OCEAN ENTERPRISE INITIATIVE

MTS marine technology society

Ocean Enterprise Initiative

GOOS Global Ocean Observing System

Overview and Updates from the Ocean Biodiversity TechSurge

NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

IOOS Integrated Ocean Observing System

oceanenterprise.com

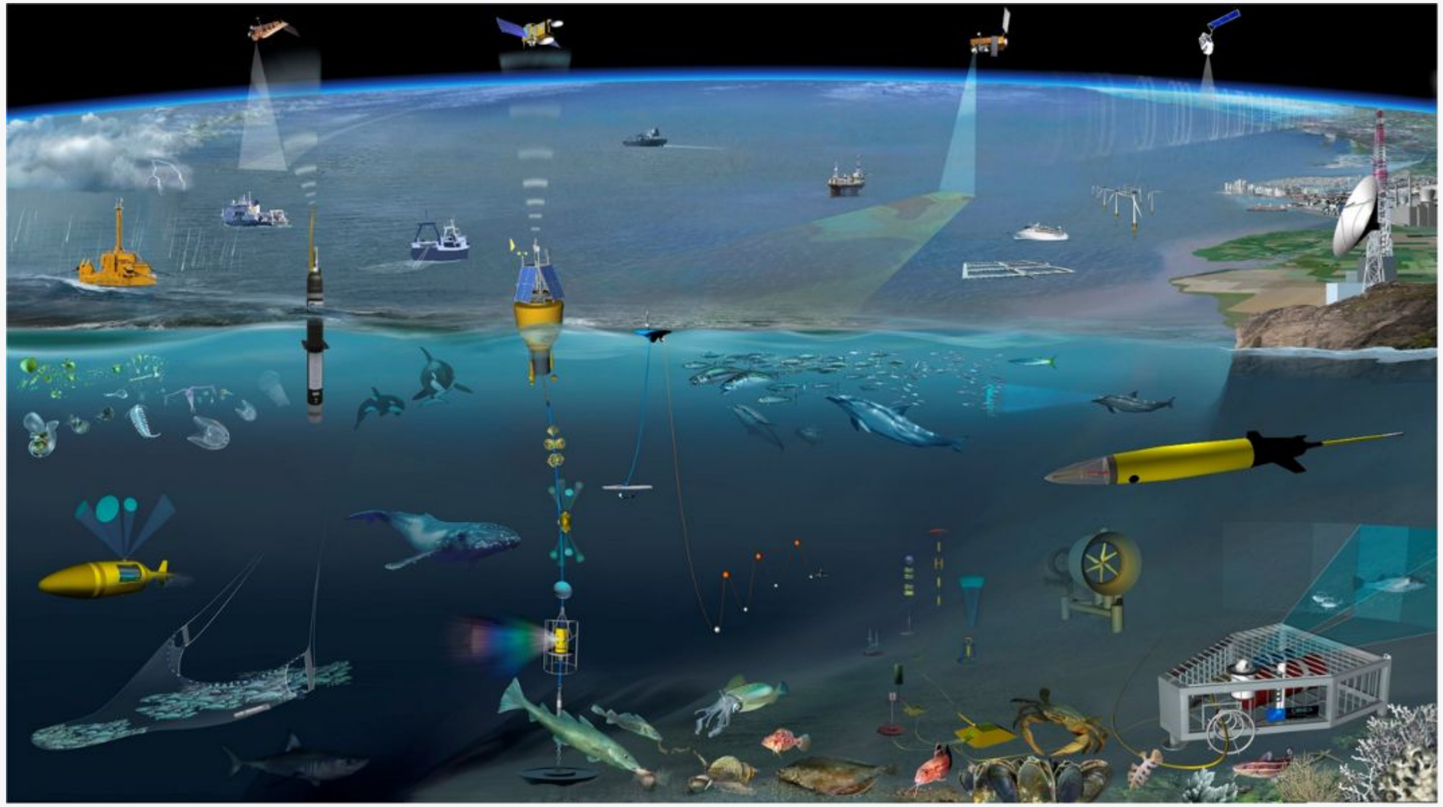
What is the Ocean Enterprise?

