



Global Maritime Issues Monitor 2020



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Marine Insurance

Global Maritime Issues Monitor

2020



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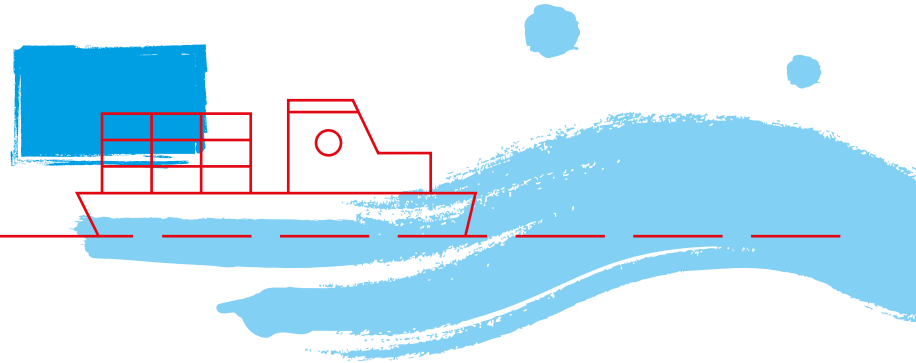
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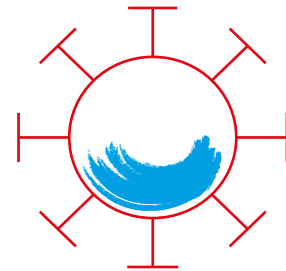
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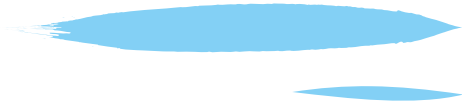
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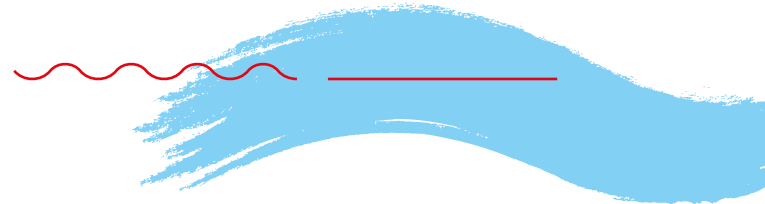


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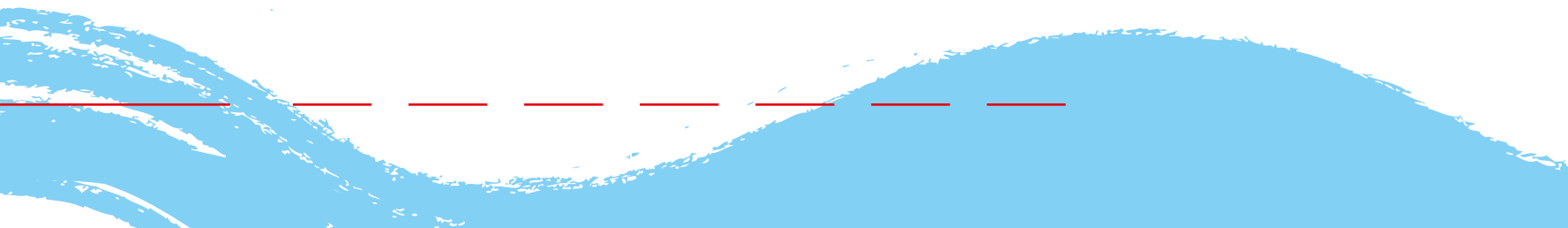


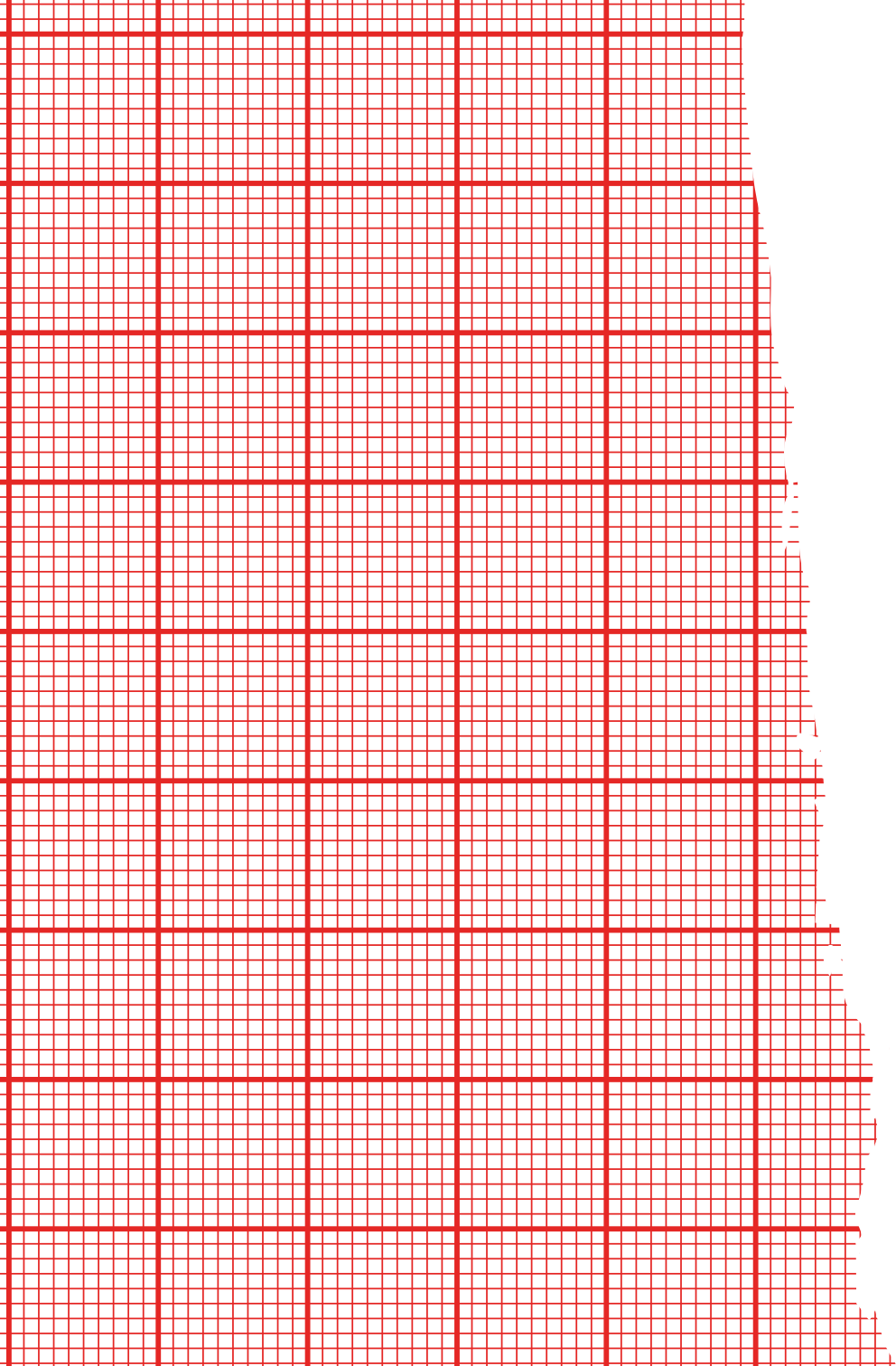
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Critical issues facing the maritime industry

Welcome to the *Global Maritime Issues Monitor 2020*. Based on a survey of maritime decisionmakers from six continents and commentary from more than a dozen leaders and experts, the report looks at some of the critical issues facing the maritime industry.

The *Global Maritime Issues Monitor* serves to inform the long-term decision making of maritime leaders around the world on the landscape of global seaborne trade, which has been significantly impacted by COVID-19. In this, the third annual *Global Maritime Issues Monitor*, we look at how issues and perceptions have changed over the past year — with a focus this year on the COVID-19 pandemic. We asked maritime decisionmakers to share their views on the important issues of the day, including COVID-19.

Which events are most likely to occur? Which would have the most impact? How prepared is the industry should such events unfold? Will COVID-19 affect the maritime industry for the long-term?

It was no surprise that pandemics immediately placed near the top in terms of perceived impact. It is nearly a year now since COVID-19 was first reported in China, and it has come to dominate headlines, business decisions, and political events worldwide.

But it is not the only issue facing the maritime sector. In the 2019 survey, environmental issues led much of the discussion, and they remain a strong focus in 2020. Likewise, geopolitics and the world economy are high on the agenda.

The 2020 report looks at the top global issues identified by survey respondents in terms of likelihood, impact, and preparedness. We also look at the pandemic and how respondents believe it will interplay with other key issues over time.

We hope you enjoy the *Global Maritime Issues Monitor 2020*, and that it stimulates conversation in your organization about the vast challenges and opportunities currently facing the sector, as well as those on the horizon.

The Global Maritime Forum, Marsh, and IUMI would like to thank those who participated in our survey. And we give special thanks to the individuals who kindly provided perspective on the findings and whose comments complement our analysis throughout the report.

