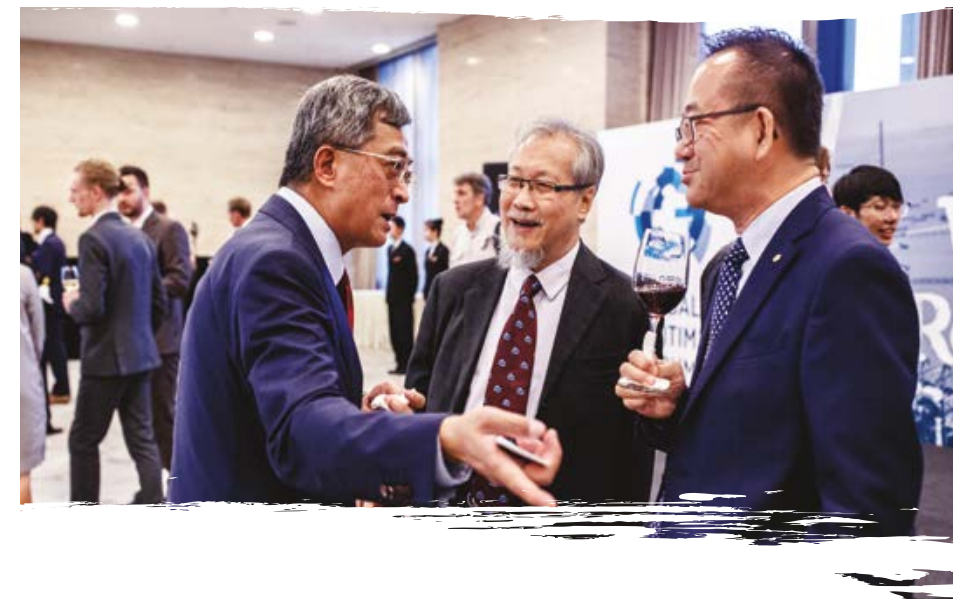
He closed his address by emphasizing that the IMO Initial GHG Strategy is not the final stage towards shipping’s decarbonization, but merely a stepping stone to more ambitious action. Finally, turning directly to participants, and major ship owners in particular, he invited them to keep contributing with their insight and experience, and urged them to set an example in compliance and implementation that others will have no choice but to follow.



“Shipping should not be looked at as something isolated. Shipping is one of the crucial parts of the global logistics supply chain.”

Kitack Lim,
Secretary-General, International Maritime Organization





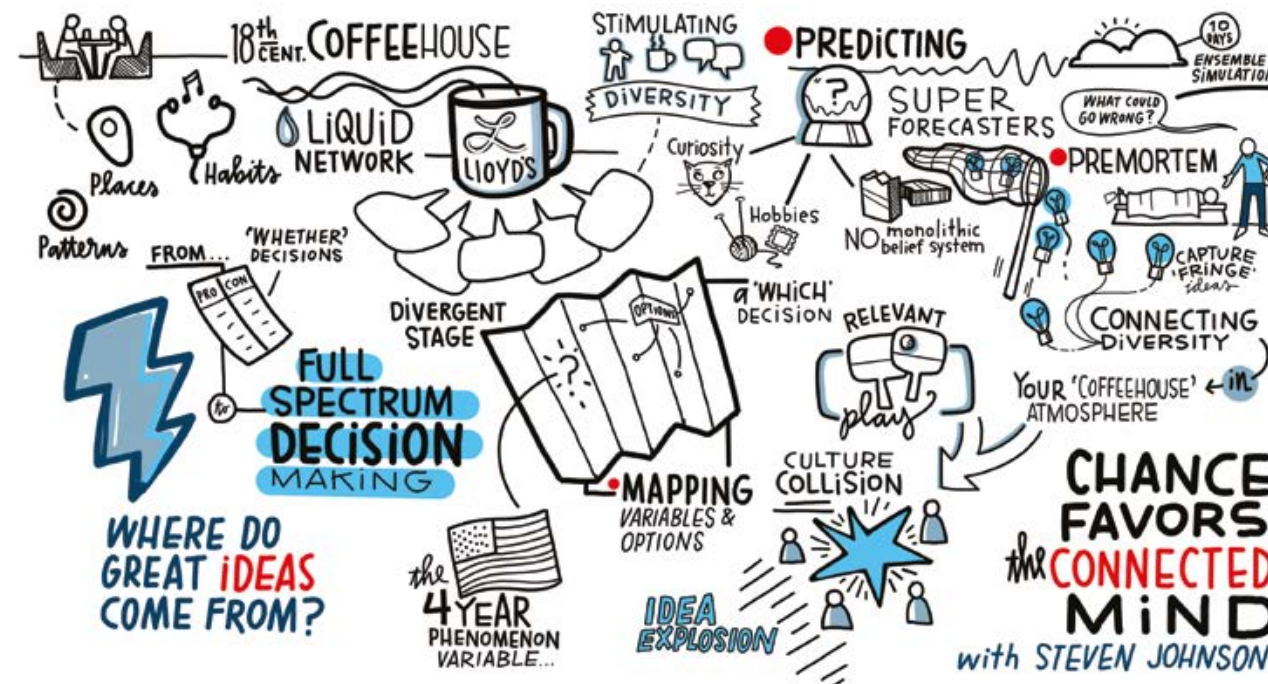
How to make the decisions that matter

The second day of the Summit was dedicated to identifying new ways of working together across the industry to make positive change happen. To kick off the day, best-selling author Steven Johnson explored environments that foster breakthrough ideas and presented different ways of tackling the challenge of decision-making in the context of complexity.

Steven Johnson introduced the idea of liquid networks as the best generative spaces of new ideas. Liquid networks appear throughout history in places where people come together without a clear purpose to share ideas and have open-ended conversations.

As a prominent example, he cited Lloyd's Coffee House in London, a popular gathering place for ship captains, investors, maritime tradesmen, and others, which gave birth to the idea of maritime insurance. In more modern times, he pointed to open-ended co-working spaces as the same type of environment, where ideas and information can come together in unforeseen ways. In contrast, he referred to the often too rigid structure of meeting rooms as places where "ideas go to die".

Next, Steven Johnson addressed the related issue of making decisions in the context of complex questions, which he called "full-spectrum decisions" – those involving different disciplines, disruptive phenomena, disparate experiences, and breakthrough technology. Referencing the work of a prominent researcher in the field of management, he presented a three-step process of making complex decisions.



We want to have global conversations where people with different backgrounds and different fields of expertise can get together and collaborate on ideas because those groups will be smarter.

Steven Johnson, author, USA

Phase 1 Mapping

In contrast to the widely used strategy of "do this or nothing", where decision-makers envision one possible option and choose between proceeding with it or not, the mapping phase presupposes a creative search for as many alternative solutions as possible. Those who included this step in their decision-making process were more likely to be satisfied with their decision later than those who only imagined one option.

Phase 2 Predicting

Whatever the decision, it will involve a prediction of its future consequences. Steven Johnson pointed out that the best people at making predictions are those who are not in the service of a single model or theory of how the world works, but instead have diverse interests. When they are faced with an important decision, they explore its many angles with curiosity and open-mindedness. Conversely, experts wedded to a single model only seek to make the problem fit their vision of the world. Steven Johnson highlighted that this is an important point to consider in making the complex decisions that the maritime industry is currently facing: Are we too locked down on our view of the future? Are we open enough?

Phase 3 Decision-making

In decision-making, Steven Johnson pointed to the red thread in his presentation: diversity of perspective – whether it is manifested by profession, race, age, gender, etc. – leads to groups that are more creative in their problem solving, and that come up with wiser decisions when thinking about long-term problems.

Working group outcomes



Participants spend a significant part of their time at the Annual Summit working in groups to address some of the key challenges and opportunities facing the global maritime industry through cross-industry collaborative action.

The topics were defined by participants themselves, and participants also chose which topic that they would work on. The outcomes of this work varied greatly. While some groups focused on getting a better understanding of the issue at hand and identified ideas that could be further explored in future sessions, other groups were already united by a common understanding of the issues and delved straight into developing concrete proposals for action.

In the following pages, the outcomes of the working groups are presented in a summarized form. Unfortunately, the summaries do not do justice to the dedication, engagement, and all the nuances and ideas generated in the group work. However, perhaps this quote from one of the working groups can serve as an illustration of the energy and enthusiasm present across all groups:

**Dream big,
start small,
do it now!**

Working group outcomes

Combining sustainability and profitability

There is a growing awareness in the maritime industry of the need to become more sustainable. But increased sustainability can only be achieved if it goes hand in hand with profitability. The good news is that an increasing number of examples show that doing good is also good business.

The maritime industry's interest in sustainability has been snowballing in recent years. This has been driven by outside pressures, but also by an industry desire to take responsibility for the greater good and improve the image of the industry and its attractiveness to talent and investors.

