Deloitte.

AI in Maritime Operations: Successful Adoption and Risk Management Strategies

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AI augmentation has created **$4.7 trillion of business value** by 2024 – Gartner

WHY NOW?

Access to infrastructure, speed, and scale like never before…

Massive datasets in a variety of mediums generated by a connected world…

Wide availability of sophisticated AI technologies that can be combined to create innovative solutions…

WEF in DAVOS IN 2025 FOCUSED ON AI AND ITS TRANSFORMATIVE NATURE

WORLD ECONOMIC FORUM

AI enables businesses to achieve greater value creation opportunities

Speed to Execution: Apply AI to accelerate time to operational and business results by minimizing latency

Cost Reduction: Apply AI to intelligently automate business processes, tasks and interactions to reduce cost, increase efficiency and ensure predictability

Reduced Complexity: Apply AI to improve understanding and decision making by deciphering patterns, connecting dots, and predicting outcomes from increasingly complex sources

Transformed Engagement: Apply AI change to change how humans interact with smart systems expanding means of engagement via voice, vision, text and touch

Fueled Innovation: Apply AI to generate deep insights on “where to play?” and “how to win?” enabling the creation of new products, market opportunities and business models

Fortified Trust: Apply AI to secure one’s brand from risks such as fraud, waste, abuse and cyber intrusion consequently assuring stakeholders and enhancing trust amongst customers

AI is set to revolutionize operations, sustainability and resilience in the maritime industry

Predictive Maintenance

Safety and Emergency Response

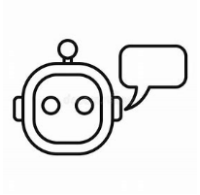
Energy Efficiency and Environmental Compliance