Peter Stokes
Chairman
Global Maritime Forum

Marcus Baker
Global Specialty Head, Marine & Cargo
Marsh JLT Specialty

Richard Turner
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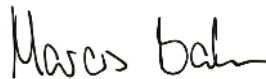
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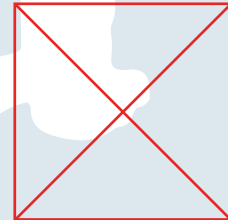
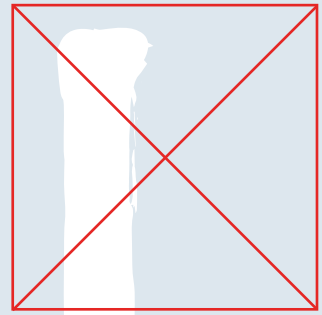


Richard Turner
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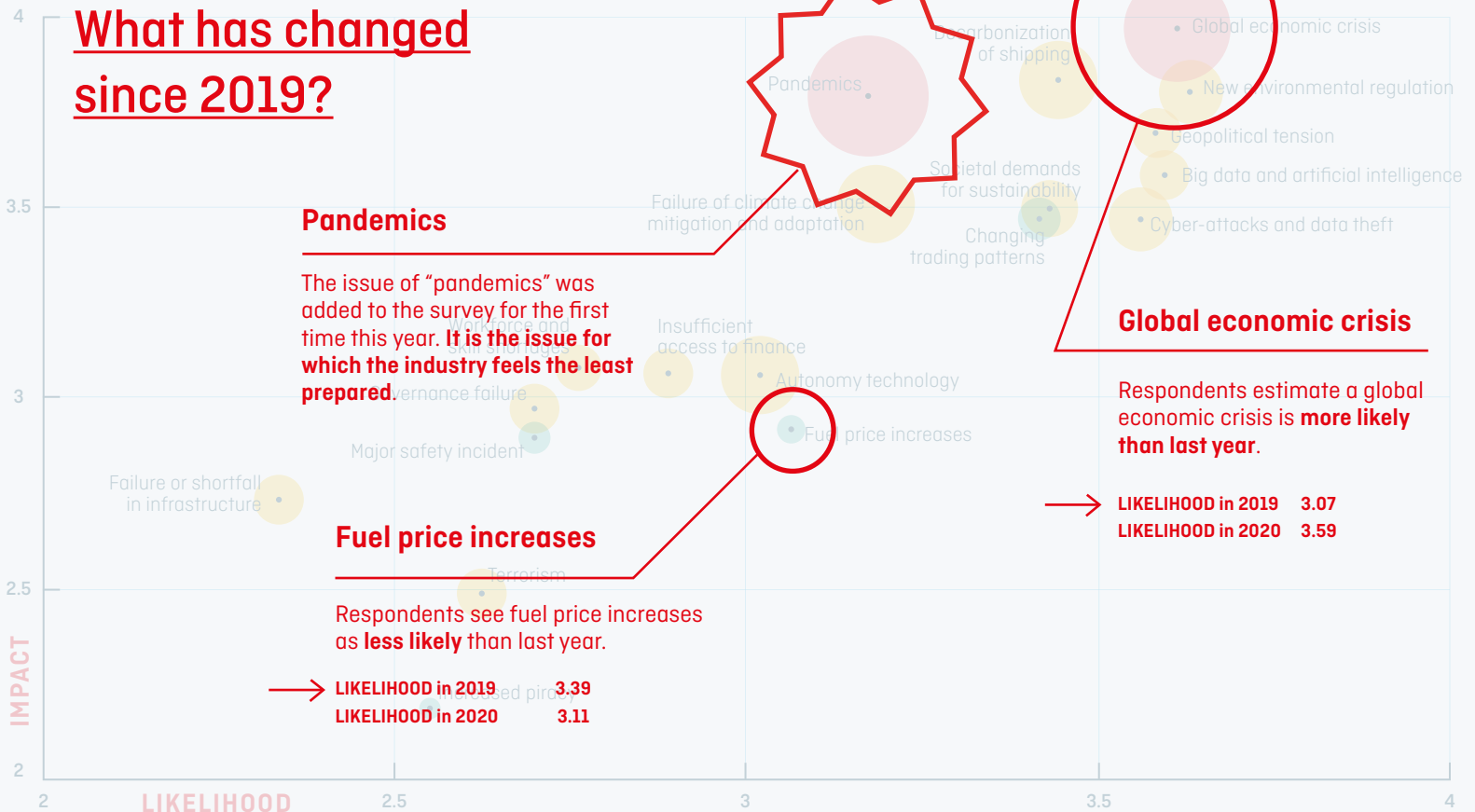
Global
maritime
issues



