



BEYOND THE HYPE:

WHAT THE MARITIME
INDUSTRY REALLY
THINKS ABOUT AI....
AND WHERE THEY'RE
MAKING IT WORK

Fiona Macdonald

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EXECUTIVE SUMMARY

Despite widespread enthusiasm for AI's potential, most maritime companies are stuck in the early stages of AI adoption, unable to scale beyond small experiments. While 82% are optimistic about AI and 81% are running pilots, 37% have witnessed AI projects fail, creating an environment that's simultaneously excited and uncertain.

New research by Thetius, in partnership with Marcura, is based on 130 survey responses and multiple in-depth interviews across the industry. It reveals a sector that is curious and cautiously optimistic, but still uncertain about how to move from experimentation to meaningful adoption.

82% of professionals believe AI can improve operational efficiency and reduce manual workloads. 81% have already launched pilots or small-scale projects. Yet despite this enthusiasm, adoption remains shallow with only 11% having formal policies to scale. Just 23% are training staff to build confidence and trust in using AI as part of their daily work.

Maritime, traditionally slow to adopt new technology, is compressing typical 10-15 year adoption cycles into just 2-3 years for AI. What we see emerging is a trust paradox where the benefits and potential of AI are broadly recognised, but that same potential is causing hesitation.



82% of professionals believe AI can improve operational efficiency and reduce manual workloads.

The real barriers are not technical. They are human. Two-thirds of respondents fear overreliance on AI could weaken human oversight. Crucially, 37% have personally witnessed AI failures, yet remain optimistic, suggesting an industry learning from mistakes rather than abandoning AI entirely.

Many are sceptical of vendor promises and overhype. 69% are concerned about poor business outcomes if AI solutions miss critical red flags in contracts or voyage planning, while nearly a quarter express concerns about vendor claims outpacing real-world results.

This report explores these human, technical and organisational blockers in depth. It highlights where AI is already proving useful, such as in charter party analysis and regulatory compliance. It also identifies the areas of strongest resistance, particularly within legal, commercial, and frontline roles.

To realise AI's value at scale, maritime leaders must shift their approach. Adoption is no longer just a technical issue. It is a challenge of governance, culture, and communication. Success will depend on transparent implementation, strong leadership, and tools designed specifically for the realities of maritime operations.

FOREWORD

Artificial Intelligence is no longer a distant frontier for the maritime industry. It is already here, and its influence is growing by the day. Despite the attention AI receives, its true potential remains clouded by hype, inconsistent definitions, and competing claims.



JANANI YAGNAMURTHY,
VP, Analytics, Marcura

Like any emerging space, vendors can be guilty of making exaggerated promises, and as the report notes, this has led to some justifiable caution as maritime leaders struggle to distinguish genuine solutions from marketing rhetoric.

While many tools are now described as AI-powered, the reality is that not all AI is created equal, nor is it universally understood.

For the maritime industry, this matters. We are an industry defined by complexity, be it operational, contractual, geographical; and that means digital solutions must be built with a deep understanding of maritime itself. The generic plug-and-play approach will not succeed. The most effective AI is not just technically advanced, but also contextually aware, able to make sense of contracts, port protocols, and voyage data in maritime terms.

At Marcura, our AI goes a step further. It not only helps untangle operational and contractual complexity but also addresses the convoluted clauses and dense contractual language that often make it difficult for maritime professionals to follow obligations and risks with clarity.

By surfacing insights and simplifying these intricate terms, our AI supports faster, more confident decision-making. This approach moves beyond basic efficiency gains to unlock predictive capabilities that drive strategic decision-making and commercial opportunities.

What motivated this study is not just the promise of AI, but the tension we see in its adoption. Undoubtedly, there is genuine

interest, yet also hesitation. Maritime leaders want to act but often feel uncertain about where to begin or how to scale. Senior executives and C-Suite leaders, in particular, express a genuine interest in AI, but there remains a significant gap between this enthusiasm and organisational readiness for implementation. The conversation frequently skews towards binary thinking: risk or opportunity, transformation or disruption. We believe it is time to look deeper.

This research aims to uncover what is really holding the industry back from leveraging the benefits of AI. What blockers – rational and emotional – are specific to maritime and how can we move beyond them? Is the resistance rooted in real risk, or in perceived challenges that can be resolved with the right mindset and protocols? The research also explores organisational maturity across the sector, helping to chart where we are today and what steps are needed to move forward with confidence.

Our goal is not simply to analyse the state of play, but to provide clarity and practical recommendations. By cutting through the noise, we hope this report equips maritime professionals with insights and perspective to support better decision-making on their AI journey.

I would like to thank the team at Thetius for their diligent and thoughtful work. I invite everyone across the maritime ecosystem to read this report with action in mind, because real change will not come from the tools alone, but from people who use them wisely.

INTRODUCTION

Successful technology adoption depends on optimism, engagement, and motivation. While Artificial Intelligence (AI) is widely seen as a valuable tool in the maritime industry, it also brings uncertainty and apprehension.

This report, prepared by Thetius in partnership with Marcura, explores how maritime professionals perceive AI. In shipping, where experience and judgment are highly valued, new tools that appear to take over decision-making can feel unsettling. Some hesitation is rooted in real concerns, such as data privacy, cybersecurity, and regulatory uncertainty. Other fears, like job loss or control erosion are more nuanced and can often be addressed through training, education, and the right system architecture.

This research examines how AI is perceived by maritime professionals today and the source of resistance. It distinguishes between concerns that are grounded in real issues, such as data privacy and cybersecurity, and those that are more nuanced or speculative, such as fears around job displacement. By exploring these perceptions, we aim to provide a clearer picture of the opportunities and challenges AI presents to the maritime sector.

This report answers the following questions and provides insights, recommendations, and practical steps to help the industry enhance AI engagement and adoption:

- ▶ What are the emotional blockers to AI adoption and why do they exist?
- ▶ What are the perceived risks of AI and where are the sources of resistance?
- ▶ How can these risks be framed as opportunities?
- ▶ How ready are maritime organisations to adopt AI?
- ▶ How can maritime professionals best embrace AI to ensure employee engagement and achieve a good ROI?



DEFINING AI

Different types of AI exist and the language used to describe them plays a crucial role in shaping perceptions. Below are some key terms commonly used when discussing AI.



Agentic AI – Intelligent systems that are made up of autonomous “agents” that can reason, plan, and take multi-step actions toward goals, without ongoing human instruction. Unlike generative chatbots, they can execute tasks, such as booking travel or approving invoices, using tool integrations and memory capabilities. Agentic AI goes beyond natural language processing and sees decisions made independently while interacting with external environments.¹ This is often seen in robotics.



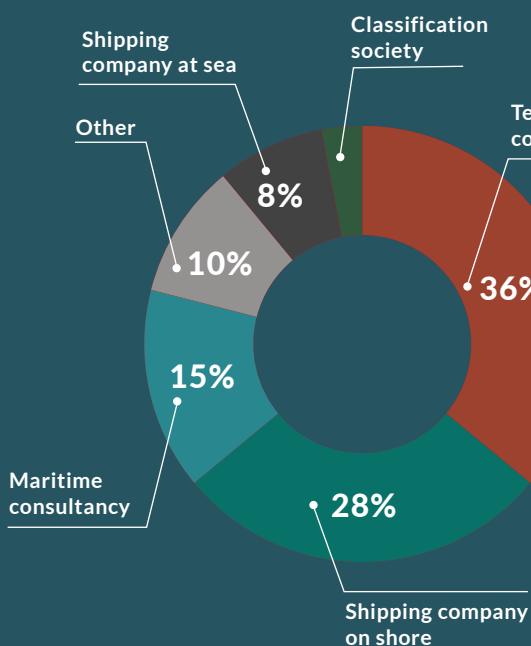
Embedded AI – AI models or logic integrated directly into hardware or devices (edge systems) so they can process data and decide in real time, without needing to send it to the cloud.



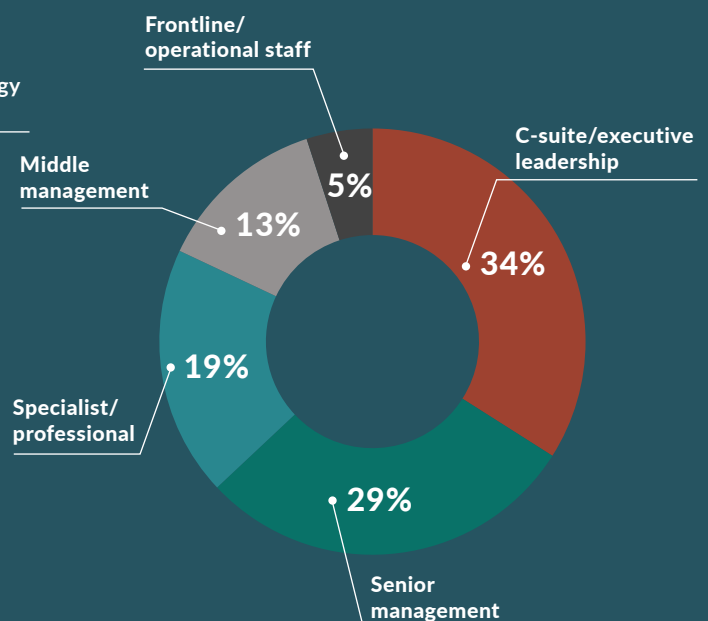
Vertical AI – AI solutions tailor-built for specific industries or domains, leveraging deep sector knowledge and specialised data to deliver high-precision outcomes.

SURVEY RESULTS

WHAT IS YOUR ROLE IN THE INDUSTRY?

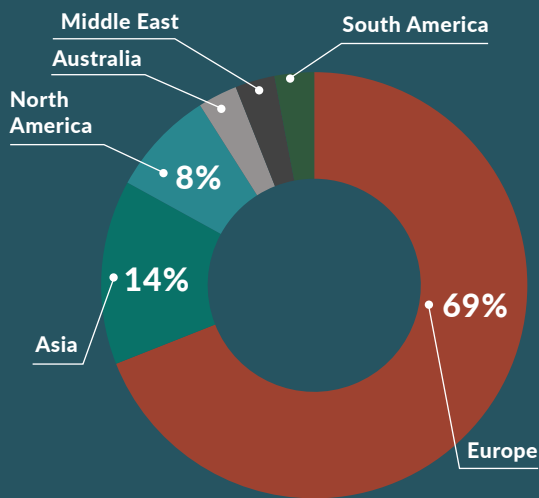


WHAT IS YOUR LEVEL OF SENIORITY WITHIN YOUR ORGANISATION?