The conflict between doing good and the need to run a profitable business has been perceived as a barrier for becoming more sustainable. Examples from other industries and from the maritime industry itself show, however, that this conflict can be eliminated – and in some cases turned into a business opportunity.

The working group discussed how the shared goal of combining profitability and sustainability can be achieved in ways which can create real value for all stakeholders.

One way forward is for individual shipping companies to improve their internal sustainability practices. This could involve setting targets for reducing emissions and increasing energy efficiency; following ambitious ship recycling standards; focusing on improving safety performance; and investing in the training of employees while also expanding the diversity of the workforce.

Individual company action is not enough, and the group also identified a need for collaborative efforts that would involve a broad coalition of stakeholders across the maritime spectrum, including shipping companies, banks, investors, insurers and regulators. This group of stakeholders wanting to show industry leadership would form a "sustainability and profitability tribe", which would set out to prove that profitability and sustainability can be combined to the benefit of all.

A founding principle of the profitability and sustainability tribe would be that good practices should be rewarded. This could for instance be investors offering easier access to capital to sustainable companies; insurers offering lower premiums to reflect the reduced incident risk of companies with high safety standards; banks and other loan givers making access to loans dependent on alignment with specific sustainability targets – for instance, related to carbon emissions; and customers stating and showing a clear preference for business partners with a strong sustainability record. If this were to happen, the maritime industry could take a big step towards combining sustainability and profitability.

SUSTAINABILITY & PROFITABILITY



We are at a point where sustainability can be rewarded with greater profits.



Jeffrey D. Pribor, Senior Vice President and Chief Financial Officer,
International Seaways, USA



Working group outcomes

Collaboration and leadership to meet IMO's 2050 goal

Emphasizing the importance of mobilizing the industry to meet the IMO's 2050 target, this group focused on the need to move beyond competition and self-interest toward a new paradigm of active collaboration and leadership.

The group proposed that leaders in the industry should focus on the long-term survival of the industry, rather than the pursuit of short-term economic opportunities. Speaking in one voice and fostering a closer collaborative relationship with the IMO was considered as essential in developing a global regulatory framework supportive of shared goals.

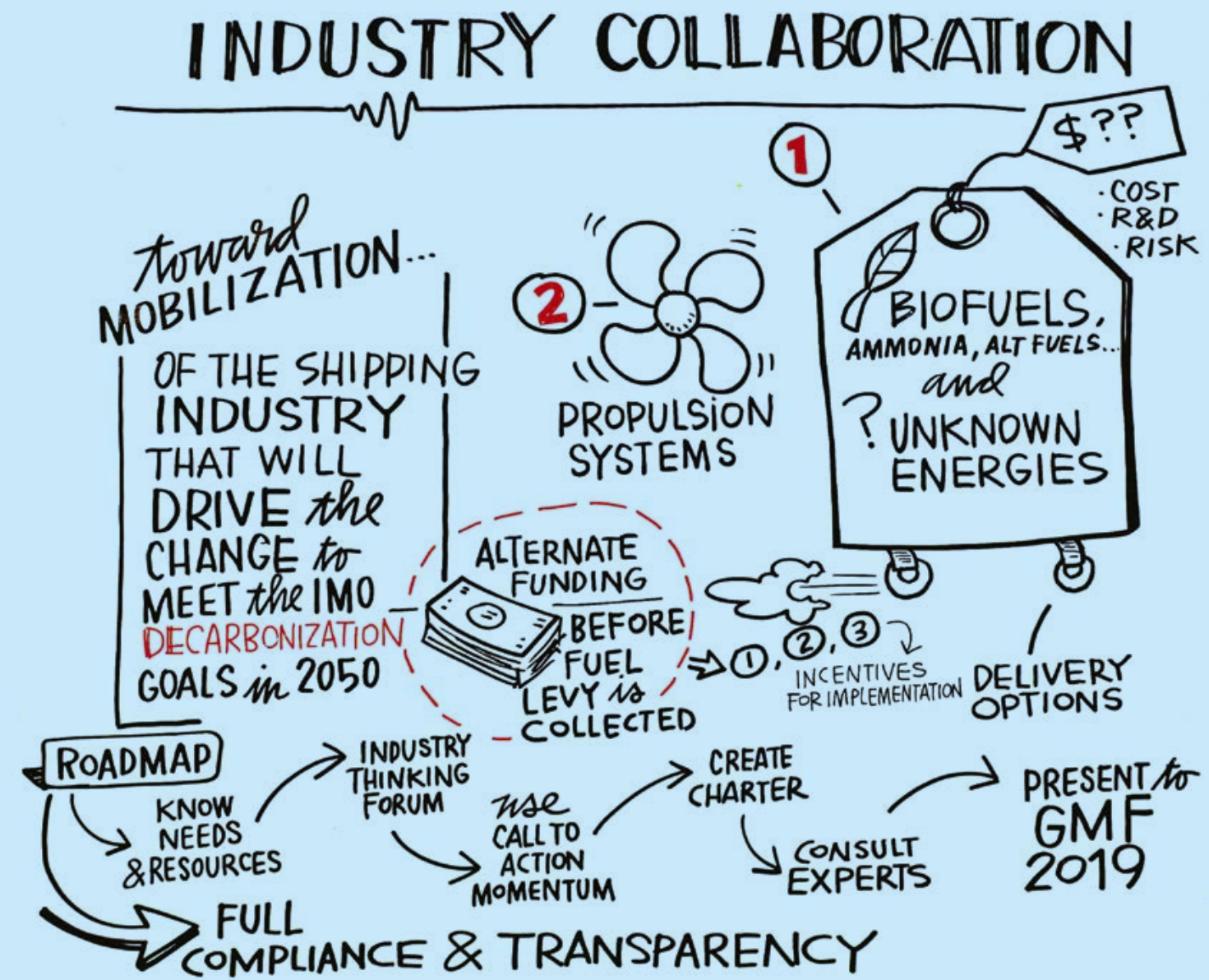
A structured road map for the industry to adopt zero carbon fuels was discussed as a key objective to meeting the ambitious target set out by the IMO, which will require significant investment in the development and deployment of new technologies, and a funding mechanism (e.g. through a fuel levy) to match.

Significant value could be created by building a "coalition of the willing" with a united voice and clearly defined, shared objectives. The coalition would engage with major stakeholders – the IMO, regulators in key countries, other important sectors – on how to achieve decarbonization on the timescale set out by the IMO's target.

The group identified immediate next steps to take:

- Launch an industry coalition of diverse stakeholders to explore options (technology options, near term commercial opportunities, pathway to long-term solutions, funding mechanism etc.)
- Engage with relevant stakeholders who are not already part of the Global Maritime Forum platform e.g. Asian shipowners, other industries
- Engage with experts on shipping's decarbonization to develop a conceptual industry road map to take forward (including technology options, likely cost, scalability, and funding)
- Leverage the initial Call to Action to make industry decarbonization pledge
- Develop proposals to be presented to the IMO for discussion
- Present achievements back to the Global Maritime Forum's Annual Summit in October 2019

It was emphasized that companies would need to commit resources, including people, in order to make this coalition a reality.



“ One of the biggest challenges is that we have no idea of what technologies can be made available on commercially viable terms to fulfill the IMO 2050 goals. ”

Randy Chen, Director and Vice Chairman, Wan Hai Lines, Taiwan



Working group outcomes

Accelerating the transition

The scope for reducing shipping emissions from operational measures appears to be insufficient in isolation. Therefore, reaching even IMO's goal for 2050 – to reduce the industry's emissions by at least 50% – will require a transition to zero carbon fuels to happen very quickly. This working group set itself the objective to get to a point where it is financially cost-effective and commercially viable to order a net zero emissions deep-sea vessel within 10 years for delivery in 2030.

The group agreed that to achieve this objective, it will be necessary to (a) make zero carbon fuels available at scale and (b) make zero-carbon powering solutions available and cost effective to buy and utilize. The group also agreed that it was critical that the objective could be achieved without the use of subsidies and that it was created from within (and through) the maritime sector.