Global maritime issues map



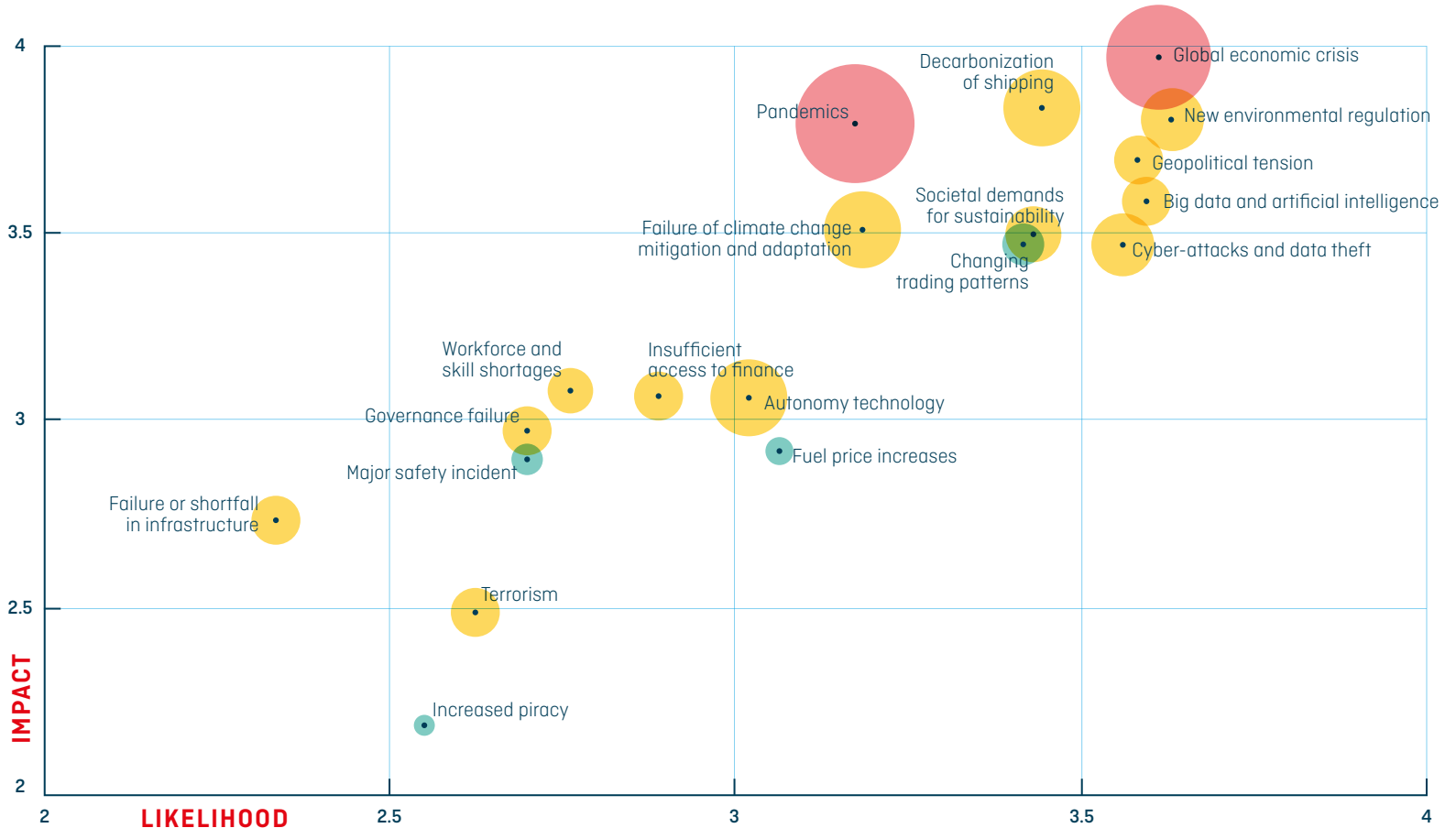
IMPACT vs LIKELIHOOD vs PREPAREDNESS



Global maritime issues map



IMPACT vs LIKELIHOOD vs PREPAREDNESS



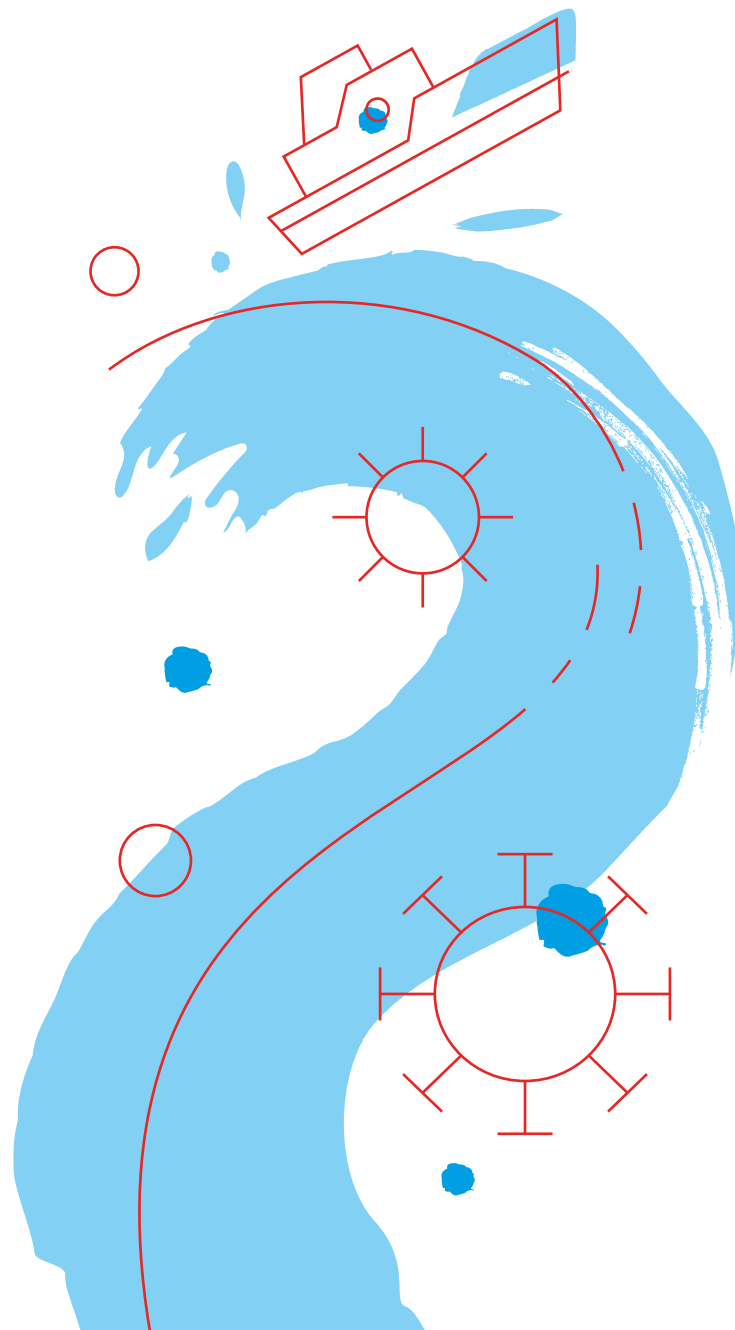
Global maritime issues

The COVID-19 pandemic upended the global maritime sector in the first half of 2020, as it did every corner of the world economy. Actions taken by individual businesses; local, regional, and country governments; and world bodies aimed to slow the virus' spread, but also led to severe disruptions in supply chains, maritime shipping, and global economies.

This was the first year we listed pandemics as an issue in our survey, and respondents placed it third on the list of issues ranked according to their potential impact. Not surprisingly, they also ranked it in last place in terms of how prepared the sector is to manage it.

Along with pandemic concerns, survey respondents cited issues related to global economies and geopolitics, the environment, cyber-attacks, and digitalization as being of particular concern. Embedded in these emerging issues are the challenges and opportunities from which the sector will set its course through the pandemic and beyond.

To provide a broad perspective on key issues for the maritime sector, the survey and analysis in this report draws on a variety of sources. We asked respondents to tell us which issues they see as the most likely to arise in the coming decade, which hold the potential to have a high impact, and how well prepared the sector is to meet the challenges. Furthermore, we invited leaders and experts to comment on the main findings.



Potential impact of economic crisis increases

Survey respondents said a potential global economic crisis is the issue that will have the greatest impact over the next 10 years. This marked the third consecutive year the concern topped the impact rankings, underscoring the interdependent nature of the maritime industry and the global economy.

Environmental issues, which dominated the 2019 survey responses, remained high on the list of concerns, with decarbonization of shipping once again at number two.

Pandemic placed number three on the list, undoubtedly due to the dual worries about the speed with which COVID-19 launched a global economic crisis and its severe impact on human health*. That it did not rank number one or two may come as a surprise, although the connection to a global economic crisis is clear, and respondents ranked it as having nearly the same potential impact as decarbonization.

New environmental regulation, number four on the list, first became a survey choice in 2019, along with decarbonization. In 2020, as in 2019, respondents ranked the survey's three possible environmental issues among the top 10, a reflection of the growing understanding that climate change and related environmental issues will have severe and lasting consequences for the maritime industry. In fact, research, including a recent study published by [The Royal Society](#), suggests a strong likelihood that the twin impacts of species extinction and the failure of climate change mitigation and adaption — number eight in terms of impact on this year's survey — increase the risk of future pandemics.

*Note: We added "pandemics" as an issue for the first time in the 2020 survey.

What **impact** do you think the following issues will have on the maritime industry over the next 10 years?

1 Minimal impact / 2 Minor impact / 3 Moderate impact / 4 Major impact

RANK	2019	ISSUE	SCORE
1	1	Global economic crisis	3.84
2	2	Decarbonization of shipping	3.73
3	N/A	Pandemics	3.72
4	3	New environmental regulation	3.69
5	4	Geopolitical tension	3.57
6	6	Big data and artificial intelligence	3.52
7	8	Societal demands for sustainability	3.48
8	9	Failure of climate change mitigation and adaptation	3.45
9	5	Cyber-attacks and data theft	3.43
10	7	Changing trading patterns	3.42
11	10	Workforce and skill shortages	3.10
12	14	Insufficient access to finance	3.08
13	13	Autonomy technology	3.08
14	15	Governance failure	3.01
15	11	Fuel price increases	2.96
16	12	Major safety incident	2.94
17	16	Failure or shortfall in infrastructure	2.81
18	17	Terrorism	2.62
19	18	Increased piracy	2.36

See **Glossary of terms** 
on page 28

Likelihood of economic crisis seen as rising

The biggest shift in respondents' views of the likelihood of certain issues to arise was around a global economic crisis, which jumped from number 10 in 2019 to number two this year. Unlike in prior years, respondents rated this issue high not only in impact, but in likelihood as well. This is not a surprise given the economic implications of the COVID-19 pandemic.

The second biggest change in likelihood rankings compared to 2019 came in fuel price increases, which respondents see as less likely now, dropping it from number seven in 2019 to number 11 this year. Fuel prices fell considerably in 2020 as the pandemic led to a decrease in demand.

Interestingly, pandemics — the driver of the current economic downturn — ranked relatively low, at number 10, in terms of likelihood. This could be a red flag if it means that companies believe that COVID-19 is a “one and done”, and that the next pandemic will be a long way off. However, the score still indicates that respondents perceive a new pandemic as likely in the coming decade.

Decarbonization of shipping placed at number two in terms of

impact, but ranked seventh in terms of likelihood, slightly higher than last year, when it was number eight. This suggests that there is a great need to come up with tangible solutions for how to decarbonize shipping.

Respondents remained firm in the view that the adoption of new environmental regulation is the most likely issue to arise over the next 10 years. In terms of impact, however, regulation dropped to number four in 2020 from number three in 2019.

Apart from the issues listed above, changing trading patterns and terrorism each dropped three places in the likelihood rankings from last year, while insufficient access to finance rose three places.

What is the **likelihood** of the following issues occurring within the next 10 years?

1 Very unlikely / 2 Unlikely / 3 Likely / 4 Very likely

RANK	2019	ISSUE	SCORE
1	1	New environmental regulation	3.60
2	10	Global economic crisis	3.59
3	4	Big data and artificial intelligence	3.56
4	2	Geopolitical tension	3.56
5	3	Cyber-attacks and data theft	3.54
6	8	Decarbonization of shipping	3.44
7	6	Societal demands for sustainability	3.44
8	5	Changing trading patterns	3.42
9	9	Failure of climate change mitigation and adaptation	3.21
10	N/A	Pandemics	3.16
11	7	Fuel price increases	3.11
12	11	Autonomy technology	3.07
13	16	Insufficient access to finance	2.96
14	12	Workforce and skill shortages	2.85
15	15	Governance Failure	2.80
16	13	Major safety incident	2.80
17	14	Terrorism	2.73
18	18	Increased piracy	2.67
19	17	Failure or shortfall in infrastructure	2.48

How **prepared** is the maritime industry to deal with the following issues?

1 Very unprepared / 2 Unprepared / 3 Prepared / 4 Very Prepared

Pandemics top preparedness concerns

It's one thing to see how the sector ranks the likelihood and potential impact of issues, but it's perhaps more important to get a feel for how prepared it is to manage them. Repeating a pattern from previous years, respondents perceive the maritime industry to be relatively unprepared to deal with the top issues raised in the survey.