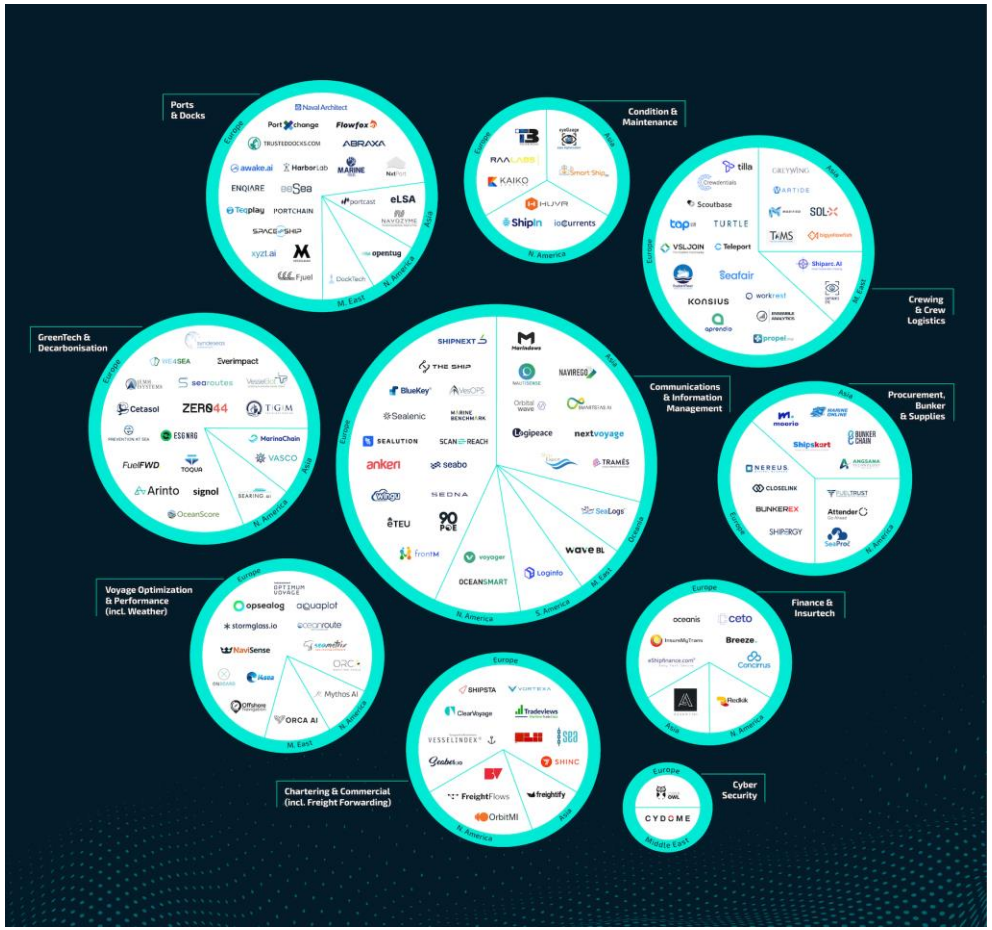
Crewing and Crew Logistics

Supply Chain Management

Autonomous Navigation

Generative AI for streamlined admin operations



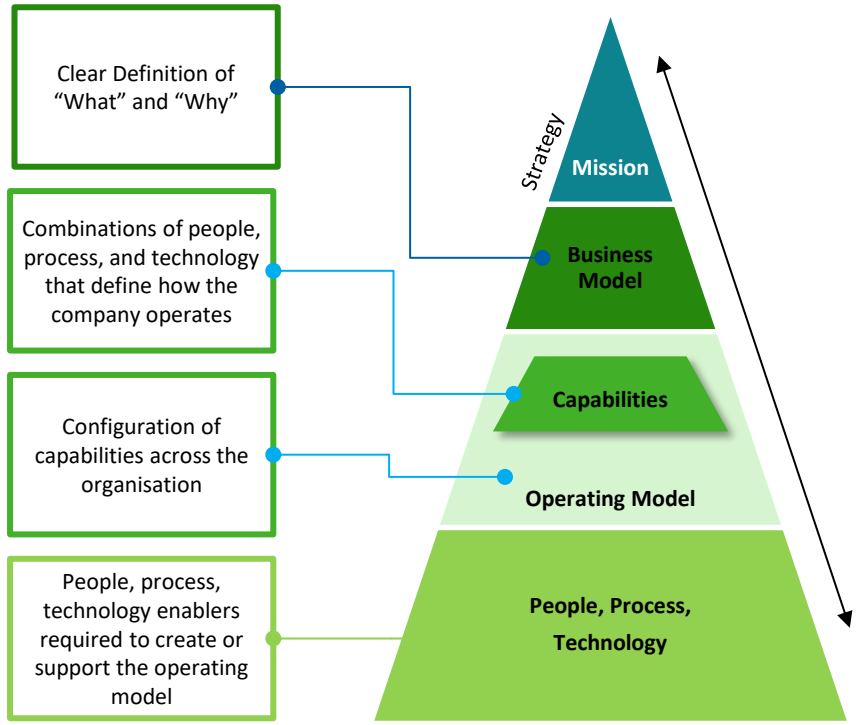


Global Maritime Tech Startup Map 2024

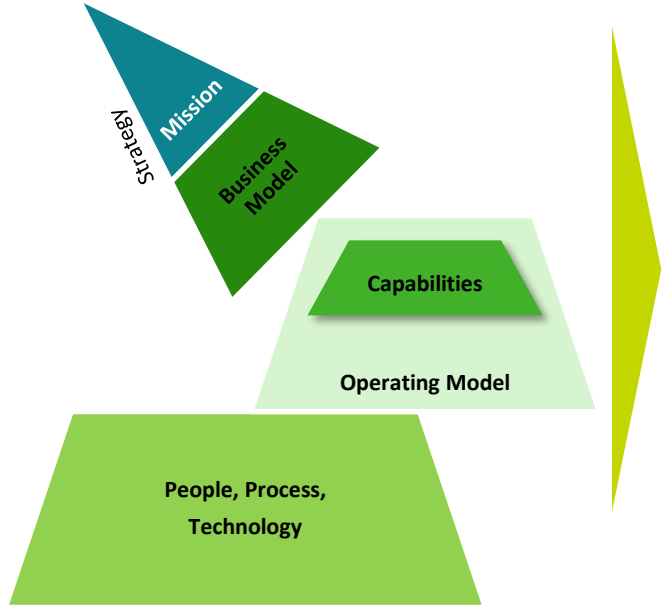
AI in maritime- Capital Link 2025
https://www.flagshipfounders.com/startup-maps/startup-map-2024