The group proposed two key action areas:

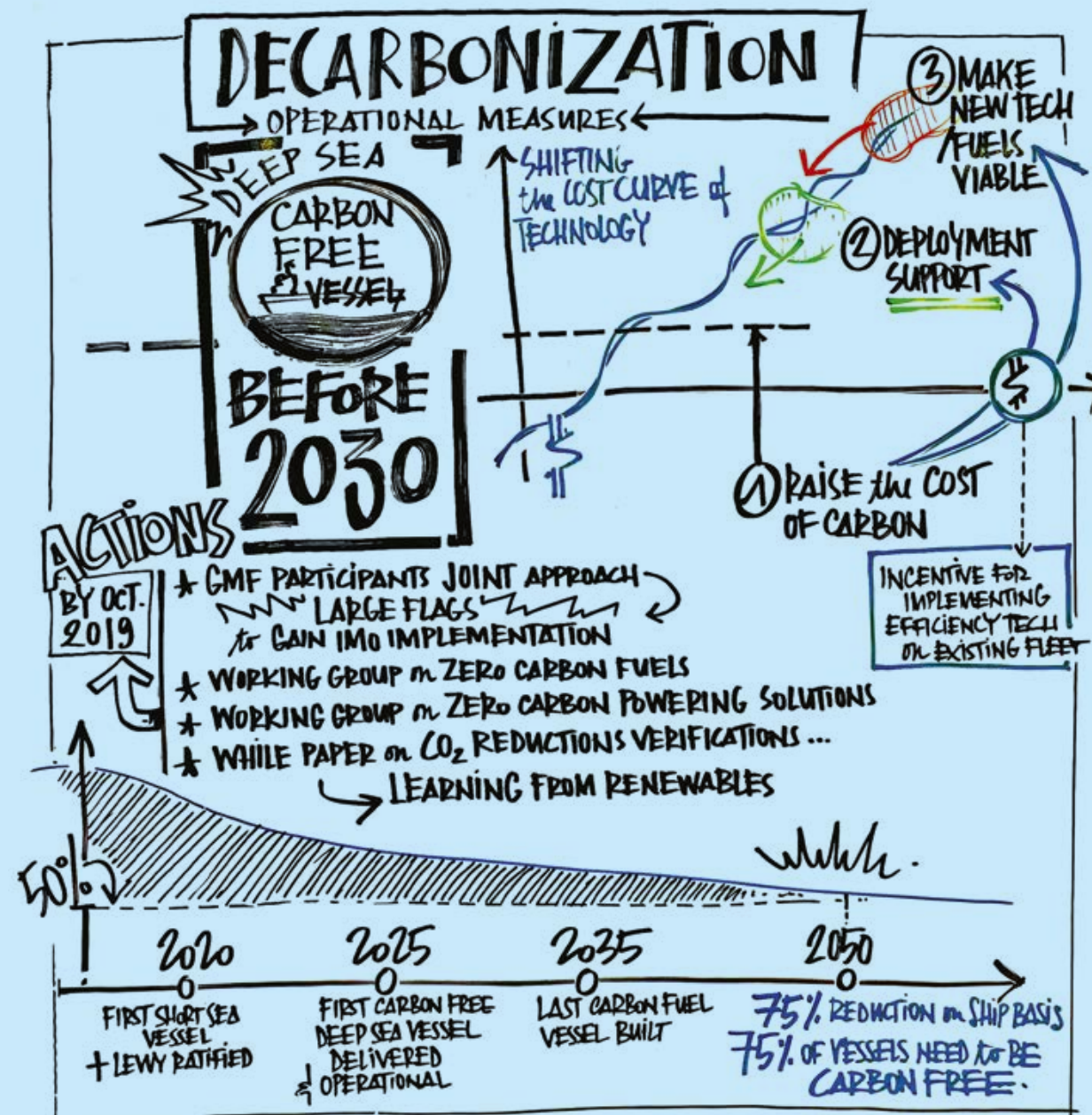
1. Raising the cost or penalty of emitting carbon dioxide.
2. Develop a support mechanism to select, fund, encourage, and reward the development of zero-carbon fuels, associated technology, and uptake.

The group pointed to the UK and German governments' efforts to drive clean power generation as successful examples of how to bring down the cost of renewable electricity.

Bringing in other industries was identified as critical to making zero carbon fuels available at scale, for example oil & gas majors, the chemical sectors (producers of biofuels and hydrogen) and engine manufacturers. The group suggested that working with other industries could enable a progressive transition, enabling zero carbon fuels such as ammonia and biofuels that could be dropped-in to existing technology.

To incentivize the transition and to fund much needed research, development, and deployment of new technologies, a carbon tax should be established quickly. The right place for the fund needs to be identified too, with perhaps the IMO as the main driver and the funds being put right into projects.

The group proposed the establishment of a dedicated working group on zero-carbon fuels, which could bring together representatives from relevant sectors to develop an industry road map to reaching the IMO goal and to collaborate on its implementation and support the adoption of regulations to advancing this transition.



“ When you think about 2030, it seems like a long way away. However, when you start there and work backwards and think about the time available and what is needed, you realize very quickly that all of the processes have to start today. ”

Lasse Kristoffersen, President and Chief Executive Officer, Torvald Klaveness, Sweden



Working group outcomes

Incentivizing shipping's decarbonization

This working group discussed the role of the financial sector in encouraging the industry to support the IMO's 2050 target. It pointed to the Poseidon Principles, a set of criteria for integrating climate risk considerations into lending decisions, as a framework to incentivize shipping's decarbonization, but also to address other environmental and social issues.

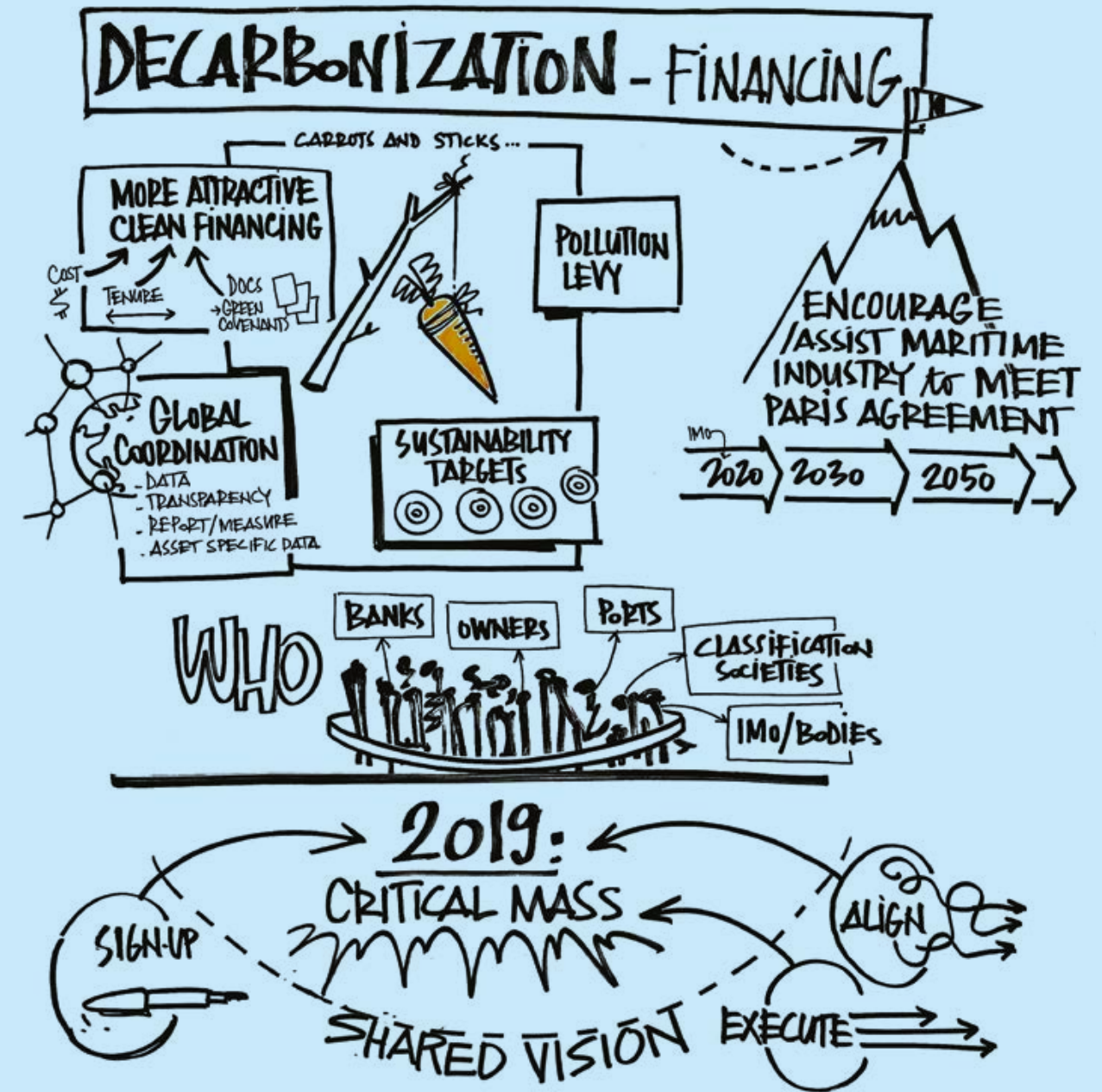
The group identified a number of requirements for the initiative to be successful. First, to have the most impact, it must be global and should include all lending institutions. Second, it should be supported by globally-recognized reporting of data and the use of established, agreed on metrics. Ideally, classification societies would be involved as neutral arbiters of information. Third, directional targets should be set. For example, for the issue of climate change, the targets could be based on a decarbonization trajectory. Finally, this process should be transparent to encourage trust throughout the system.