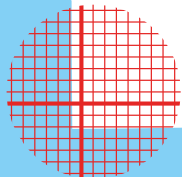
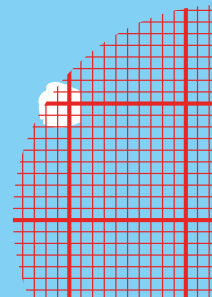
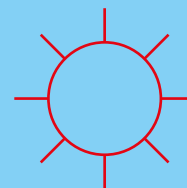
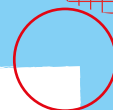
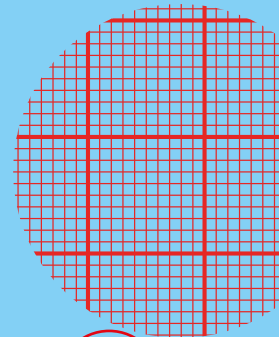
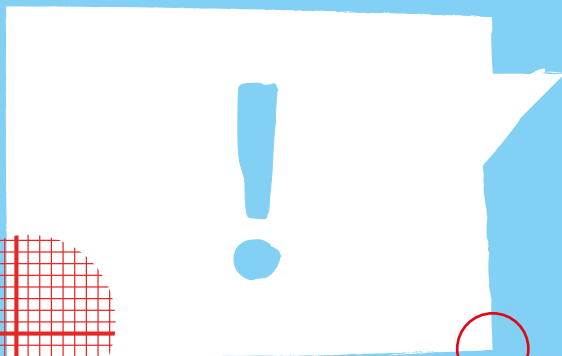
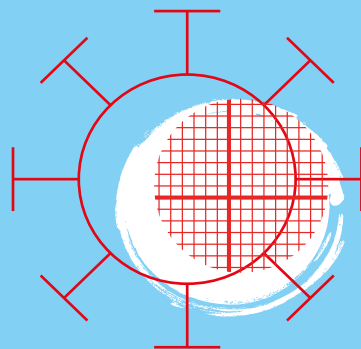
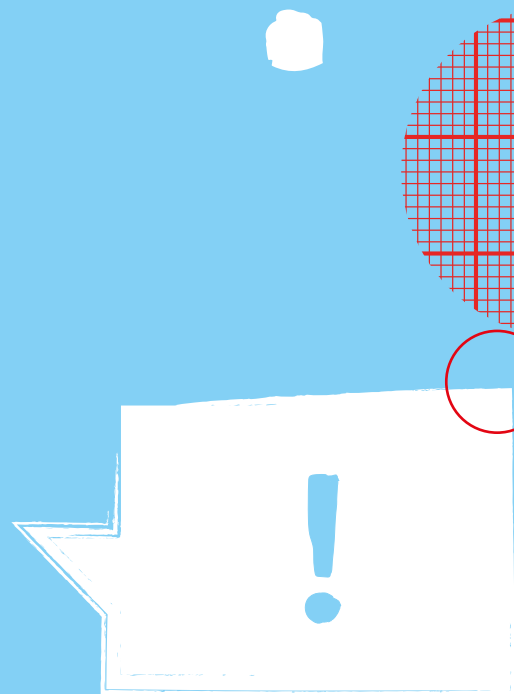
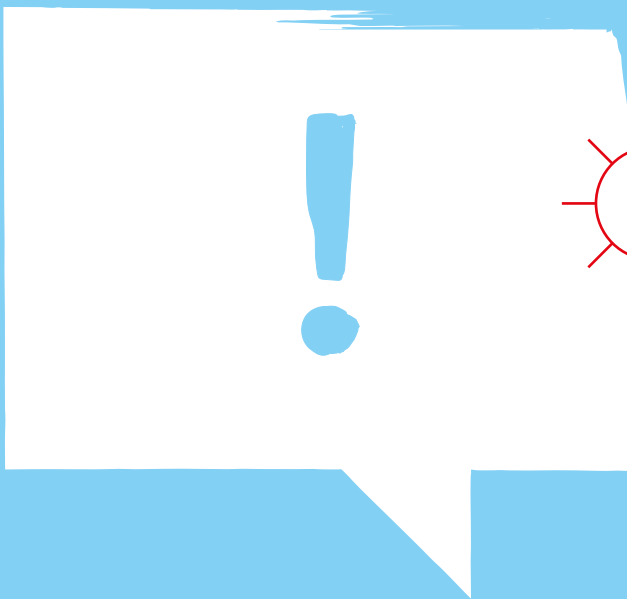
Respondents identified pandemics — in their first year in the survey — as the issue for which the industry is the least prepared, followed by global economic crisis.

Seven of the 10 issues seen as having the most impact are among those for which respondents consider the industry least prepared.

Technology-related issues drew a mixed response. Big data and artificial intelligence improved in perceived preparedness, moving from the seventh least prepared last year to eleventh in 2020. However, autonomy technology continued to rank high as an issue for which the industry is not well prepared, and moved from fourth on the unprepared list to third.

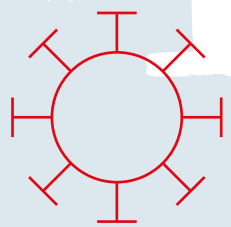
Increased piracy remained the issue for which the industry is seen as best prepared.

RANK	2019	ISSUE	SCORE
1	N/A	Pandemics	2.05
2	1	Global economic crisis	2.07
3	4	Autonomy technology	2.22
4	2	Failure of climate change mitigation and adaptation	2.23
5	5	Decarbonization of shipping	2.23
6	9	New environmental regulation	2.30
7	3	Cyber-attacks and data theft	2.32
8	6	Societal demands for sustainability	2.34
9	8	Failure or shortfall in infrastructure	2.37
10	13	Terrorism	2.37
11	7	Big data and artificial intelligence	2.39
12	14	Insufficient access to finance	2.39
13	11	Geopolitical tension	2.40
14	10	Governance failure	2.42
15	12	Workforce and skill shortages	2.52
16	15	Changing trading patterns	2.68
17	17	Major safety incident	2.76
18	16	Fuel price increases	2.82
19	18	Increased piracy	2.97





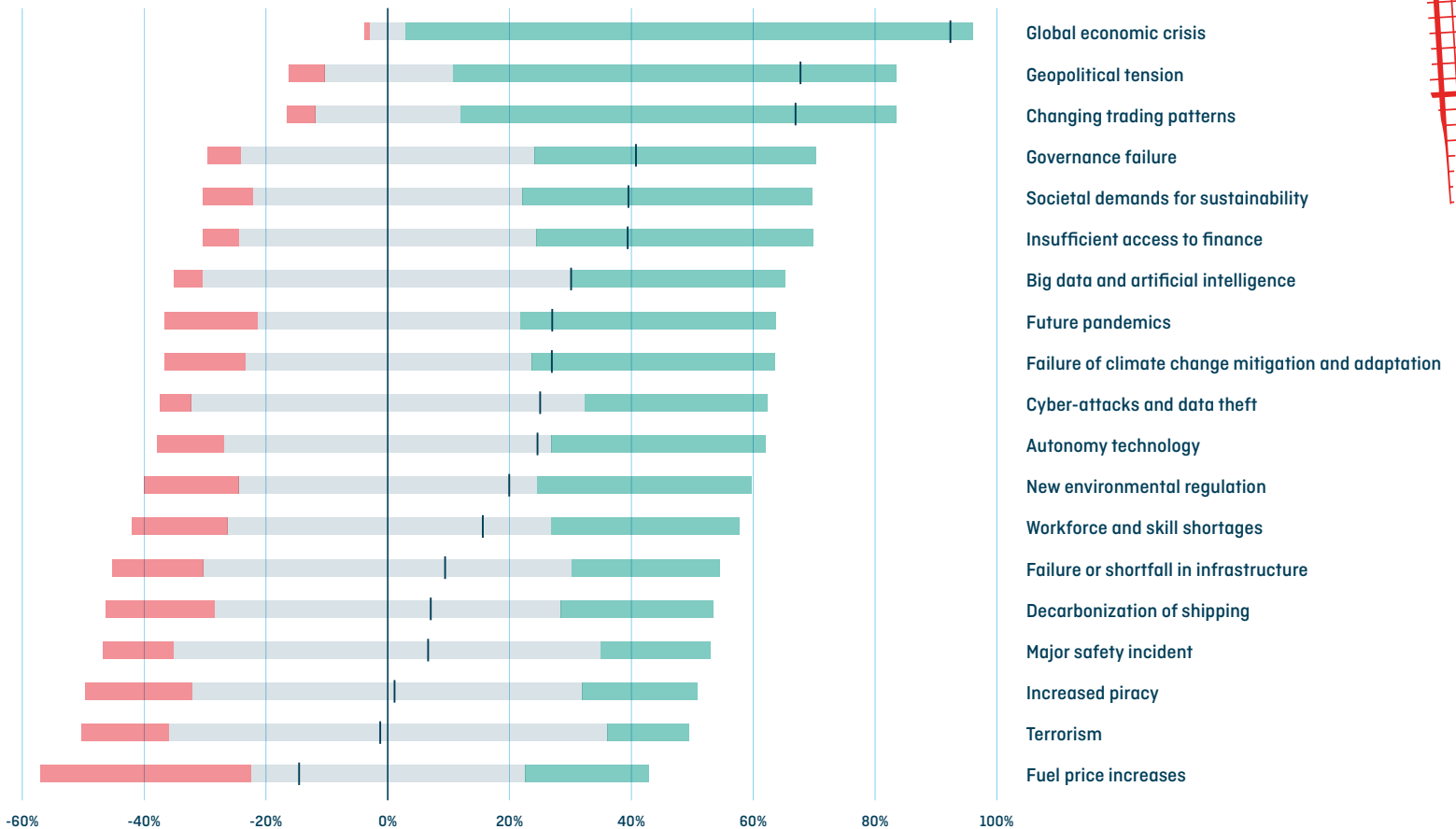
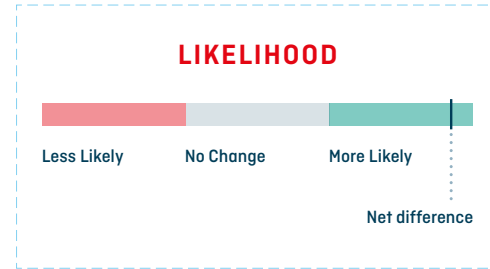
The Impact of COVID-19



How will the COVID-19 pandemic affect the likelihood of the following issues occurring in the next 10 years?