Nested component of the ocean economy within the realm of maritime monitoring

Private, public, and academic sectors

Engaged in:

- Providing observation infrastructure and capacity for ocean observation
- Measurement
- Forecasting
- Delivering operational information services



(source: Glynn Gorick and the NeXOS project)

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What is the Ocean Enterprise Initiative?

- Globally inclusive forum
- Public-private partnerships
- Understand market opportunities
- Incentivize ocean solution innovation
- Facilitate data and information exchange
- Develop a workforce

Expansion of the signature program ***Dialogues with Industry***, launched in 2022 by MTS, GOOS, NOAA, Kongsberg Discovery and L3Harris.

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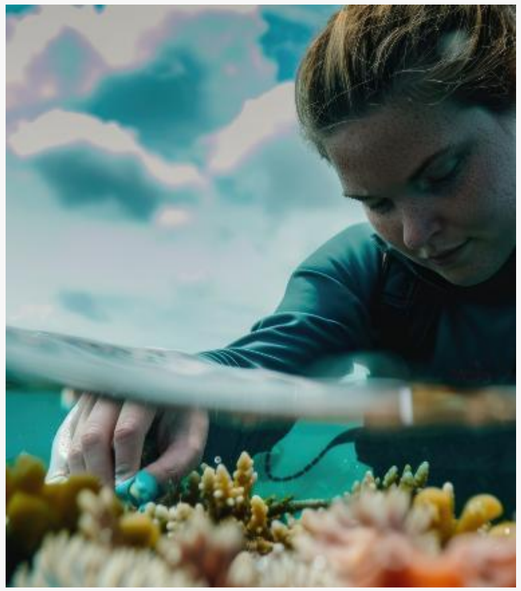
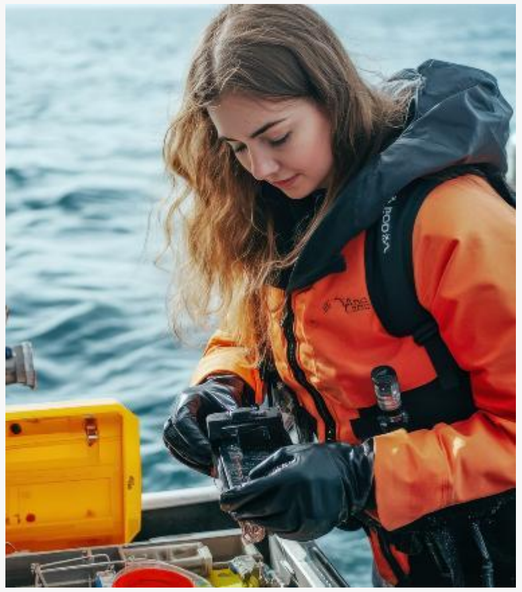
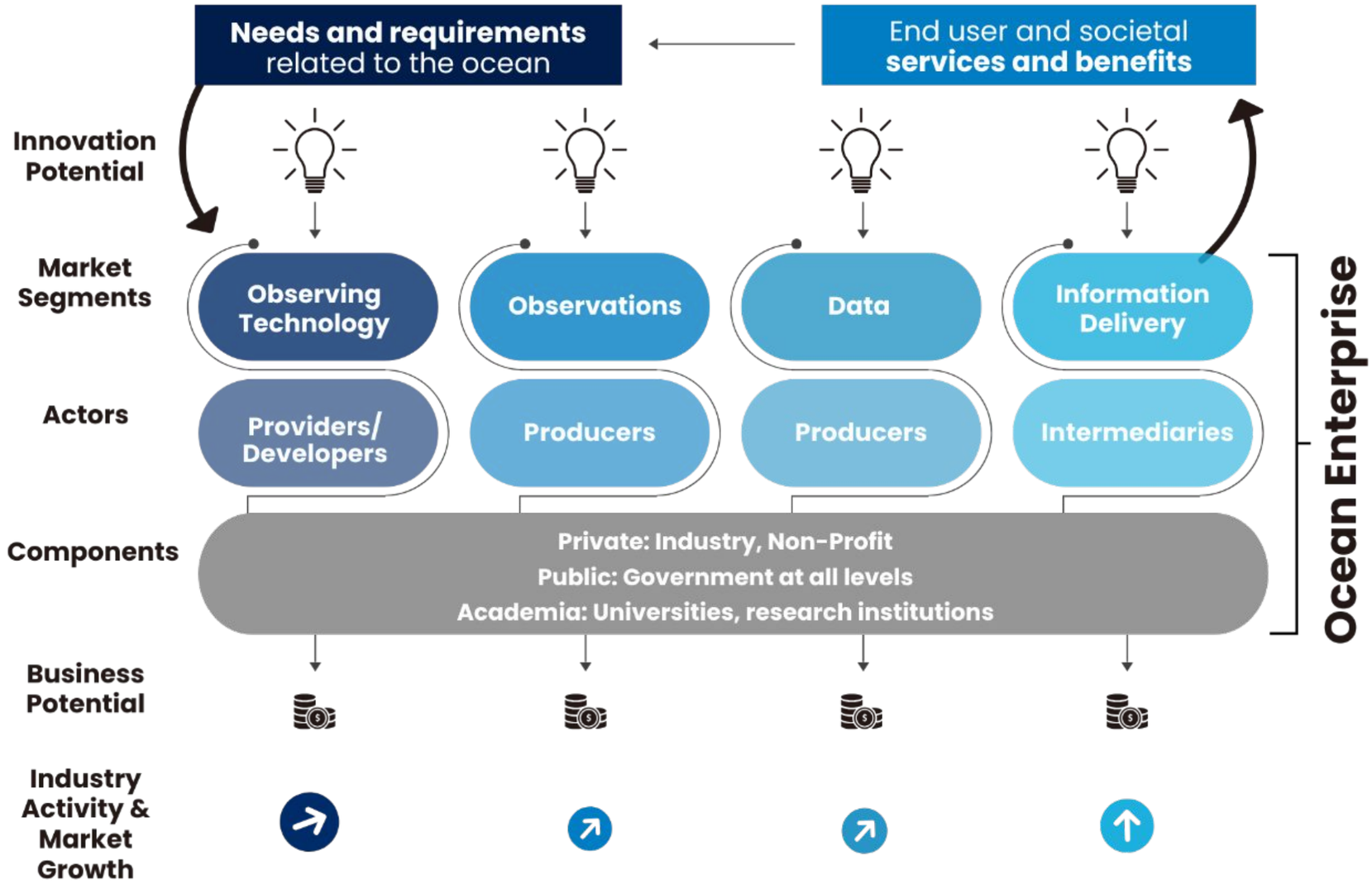