Adopting AI starts with a clear strategy for the benefits to be achieved

The optimal business continuum



Unstable business pyramid



Business outcomes

- Failure to achieve tangible and intangible targets
- Siloed decision making and project execution
- Multiple projects aimed at achieving same outcome resulting in poor capex spend
- Multiple operating structures that lead to business confusion

Need for Ethical Considerations in AI

FAIRNESS	TRANSPARENCY / EXPLAINABILITY	ROBUSTNESS	ACCOUNTABILITY	SECURITY
How can these be identified proactively and treated to avoid institutionalizing and perpetuating existing bias?	How do we trust the outcomes of a system if we are unable to trace the steps that led to it?	How do we ensure that our model would given consistent predictions for smooth function of the overall system?	Who then takes responsibility for unintentional adverse outputs of an AI system?	.How do we protect our AI systems from unauthorized changes and attacks ?

Amazon scraps secret AI recruiting tool that showed bias against women

By Jeffrey Dastin

8 MIN READ

Tech Times

[Tern AI Develops Low-Cost GPS Alternative Amid Growing Security Concerns](#)

Tern AI wants to offer a low-cost navigation alternative to reduce dependence on GPS, which is crucial for various systems of our modern...

Ch16 Maritime Risk Intelligence

[Experts Warn of Dangers as Shipping Adopts AI Systems](#)

The rapid expansion of artificial intelligence (AI) faces major stumbling blocks in shipping, where more than 80% of large vessels barely have...

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The AI Act in a nutshell

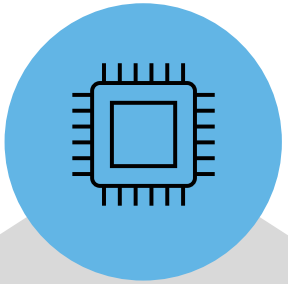
Classification of AI systems according to their risk

Prohibited Artificial Intelligence Systems

It is **prohibited** the use of **AI systems aimed at:**

- **Manipulate** human behavior, opinions, and decisions.
- **Classify** people based on their social behavior.
- **Identify** in a **Biometric**, massive at a distance and in real time, with certain exceptions.

Example: **Social scoring used for hiring**

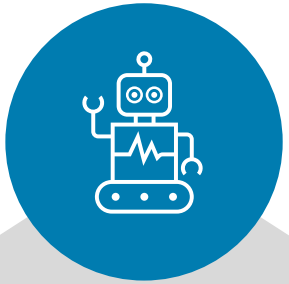


High-Risk Artificial Intelligence Systems (HRAIS)

The **AI systems** which can lead to a **significant risk** for health, safety or fundamental rights, for example:

- Recruitment and promotion.
- Access to credit and insurance.
- Biometric identification (except for mere user identification and prohibited practices).
- Other products already regulated by harmonized standards (medical devices, lifts, autonomous vehicles, etc.).

Example: **Autonomous Vessels**



AI Systems with transparency obligations

Permitted but with information/transparency obligations

- Interaction with humans.
- Use for emotion recognition.
- Categorizations based on biometric data.
- The generation of manipulated content.