The group discussed what combination of tools and measures representing both carrots and sticks might be applied to meet the goal. One option discussed was whether it might be possible to provide differential rates, with better terms going to the "greener" vessels. Transparency and the naming and shaming of those not meeting the goals was also discussed as a potential stick.

The group also pointed to the role of charterers in providing both carrots and sticks by driving business toward greener vessels.

The group also discussed whether this initiative could be used vis-à-vis regulators to seek relief from Basel 4.

Finally, the group encouraged that banks should look to build a single initiative, using the Poseidon Principles as the umbrella to address other issues as well, such as ship recycling and crew welfare, to increase its reach and effectiveness.



“ It is very important that we act as an industry, not individually. ”

Stephen Fewster, Global Head of Shipping, ING, United Kingdom



Working group outcomes

Implementing the 2020 sulphur cap

The IMO's 2020 cap on the sulphur content of maritime fuels will bring significant changes to the maritime industry. In order to achieve a smooth implementation and ensure a level playing field, a number of outstanding issues need to be addressed, which will require both company and industry action.

In January 2020, new rules regarding the sulphur content of maritime fuels will enter into force globally. This means that ships will need to use fuels with a sulphur content of less than 0.5 % or install scrubbers that can clean the exhaust gas. Installing scrubbers will enable ships to continue using heavy fuel oil, which is much cheaper than fuel oil with a lower sulphur content, though the scrubber system requires additional investment. It is expected that only a small fraction of the global fleet will have installed scrubbers by the time the IMO's 2020 sulphur cap enters into force.

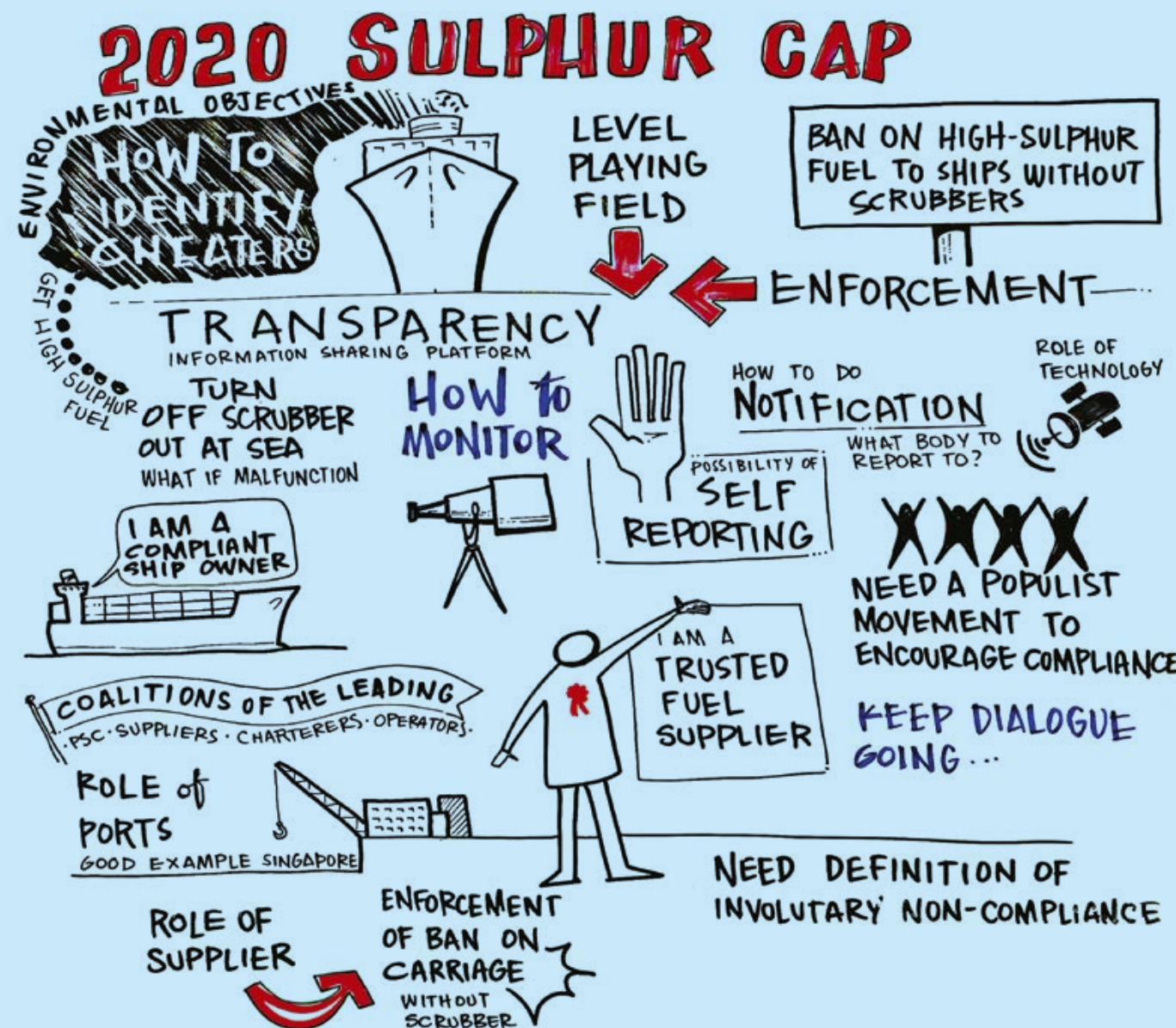
The working group explored some of the outstanding issues that still need to be addressed if the entry into force of the IMO's 2020 rules is to be achieved in an orderly manner.

A key concern is the need to ensure a level playing field and avoid the risk of ships without scrubbers continuing the use of cheap high sulphur fuel. This will require effective regulation and enforcement – for instance, through a ban on carrying high sulphur fuel on ships without scrubbers. Compliance with the rules can also be supported by increased transparency on fuel use and contractual requirements from charterers on the need to comply with the regulations.

Another concern is the availability and price of low sulphur fuels, since the expected increase in demand for low sulphur fuels can outstrip supply and thus lead to price spikes, unless refiners increase the production of these fuels in time. A related issue is whether the right types of fuels will be available in all ports, and if not, how situations of involuntary non-compliance can be handled.

The quality of the new fuel types was also discussed, since there is a risk that new low sulphur fuel blends can cause technical issues, especially if the precise composition of the blends deviates from the specifications provided to the ship operator.

The discussions in the working group showed that there is a need for more collaboration among a wide range of industry stakeholders, as well as more work at company level to get the industry ready for the 2020 sulphur cap. But the discussions also demonstrated a clear willingness to address these issues and identify the necessary solutions.



“ **More work needs to be done.** ”

Michael J. Kasbar, Chairman and Chief Executive Officer, World Fuel Services, USA



Working group outcomes

Making ship recycling more transparent

There is an urgent need to make ship recycling safer for workers and better for the environment. This requires overcoming both the lack of binding global regulations and the lack of economic incentives. The working group also saw increased transparency and a commonly agreed industry standard as important elements in making ship recycling sustainable.

The working group identified three key elements needed in order to bring about sustainable ship recycling practices at the global level: transparency, globally accepted rules, and common industry standards.

The first element was transparency, which is needed to drive responsibility throughout the value chain. By having transparency about how ships are recycled, a counterbalance to the economic incentive of obtaining the highest scrap price, can be created. This balance could be in the form of requirements from banks, investors, or underwriters to use sustainable shipping practices, for instance. Increased transparency could also inspire companies to rethink their current practices and increase the salience of the reputational risk of using substandard facilities, which could also lead to more sustainable ship recycling.

A barrier to having more transparency that was raised in the discussions, is the risk that even current best practices are not considered enough to live up to the expectations of public opinion. This is a particular challenge in the absence of globally accepted standards or regulations that could create a common frame of reference.

It is also important to have globally accepted rules that can set the standard for sustainable ship recycling. The Hong Kong Convention is an important part of the solution, but the convention needs to be ratified by many more countries to enter into force. The working group found it important to continue to push for the ratification of the Hong Kong Convention.

Common industry standards for sustainable ship recycling was also seen as an important element. The standard should be developed by a broad range of maritime stakeholders to ensure wide industry support including ship buyers and sellers, ship recyclers, ship yards, ship owners, regulators, financial institutions, and underwriters. A key element in building far-reaching support for a common industry standard would be to continue building awareness around the issue.