Ocean Observing Value Chain



Graphic from Dialogues with Industry Roadmap

- Framework to visualize the Ocean Enterprise
- Interconnected components and activities
- Blue discs visualize ethe current level of industry involvement – current relative market size
- Arrows indicate our estimate of private industry growth

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OCEAN BIODIVERSITY TECHSURGE

Implementing the US Ocean Biodiversity Strategy and Related Global Efforts Towards a Sustainable Ocean Economy

OCTOBER 1 – 2, 2024

INNER HARBOR | BALTIMORE, MARYLAND

ORGANIZING PARTNERS:

Ocean Biodiversity TechSurge Objectives

- **Cross-sector Coordination:** Supports national and global ocean biodiversity initiatives.
- **Discussed:** The technology community's role in the U.S. National Ocean Biodiversity Strategy.
- **Opportunities:** Co-design possibilities among industry, scientists, government, and NGOs.
- **Analyzed:** Interdependencies of market needs, policy, and technology, with recommendations for future blue economy initiatives.
- **Demographics:** 40% for-profit, 25% government, 20% non-profit, 10% academia, 5% intergovernmental.
- **Unique:** Involvement of the financial sector.

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Ocean Biodiversity TechSurge Keynote Overview

Day 1: Benefits of a Globally Scaled Ocean Biodiversity Knowledge Network

…Conserving America's biodiversity will require sector representatives to work at the intersection of conservation, innovation, technology, finance, climatology, and social science, among others. Engaging the technology community and sharing data are key…

Day 2: Powering Solutions: Advancing Ocean Biodiversity Technologies for Applications from Finance to Conservation

- …industry and the private sector crucial in identifying who the customer is for these technologies and generating markets. "insetting" in agriculture…
- Venture capital, in particular new small funds, need to show traction in their investments and receive a strong signal of a customer's willingness to pay to grow…

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Panel Take Aways

Topic 1: The Importance of Biodiversity

1. Biodiversity is crucial for our culture and a sustainable Blue economy, yet its significance is overlooked.
2. “Disruptive” Technology is needed to transform data value chains, production processes, and stakeholder interactions.
3. New financing tools like blue bonds and credit markets are emerging.

Topic 2: Demand Aggregation

1. Set measurable actions and biodiversity outcomes to ensure accountability and effectiveness.
2. Emphasize the need for cost-effective technologies to bridge knowledge gaps.
3. There is a market opportunity for innovative technologies and processes to tackle complexity, time limitations, scalability, and data management.

Topic 3: Technology and Data Innovations

1. Innovation is essential for effective public-private partnerships and co-design.
2. Strategies for mitigating risks in start-ups, emphasizing phased investments, regulatory sandboxes, and pilot integration.
3. Advanced sensors and data analysis will create opportunities in the Blue Economy, aligning conservation efforts with economic growth.

Topic 4: Financial Tools

1. Science helps address questions that promote market development and enable investors to support scalable solutions.
2. Diversifying financial options includes private capital, blended finance, insetting, parametric insurance, and blue bonds.
3. Transitioning from traditional investments focused solely on risk and return to impact investments that balance impact with financial return.

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Encourage technological innovation and the integration of various sensors and platforms to enhance informed decision-making regarding ocean usage that impacts or promotes changes in biodiversity

Multi-Sensor Approaches Combining Multiple Sensors and Platforms

- Link bio-acoustics, imagery, environmental DNA (eDNA), remote sensing, and traditional species and environmental observing techniques

Remote Sensing

- NASA PACE mission, provide invaluable large-scale monitoring capabilities.

Autonomous Systems

- Offer great potential for biodiversity monitoring, especially in hard-to-reach areas.

AI & Machine Learning

- Hold potential to transform data analysis, and to expand species identification and data availability from new or existing datasets

Interoperability in observations, monitoring results, data, and assessments among private organizations, research, and government sectors.

- Adoption across sectors of globally agreed data standards for ocean biology and biodiversity information