How will the COVID-19 pandemic affect the likelihood of the following issues occurring in the next 10 years?



How will the COVID-19 pandemic affect the **likelihood** of the following issues occurring in the next 10 years?

Less likely / No change / More likely

RANK	ISSUE	LESS LIKELY	NO CHANGE	MORE LIKELY	NET DIFFERENCE
1	Global economic crisis	1%	6%	93%	92%
2	Geopolitical tension	6%	21%	73%	67%
3	Changing trading patterns	5%	24%	72%	67%
4	Governance failure	6%	48%	46%	40%
5	Insufficient access to finance	6%	49%	45%	39%
6	Societal demands for sustainability	8%	44%	48%	39%
7	Big data and artificial intelligence	5%	61%	35%	30%
8	Failure of climate change mitigation and adaptation	13%	47%	40%	27%
9	Future pandemics	15%	43%	42%	27%
10	Cyber-attacks and data theft	5%	65%	30%	25%
11	Autonomy technology	11%	54%	35%	24%
12	New environmental regulation	16%	49%	35%	20%
13	Workforce and skill shortages	16%	53%	31%	16%
14	Failure or shortfall in infrastructure	15%	61%	24%	9%
15	Decarbonization of shipping	18%	57%	25%	7%
16	Major safety incident	12%	70%	18%	6%
17	Increased piracy	18%	64%	19%	1%
18	Terrorism	15%	72%	13%	-1%
19	Fuel price increases	35%	45%	20%	-15%

→ See **Glossary of terms** on page 28 

The impact of COVID-19

With the pandemic the dominant global issue for many months, we asked respondents how they see COVID-19 affecting the likelihood of other issues. The most resounding response related to the pandemic's impact on a potential global economic crisis: 93% of respondents said the pandemic makes such a crisis more likely.

In their comments to an **open-ended question** in the survey, respondents highlighted other potential impacts from the pandemic. To summarize our findings:

- 73%** of respondents think the pandemic makes geopolitical tension more likely. **Particularly, respondents anticipate escalation in the conflict between the US and China.**
- 72%** think trading patterns are more likely to change. **Respondents foresee more regionalization, near-shoring, domestic production of essential goods, less dependence on China, and more.**
- 48%** said the pandemic will increase the societal demand for sustainability. In fact, of all the environmental issues, this showed the sharpest increase in likelihood due to the pandemic.
- 46%** said COVID-19 increases the likelihood of governance failure. **As noted by several respondents, many seafarers experienced great difficulties during the pandemic, sometimes with little relief from authorities.**
- 45%** said insufficient access to finance increased in likelihood compared to last year. **Many respondents commented that this could lead to bankruptcies and consolidation, increased scrapping of old ships, and lower rates of new-build orders.**
- 35%** said that the main issue the pandemic made *less* likely is fuel price increases.

Data from QUANTITATIVE parts of the survey
Data from QUALITATIVE parts of the survey (open-ended question)

Across the board in our survey responses and external expert commentaries, there was a recognition of the deep impact COVID-19 will have on the maritime industry.

“COVID-19 is a litmus test for a globalized and interdependent world economy,” said **Dr. Mukhisa Kituyi**, Secretary-General, UN Conference on Trade and Development (UNCTAD). “Maritime transport should brace itself for change and prepare to reassess vessel and capacity deployment, shipping network configuration, and port development. Shipping and ports may also have to rethink their strategies and plans to integrate criteria pertaining to disruption risks and vulnerabilities, as well as related response mechanisms.”

COVID-19 is a
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Dr. Mukhisa Kituyi
Secretary-General
[UN Conference on Trade
and Development \(UNCTAD\)](#)

Top issues

When considering the overall context of survey respondents' views regarding likelihood, impact, and preparedness, issues related to the pandemic, they fall within the broader category of environmental and human health issues. Two other categories that stand out this year are economic/geopolitical and digital issues.

Pandemic complicates environmental and human health issues

Health and safety risks to seafarers a major concern

In the context of the maritime industry, the pandemic's health impacts are broader than the illness caused by the virus. Many survey respondents and external commentators pointed to the physical and mental wellbeing of seafarers as being overlooked during the pandemic, with many seafarers stuck on board ships, unable to join their families at home.

Hugo de Stoop, CEO, Euronav, said: "Despite increasingly urgent industry intervention and support from the United Nations Secretary General, the International Maritime Organization (IMO), and even the pope himself, the shipping industry is struggling to break the bureaucratic logjam that has left hundreds of thousands of seafarers stranded at sea, with already-extended contracts expired many times.

"The short-term consequences are dramatic. People's mental health is deteriorating by the day and we already heard thousands of stories of seafarers missing important events such as the birth of a child, the wedding of a close relative, the funeral of a parent. In the long term, the industry reputation for the employees and future employees will be damaged and it will become even more difficult to recruit good people."

Several commentators noted that seafarers' roles as key workers who make possible the delivery of goods worldwide has been overlooked during the pandemic response.

"Maritime stakeholders need to collectively campaign for seafarers to be designated as key workers in the long term, so that they receive the protection they deserve," said **Stephen Cotton**, General Secretary of the International Transport Workers' Federation. "Moreover, it is crucial that their essential role in the global economy is clearly portrayed in media coverage to gain the same public support as health care or public transport workers."

He added that the maritime industry "requires international protocols for operations during pandemics, developed in partnership with regulatory agencies, to provide practical instruments that enable seafarers to continue performing their essential role in times of crisis."

Respondents placed pandemics third for impact, and at the bottom for preparedness. On likelihood, although it ranked as likely to occur, it sits in tenth place compared to other issues. The middle-of-the-pack ranking for likelihood should flash a warning, some experts said, adding that it is critical for the maritime industry to learn from COVID-19.

"There is a significant risk of another pandemic," said **Professor Ian Goldin** of the University of Oxford. "The root causes of the

current pandemic have not been stopped. Far from the World Health Organization (WHO) and other organizations that are vital to stopping future pandemics being reinforced, they are being undermined.” Among the issues highlighted by the pandemic, he said, are the rotation of crew, the ability to support crew and family members in isolation, and the need for stockpiles of protective equipment on ships.

“The industry has to work with ports, and with health authorities in various port cities, on protocols for the future,” said **Christine Loh**, Chief Development Strategist, Institute for the Environment, Hong Kong University of Science and Technology. “The maritime industry as a whole has an interest to work with the onshore stakeholders to redefine what could be rolled out quickly in future outbreaks, whether a pandemic or not.”

Environmental and sustainability issues remain top of mind

Environmental issues — climate change, decarbonization of shipping, and new environmental regulation — remained high on the agenda for respondents, and increased, if slightly, in rankings for impact, likelihood, and preparedness.

Several external commentators noted that the industry cannot afford to lose track of the long-term threats posed by climate change, including ongoing changes in regulations as most governments align their policies to the Paris Agreement. Decarbonization is a critical aspect for climate action generally, and for the maritime industry specifically, as seen by its second-place ranking in our survey in terms of impact, just ahead of pandemics.

The open-ended survey responses show that the industry feels diverging pressures on these issues. Industry leaders seem concerned that a global economic crisis will reduce the industry’s capability — or at least make it more difficult — to make the investments needed to decarbonize. At the same time, they feel that the pandemic will add to the pressure to make their business more sustainable and resilient.

“The industry doesn’t yet know which technology will be adopted to meet the IMO targets,” said **Stephen Fewster**, Managing Director and Global Head of Shipping, ING. “For example, liquid natural gas (LNG) is viewed as a transition fuel, and not the end answer — which could be hydrogen, ammonia, or battery cells. Therefore, ship owners are holding back on investment decisions until there is clarity. All industry players — ship owners, charterers, financiers, and shipyards — have an important role to play in greening the industry.”

However, 57% of survey respondents say that COVID-19 will make no change on the decarbonization of shipping. External commentators point to the fact that the pandemic represents opportunities for catalyzing the decarbonization of shipping.

“In order to meet the targets that are being considered by the IMO as part of their greenhouse gas (GHG) strategy, decisive steps need to be taken in the coming decade,” said **Faustine Delasalle**, Director, Energy Transition Commission. “Fortunately, weathering the current recession and moving towards decarbonization do not need to be mutually exclusive.” As governments plan stimulus packages to restart their respective economies, she said, policymaking could act as the catalyst for many carriers to begin decarbonizing their fleet, while helping to ease the pressures brought about by the pandemic.

Others see hope in that decarbonization efforts and ambitions remain high.

“Despite the immense challenges that have been posed by the global pandemic, I have been encouraged that the collaborative discussions have continued to move the dialogue surrounding decarbonization in a positive manner,” said **Randy Chen**, Vice Chairman of Wan Hai Lines. “There is a common understanding that society’s expectations require tangible and actionable change, which has preserved the momentum that was catalyzed last year by the Getting to Zero Coalition and the Poseidon Principles. In fact, having the common challenge of dealing with the new realities of a COVID-19 plagued world has only added to the urgency in finding solutions.”