¹ IBM (accessed Jun, 2025) [What are AI agents?](#)

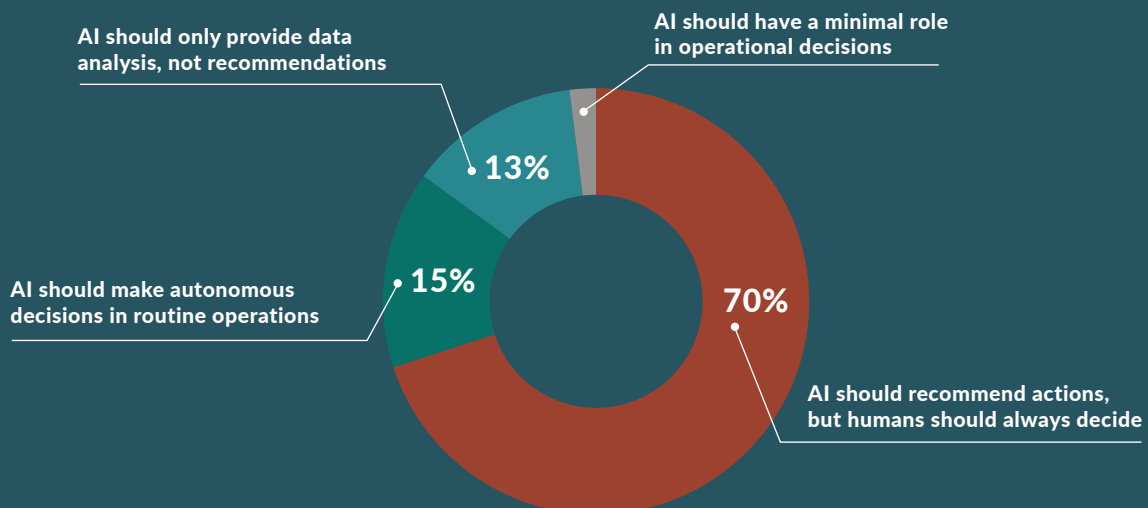
WHERE IS YOUR ORGANISATION HEADQUARTERED?



EMOTIONAL RESPONSE

- ▶ **72%** identify improved efficiency as the first thing they associate with AI in the workplace
- ▶ **64%** of professionals feel somewhat confident in understanding how AI could and should be used in their job function
- ▶ **40%** are highly optimistic and see significant potential for improvement in maritime operations with AI
- ▶ **41%** are cautiously optimistic about the potential of AI

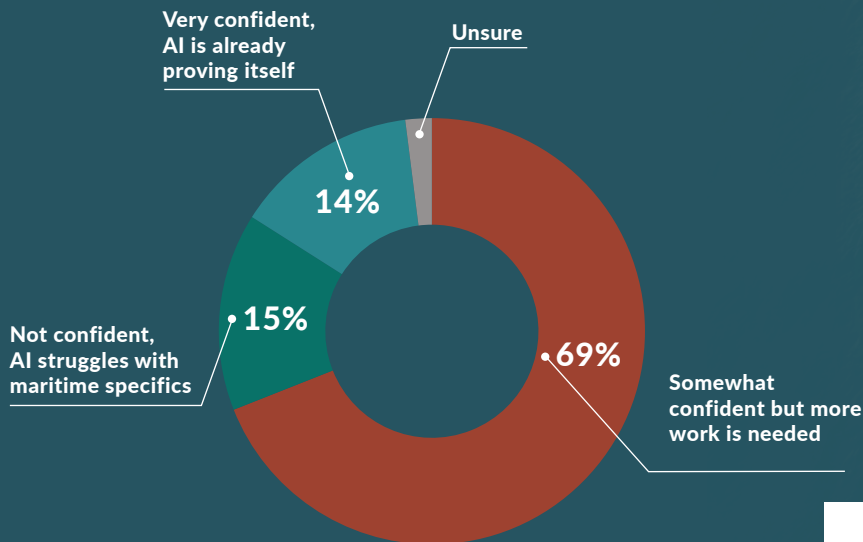
HOW DO STAKEHOLDERS VIEW THE ROLE OF AI IN DECISION-MAKING?



PERCEIVED RISKS AND OPPORTUNITIES

- ▶ **97%** believe that AI is useful or extremely useful for reducing manual workflow inefficiencies
- ▶ **85%** say that AI is useful or extremely useful for identifying risky voyage decisions and red flags in voyage profitability
- ▶ **69%** are concerned about poor business outcomes if AI solutions miss critical red flags in contracts or voyage planning
- ▶ **66%** worry that overreliance on the technology could lead to a reduction in human skills and oversight
- ▶ **61%** feel that cybersecurity and data breach vulnerabilities are the biggest risks for them in implementing AI in maritime operations
- ▶ **37%** have witnessed AI projects failing or causing harm
- ▶ **23%** feel that vendors are generally untrustworthy, offering too much hype and insufficient results

HOW CONFIDENT ARE MARITIME PROFESSIONALS THAT AI SYSTEMS CAN UNDERSTAND AND HANDLE THE SPECIFIC NUANCES OF MARITIME CONTRACTS, WORKFLOWS, OR OPERATIONAL REQUIREMENTS?

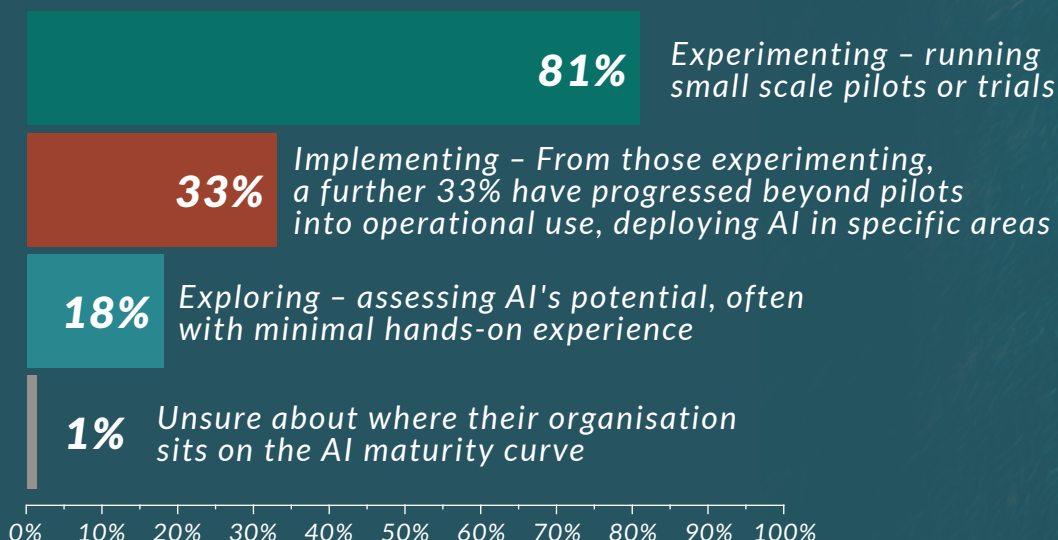


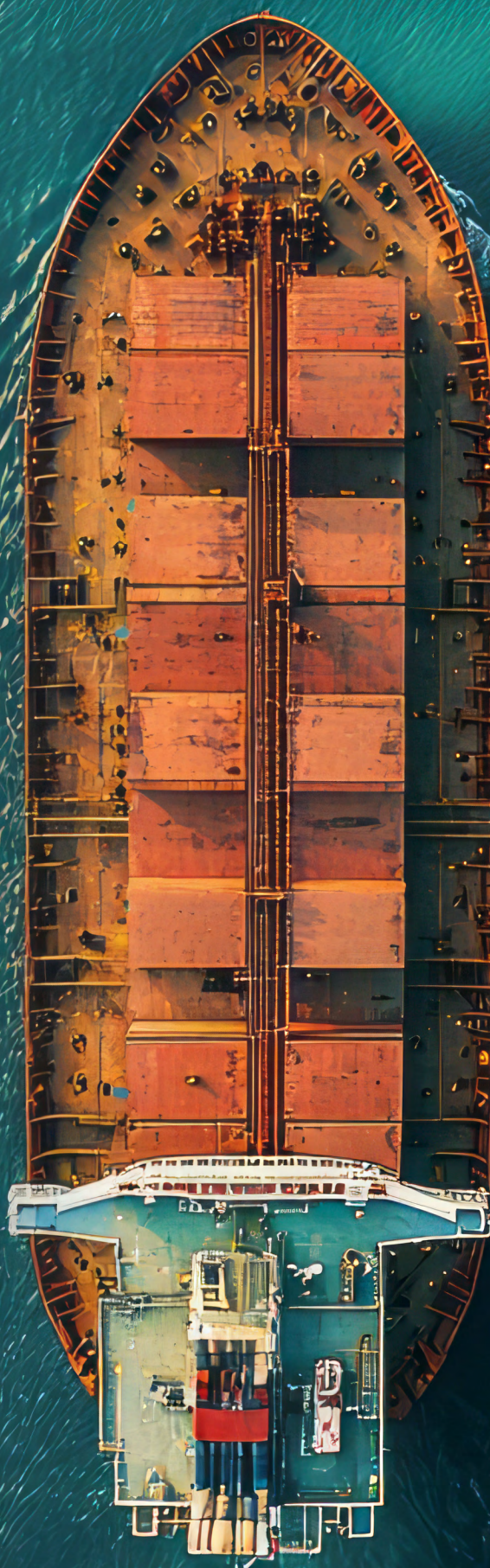
ORGANISATIONAL READINESS

- ▶ **57%** cite strong leadership support as having a major influence on their organisation's readiness for AI
- ▶ **41%** say employee openness and digital skills influence their readiness for AI
- ▶ **23%** of organisations have implemented training to build trust in AI among staff
- ▶ **17%** of organisations have taken steps to be transparent about how will AI make decisions within their organisations

Despite industry optimism for AI, only 11% of organisations have a fully developed formal AI policy that is followed and adhered to.

WHERE ARE MARITIME ORGANISATIONS ON THE AI MATURITY CURVE?





EMOTIONAL RESPONSE AND SENTIMENT

INDUSTRY-WIDE OPTIMISM

This research by Thetius, in partnership with Marcura, reveals a generally optimistic outlook among maritime professionals regarding the role of AI in the workplace. In a survey of more than 100 maritime stakeholders, just over 40% of respondents said they are highly optimistic and see significant potential for improvement through AI, while a further 41% described themselves as cautiously optimistic. This indicates a predominantly positive outlook, tempered with some caution.

Confidence in maritime AI appears to be growing, with 72% of survey respondents identifying improved efficiency as the first thing they associate with AI in the workplace. This is a clear sign that many view it as a tool to enhance rather than disrupt daily operations.

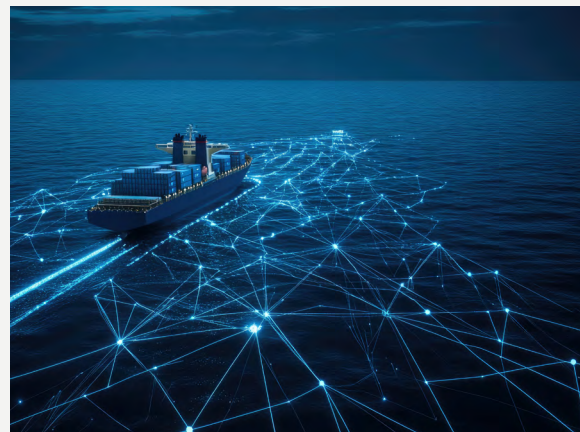
One ship management company we spoke with confirmed that AI is widely seen as a positive development across their organisation. "AI is a real value. It is not just a technology. It is solving actual pain points faster, smarter, and at scale," said Theofano Somaripa, Group CIO at Newport S.A. "AI will be a part of our life, like it or not. In a few years, we could not imagine how life was before AI implementation, like we cannot imagine how to live without electricity."