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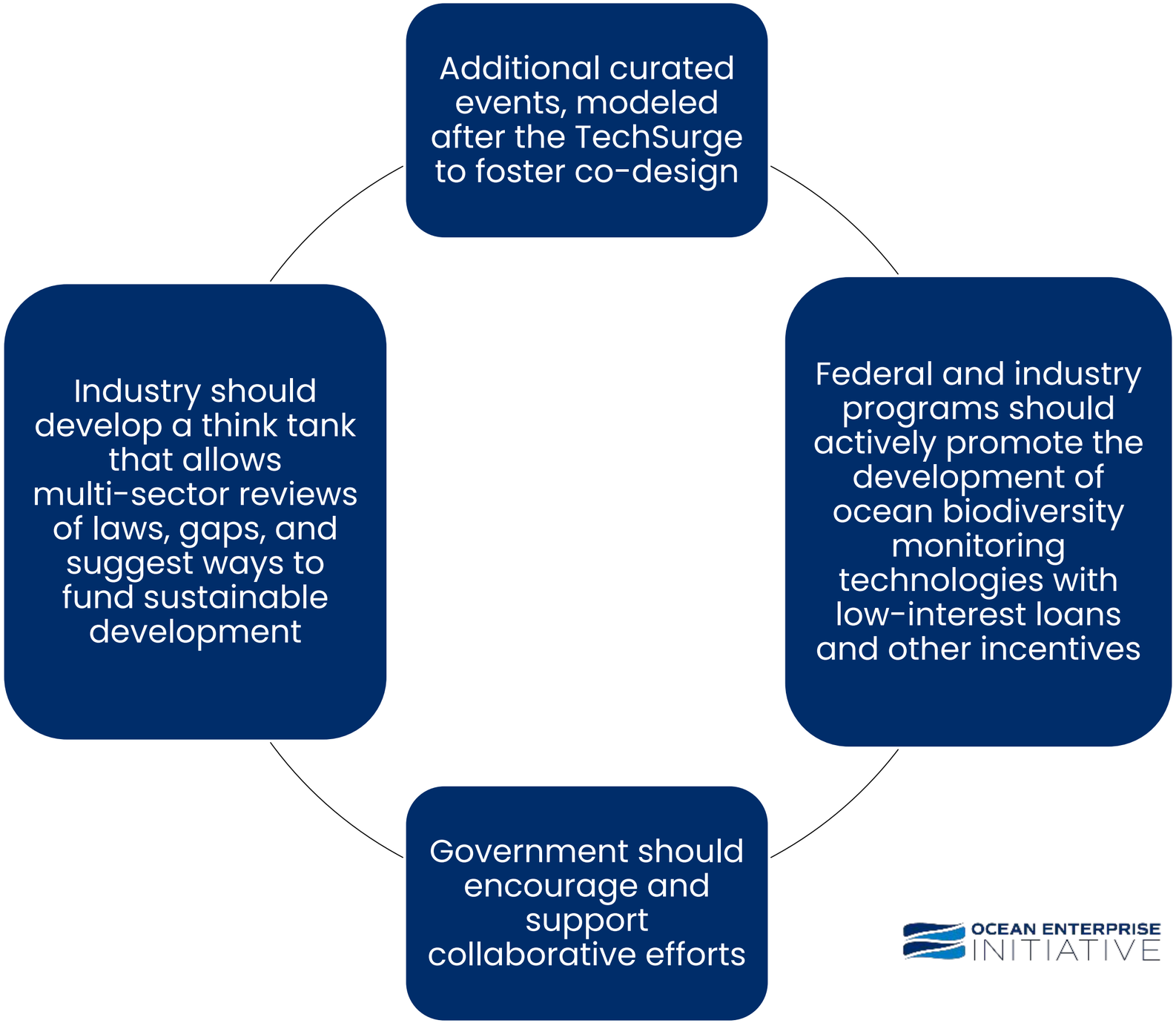
Potential Action Pathways



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Dialogues with Industry Foundation

Series List	**Format**	**Outcomes**	**Participants** *(20-25 individuals by invitation)*	**Observers** *(Open to all)*
• Initial *Dialogues with Industry*: Ocean Observing • Second *Dialogue* series: HAB • Third *Dialogue* series: upcoming Sensing Technologies	• 3 session; 2.5 hours long • Moderated and curated • Based on case studies and questions	• Background Report • Post Dialogue Reports • Summary Report with Action Pathways	• Hand-selected subject matter experts – industry/non-profit to make up 60% • Actively contribute during session • Review and provide feedback on pre-meeting materials • Review post-dialogue summary and insights	• Participate via chat throughout the session Join a live, facilitated group dialogue in the final 30 minutes • Help amplify the dialogue by sharing with your networks

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Dialogues with Industry

Inaugural Dialogues Series 2022-2023

Read the Full Roadmap

Key Takeaways

- Ocean observing and services not seen as an independent market
- Articulating market size will help drive investment
- Aggregation of demand a barrier to Ocean Enterprise
- Ocean observing can de-risk blue investment
- Perception change needed from being peripheral to essential
- Data as a service – a paradigm shift