Increasing societal demands for sustainability also mean that the industry will face increasing scrutiny of its environmental performance. **Odin Kwon**, Executive Vice President and Chief Technical Officer, Daewoo Shipbuilding & Marine Engineering, said that “if maritime transportation cannot offer low carbon emissions, producers will seriously search for other ways of transportation or re-shoring of factories.”

Yet the maritime industry has the opportunity to play a leading role simply through its place as a key market.

“Many countries are looking to invest in hydrogen production to decarbonize their industries, and shipping could provide a steady and reliable demand,” said **Gonzalo Muñoz Abogabir**, High Level Champion for Climate Action for COP25. Additionally, he noted, hydrogen fuel production can create new economic opportunities for some developing countries, while the decarbonization of ships and ship technology will bring investment in innovation and new production, and thus new, green jobs.

Economic and geopolitical tensions mount

Given the maritime industry’s global nature, economics and geopolitics will always play an outside role compared to many other industries. This year, due to COVID-19, a global economic crisis moved from a “likely” response in our survey to a harsh reality. The pandemic makes such a crisis more likely, according to 93% of respondents, with 45% citing insufficient access to finance as more likely due to COVID-19.

The pandemic is not so much creating new tensions as exacerbating existing ones. “The virus is set to accelerate an uptick in protectionism, de-globalization, and decoupling pressures that existed prior to the outbreak,” said **Meredith Sumpter**, Head of Research, Strategy and Operations at Eurasia Group.

Many respondents commented in the open-ended questions that they expect to see an increase in bankruptcies and consolidation, increased scrapping of older ships, and lower rates of new-build orders.

In the coming years, Sumpter said, the shipping industry and others will face mounting political interference in trade, alongside increased nationalism. “The maritime shipping industry will need to consider how to optimize their global footprint in this more challenging, fragmented environment,” she said. “This may mean more of a shortening or rationalization of shipping routes than planned to capitalize on the trend toward intra-regional trade. With global companies moving to diversify away from overreliance on single-source manufacturing exporters, maritime shippers may also need to consider building out new routes and readying fleets commensurate with overlapping trade patterns.”

Several experts noted that globalization itself is under threat at this time.

“Nations are increasingly inwards looking, and xenophobia and nationalism are on the rise,” said **Bjørn Højgaard**, CEO, Anglo-Eastern Univan Group. “The ability for the shipping industry to be part of the solution and prosper on the way is contingent on us all stemming the tide of geopolitical tension so the world can get together in finding solutions to these existential threats.”

Digitalization holds promise

The pandemic has shown digitalization to be a shortcoming in the industry. Some commentators said that digital technologies, had they been better developed prior to the pandemic, could have improved transparency and traceability in disrupted supply chains and reduced the exposure of seafarers to contagion. The open-ended survey responses indicated that COVID-19 is seen as likely to accelerate digitalization, while 35% of respondents said it has made the development of big data, AI, and autonomy technology more likely.

“The maritime sector has long been accused of being slow to adapt,” said **Alicia Garcia Herrero**, Chief Economist Asia Pacific, Natixis. “But to live with the virus, the maritime industry should respond quickly to include terms related to new arising issues such as sudden port closures or increased hygiene protocol. In the medium run, the sector should enhance its digital adoptions to meet with the new working mode.”

She added, “Those more adapted to digital applications and more diversified in supply chain could operate relatively smoothly during pandemic disruptions.”

It’s possible that the abrupt emergency conditions brought on by the pandemic will also force changes in the onshore maritime workforce similar to what is being seen in other industries. “Remote working and the adoption of new technology have historically been real challenges for the maritime sector to consider,” said **Heidi Heseltine**, CEO, Halcyon Recruitment, and Co-Founder, Diversity Study Group. “It took the pandemic for the industry to be left with no other option but to embrace both simultaneously, and almost overnight.”

One area of acceleration stems from the need to reduce face-to-face interactions, said **Quah Ley Hoon**, Chief Executive, Maritime and Port Authority of Singapore, noting that the MPA has been rolling out technology to use electronic certificates to improve efficiency and port clearance. “The global supply chain thrives on global connectivity,” she said. “There needs to be global collaboration on digitalization in order for the benefits to be multiplied.”

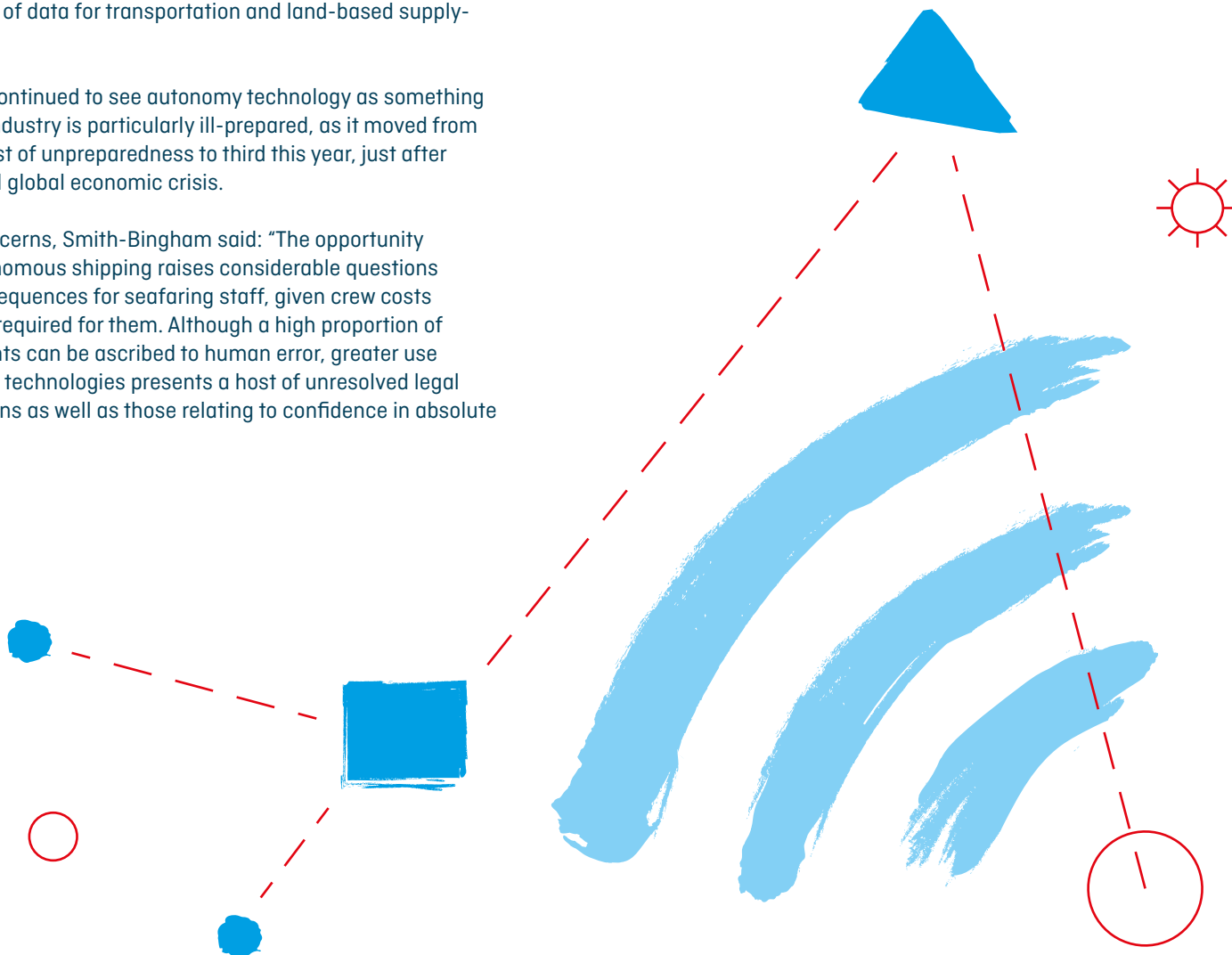
Industry experts agree that improving the use of technology should be a top agenda item and could lead to benefits in areas such as efficiencies from data optimization — including meteorological data, oceanographic data, shipping rates, and vessel information — improved risk management, improved environmental performance, and more.

In order to take advantage of the new opportunities, said **Richard Smith-Bingham**, Executive Director at Marsh & McLennan Advantage, shipping companies will need to enter into new technology-based partnerships. Without those, the industry could be open to disruption from major technology firms, particularly

e-commerce and transportation firms with existing capabilities in the application of data for transportation and land-based supply-chains.

Respondents continued to see autonomy technology as something for which the industry is particularly ill-prepared, as it moved from fourth on the list of unpreparedness to third this year, just after pandemics and global economic crisis.

Among the concerns, Smith-Bingham said: “The opportunity of (more) autonomous shipping raises considerable questions about the consequences for seafaring staff, given crew costs and the space required for them. Although a high proportion of marine accidents can be ascribed to human error, greater use of autonomous technologies presents a host of unresolved legal liability questions as well as those relating to confidence in absolute reliability.”