Confidence in how AI could or should be applied is also encouraging. 64% of professionals said they feel somewhat confident in its role within their job function, and 23% reported feeling very confident. Crucially, there is a strong preference for keeping people in control, with 70% believing that AI should recommend actions, but that humans should always make the final decisions. This reflects a clear desire to balance technological support with human judgement, reinforcing the view that AI should be a partner, not a replacement.

"If you use AI correctly as an assistant tool, and not as a replacement for a human, it will be a great addition to the work of every single person," Giuseppe Oliveri, Director at d'Amico told us.

EMOTIONAL BLOCKERS: WHAT'S HOLDING PEOPLE BACK?

Despite widespread optimism, there are signs that maritime stakeholders remain concerned about AI's growing capabilities. While many can acknowledge the benefits of new technology, emotional responses can still lead to resistance, particularly when that technology feels unfamiliar, intrusive, or threatening.



LOSS OF CONTROL AND SENTIMENTAL ATTACHMENT

Our research shows that a fear of losing control and a loss of the human element in decision making can deter people from fully engaging in it. 66% cited concerns with overreliance on the technology, leading to a reduction in human skills and oversight. A small percentage (20%) said that the first thing that comes to mind when thinking about AI being introduced in their workplace is a question about how it would affect their role.

Janani Yagnamurthy, VP Analytics at Marcura, explained why this might be the case: “Many operators fear losing control. They’ve spent decades honing their judgment in high-stakes roles like chartering and operations. So when AI is introduced, there’s a perception that machines are taking over, not assisting.”

In high-responsibility jobs such as charter managers, operations managers, or captains, the idea of an “autonomous system” making calls can feel like an existential threat to professional expertise. This fear often persists even when the AI is only providing recommendations rather than final decisions because emotionally it can feel like a slippery slope towards automation overriding human judgment.

Takeaway: *Fear of losing control or human judgement can lead to emotional resistance, especially in shipping roles where expertise is deeply personal and hard earned.*

TRUST CONCERNS

While 82% of participants feel optimistic about AI in their workplace, some are still held back by the issue of trust.

Our survey found that 37% of participants have witnessed instances where AI either caused harm or failed to deliver as promised. These failures are often attributed to the lack of human judgement in machine decision-making² and poor implementation driven more by hype than practicality.

Discussions around trust in AI often centre on whether humans can trust AI. However, trust in AI is not a one-way consideration. These AI models depend heavily on the quality and reliability of human inputs to function, creating a bidirectional trust relationship.³ While AI lacks the ability to make subjective judgments about intentions, consistency and vulnerability (things humans assess when considering whether one is trustworthy or not), it is still reliant on humans for data collection, labelling, and oversight. In the case of generative AI, the quality of prompts from users plays an important role; more precise inputs produce more useful and reliable outputs.

This mutual dependence highlights a critical gap in how organisations prepare for AI adoption.

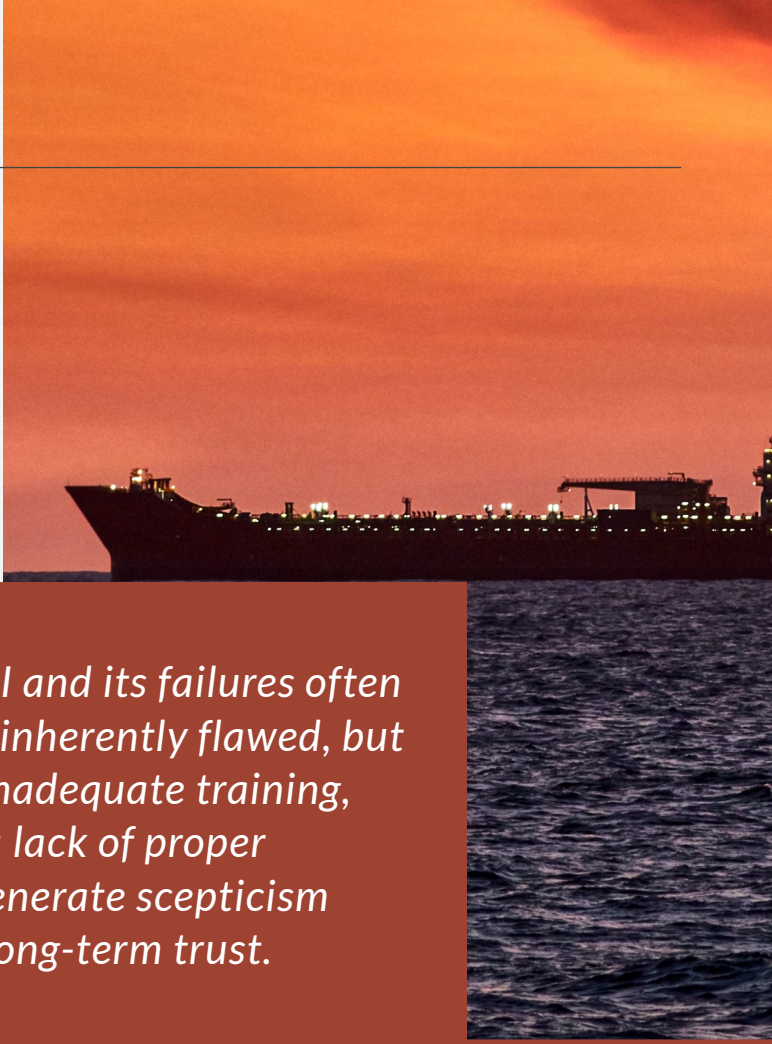
As one ship manager explained, “People train their AI models but they don’t train their people. If the crew and the office do not understand the AI outputs, it could lead to misuse, which creates mistrust. We need to first train our people and our minds.”

Steven Jones, Founder of the Seafarers Happiness Index told us that he sees a significant disconnect between the development, deployment, and actual use of AI on ships, fuelling mistrust. “Salespeople sell a dream... and then time-stressed seafarers are left trying to unbox and make it work.”

2 Sagona, M et al., (Mar, 2025) [Trust in AI-assisted health systems and AI's trust in humans](#)

3 Azevedo-Sa, H et al., (Jul, 2021) [A unified bi-directional model for natural and artificial trust in human-robot collaboration](#), IEEE Robotics and Automation Letters

A Master Mariner with more than 21 years of experience at sea and on shore told us that he had lost trust in AI tools after realising incorrect data filtering was generating poor results. “The systems were lacking. While the intentions were good, the data wasn’t being filtered properly and it was leading to incorrect information output.”



Takeaway: *Lack of trust in AI and its failures often stem not from AI itself being inherently flawed, but from poor implementation, inadequate training, unrealistic expectations, or a lack of proper human oversight. This can generate scepticism and make it harder to build long-term trust.*

MISLEADING FRAMING AROUND AI RISKS TRUST

There is ongoing scepticism about whether today’s AI is truly “intelligent” or simply advanced data processing. As economist Paul Krugman argues, models like ChatGPT generate plausible responses without real understanding, raising doubts about their cognitive depth.⁴ This can lead some to question the value of AI and assume their own intelligence is superior.

Our research further supports the view that the language and framing used around AI influence how people perceive and use it. One ship manager told us that when AI is framed as being “intelligent” or “autonomous” it distorts users’ understanding, leading to misplaced trust in systems that are not truly intelligent, they’re just tools operating on data-driven prediction. “Misleading language risks over-trust,” she told us.

Takeaway: *AI is not intelligent in the human sense, it is a predictive tool shaped by training data and algorithmic logic. Realistic expectations, critical thinking, and user responsibility, rather than attributing human-like cognition or agency to AI systems, is necessary.*

4 Financial Times Podcast (Jun, 2025) [The Wolf-Krugman Exchange: AI hype vs reality](#)

WHY EMOTIONS MATTER

Emotions drive the uptake and quality of a technology's use. The pilot vs passenger mindset can be useful to illustrate this point. The pilot mindset sees AI as a way to augment the user's capabilities. The passenger mindset feels carried along by AI and senses a loss of control and agency.

In a recently published two-year study, BetterUp and Stanford University's Social Media Lab examined 12,000 workers across 18 industries to understand how AI is transforming their work. Interestingly, it found that 28% of the workforce are pilots, but they are 3.6x more productive and 3.1x more loyal than passengers.⁵

Why is this important? In maritime, where scepticism of new technology is traditionally high, emotional factors and this pilot vs passenger mindset are critical to securing buy-in. Users must be willing co-pilots with AI, rather than reluctant passengers. Those with a pilot mindset will be more likely to take control of the opportunities that AI offers.

ROLES AND RESISTANCE TO AI

Our research suggests that attitudes towards AI in the maritime industry vary depending on an individual's role, seniority, and proximity to day-to-day operations. Frontline and operational staff may have concerns shaped by the hands-on nature of their work and the direct impact AI tools could have on established processes. Many also fear losing the human relationships and trust-based interactions that underpin this people-first, network-driven industry. Back-office teams, while often more exposed to digital tools, may face different pressures or resource constraints that shape their experience and expectations of AI. Senior leaders tend to see AI through a strategic lens, focusing on potential gains, but may not always be attuned to the emotional or practical hurdles felt elsewhere in the organisation.

Takeaway: To adopt AI successfully, individuals as well as organisations need a pilot mindset, not just letting tech happen to them, but actively steering its use towards real outcomes.

5 BetterUp Labs (Jun, 2025) [The next evolution in management](#)



Department	Departments that are viewed as most prepared for AI implementation ⁶
IT and Digital Transformation	31% of respondents said that IT and Digital Transformation departments seem the most prepared for AI implementation. The research found that IT departments generally show a strong understanding of AI and are optimistic about its ability to improve efficiency. Uncertainty is largely focussed on the technology's reliability and getting other departments onboard.
Operations and Voyage Management	25% of respondents said that Operations and Voyage Management departments seem well prepared for AI implementation. Professionals in these roles are generally optimistic about AI for efficiency and safety. They are keen for AI to have autonomy in routine tasks with some human oversight.
Compliance or Legal	Within these departments, some scepticism about AI implementation exists, with concerns about accountability, legal risk, and overreliance. Only 13% of respondents said that Compliance and Legal departments are most prepared for AI implementation. There is a strong preference from these professionals for a strict human-in-the-loop process. There is also a high concern for data governance, regulatory liability, and misinterpretation of legal nuances by AI.
Other (including maritime consultancy and HR roles)	There are mixed views around how other departments such as HR view preparedness for AI implementation. Some express concern about job displacement, while others view AI as a path to upskill and shift roles.