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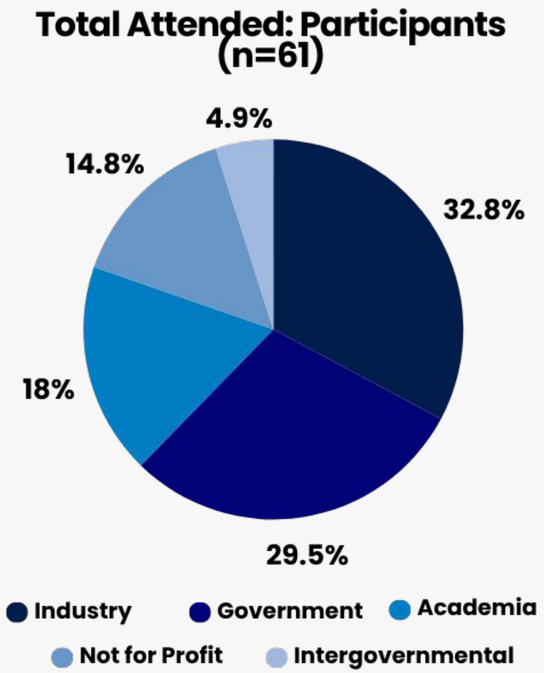
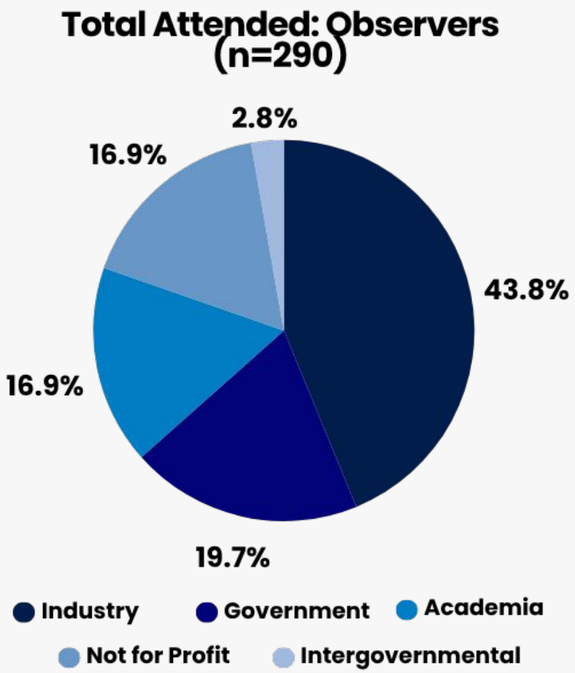
Dialogues with Industry
Harmful Algae Blooms (HABs)

Instrument Provisioning
User-Driven Ocean Information
Advancing Control Technologies