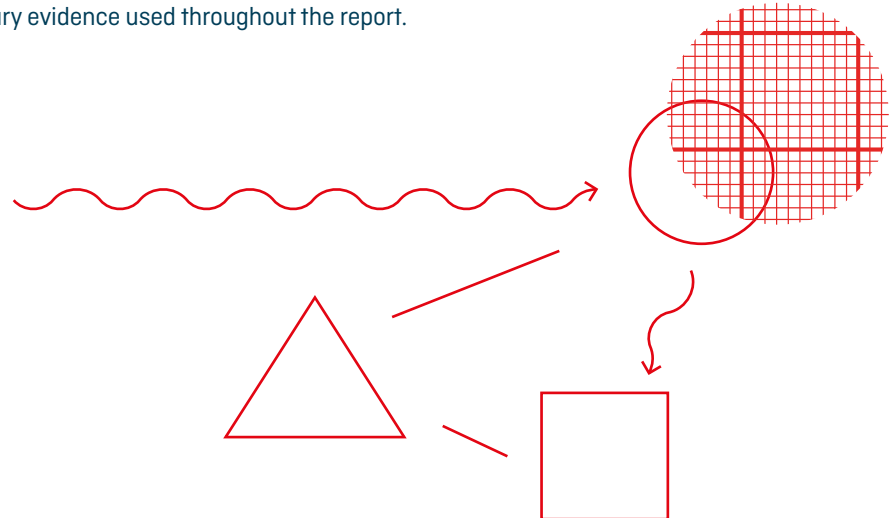


Methodology

The *Global Maritime Issues Monitor 2020* is based on a survey conducted between April 29, 2020, and June 8, 2020, which was completed by senior maritime stakeholders from the Global Maritime Forum and Marsh's multi-stakeholder networks. Respondents included board members, C-suite, and functional decision makers from the private sector, alongside government and civil society representatives. The sample represents a diverse network of maritime stakeholders from six continents.

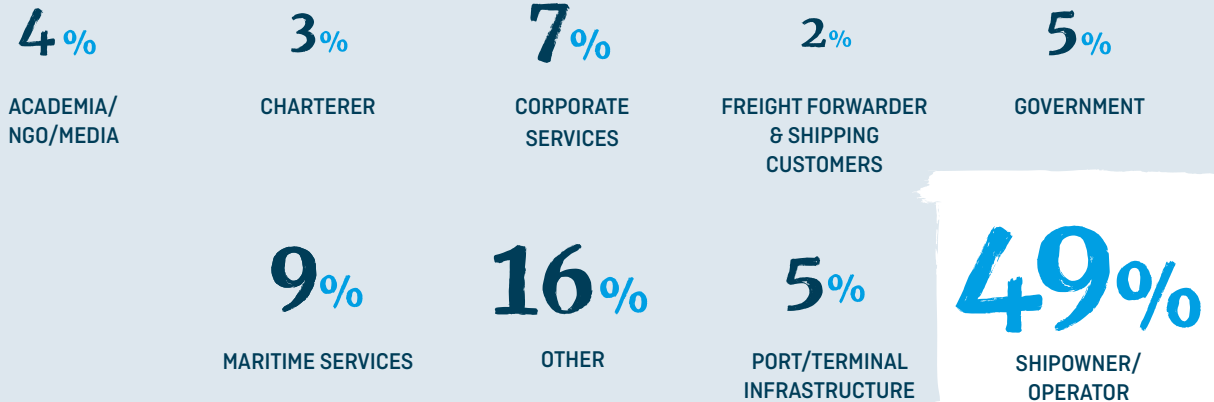
Respondents ranked a series of global maritime issues on their potential impact to seaborne trade, the likelihood of different events occurring over the next 10 years, and the maritime industry's preparedness for these events. The survey looked at 19 general maritime issues, and sought to understand specific priorities related to pandemic.

The responses were coded to allow comparisons. Arithmetic mean scores were calculated for each issue and used to rank them in terms of likelihood, impact, and preparedness. Leaders and experts were then asked to comment on and provide context for the findings between June 29, 2020, and August 14, 2020. The results were used to produce impact vs. likelihood vs. preparedness charts and to provide the supplementary evidence used throughout the report.

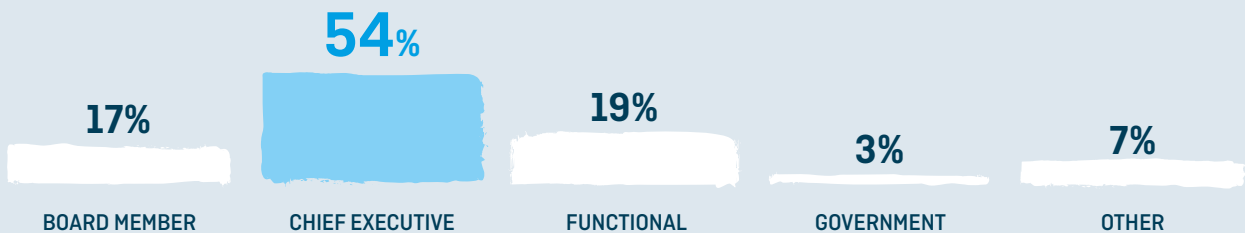


Survey population

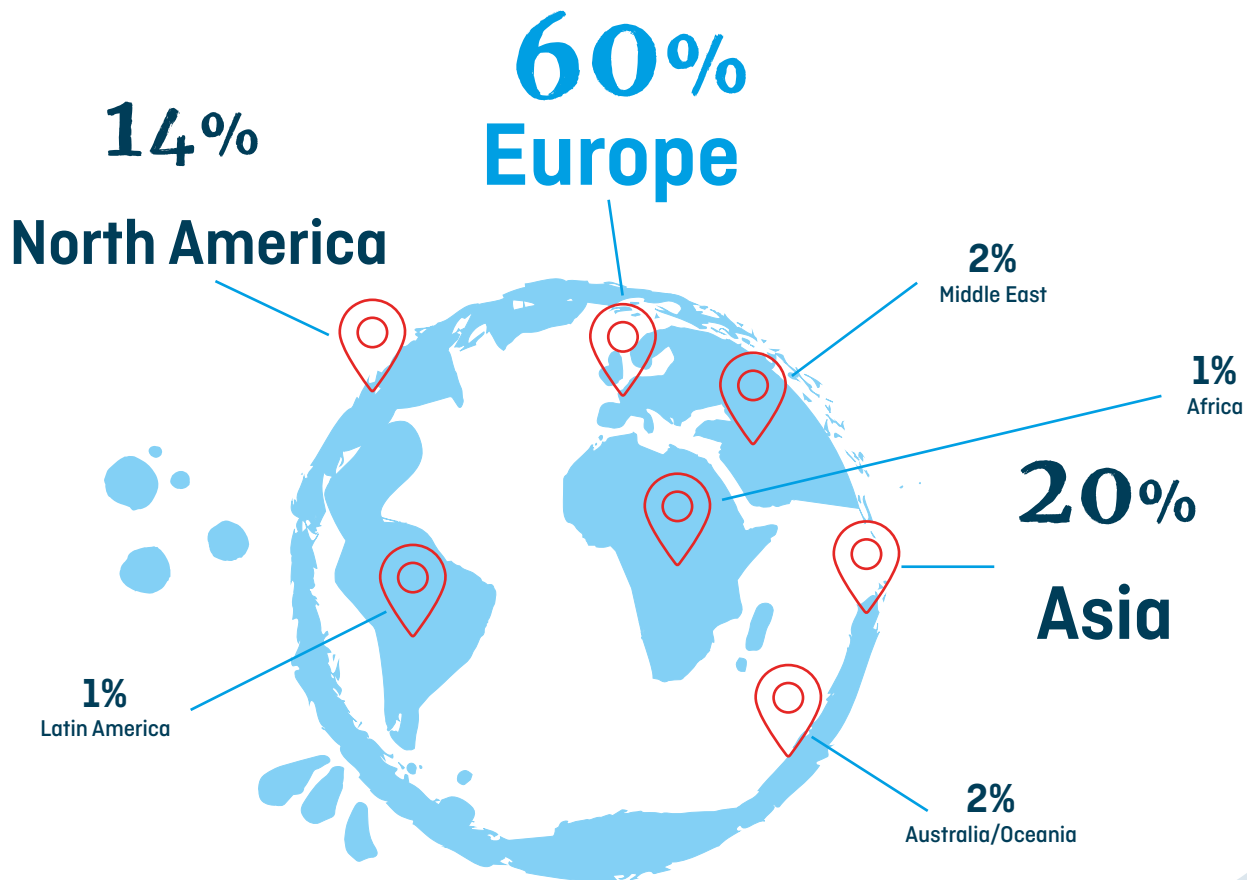
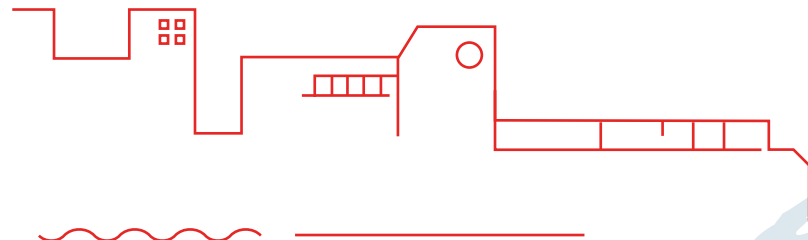
What organization type do you represent?