Table 1. Departments that are viewed as most prepared for AI implementation.

C-suite executives and senior managers in shipping companies both onshore and at sea generally show optimism towards AI. The two most frequently cited challenges are an overreliance on AI and a fear of reducing human skills, and oversight and safety risks from incorrect AI decisions. Another challenge is persuading others in the organisation who may be more resistant to change. This can create a blocker when moving from pilot to scale.

IT managers display a high level of optimism towards AI, reflecting their strong understanding of the technology's capabilities and a lower degree of apprehension about its use. The biggest frustration this group voiced was internal

resistance from others. One noted that a big part of his job is "playing psychologist," alleviating colleagues' fears about the AI projects his team is rolling out. Our data also shows that IT managers worry about unregulated use of AI, for instance, employees using ChatGPT without company guidance, potentially leaking data.

Those who had prior experience with successful digital transformation projects were also less resistant.

In contrast, frontline workers are at the greatest risk of being left behind in the AI transformation, possibly due to insufficient training or uncertainty about how AI will affect their roles.

Steven Jones, Founder of the Seafarers Happiness Index told us that AI is still largely absent from day-to-day shipboard operations. Many seafarers haven't yet felt the impact of AI, contributing to a disconnect between technological hype and practical reality.

One chief engineer who works for a shipping company that has between 251–1,000 employees said he feels somewhat optimistic about AI but is unsure about how it could or should be used within his role. He expressed concern that AI could replace, rather than assist, maritime professionals, reflecting fears of job displacement within the industry. This suggests either a limited understanding of AI's applications or insufficient communication about its potential. He was also unsure where his organisation sits on the AI adoption maturity curve, which may indicate that it is still in the early stages of AI exploration or that there has been a lack of transparency around AI's use.

Some commercial managers voiced concerns about losing the human touch, particularly in client relationships. Deals in shipping often hinge on personal trust and real-time judgement calls, which many believe AI cannot replicate. As Giuseppe Oliveri, Director at d'Amico, explained: "In the shipping industry there is still that feeling of the person, the face-to-face relationships and not just the computer." There remains a deep-rooted preference for interpersonal communication, especially in negotiations, claims handling, and operational coordination. Human connection is still central to how the industry functions and builds trust.

Maritime professionals often value reputation, experience, and intuition, qualities that are difficult to reproduce through automation. As a result, there is a noticeable resistance to AI tools that interfere with client communication or relationship-building. However, back-end AI tools, particularly those offering data analytics and decision support are more readily embraced, as they offer value without displacing the human element.

Departments like legal, insurance, and compliance have specific worries that make them cautious. Their world revolves around

risk mitigation and adherence to regulations or contracts. If AI tools for construct analysis are used, questions and concerns might be raised about what happens if the AI misses a red flag in a charter party clause, for example.



Takeaway: Emotional responses, whether acceptance, excitement, uncertainty or reluctance, influence how AI is adopted and scaled in an organisation. Recognising where resistance is highest, and understanding the reasons behind it, allows for more targeted engagement and support. Ultimately, successful AI adoption requires not only technical readiness but also a thoughtful, human-centred approach.

OPPORTUNITIES AND RISKS: PERCEPTIONS OF AI TODAY

AI is perceived as highly valuable in several key areas of maritime operations. However, significant change inevitably invites some resistance. The key question is where does this resistance come from, how much of this resistance arises from tangible concerns, and how much is shaped by subtler perceptions and uncertainties? Even if a fear is exaggerated, it can still slow or derail an AI project if not addressed. Part of creating opportunities from AI solutions involves not just managing actual technical risks, but also managing perceptions and trust.

WHERE IS AI PERCEIVED AS MOST VALUABLE TODAY?

According to maritime professionals, the following areas are seen as offering significant benefits from the application of AI.

REDUCING MANUAL WORKFLOWS

97% believe that AI is useful or extremely useful in reducing manual workflow inefficiencies, such as augmenting inboxes to automatically flag key data. This is a popular starting point, as the application of AI in this context is low risk: it does not make decisions, but instead organises information and enhances visibility.

CHARTER PARTY ANALYSIS

87% of respondents believe AI is useful for analysing clauses in charter party contracts. AI is being used to scan lengthy charter parties, contracts, or legal documents to identify risks or extract key information.

However, it is important to point out that 69% also said they are concerned about poor business outcomes if AI solutions miss critical red flags in

contracts or voyage planning. This suggests that while there is motivation to use AI in contract analysis, it must be done with caution and human oversight to avoid business critical errors.

VOYAGE OPERATIONS

85% say that AI is useful or extremely useful for identifying risky voyage decisions and red flags in voyage profitability.

REGULATORY COMPLIANCE MONITORING

85% believe that AI is useful or extremely useful for regulatory compliance monitoring in maritime operations.

Takeaway: AI is being embraced first where it supports, not replaces, human judgement. These early use cases build confidence without compromising on risk.

WHERE IS AI PERCEIVED AS MOST RISKY?

The following outlines where there are perceived risks around the application of AI and the opportunities to overcome these.

CONCERNS ABOUT JOB DISPLACEMENT

Perceived risk: *AI will replace jobs and lead to layoffs.*

Opportunity: *AI will enhance efficiency, create new roles and allow people to focus on higher-value, skilled tasks.*

Recent examples show that AI is shrinking some roles. For instance, large organisations like Salesforce announced AI is doing 30-50% of the work.⁷

Our research suggests that while optimism remains high, a small percentage (15%) are very concerned and a further 23% are a little concerned that AI could replace rather than assist maritime professionals in their roles.

One maritime consultancy manager who has been working in the field for more than 20 years said they are somewhat fearful and have concerns about AI's impact. They also said, "In five years, it may well make me redundant (or looking for a new job!)". A CEO at a technology company added, "There will be big changes, a lot less people but no true revolution," indicating a concern that fewer people will be needed in the maritime workplace.

Part of this anxiety stems from inflated perceptions over what AI can actually do. For instance, Amazon's CEO Andy Jassy noted that the swift adoption of generative AI could eventually lead to a reduced need for employees in roles that are automated by the technology.⁸ But in practice, most AI tools still

lack the nuance or judgement to truly replace people in maritime decision-making roles.⁹

It is important to note that while every new innovation displaces old ways of working, new jobs are always created.

Some of the maritime professionals we spoke with are well aware of this and see AI as an opportunity to reassign staff to higher-value activities rather than a simple cost-cutting tool. One CEO that responded to our survey noted, "I'm not looking to cut headcount with AI, I'm looking to handle 2x the business with the same headcount." Another CCO at a technology company said, "For my role, AI will shift the focus from routine data analysis and manual decision-making to strategic oversight and exception management." A cargo handler at a shipping company said he believes AI will help by "automating routine tasks, allowing more time to focus on revenue-generating activities."

These views indicate that while job displacement is a concern for some, many are aware that AI is designed to automate repetitive execution-level tasks, not human-level strategic thinking. The real gap is often not in capability, but in understanding. Educating teams on what AI can and cannot do is essential to rebuilding confidence and focusing efforts.

Takeaway: *Fears about AI-led job loss are real, but when leaders reframe AI as a force-multiplier rather than a headcount reducer, it opens the door to sustainable transformation.*

⁷ Silicon (Jun, 2025) [AI doing 30-50 percent of work at salesforce, says Marc Benioff](#)

⁸ CNBC (Jun, 2025) [Amazon CEO Jassy says AI will lead to 'fewer people doing some of the jobs' that get automated](#)

⁹ Financial Times Podcast (Jun, 2025) [The Wolf-Krugman Exchange: AI hype vs reality](#)

A reality check on the AI overhype and a cautionary tale for maritime

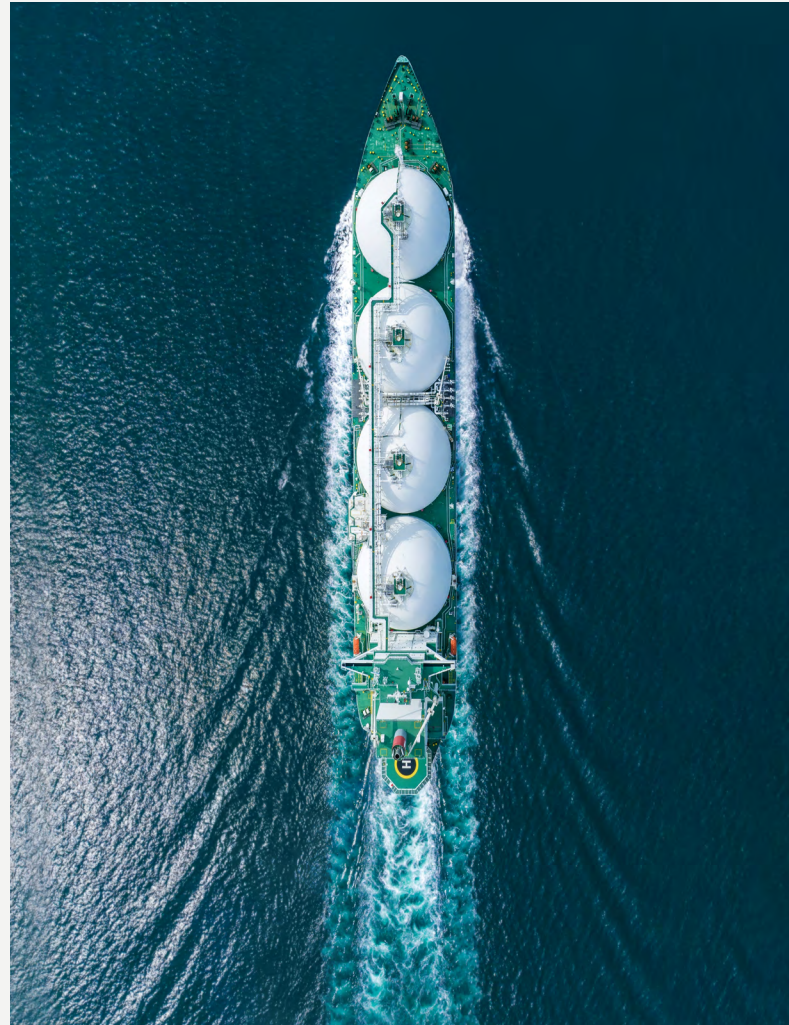
Swedish fintech Klarna offers a telling example of the risks of AI overhype and the concerns many have about it replacing jobs today.

In 2024, the tech giant initially replaced 700 workers with a new AI chatbot, with CEO Sebastian Siemiatkowski claiming that, “I am of the opinion that AI can already do all of the jobs that we, as humans, do. It’s just a question about how we apply it and use it.”¹⁰ The company celebrated a \$10 million savings, claiming generative AI could handle translations, image production, data analysis, and customer complaints.¹¹

Less than a year later, the tone changed. Customers reported declining service quality and customer dissatisfaction,¹² leading Siemiatkowski to admit in May 2025 that, “Cost unfortunately seems to have been a too predominant evaluation factor...what you end up having is lower quality.”¹³ Klarna has now acknowledged the shortcomings of its AI-first strategy with the CEO stating that “investing in the quality of the human support is the way of the future for us.”¹⁴

Klarna’s story is not unique. Many customers don’t want to interact with AI instead of a human, especially when they are already agitated. A 2022 research paper found that when a customer is angry, interacting with a chatbot that appears or behaves like a human results in lower customer satisfaction, worse evaluation of the company, and decreased intention to purchase again.¹⁵ This is largely because human-like chatbots inflate customer expectations and when these aren’t met, the letdown is magnified.