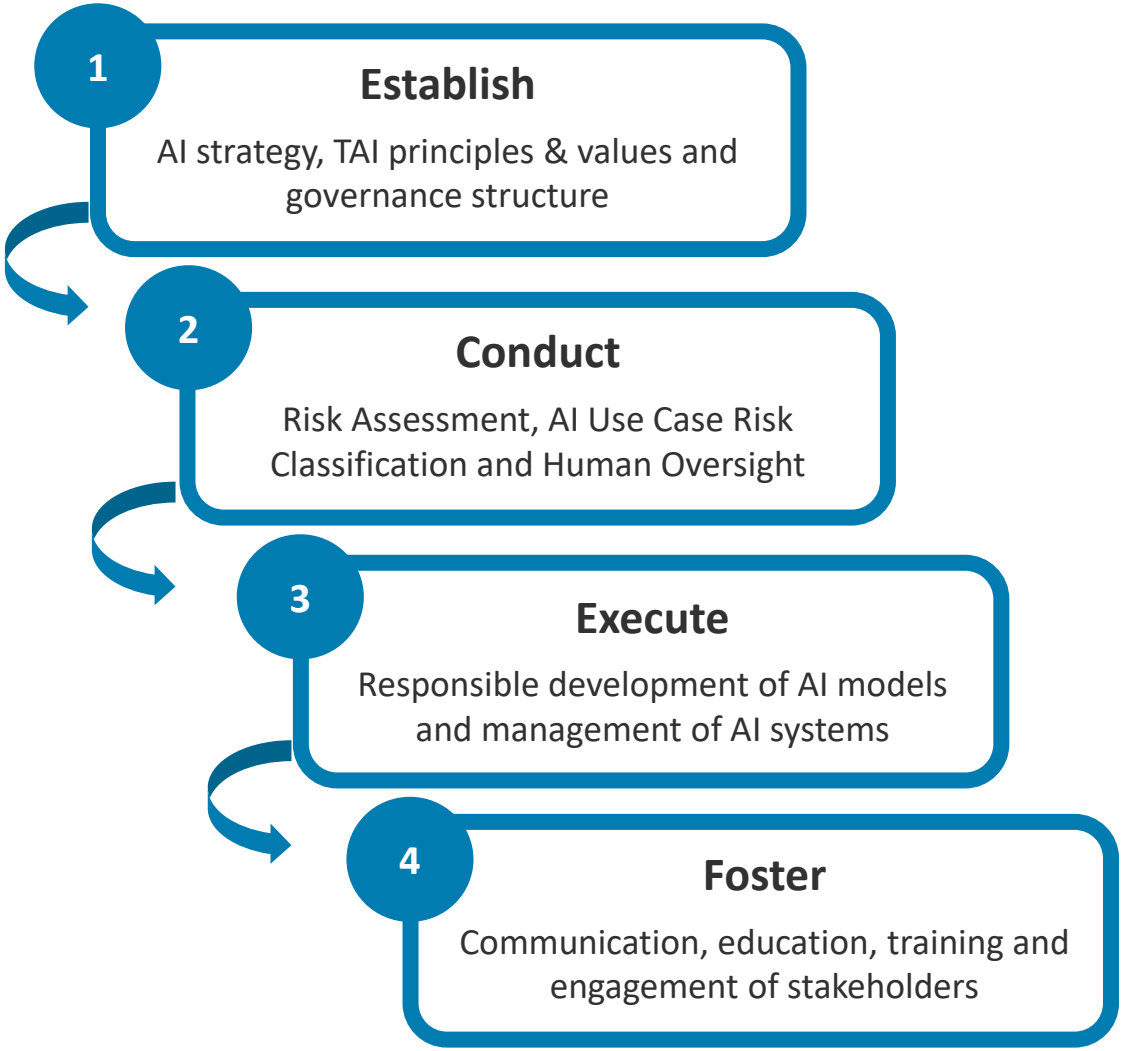
Example: **Chatbots**

Artificial Intelligence systems with Non-Existing or Minimum Risk

Permitted without Restrictions.

Example: **Predictive maintenance**

Journey to Responsible and Trustworthy AI adoption



> **This next generation of AI will reshape every software category and every business, including our own. Although this new era promises great opportunity, it demands even greater responsibility from companies like ours.**
>
> **Satya Nadella**

Deloitte.

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