A common standard for ship recycling would create the economic incentive for ship recycling facilities – especially in emerging economies – to invest in improving their safety and environmental performance without fearing that the increased cost would damage their competitiveness.

In addition, a common standard would create pressure on companies not currently living up to the standard to improve or be faced with pressure from customers, the public, and investors to improve their performance.

— SHIP RECYCLING —



“ **Let’s agree on a standard for ship recycling we can all be proud of.** ”

Anil Sharma, President and Chief Executive Officer, Global Marketing Systems, United Arab Emirates



Working group outcomes

Investing in sustainable oceans

Though the shipping industry itself is not necessarily a source of many of the challenges facing the health of the oceans today, this working group proposed that addressing ocean sustainability would none the less benefit the maritime industry.

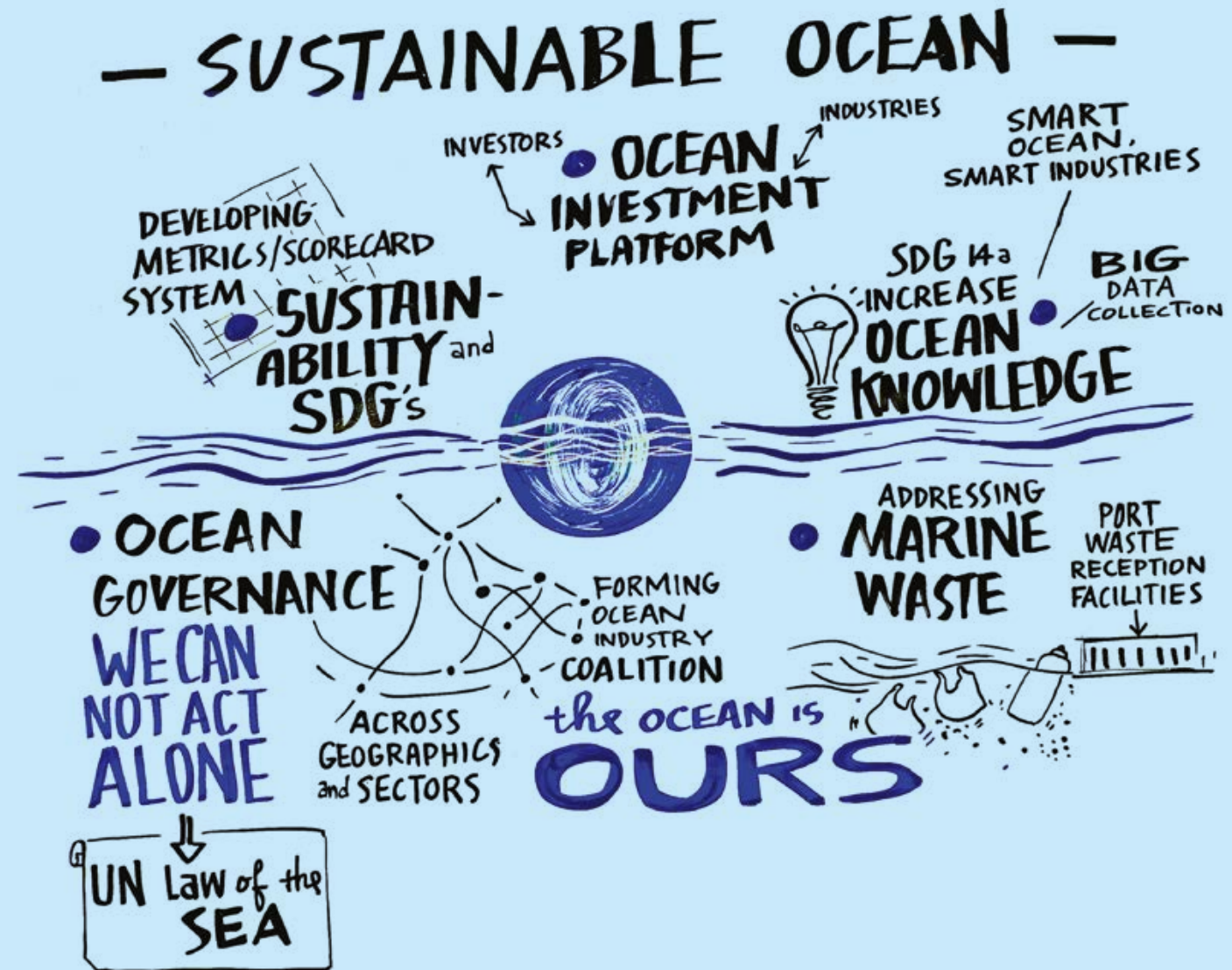
The working group first identified the need to define and operationalize sustainability and the Sustainable Development Goals (SDGs) for the maritime industry. This could include developing metrics and scorecards for the SDGs, as has been done in other industries. These scorecards could be used by investors, charterers, customers, and other key stakeholders to drive action.

Second, the group proposed the development of an Ocean Investment Platform, to bring together investors and the maritime industry to identify priorities for sustainable investments linked to the oceans. A working group could work with other stakeholders active in ocean sustainability to identify priorities for the platform.

The group also discussed how ocean industries might be harnessed to increase ocean knowledge.

The working group also suggested that the maritime industry engage proactively in ocean governance, especially in UN Law of the Sea negotiations. This could be done by developing an ocean industry coalition.

Finally, the group emphasized the need to address marine waste. This could be achieved by ensuring adequate port waste reception facilities and could be encouraged through the Ocean Investment Platform.



“ It is one big global ocean, it is one global ocean business community. ”

Paul Holthus, President, World Ocean Council, USA



Working group outcomes

Encouraging innovation through better regulation

Global regulation of the maritime industry provides uniform standards and ensures that broader societal goals are addressed. This working group discussed ways to improve the regulatory process to create cost-effective regulation that spurs and rewards innovation.

The working group identified three issues that must be considered to improve regulation of the maritime industry.

First, the challenge of regulating at the forefront of technology, where regulatory and technological developments are often out of step with each other, and putting early movers at a disadvantage and thus discouraging innovation.

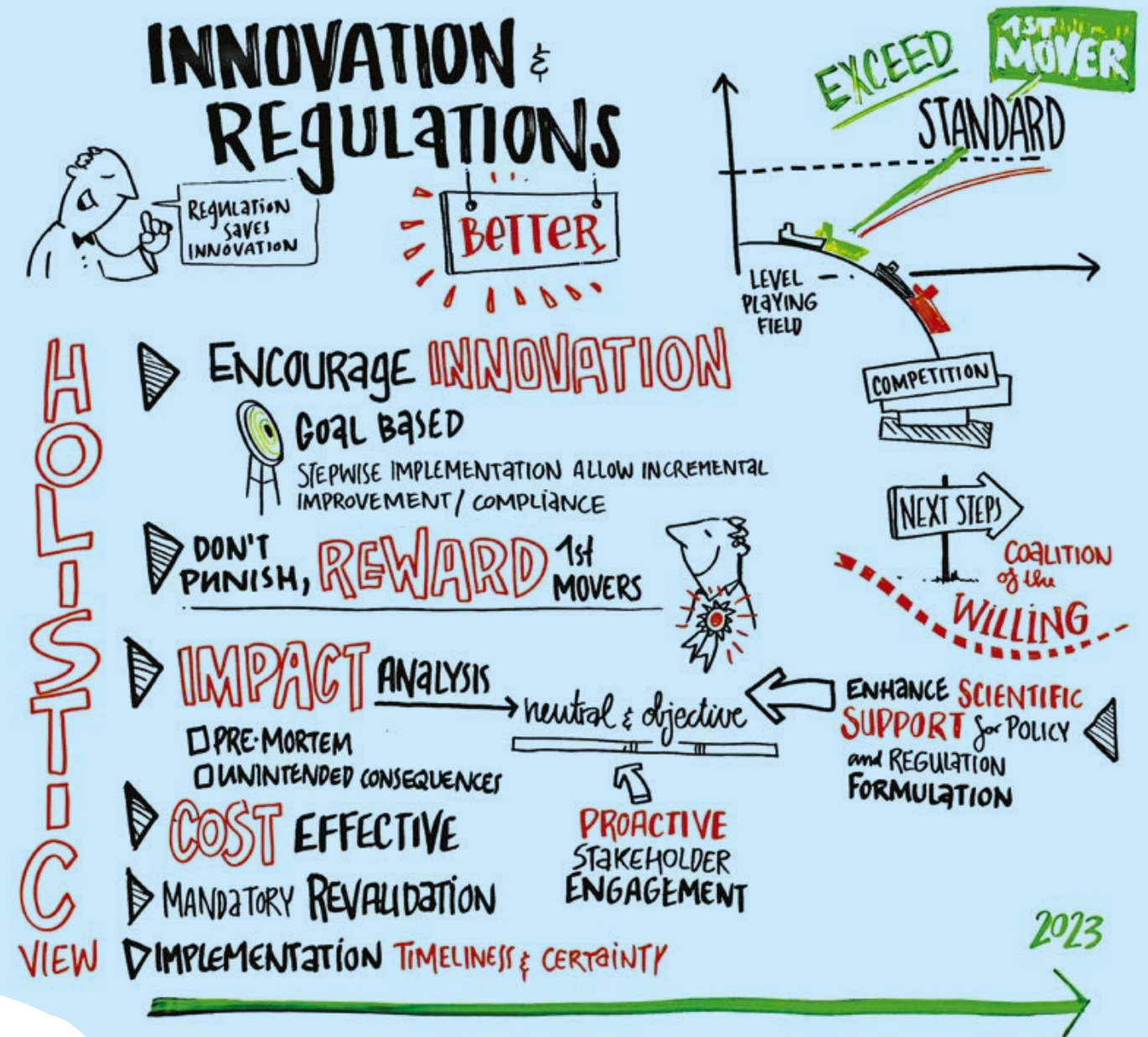
Second, the interplay between creating a global framework and adapting to local or sectoral requirements. Here, it is important to maintain a level playing field while also respecting local requirements and needs.