One vendor we spoke with said maritime solutions providers should be cautious of relying too much on AI and affecting



the relationships with their customers. “We don’t want our clients to just buy our solutions and then have to interact with an AI bot. That doesn’t really work for us.”

Many organisations are also discovering that hastily deployed AI solutions often fall short of expectations. Project failure rates are growing, which is believed to be down to a rapid adoption of AI initiatives, according to a recent S&P Global survey. The research found that 42% of companies are now abandoning their AI projects before they reach production and 46% are scrapped between proof of concept and broad adoption.¹⁶

10 Bloomberg (Dec, 2024) [Klarna CEO says AI is replacing workers](#)

11 Vice (May, 2025) [This company replaced workers with AI. Now they’re looking for humans again](#)

12 Forbes (May, 2025) [Business tech news: Klarna reverses on AI, says customers like talking to people](#)

13 Vice (May, 2025) [This company replaced workers with AI. Now they’re looking for humans again](#)

14 Independent (May, 2025) [Klarna’s AI replaced 700 workers. It now wants some of them back to improve customer service](#)

15 Crollic, C et al., (2022) [Blame the bot: Anthropomorphism and anger in customer-chatbot interactions](#)

16 S&P Global (May, 2025) [Generative AI experiences rapid adoption, but with mixed outcomes](#)

Much like Klarna's retreat from full AI reliance due to declining service quality and customer dissatisfaction, the maritime sector must tread carefully. Applying AI without understanding operational nuance risks damaging performance, trust and reputation.

According to Theofano Somaripa, Group CIO at Newport S.A, "We are already using AI and we don't realise it. Automation of navigation, predictive maintenance, cargo operations... these are all augmented by AI. But the reality is that we have to upskill our seafarers, we have to manage our smart systems. AI will create shore-based roles like fleet analytics or remote support. It's not a replacement; it's a shift.

Another cautionary perspective on the AI overhype comes from Nautilus' Head of Professional and Technical David Appleton who recently aired his views.¹⁷ He explained that while AI offers real potential to ease seafarer workloads, talk about relaxing the second watchkeeper requirement to trial AI systems risk prioritising headcount reduction over safety. This approach is premature and regulation must be based on evidence, not hype. "If technology can genuinely enhance safety and improve working conditions, it should be embraced. The maritime industry cannot afford to gamble on unproven technologies at the expense of skilled seafarers. It is imperative that we prioritise rigorous testing and uphold the highest safety standards, ensuring that AI complements rather than compromises the efforts of our maritime professionals."¹⁸



Takeaway: AI may promise speed and savings, but poor implementation can erode trust, damage service quality, and introduce new safety risks. For maritime leaders, realism is as important as innovation.

¹⁷ Nautilus International (Sep, 2024) [David Appleton: AI in maritime – hype vs reality](#)

¹⁸ Ibid

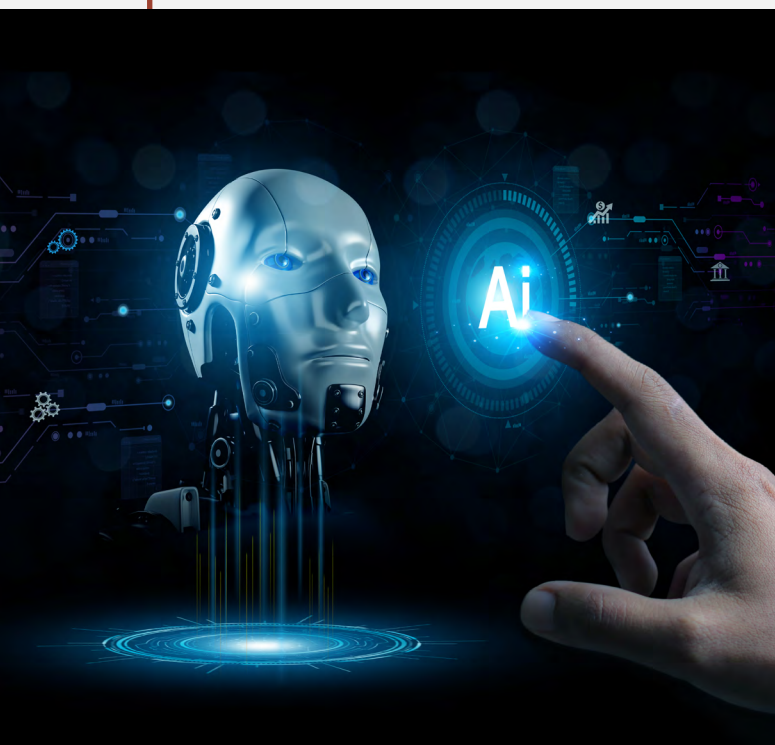
THE RISK OF AI HALLUCINATIONS



Perceived risk: *Generic AI doesn't understand the nuances of maritime operations or contracts, which can lead to hallucinations that are presented as fact.*

Opportunity: *Maritime-specific AI models trained on relevant data and real-world cases will be less likely to misunderstand concepts and provide hallucinations.*

One of the biggest concerns that was reiterated throughout the interview and survey analysis is that AI cannot yet understand the nuances of maritime operations or contracts. Our survey found that 69% believe that AI can handle some maritime complexity, but more work is needed to do so effectively. Many AI models are today trained on generic data, which can lead to hallucinations that are presented as fact. This creates difficulties as many hallucinations are plausible-sounding and may only be recognised as false by experts or with fact-checking.¹⁹



“The only thing with AI where I am most afraid is that it gathers so much information, true and false, that people may not realise what is reality and what is not,” Giuseppe Oliveri, Director at d’Amico told us.

AI needs to be able not just to read documents, but to process decades of voyage data, incorporate context, and build agents tailored to specific personas. LLMs that are not built for maritime-specific environments could misinterpret a contract or clause if not trained properly. A generic AI that is not trained on maritime data will also lack context, meaning that its answer could be plausible but incorrect.

Janani Yagnamurthy, VP Analytics at Marcura told us, “A general AI agent might say that SF means standard form, but in shipping, it means storage factor. That level of contextual accuracy is critical but doesn’t come out of the box.” Without industry-specific training and context, off-the-shelf AI can easily misunderstand industry-specific language. It is therefore important for AI models used in maritime to be designed to understand industry language and workflows.

Several other interviewees highlighted the fact that AI doesn’t know what it doesn’t know. Unlike an employee who might ask a senior member of staff when unsure, a current AI might plow ahead and output something confidently, even if it’s wrong, unless carefully designed to flag uncertainty.

A legitimate risk is that if a company deploys a one-size-fits-all AI, it may produce errors or require a lot of correction and customisation.

The opportunity here is to explore vertical AI, which is different from general-purpose AI like ChatGPT. Vertical AI refers to systems that embed deep, industry-specific expertise into intelligent, real-time agents tailored for particular industries and workflows.²⁰ These models prioritise accuracy, responsibility, and domain depth. Accuracy is critical as training AI models on bad data will create irreversible damage, according to Deepak Garg, Founder,

¹⁹ Forbes (May, 2025) [Why AI 'hallucinations' are worse than ever](#)

²⁰ Boussetouane, F (Jan, 2025) [Agentic systems: A guide to transforming industries with vertical AI agents](#)

Chairman & Co-CEO of Smart Energy Water (SEW).²¹ Vertical AI models are trained on accurate and labelled data relevant to specific maritime use cases. For example, ship-to-ship transfer detection. In one example, thousands of satellite images were used to build a dataset. Images were labelled and used to train an algorithm to recognise such events accurately.²²

The more maritime-specific data these models are trained on, from clauses and cargo flows to vessel behaviour and weather, the more accurate and context-aware they become. Expert oversight is critical to get there.

Takeaway: *AI trained on generic data risks sounding smart while being wrong. To truly support maritime decisions, AI must be built on industry-specific data, context and expertise.*

USERS CAN FALL PREY TO VENDORS' OVERHYPED CLAIMS

Perceived risk: *Vendors set too high expectations and solutions fall short of their promises.*

Opportunity: *Vendors should set realistic expectations and take advantage of the opportunity to build maritime-specific AI models.*

There's a common misconception that AI is "plug and play," but maritime is too nuanced for generic solutions. Vendors promising otherwise risk eroding trust by setting unrealistic expectations. Our survey found that 23% of respondents feel that vendors are generally untrustworthy, offering too much hype and insufficient results.

End users often buy into AI technologies, believing they will enhance their processes, but end up disappointed when generic AI fails to meet maritime-specific expectations. Our survey data also found that 37% have witnessed AI projects failing or causing harm. One respondent noted, "The AI was misinterpreting technical subsystems and functions of some devices, causing absolutely wrong proposals/answers." Another said, "It sometimes hallucinates and gives, or makes up, incorrect information."

These issues can create scepticism, making it harder for legitimate experimentation to scale. Some vendors use the term "AI-powered" to describe tools that are really just robotic process automation or rule-based logic. These systems can do a basic set of pre-programmed tasks very quickly, but are limited to very defined parameters like data entry. According to Theofano Somaripa, CIO at Newport SA, AI as a mature and ethical technology has yet to be properly implemented in the maritime sector.

One interviewee who previously worked with a shipping company told us they had to cut ties with a vendor due to a mismatch

21 Smart Energy Water (May, 2025) [Deepak Garg, Chairman, Co-CEO & Founder on Vertical AI, People+AI, and the Future of Energy & Water](#)

22 WindWard (Jun, 2024) [How does vertical AI ensure accuracy & reliability of multi-source data within maritime trade?](#)



between the AI's capabilities and their operational needs. She drew upon this point to highlight the risk of blindly implementing AI without addressing what data is available and what problems you are trying to solve.

Another emphasised the importance of dialogue between themselves and their vendor. Maritime Transformation Advisor Ha Eun Ruppelt told us, "When I was at a shipping company rolling out an AI-related project, transparency in our conversations made all the difference. The vendors walked us through everything – data sources, cleaning methods, and the logic behind their calculations – and we, in turn, shared that information openly with our internal teams. They answered every question, and that openness built the trust we needed to move forward.

Maritime technology may not yet be where we want it to be, but when you have a partner who listens, explains, and evolves with you, it becomes the closest thing to true collaboration, and that's what makes the difference."

"You need to partner closely with your vendors and stay informed as systems evolve. Many dismiss a tool after an initial trial, not realising updates and improvements have been made. Regular dialogue ensures you harness the best for your organisation."

Ha Eun Ruppelt, a Maritime Transformation Advisor.