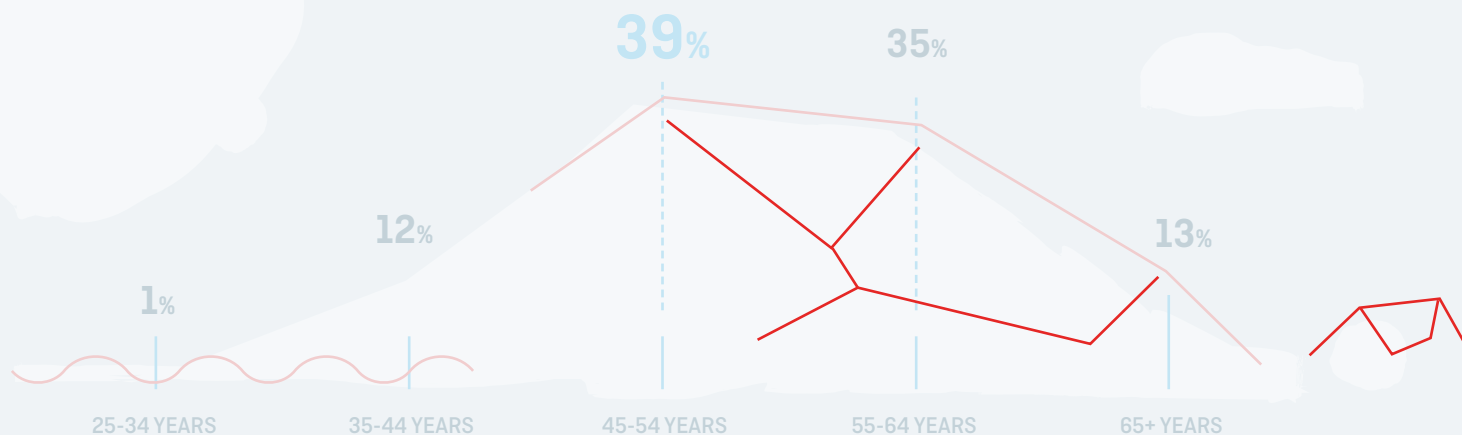
Which role best describes your position?



In which region is your office based?



What is your age?



What is your gender?

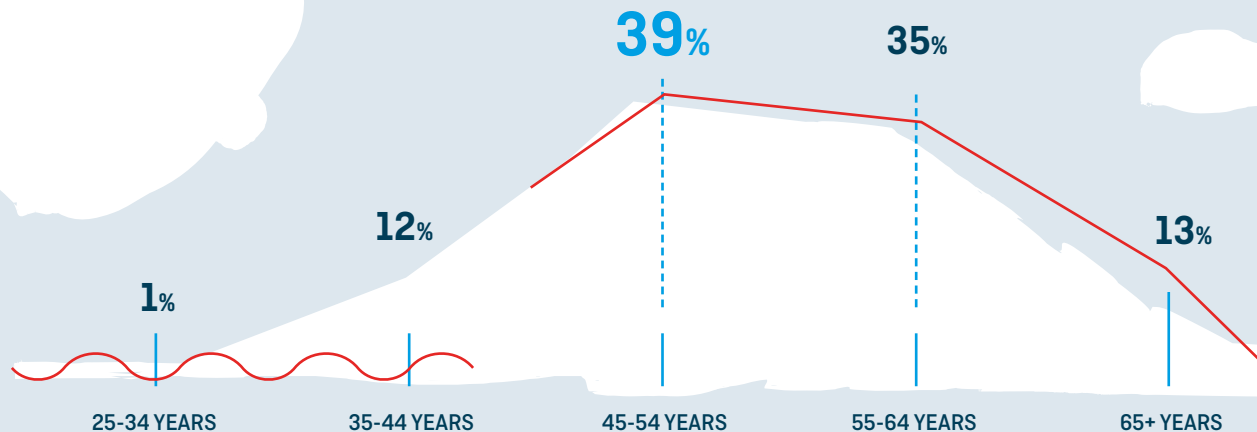
Female

● 9%

Male

● 91%

What is your age?



What is your gender?

Female

● 9%

Male

● 91%



GLOSSARY OF TERMS

Economic issues

Changing trading patterns

Changes to the maritime trading landscape and supply chain that will have an impact on global trade (for example, One Belt One Road, deindustrialization, near-sourcing).

Failure or shortfall in infrastructure

Failure to adequately invest in, upgrade, and/or secure transportation infrastructure, leading to loss of economic activity, pressure, or a breakdown with system-wide implications.

Fuel price increases

Increases in fuel prices leading to economic pressure or uncertainty for the maritime industry.

Global economic crisis

A significant downturn in the global economy resulting in a lack of growth for the maritime industry.

Insufficient access to finance

Inability of the maritime industry to attract sufficient finance for long-term investment.

Geopolitical issues

Geopolitical tension

A bilateral or multilateral dispute between states that escalates into economic, military, cyber, societal, or other conflict.

Governance failure

Inability of regional or global institutions to resolve issues of economic, geopolitical, or environmental importance.

Increased piracy

An increase in the practice of attacking and robbing maritime businesses at sea or on land.

Terrorism

An unlawful use of violence and intimidation by individuals or groups with political or religious goals which inflicts human or material damage.

Environmental & human health issues

Decarbonization of shipping

The various consequences to the maritime industry resulting from pressure — regulatory, competitive or societal — to reduce the use of or eliminate fossil fuels within shipping, and replace them with fuels and/or technologies that do not emit greenhouse gasses.

Failure of climate change mitigation and adaptation

Adverse consequences to the maritime industry resulting from the failure of governments and businesses to enforce or enact effective measures to mitigate climate change, protect populations and help businesses impacted by climate change to adapt.

Major safety incident

An unintended event within the maritime industry that severely disturbs normal operations and has vast irreversible consequences on human life and/or the environment (for example, explosion causing loss of life, oil spill).

New environmental regulation

Efforts to minimize the maritime industry's negative impact on the environment (for example, SO_x and NO_x emissions, ballast-water discharges, ship recycling) through new regulation (excluding regulation pertaining to the decarbonization of shipping).

Pandemics

Outbreak of a disease that occurs over a wide geographic area and affects an exceptionally high proportion of the population.

Societal issues

Societal demands for sustainability

Rise in demands for organizations to act responsibly with regard to the environment, society, and the economy (for example, preservation of biodiversity, diversity and inclusion, circular economy).

Workforce and skill shortages

Shortages in the maritime industry's workforce, either in size, type, skill, or experience, both at sea and on land.

Digital issues

Autonomy technology

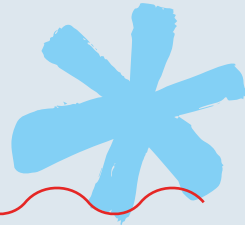
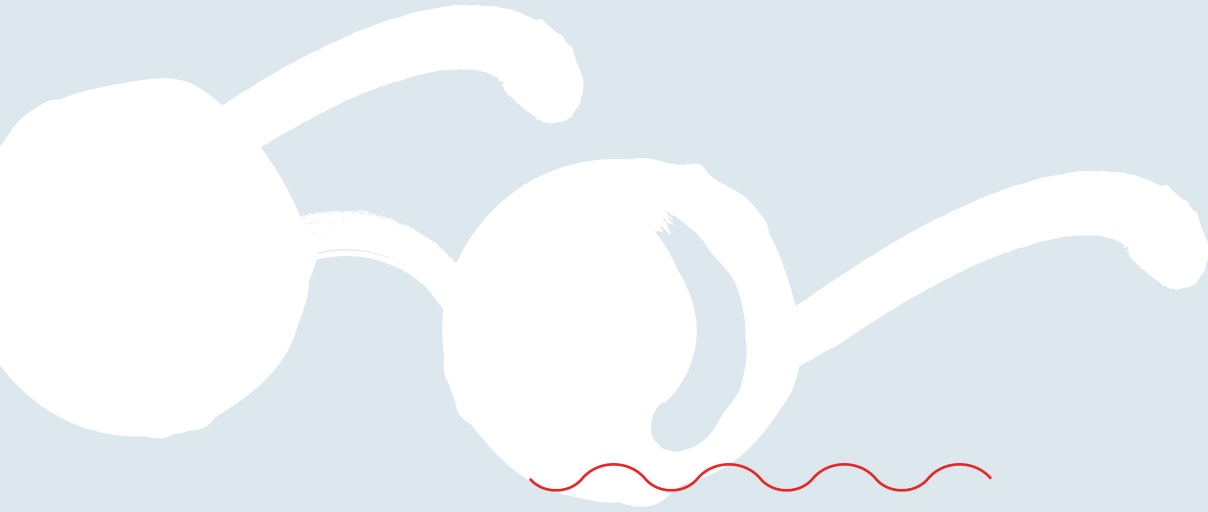
Technology that is able to perform tasks without human interaction (for example, unmanned ships, autonomous ports).

Big data and Artificial intelligence

The process of collecting large amounts of data and using artificial intelligence to interpret it, learn from it, and apply these learnings to specific tasks and goals.

Cyber-attacks and data theft

Attempts by hackers to damage or destroy a computer network or system causing economic impact and the exploitation of private or official data.



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