Third, recognizing that regulation will never be perfect. The group pointed out that it is important to have ways to adjust and update regulation based on experience and technological developments, so that outdated requirements can be adjusted or eliminated.

Based on a discussion of these three issues, the working group identified nine criteria for developing better regulation. Regulation should:

1. Encourage innovation by being goal-based
2. Reward first movers – for instance, through stepwise implementation
3. Based on objective and neutral impact assessments
4. Have review or expiry clauses
5. Cost effective
6. Enforced consistently and effectively
7. Implemented in line with agreed timelines to ensure certainty and predictability
8. Formulated and implemented in a pro-active process of stakeholder engagement
9. Based on facts and supported by scientific knowledge and evidence

The working group identified the upcoming work at the IMO on delivering on the ambitious goals for decarbonizing shipping as a key area of regulation, where these criteria could be put to the test.



We want to reward first movers and encourage innovation.



Scott Bergeron, Chief Executive Officer, Liberian Registry, USA



Working group outcomes

Competing for the talent of the future

In order to succeed in the long-term, the maritime industry needs to attract young talent. This is a challenge, since the industry is currently not well-known and is not offering a value proposition that matches the desires of millennials. To address this challenge, this working group suggested there is a need to improve the image of the industry and develop a more attractive value proposition for young people.

Being able to attract the right talent is a key factor in building a successful company and industry. According to this working group, however, the maritime industry is currently not in a good position in the competition for talent with other industries.

One important factor is that the industry is not particularly well-known, or indeed associated with negative perceptions, such as being disconnected, being away from family, and being a dangerous industry.

At the same time, the value proposition that the industry offers, is not seen to match the demands that young people are looking for. It was the impression of the working group that millennials want to understand what a company does to positively impact society, and that they expect better working conditions, as well as well-being, connectivity, and more flexible ways of working.

The working group agreed that the maritime industry has the potential to better its image, since it can play a crucial role in meeting the Sustainable Development Goals. For instance, as a facilitator of global trade, the industry can contribute to equitable economic growth and job creation in developing economies. The industry is also taking important strides in improving its environmental performance, notably when it comes to decarbonization.

The group suggested a collaborative branding campaign to attract the talent of the future, proposing a tagline that emphasizes the positive role the industry can and should play in the world: *Connecting across the oceans, responsibly, for the future of our planet.*

The group also saw a need to make it more attractive for young people to pursue a career in the maritime industry, for example by articulating a more compelling value proposition, by addressing diversity issues, and by introducing clear pathways for career development.



“ We must go back to the millennials and offer them a value proposition that makes them excited about joining our industry. ”

Ian El-Mokadem, Chief Executive Officer, V.Group, United Kingdom



Working group outcomes

Together in safety

Although some progress has been made on the safety record of the maritime industry, there is room for further improvement. This working group set out a vision of a zero-accident industry and developed a roadmap toward this goal centered around leadership, responsibility, and collaboration.

The working group was united by a strong desire to improve the safety performance of the maritime industry, since the industry – despite progress being made – still suffers from too many losses of ships and lives.

The long-term vision set out was zero accidents, since every accident can have a devastating impact on seafarers, their loved ones, the environment, and on the image of the maritime industry. The group also formulated short- and medium-term goals of reducing the number of incidents by 30% within the next five years and by 50% in the next ten years.

The group agreed that this vision can only be realized if all the stakeholders take responsibility for keeping seafarers safe and work together to make it happen. With this in mind, the group developed a roadmap for collaborative action to improve maritime safety. The initiative – named “Together in Safety” – will be based on leadership, responsibility, and collaboration:

- **Leadership.** Top management must make safety a visible and personal priority for their work, for instance through visits to ships. They must also continuously engage with and empower seafarers, for instance give them the power to stop operation if they consider it unsafe.
- **Responsibility.** Everyone involved must recognize the devastating effect that injury or fatalities have on seafarers and their loved ones. It is important to create a safety culture with a systemic approach to incidents, rather than a blame culture focusing on compliance.
- **Collaboration.** The industry must create a common language and collaborative mindset. The success of this work will be defined by the free flow of ideas and information across the industry.

The group identified a number of concrete ideas for collaboration that should be explored further. This included having companies waive copyrights to allow for better information use and the sharing of best practices, the sharing of existing accident reports to establish the baselines necessary to monitor progress, and the further standardization of safety equipment and training.

A key principle for “Together in Safety” identified by the group was to build on already established structures and guidelines related to maritime safety in order to avoid reinventing the wheel or duplicating existing efforts.

The work would initially be led by a smaller group of industry leaders and key stakeholders, who would drive the work forward, but the aim was to involve more companies, industry bodies, and other stakeholders in due course to maximize impact.



“**One human life lost is one too many.**”

Grahaeme Henderson, Vice President, Shipping and Maritime, Shell, United Kingdom



Working group outcomes

Financing innovation

Access to finance is important if the maritime industry is to prosper and make the investments in new green technologies that are needed to decarbonize the industry. This working group addressed the issue of financing from two angles: How can we finance innovation and how can we create new innovative ways of financing the industry?

The group identified three interlinked issues that are making financing the maritime industry a challenge.

The first issue relates to the lack of transparency in the industry. The lack of transparency is contributing to the retreat from the sector of many banks, since it makes it difficult to assess the risk and thus compounds the risk profile of an already volatile sector. This development is also influenced by new banking regulations such as the Basel IV rules, which increases demands for risk management.

A key recommendation of the working group was to increase transparency in the whole system both from the banking side and from ship owners, since having access to all the information would make it easier to provide finance and create new innovative ways of financing the industry. Here the creation of transparent and objective industry wide metrics and benchmark could be an important step forward, which would also help to raise public and capital market awareness and improve the profile of shipping in general.

The second issue was market distorting state-aid – especially directed toward ship building – which creates imbalances in the market and increases the risk for commercial lenders. The group saw a need to end direct and indirect state aid to shipyards and called for such aid to be phased out over a five-year period.