Our research revealed that buyers often struggle to compare solutions and discern hype from delivery, with transparency flagged as a major concern. Additionally, several participants of this research listed vendor lock-in or technology dependence as one of their biggest risks regarding AI implementation. This highlights a fear of being tied to a single provider or ecosystem that may not evolve with the organisation's needs.

To mitigate this issue, transparency is key. The industry needs clear benchmarks and evaluations of vendors' track records, greater transparency in algorithms, integration models, and support levels, as well as tools for comparing vendors against regulatory and operational criteria.

The actual risk here is less about the technology and more about change management and honesty. AI tools often require integration, training with the right data, and a period of adjustment to fit into existing processes. A product that works out-of-the-box for one company might need tweaking for another due to different data or procedures. If stakeholders expect a perfect plug-and-play experience and instead face a 3-month learning curve, they may conclude the AI doesn't work, even if it just needs proper configuration.

Takeaway: *The real risk is not always the AI, it's the hype, poor fit, and false expectations. Successful adoption depends on honest dialogue, domain-specific design, and continuous support.*

DATA PRIVACY AND CONFIDENTIALITY CONCERNS



Perceived risk: Sensitive AI data will be exposed or leaked.

Opportunity: Data security is a valid concern, but it can be managed with the right architecture and human oversight.

The risk of data leakage remains a significant concern in the maritime industry. Stakeholders have expressed concerns about sharing sensitive contract data, as the possibility of AI learning from past deals raises anxiety over the potential exposure of confidential commercial information.

Our survey found that 61% of respondents feel that cybersecurity and data breach vulnerabilities are the biggest risks for them in implementing AI in maritime operations. Data leaks can occur if a company inputs a contract for analysis; the contract's contents could then be used to train the AI and potentially appear in another user's output. Organisations that do not use controlled channels increase the risk. A 2023 study found that 11% of data employees paste into ChatGPT is confidential.²³ But the source of these leaks is often human error, not the AI itself. Without proper boundaries or controls, staff may unknowingly expose sensitive material to third-party systems.

The actual risk of data leakage also depends on the solutions chosen. Enterprise-grade AI providers allow for private, self-contained AI environments. For instance, maritime solutions provider Marcura deploys AI in dedicated secure cloud environments or on-premises, where each client's data and AI models are isolated. In such a setup, the AI learns from the client's data only for that client's use, and strict access controls ensure no unauthorised visibility. When deployed properly, AI can actually improve data governance, rather than compromise it.

Takeaway: The danger lies not in AI itself, but in how it's used. With controlled environments and informed processes, AI can enhance, not erode, data confidentiality.

THE RISK OF AI MODEL COLLAPSE



Perceived risk: AI systems are trained on data generated by other AI models leading to a performance plateau.

Opportunity: Organisations that push to collect and responsibly use high-quality, real-world data for AI models will gain a competitive advantage.

Imagine if every time you tried to learn something new, your only source was an AI-generated summary of another AI-generated summary. Over time, the original meaning gets lost, and the information becomes so disconnected from the truth that it's no longer useful.²⁴

This is known as model collapse. It happens when AI models are trained on the outputs of other AI models rather than real-world input. Over time, the models begin to forget the true patterns in the data, especially the less common information.²⁵ According to Yunzhen Feng, a PhD candidate in the Maths and Data group at the Centre for Data Science, New York University, no matter how much data is added, the models hit a performance plateau when trained on synthetic data.²⁶

AI model collapse is a risk, especially as AI systems are increasingly trained on data generated by other AI models. The effect is a gradual erosion of accuracy, nuance, and reliability, not

23 Cyberhaven (Feb, 2023) [11% of data employees paste into ChatGPT is confidential](#)

24 Karlsgate (accessed Jul, 2025) [Real-world data matters more than ever in the age of AI](#)

25 Shumailov, L et al., (Mar, 2025) [AI models collapse when trained on recursively generated data](#)

26 NYU Centre for Data Science (Aug, 2024) [Overcoming the AI data crisis: a new solution to model collapse](#)

because of AI itself, but because of training inputs that recycle and reinforce flawed assumptions.

Research interviews for this study revealed that while the concept may not be widely recognised yet, some experts are concerned that if current trends continue, it could become a more significant issue as the model learns from corrupted recycled information.²⁷ One head of marketing at a technology company told us that data quality is critical for them moving forward with AI. “The industry needs to address data quality and inconsistencies that are well documented, such as with AIS. AI with poor quality data is just smarter and faster stupidity.”

Although this seems like a worrying issue to face, organisations can use this as an opportunity to improve AI models by training them on high-quality, uncontaminated data.²⁸ Techniques like Reinforcement Learning from Human Feedback (RLHF) can be applied, which works to refine AI models by aligning outputs with human values and expectations.²⁹

One ship manager we spoke with said there is a huge opportunity here to push for better data governance. “Real, human-generated data is critical to counteract synthetic feedback loops as is strategic implementation, including baby steps with purpose-driven pilot projects to build data maturity and trust. AI models also need to be tailored to maritime as generic models will fail unless based on maritime-specific operational realities.”

A CCO at a technology company we asked said, “The single most important thing the maritime industry needs to do to prepare for AI is to build a robust, high-quality data infrastructure.

AI can only be as effective as the data it learns from. This means standardising data collection across vessels, ensuring accuracy, integrating operational and emissions data, and breaking down silos between departments. With clean, consistent, and comprehensive data, AI can deliver real value, whether in route optimisation, predictive maintenance, regulatory compliance, or energy

efficiency. Without it, even the most advanced AI will struggle to deliver meaningful results.”

Importantly, 69% of survey respondents believe AI can already handle some maritime complexity, suggesting cautious optimism. Model collapse is not inevitable; it is a design risk that can be mitigated through domain-specific data and expert oversight.

Takeaway: Model collapse is a solvable challenge and maritime has the advantage. By using high-quality, real-world operational data, the sector can build stronger, more reliable systems where others may stumble.



REGULATORY UNCERTAINTY

Perceived risk: Stakeholders are unsure about the responsibility, safety and compliance of AI systems misbehave or fail.

Opportunity: Maritime leaders can demonstrate responsible AI tests and pilots, and upskill their workers to help build trust around AI tools.

AI regulations in maritime are currently lacking, and there is significant uncertainty as to who is legally responsible and should be liable in the

27 Economic Times (Jun, 2025) [Are AI models cannibalising their own creations?](#)

28 Feng, Y et al., (Oct, 2024) [Beyond model collapse: Scaling up with synthesised data requires verification](#)

29 Jolt Digest (Mar, 2025) [Model collapse and the right to uncontaminated human-generated data](#)

event of damage caused by an AI recommendation. This uncertainty complicates both legal disputes and insurance claims, as existing policies lag behind AI-driven maritime operations.³⁰

23% of our survey respondents said regulatory non-compliance or legal liability issues are one of the biggest risks of scaling AI today, indicating that this uncertainty is already influencing decisions on whether and how to expand AI adoption.

There is however, an opportunity for maritime professionals to demonstrate leadership in responsible AI use and transparent compliance. This leadership can build trust not only with regulators and insurers, but also with customers, classification societies, and the wider public. Taking clear, proactive steps now may help shape future AI regulation.

Takeaway: Maritime regulation may lag behind AI innovation, but the industry doesn't have to wait. Responsible pilots, clear accountability, and a culture of transparency can build trust before rules are written.

CASE STUDY: HOW ONE VENDOR IS ADDRESSING USER CONCERNS AROUND AI IMPLEMENTATION

Maritime solutions provider Marcura has been introducing AI-driven features into its products for compliance, chartering, and operations. However, as it began integrating AI into these solutions, it encountered the usual reservations from its shipping clients. The company manages AI concerns in the following ways.

Integrating academic and artificial intelligence

Marcura takes a hybrid approach by combining academic intelligence (human expertise and critical thinking) with AI (algorithmic and data-driven tools). This allows them to make AI decisions more contextual, accurate, and aligned with operational realities.

Keeping the human in the loop Marcura's core AI philosophy centres on augmentation over automation. The company focuses on deliberately not aiming to replace human work but to enhance existing workflows. The design principle is that the user is always in charge. For instance, if their AI recommends an improvement, it's presented as a suggestion and the user decides whether to accept or ignore it. The interface allows users to give feedback.

Alignment with industry needs By spending 80% of their time researching what the industry truly needs,³¹ Marcura is focused on a user-centred development approach. This means their AI solutions are tailored to actual workflow needs and pain points.

Context-aware AI deployment Marcura's AI solutions are tailored to align with each customer's existing operational context, rather than enforcing rigid automation frameworks. These systems are purpose-built for maritime applications. For instance, the charter party analysis tool can scan documents in seconds, a task that would typically take hours to complete manually and is prone to human error. In one example, a dry bulk operator avoided potential losses of over \$120,000 by identifying four critical clauses that had been omitted from a draft agreement.³²

Recognising that data privacy is paramount Marcura set up each client's AI environment such that all data and even the AI models fine-tuned on that data are owned by the client. "We operate in dedicated, secure environments," Janani Yagnamurthy, VP Analytics at Marcura explained. Clients' contract data and voyage records for example, are not mixed on a central server; instead, they often reside in a private cloud with strict access.

30 Orca AI (Jul, 2025) [Sailing through legal fog: How regulation lag is stalling maritime automation](#)

31 Marcura (Jun, 2025) [Boosting voyage profitability with AI: smarter port calls & claims](#)

32 The Maritime Executive (Jul, 2025) [Beyond the AI hype: what actually works in maritime operations](#)

ORGANISATIONAL READINESS AND MATURITY

Many maritime organisations have already progressed beyond simple awareness of AI and are experimenting or scaling.

THE MATURITY CURVE

We asked organisations to place themselves on an AI maturity curve, from awareness to experimentation to scaled adoption. The responses clustered around the early-to-mid stages, with some variation by company size, role, and sector.

While 81% of respondents are aware of AI and have experimented with it, running pilot projects,

only 33% have progressed beyond pilots into operational use (the adoption stage) deploying solutions in specific areas, optimising with AI, or scaling. 18% are just exploring AI's potential, often with minimal hands-on experience and some uncertainty about vendor options.

A small percentage (<1%) are unsure about their organisation's place on the AI adoption maturity curve.

DEFINING THE MATURITY CURVE

Organisations typically travel along an AI maturity curve that can be described in stages: **AWARENESS** → **EXPERIMENTATION** → **ADOPTION** → **MATURITY**.



AWARENESS: The organisation is aware of AI's potential, and may have begun conversations about how it might apply to their business.³³ Many maritime firms were at this stage a couple of years ago, discussing AI at conferences, maybe appointing a digital lead to explore ideas, but with no concrete projects yet.



EXPERIMENTATION: In this stage, the company is testing AI on a small scale. Our research found a lot of maritime companies in this phase right now. For example, a bulker operator might be trying out an AI-driven weather routing tool on two ships. This phase is about learning, iteration, and building internal confidence.



ADOPTION: Here, the company moves from a successful pilot to rolling out AI more broadly. This could mean deploying an AI solution across a fleet and integrating the AI into core processes and workflows. Only a smaller subset of maritime players have reached this stage as of now. They are reaping some tangible benefits, like improved decision quality, and are working through challenges of change management and scaling infrastructure.



MATURITY: At this stage, AI is embedded in the organisation's operations and strategy.³⁴ The company likely has internal expertise around AI and a governance framework to manage AI tools responsibly. They continually refine models, add new AI capabilities, and measure value in terms of business outcomes. A mature AI-driven maritime organisation could be one that uses AI in its major processes and has a culture that embraces data-driven continuous improvement.

³³ CISO Global AI Division (May, 2025) [Understanding AI Maturity: Where Are You Today, and Where Do You Want to Be?](#)

³⁴ Ibid

THE RAPID SHIFT IN AI ADOPTION

Historically, new technologies would take 10-15 years to become standard, but today AI systems are moving from pilots to meaningful adoption in just 2-3 years. The maturity curve itself is compressing, from early trial to industry standard in a fraction of the time.

This shortening curve is evident within the maritime industry. Companies are using AI in areas such as navigation automation and cargo operations. But according to Theofano Somaripa, CIO at Newport SA, many smaller and medium-sized ones are not yet ready to fully adopt or scale AI. Our research supports this statement, showing that financial constraints, lack of digital transformation strategies, staff readiness, and concerns over data privacy and transparency are blockers to scaling AI.

One of the reasons for maritime's rapid adoption of AI when historically it has been fairly slow to embrace new technologies, is the increasing pressure for companies to show they are committed to advancing technologies and keeping pace with industry leaders.

Another reason for the accelerated maturity curve is due to vendor relationships. Companies that have used solutions from one vendor may be more inclined to adopt AI enhancements built on top of those foundations. This is because they have not only built trust with that vendor but also because their data is already digitised and adding AI is the next natural step.

Furthermore, vertical AI is building trust and maturity faster. Due to it being built for the industry's specific needs, it delivers faster time-to-value, enabling companies to progress from pilots to deployment more quickly and with greater confidence.

Takeaway: Maritime's maturity curve is shortening, and those with strong vendor partnerships, digital foundations, and industry-specific tools will move fastest.

THE IMPORTANCE OF FORMAL POLICIES

Companies can benefit from an established AI policy that is adhered to in order to assess the proper and improper use of AI. Interestingly, our survey results show that only 11% have a formal policy that is adhered to, while 82% either have some guidance that is not always adhered to or no policy at all.

Even those who are exploring or implementing AI do not have a fully managed policy, suggesting that users are inputting potentially sensitive information into open AI platforms without knowing how that data may be stored, processed or reused.

This presents a critical vulnerability, one that could be mitigated through clear policies, approved tools, and internal education.

Takeaway: Without formal policies, even well-intentioned AI use can introduce risk. Setting clear boundaries early helps protect both people and data.



AI READINESS

Maritime is more AI-ready than it realises due to existing infrastructure and relationships. But there are still significant challenges in adapting AI technologies to existing company structures, which may slow down the adoption process.

The following three key aspects are required for a maritime organisation to be ready to integrate AI.

DATA STRUCTURE, GOVERNANCE AND OWNERSHIP

Internal readiness for AI adoption depends on data structure, governance, and ownership. 32% of survey respondents noted that good data governance and ownership strongly influences their organisation's readiness for AI. Organisations are more likely to adopt AI confidently when assured that their data remains secure, controlled, and a source of competitive advantage.

LEADERSHIP BUY-IN AND CULTURAL TRUST

Leadership and clear communication play a crucial role in shifting attitudes from hesitation to optimism. 57% of respondents cite strong leadership support as having a major influence on their organisation's readiness for AI.

Our research also found that respondents who were highly optimistic about AI use in the maritime industry tended to be at a more experimental stage of AI adoption. This suggests that openness to trying new systems is closely linked to higher AI maturity.

Another important factor is the internal culture of trust. Companies with a blame-heavy environment tend to struggle with AI adoption because employees may fear being held responsible if the AI makes a mistake. In contrast, organisations that encourage testing and learning create a safer space where employees are more willing to engage with AI and build confidence through first-hand experience.

"Put first things first: create a fleet-wide data-governance framework that makes high-quality, standardised, cyber-secure operational data continuously available for AI training and deployment."

CEO of a technology company.

Takeaway: *Trust in leadership, in data, and in organisational culture, is the foundation of AI readiness.*

A COLLABORATION-TO-UNIFICATION MATURITY MODEL

A collaboration-to-unification maturity model refers to a phased model of AI evolution from collaboration mode (early-phase, co-developed systems) to unification mode (industry-wide convergence toward shared standards and practices).³⁵

Shipping companies typically start in collaboration mode where they co-create tools with vendors. This early phase often involves active feedback loops between frontline users and providers, allowing systems to be shaped by real-world knowledge and use cases.

Over time, this evolves into unification mode, where common workflows and standards emerge across the industry. With AI, this journey is compressing, from a decade-long evolution to just a few years.

35 Mulder, W and Meyer-Vitali, A (Sep, 2023) [A maturity model for collaborative agents in human-AI ecosystems](#)

Takeaway: *AI's adoption curve is not just steep, it's compressed. Co-development today helps build industry-wide best practice tomorrow.*

EXPERIMENTATION & SCALING

Our research confirms that the majority (81%) of respondents are testing AI in small-scale pilots, within low-risk workflows or non-core functions. These controlled trials reflect a healthy appetite to explore AI, but also a hesitance to move too fast without proven results.

KEY BLOCKERS TO SCALING

Despite a progressive experimentation landscape, there are some clear blockers to scaling. Our findings show that the main blockers are human rather than technical.

Inadequate skills and training requirements

38% of survey respondents said that skills and training requirements are a huge blocker when scaling AI solutions and only 23% said their organisations have implemented training to build trust in AI among staff. This creates a competence gap that inhibits practical, confident AI use.³⁶

Fear of disruption outweighs the fear of stagnation

Interviews revealed that the fear of disruption outweighs the fear of stagnation. Customers who cannot see a clear ROI are concerned about making investments that fail to deliver measurable improvements.

One operator told us, "We're getting 15–20% efficiency now, what if we lose that?"

Fear of overreliance and loss of human skills

66% of survey respondents said that their biggest worry is that AI will lead to an overreliance, and a decline in human oversight and judgement. An IT project manager at a shipping company said, "We need to ensure the skill level of users remains high to spot and correct hallucinations."

Fear of missing out

There is a group of people driven by "fear of missing out," who may adopt AI too quickly without clear use cases. While they're adopting AI they might not be doing it right to suit their business needs and therefore may feel that the AI has not met its expectations making them hesitant to scale.

Employee pushback

Employees who are not confident in AI may push back and refuse to use it. A 2025 study found that 31% of employees are actively sabotaging their company's AI efforts because it hasn't yet proven its usefulness.³⁷ This holds true in the maritime industry. Maritime experts we spoke with said that those at a higher level who use AI day-to-day and understand how it can assist them are much more likely to engage with it but those who don't understand the benefits are more likely to resist its use. Those that are already overwhelmed with their regular work may not be inclined to start using another tool, especially if they perceive it as extra effort with unclear payoff.

Why do these blockers exist?

When significant changes occur, people need time and support to adapt but too often, training falls short. If AI is viewed as a replacement rather than an enabler, there's little incentive to invest in upskilling the workforce. That's a critical misstep.

36 The Future of Transport (May, 2025) [Bridging the gap: Overcoming the barriers to AI adoption in transport](#)

37 Writer (Mar, 2025) [68% of C-suite say AI adoption has caused division at their company](#)

AI's core value lies in its ability to empower humans; without the necessary skills development, organisations risk undermining adoption and falling short of impact.

Takeaway: *Scaling AI isn't just a technical challenge, it's a human one. Concerns around skills, disruption, and trust must be actively addressed.*

FROM FEAR TO ADOPTION

Organisations may need some assistance to move from fear to adoption and to scale AI successfully. The following steps are useful starting points.

ACKNOWLEDGE THE FEAR

Fear is natural and legitimate, especially in a traditional, high-stakes industry like maritime. But it must be acknowledged. By bringing fears into the open, companies can address them head on and show employees they're not being steamrolled. In addition, a culture of psychological safety is important. People should feel safe to say, "I don't understand this AI" or "I spotted an error here," rather than hiding issues. This transparency allows fears to be surfaced and managed rather than ignored.

TRANSPARENCY IS KEY TO CHANGING THE NARRATIVE

AI can enable a shift from execution to more managerial and decision-making roles, but this is often poorly communicated. Only 17% of survey respondents stated that their organisations have taken steps to be transparent about how AI will make decisions within their organisations.

This leaves many employees feeling uncertain about how AI will impact their work. When companies allow rumours to circulate without addressing concerns, employee perceptions are more likely to become negative. Clarity matters more than control. Even when the full picture isn't known, being upfront builds trust.

Steven Jones, Founder of the Seafarers Happiness Index told us, "It's very hard to be optimistic if you don't know whether you'll have a job or what AI actually translates and means for you. Sometimes there isn't the communication of positive change. People are told there's a tech but there's often no clear or consistent explanation given to the end users, particularly seafarers."

According to The Financial Times, managers need to become possibility catalysers and champion AI.³⁸ Instead of focusing on efficiency and cost, which can imply job cuts, leaders should emphasise capability and career growth. Human leaders have a responsibility to be more intentional and transparent about the implementation of AI,³⁹ and those that do will be more likely to earn active buy-in.

It's important to remember that giving employees access to AI tools doesn't automatically mean they will start using them.⁴⁰ Companies that recognise the way their employees perceive and engage with technology can then implement targeted training and strategies to further increase engagement. If there is a perception of threat in a company, shifting this to an opportunity is critical for scaling.

If people don't understand the value of a new technology, especially in high-stress, high-responsibility environments like ships, they won't use it properly or at all. That failure isn't about the technology itself but about how poorly it's been introduced and explained. Reframing AI as a tool for empowerment, not replacement, is essential to build buy-in and confidence.

³⁸ The Financial Times (Mar, 2025) [Seven AI roles managers must master](#)

³⁹ Quaquebeke, N V and Gerpott, F H (Oct, 2024) [Artificial Intelligence \(AI\) and workplace communication: promises, perils, and recommended policy](#)

⁴⁰ BCG (Apr, 2025) [When companies struggle to adopt AI, CEOs must step up](#)

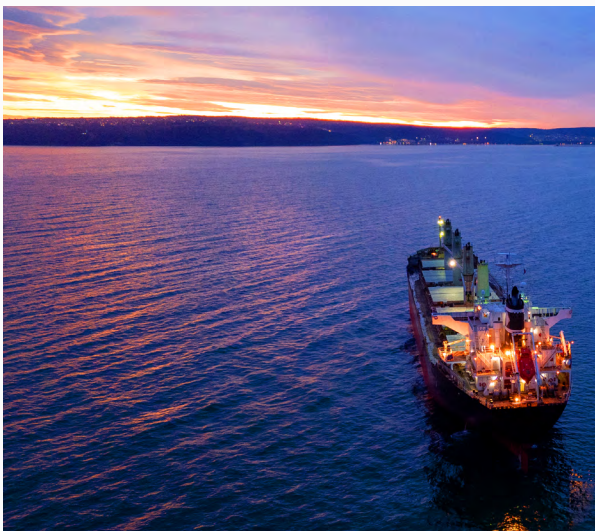
Takeaway: *Transparency and empathy go hand in hand. Honest conversations are the foundation of successful AI adoption.*

IMPLEMENT TECHNOLOGY SAFEGUARDS AND CLEAR POLICIES

On the technical side, organisations should favour AI vendors that offer data localisation, encryption, and operational transparency. Key questions to ask include: Where is the data stored and processed? Who has access? Can we audit the AI's training data?