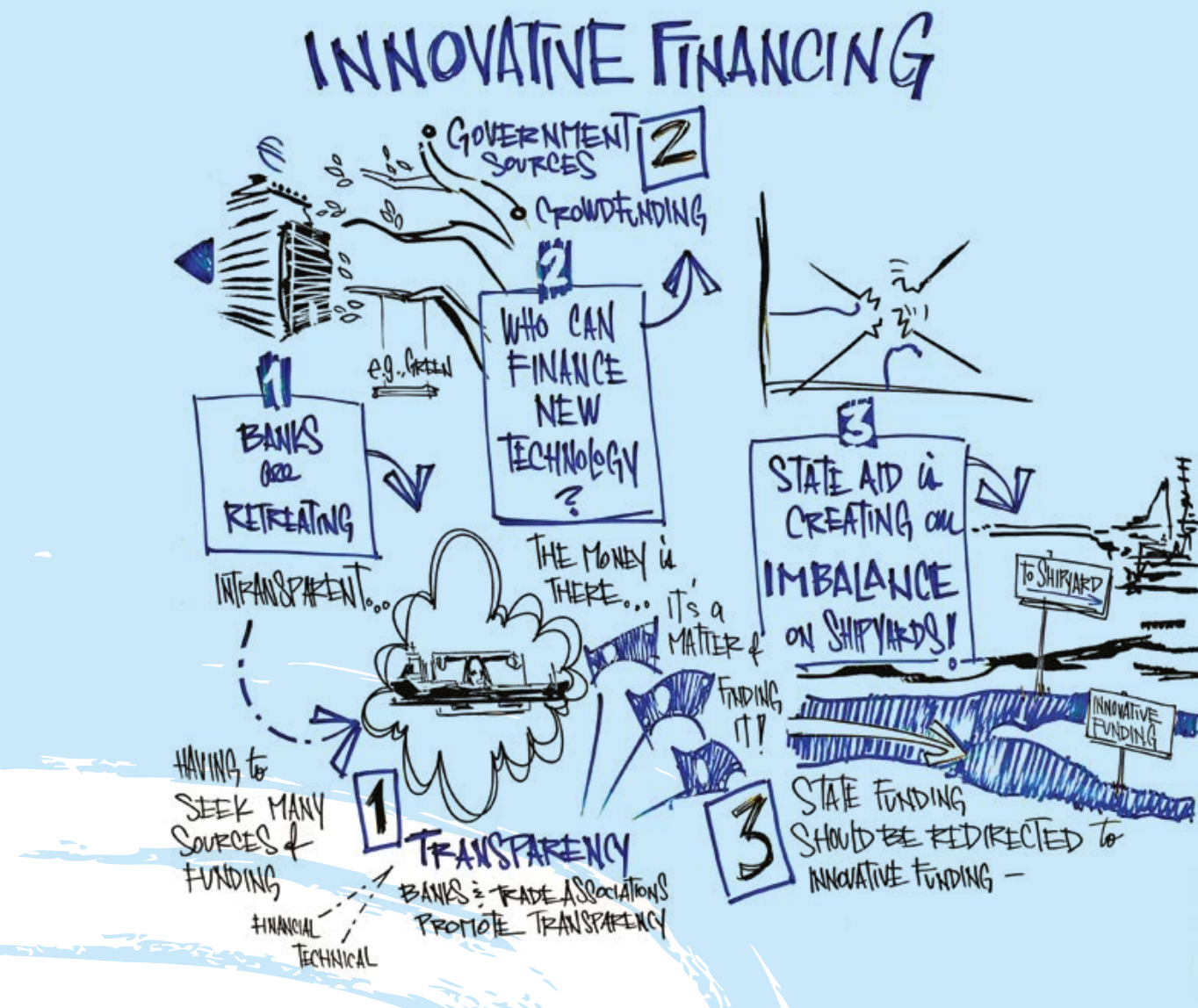
The third issue was the question of how shipping's decarbonization could be financed. The group pointed to government support in tackling the technology risk associated with decarbonizing the sector, for instance through financing R&D and supporting the testing of promising – but not yet commercially viable – solutions. There are currently insufficient funds available to address the challenge, and present state aid could be redirected to foster the necessary innovation instead.

The maritime sector might also be able to fund the transition through its own means if cash flows from proposed carbon taxes could be used to fund innovation. While the distribution of such funds will be a challenge, the working group was optimistic that dedicated carbon tax income would result in funding flowing to universities, the equipment industry, and other important stakeholders.

If the identified issues are addressed, the group found that the financing issue could be dealt with, since – as it was succinctly put – the money is there.

“ **There has to be more transparency. If you have all of the information it is much easier to create innovative financing solutions.** ”

Roland-Torsten Land, Director, KfW IPEX-Bank, Germany



Working group outcomes

Leveraging big data to improve maritime safety

The working group was brought together by a shared interest in how big data can be used in the maritime industry, with a focus on improving maritime safety.

This group quickly agreed that a shared challenge could galvanize the industry to work together to unleash the potential of big data in the maritime industry. On this basis, they set an ambitious vision for 2030: to reduce safety incidents by 70%, insurance costs by 50% and no oil spills or fatalities, all through the use and sharing of data.

The group suggested that a starting point would be to identify existing data flows and leverage systems already onboard ships to increase the amount of available data. This would allow for an increase in data collection without new capital investments.

The next step would be to explore the establishment of an industry-wide platform for sharing data related to safety. One important barrier identified by the group was that companies might not be willing to share information that could put them at a disadvantage in a commercial context.

Based on this, development of a business plan could lead to the launch of a pilot project. Building on the learnings from the pilot project, a roadmap for how to roll out the initiative to the wider industry could be developed. These learnings could also be used to launch data sharing initiatives related to other collective challenges – for instance, related to fuel consumption or supply chain optimization.

The group proposed that an industry-led working group facilitated by the Global Maritime Forum could scope and drive the project forward. The aim would be to present the first results at the Global Maritime Forum's Annual Summit in Singapore in 2019.

The key stakeholders that should be involved, in addition to ship owners and operators, would be the type of companies already collecting an extensive amount of data – for instance, P&I clubs, insurance companies, and classification societies. Equipment makers, customers, management companies, ports, and flag states could also be important stakeholders of a big data sharing platform.



“ Strong collaboration between all stakeholders can bring the data together that we need to raise our safety standards. ”

Jan Rindbo, Chief Executive Officer, D/S Norden, Denmark



Working group outcomes

Overcoming fragmentation through data sharing

Digital technologies are contributing to the transformation of many industries, including the maritime industry. The working group decided to focus their work on how digital technologies can help address the issue of maritime safety through collaborative action centered on data-sharing.

This working group quickly agreed that it is important to distinguish between two types of digital business models. The first type increases competitiveness at the company level. The second type improves the ability to address common challenges at the industry level.

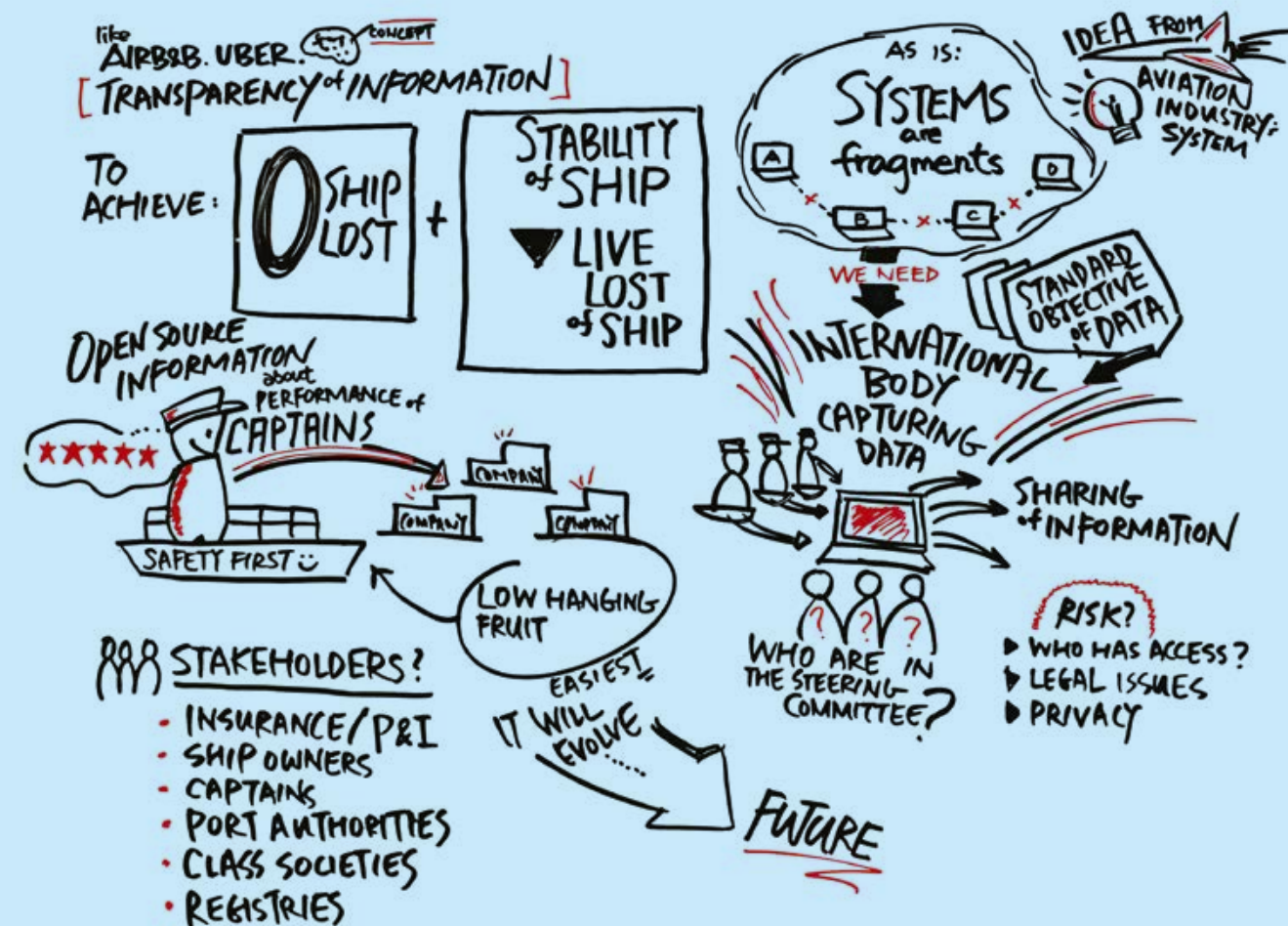
Since companies are usually not willing to share commercially sensitive data or ideas, the group decided to focus on how digital business models can be used to address shared challenges. One obvious area to explore was how digital technologies can be used to improve safety, which became the focus of the group's work.

The group identified a potential to overcome fragmentation to improve maritime safety through sharing of data, with the aim to create an industry with zero loss of lives. Inspired by practices from the aviation industry, the group suggested to establish a platform that enables international bodies to collect, analyze and publish safety-related information.

One approach could be to set up an open source platform for information sharing about the performance of ship captains, who are vital to shipping safety. With this platform, companies could check the captains' background to make sure that they only hire captains with the right qualifications and a sound safety record. The database could subsequently be expanded to other key personnel groups, e.g. pilots.

One important issue to consider and address in further work would be how to handle privacy and legal issues. The group identified a wide range of stakeholders that would need to be involved in developing and refining the idea further, including insurance companies, ship owners, captains, port authorities, class societies, and registries.

6 - DIGITALIZATION: DIGITAL BUSINESS MODEL -



“ We want to achieve zero loss of ships and zero loss of life through sharing of data. ”

Simon Doughty, Group Managing Director, Wallem, United Kingdom



Working group outcomes

Building trust through data sharing

In the digital economy, data is the most valuable asset. This working group focused on how data sharing can be leveraged to address the challenges facing the maritime industry. To do so requires building trust, developing common standards, improving transparency, and finding new ways of working together.

The working group agreed that collecting and sharing trusted data is the foundation for using digital technologies to collaboratively improve performance in the maritime industry. The real value of data will be unleashed by combining data instead of keeping data siloed within each company or stakeholder.

However, with this realization follows a challenging question: How do we create the conditions, standards and tools for data sharing in the maritime industry?

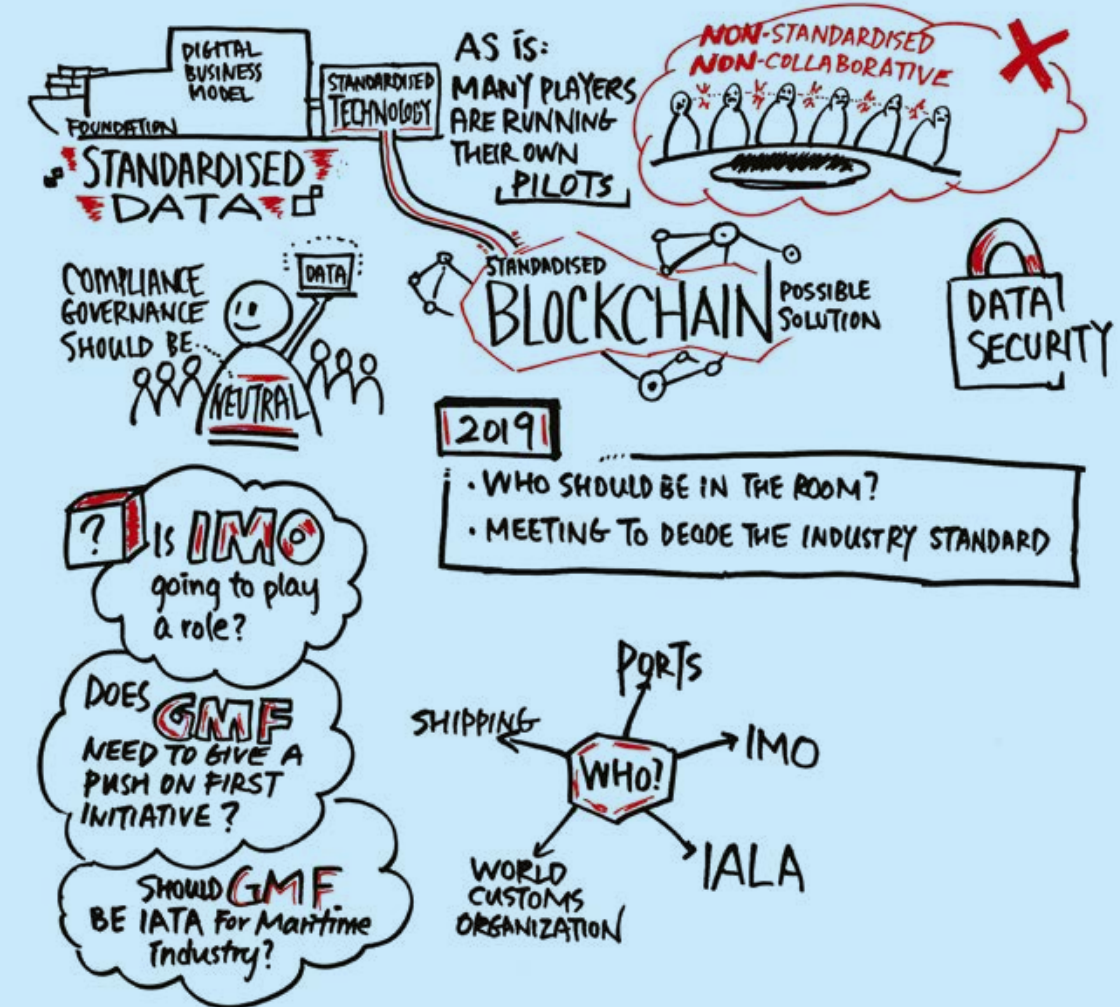
The group pointed to examples of data sharing systems that are already in effect within the maritime industry. For example, the effectiveness of Port State Control (PSC) was greatly enhanced when authorities started sharing data. The maritime industry could also draw inspiration from the airline industry, which has succeeded in creating an industry-wide system of sharing information that can be used to improve safety.

Developing a standardized data language within the industry that could be used for data sharing is also needed. Going forward, a key issue to be addressed is trust, since data sharing is only possible when the data can be trusted. Other related issues include data security and how to handle the access rights to the data, since companies will have a natural fear of sharing too much information with competitors.

The group agreed that most of the industry would not be willing to share data with commercial entities, but that a neutral governing body with a custodian role, similar to the IMO, would be preferred to facilitate a data sharing platform.

The group also discussed that in the near future, data sharing might change from primarily being an opportunity for improved performance to a requirement, since real-time monitoring could become a demand of customers and charterers.

⑦ - DIGITALIZATION: DATA SHARING -



“ Data sharing is the foundation you need to get right before you can do all the other marvelous things with data. ”

Michael Kinley, Chief Executive Officer, Australian Maritime Safety Authority, Australia



Working group outcomes

A new digital mindset

In order to be successful in the digital economy, it is not enough to adopt digital business models or use new digital solutions. According to this working group, it takes a mental transformation – a new mindset that is fit for the digital economy of the future.

This working group agreed that having the right mindset is the most important factor in ensuring that digitalization and digital technologies are opportunities and not threats to the maritime industry; in their view, this is more important than any specific digital business model or digital solution. The group identified several key elements that are required for digital initiatives to work.

First, the group pointed to a combination of in-depth understanding of the core business and processes combined with an understanding of the digital tools that can be used to improve key business operations. This makes it possible to apply the right tools, e.g. AI or blockchain, to those business processes where they can have the biggest impact, be that operations, administration, or sales.

Second, an in-depth understanding of the role of data: what data is available, what processes deal with the data, and how to use the data. This should go hand in hand with evaluating the tools that are available to assist with the management of data.

The group also agreed that building a digital mindset in the maritime industry requires the right talent. This could both be in house talent, where it was suggested that all companies should employ a “Data Lead”, but it could also be bringing in other stakeholders with experience and knowledge about digital opportunities.

The group pointed to data sharing – within the company and with external partners and stakeholders – as the foundation of digitalization, and lamented the fact that the maritime industry does not yet embrace data exchange. A question is whether the industry would be willing to share more data in the future. While there might be issues of information sensitivity and confidentiality, especially in the early stages, the group suggested that the amount and variety of data that organizations are willing to share should improve as they realize the benefits that it will bring in increasing efficiency and improving performance.

One potential area for data sharing identified by the group was safety, which was a topic with shared interests across the industry, and identified by other working groups as a focus area.



“
There is a need to change the mindset in our industry.
”

Mark Jackson, Chief Executive Officer,
The Baltic Exchange, United Kingdom



Acknowledgments

Global Maritime Forum

The Global Maritime Forum is an international not-for-profit foundation committed to shaping the future of global seaborne trade to increase sustainable long-term economic development and human well-being.

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Our project partners possess deep knowledge within their respective fields of competencies. They are a prerequisite for the achievement of our mission to shape the future of global seaborne trade to increase sustainable long-term economic development and human well-being.

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