For example, Marcura provides clients with a full audit trail and ensures data is compartmentalised. M2Intelligence, a maritime AI-based technology company, takes a similar approach. As Thomas Asproudis, Head of Innovation explained, "M2Intelligence does not own any of our clients' data. We literally log out and have no access to our clients' vessels or data." Such practices help reassure users and build trust.

On the policy side, companies must educate employees. Policies should be paired with approved tools, for example, a secure, vetted internal AI assistant. This ensures that staff can still benefit from AI without turning to insecure tools.



In maritime, when users see that they own and control their data at every step, a major barrier to adoption disappears. This is a core advantage of maritime-specific AI providers who understand that confidentiality in shipping is key and design their solutions accordingly, unlike many general-purpose big tech platforms, which may rely on different business models around data usage.

Takeaway: *Technical safeguards build confidence, but only when combined with education, control, and the right tools.*

EMBED AI INTO EXISTING SYSTEMS

Our research found that 41% of participants prefer AI to be embedded AI into systems already in use, while 33% say a mix of both integrated and standalone systems works best.

Solutions that are delivered as augmentative layers rather allow users to integrate as they wish or replace if that's what works best for them.

Takeaway: *Embedding AI within familiar tools smooths adoption and reduces resistance, especially when users feel in control of the experience.*

HUMAN-IN-THE-LOOP AI

A human should always be kept in the loop in AI decision making. One CEO of a technology company said, "We must realise AI is a black box that cannot make strategic decisions. Use it as support to enhance humans' life, efficiency and decisions."

Our research shows that there is a huge demand for critical judgment to remain with humans. Agentic AI frameworks allow humans to verify, correct, and guide AI decisions, especially in edge cases. Real-world decisions, such as whether to accept a clause, still lie with people. AI supports but doesn't override them.



"We need extremely skilled, practical, well-rounded and experienced humans behind AI".

CEO of a technology company.

Takeaway: AI adoption rises when people feel empowered, not replaced. Keeping a human in the loop helps maintain confidence and oversight.

THE NETWORK EFFECT

Adoption tends to accelerate when organisations observe peer adoption and successful use cases within their industry. 40% of respondents said that proven use cases and success stories would make them more confident in moving from experimentation to scaled adoption of AI.

A Master Mariner with more than 21 years of experience noted that companies like Maersk that have been transparent about their adoption of AI will encourage others to follow suit.

To support this peer learning, some companies designate AI ambassadors, individuals who share hands-on experience and practical advice, helping to embed new behaviours.

Additionally, some companies form cross-functional AI ambassador teams that rotate through vessels or offices to provide peer-to-peer education and encouragement. Using established networks within the maritime community helps build trust and acceptance. Inviting testimonials from industry events also motivates adoption. For example, hearing at a conference that a competitor successfully reduced bunker costs by 5% using AI can encourage organisations to overcome internal doubts and scale similar solutions.

One maritime learning, assessment and strategy leader at a technology company noted, "I don't believe you can prepare a global industry ... or tell it what it needs to do as it does not function as one industry, being multi-layered, international and multi-sector. You can only work with companies, groups, governments and sectors. To that end, the industry is likely to do what it always does: watch the early adopters, gain evidence, assess vendors and ROI, make mistakes, train people, hire specialists, set up IT projects, run conferences and write articles about it, learn from others... and gradually uptake will become normalised. If AI vendors want to promote their products' benefits, it is the same process as any other value driven solution selling approach I guess."

CONCLUSION

AI in maritime is certainly gaining momentum but caution, confusion, and uneven maturity are still holding the sector back. The majority (82%) view AI as beneficial for improving efficiency and reducing manual workloads, and 81% have already begun experimenting with pilot projects to embed AI into their workflows.

But the timeline for AI adoption is no longer slow and steady. What once took a decade now unfolds in just a few years. Maritime organisations must now build trust, capability, and governance in parallel or risk being left behind as the curve steepens.

Despite this momentum, some fear and uncertainty remain about the changes AI could bring. This is unsurprising given the rapid pace of AI advancements. The research reveals that much of this fear stems from human rather than technical barriers. It's clear that perceptions of AI are shaped by feelings of agency, trust, and value. If individuals feel that adopting AI will enable them to act more effectively, trust them to exercise judgment, and recognise the value of their expertise, they tend to view AI positively. On the other hand, if they feel AI will strip away control, diminish their role, or undervalue their judgment, their perception steers towards the negative side.

Some concerns such as data privacy and cybersecurity are very real, with 61% citing these as major risks to AI implementation in maritime operations. Organisations need robust data governance and ownership frameworks before feeling ready to fully roll out AI solutions. High-quality data is also essential for successful scaling.

Other concerns are more nuanced. Worries about job displacement frequently surfaced during the survey and interview process. These fears often stem from unclear implementation plans and a lack of education, transparency, or visible leadership.

46% of respondents feel that training and education around AI's role are key to building trust in AI among staff and leadership. Another 38% said that skills and training requirements are the biggest blockers preventing their organisation from

scaling AI solutions. Training is often lacking in the maritime industry, which in turn can lead potential users to fear it. Rather than viewing AI as a tool for enhancement, some may see it as a replacement for human roles. This perception can lead to reluctance to engage with AI or to its improper use, ultimately preventing an organisation from realising the full benefits of its investment. Upskilling employees is therefore critical to achieving the desired ROI from AI initiatives.

Furthermore, while 70% of respondents believe AI should recommend actions with humans making the final decisions, organisations must prioritise delivering human-in-the-loop systems with clear oversight to cement this trust.

The research also uncovered some concern about AI's ability to comprehend the complex nuances of maritime and shipping operations. 69% are somewhat confident that AI can understand and handle the specific nuances of maritime contracts, workflows, or operational requirements, but feel that more work is needed. This reinforces the need for vertical AI solutions trained on maritime data. Tools that understand contract nuances, voyage planning intricacies, and operational context are far more likely to succeed than generic platforms.

Ultimately, the more we view and treat AI as a supportive partner, one that respects the experience and good judgment of people, the more likely it is to be welcomed and accepted. This attitude is key to making the most of AI's benefits while safeguarding trust, safety, and efficiency in the maritime industry.

The opportunity now is to act with intention: to lead AI adoption in a way that is trustworthy, transparent, and built for maritime, not borrowed from elsewhere.

RECOMMENDATIONS

Through this research, we have identified several key points to help the maritime industry balance general AI guidance with industry-specific needs. The following recommendations aim to ensure that solutions are trusted, effectively integrated, and embraced by maritime stakeholders today.

01 INVEST IN AI TOOLS BUILT SPECIFICALLY FOR MARITIME

AI tools need to be able to understand specific maritime nuances.

Generic AI may assist with routine automation, but it often fails to interpret the contractual, operational, and contextual subtleties that define maritime work. Tools trained specifically on sector data and workflows, such as charter party clause analysis or regulatory flagging, are far more likely to deliver meaningful value.

If you are an end user, prioritise AI tools and platforms that are designed and trained for maritime operations. If you are a solutions provider, there is an opportunity to show how your solutions go above generic AI and meet maritime-specific needs.

02 FOSTER AGENCY AND DISCERNMENT

Organisations should invest in training programs that enhance employees' agency and discernment to navigate the AI landscape effectively.

Employees need comprehensive training programs that help them to understand, assess, and effectively use AI tools, especially if they haven't had a chance to engage much with AI previously. Leaders need to demonstrate to their employees how AI is a co-pilot, not a new member of staff.

03 KEEP THE HUMAN IN THE LOOP TO HARNESS TRUST

Trust in AI is built when people understand its purpose and see its value in action. Human oversight is critical for users to assess the potential benefits of AI and feel confident in applying it safely and effectively. AI projects need a clear purpose and leadership.

Where trust is low, start with decision-support tools that keep humans firmly in charge. Systems that allow experts to audit, override, or question AI outputs help preserve professional judgement, and confidence.

AI tools should assist and guide those with advanced knowledge and experience to make decisions more efficiently, rather than making decisions autonomously.

04 ENGAGE WITH EMOTIONS, NOT JUST SYSTEMS

AI adoption is not just a technical process; it's an emotional journey. Excitement, resistance, or anxiety can vary by department, seniority, or role, and these emotional responses directly affect behaviour.

Identify where resistance is highest and tailor engagement and training accordingly. The most successful adoption strategies prioritise empathy as much as efficiency.

Acknowledge fear, reward curiosity, and create space for people to express uncertainty without stigma.

05 IMPLEMENT GOVERNANCE FRAMEWORKS

Organisations must establish governance frameworks to manage AI tools effectively, ensuring compliance with data policies and ethical standards.

These frameworks should cover not only compliance, but also transparency, auditability, and internal accountability. Governance is not just about risk; it's about enabling safe and confident use. Clear policies give both leaders and employees confidence that AI solutions operate transparently and responsibly.

06 DEMAND TRANSPARENCY AND REAL-WORLD IMPACT FROM VENDORS

AI should be applied to address genuine operational challenges rather than simply following industry trends. If you are a shipping company looking to invest in AI, avoid being distracted by vendor hype or adopting AI technologies that are not genuinely beneficial to your specific business needs.

"Maritime technology may not yet be where we want it to be, but when you have a partner who listens, explains, and evolves with you, it becomes the closest thing to true collaboration, and that's what makes the difference."

Ha Eun Ruppelt, Maritime Transformation Advisor.

Urge your vendors to provide full transparency and maintain an open dialogue, especially when dealing with complex data.

Avoid being swayed by industry hype and insist on detailed explanations from technology providers about their AI's capabilities, training data, and operational limitations.

Focus on solutions proven to address actual operational challenges, deliver measurable value, and respect data privacy.

07 ENCOURAGE EXPERIMENTATION

Promote a culture of creativity and innovation by allowing employees to experiment with AI tools while ensuring they understand the ethical implications. Employees need time to experiment with AI solutions without the fear that mistakes will be held against them.

Those that will be using the tools need to be creators, not just consumers.

Encourage feedback loops between frontline teams and technology owners. If tools aren't delivering value, treat that as an opportunity to refine, not a failure to adopt.

Structured experimentation in safe environments allows both trust and utility to grow over time.



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