Dialogues with Industry - HABS

Demographics





Geography – 21 countries

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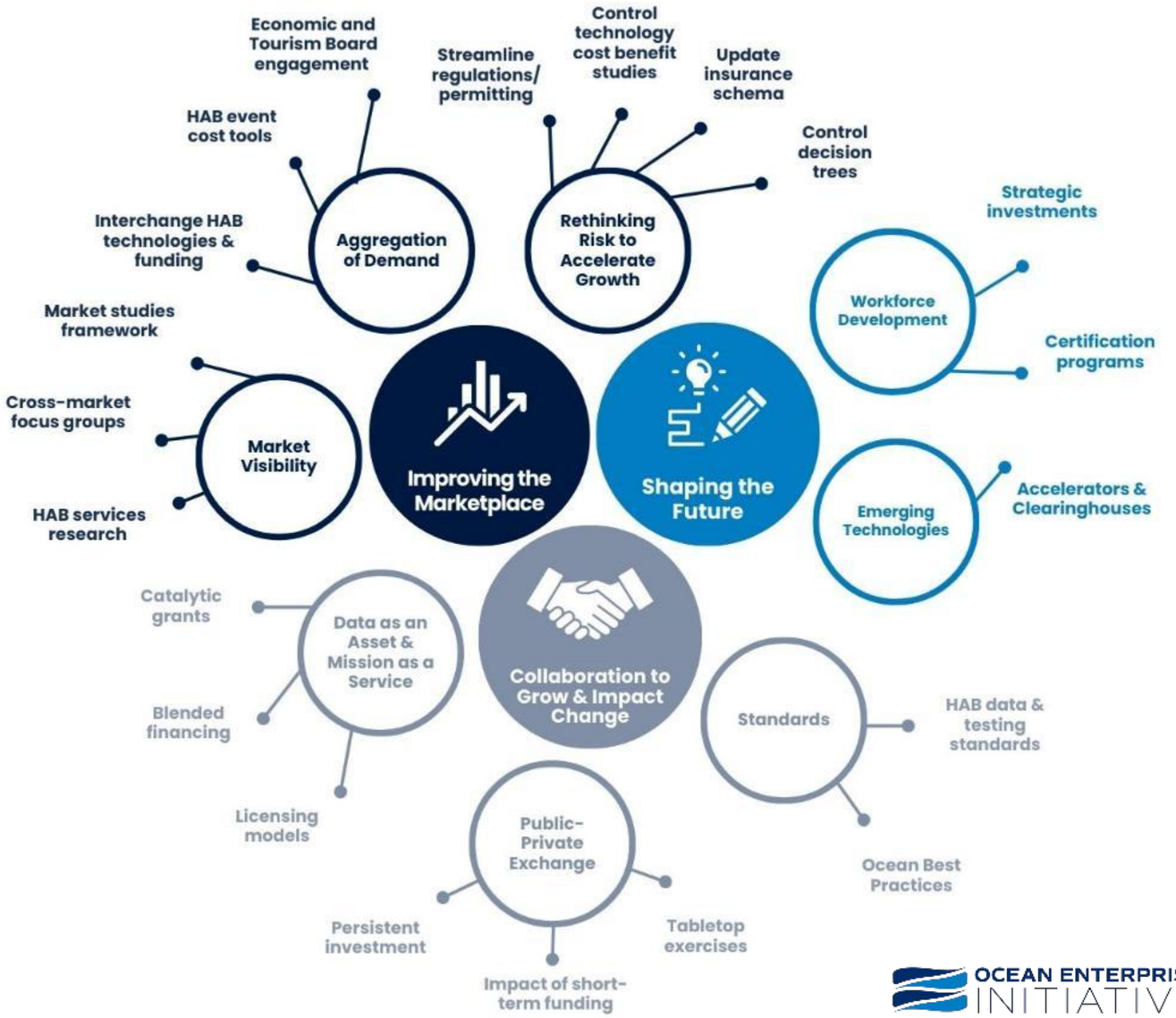
Dialogues With Industry
Roadmap Structure – HABs

21 High Priority Action Pathways

Addressing 8 Challenges

Focused on 3 Priority Areas



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Dialogues with Industry
Sensing Technology: Future Challenges & Opportunities

Upcoming Dialogue

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MTS PROFESSIONAL COMMITTEES

Advancing Marine Technology Through Thought Leadership

MTS
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WHO WE ARE

A global convener of the marine technology community

Founded in 1963 as an international professional society

Members: Engineers, scientists, technicians, policymakers, and educators

Key Focus Areas: Innovation, workforce development, and advancing the blue economy

KEY PROGRAMS

- **Ocean Enterprise Initiative -** Supporting ocean industry growth
- **Ocean Exchange –** Accelerating solutions for a sustainable blue economy
- **MATE ROV Competition -** Inspiring the next generation of marine technologists
- **Marine Technology Microcredentials -** Building career pathways
- **MTS EMERGE Program -** Mentorship for early career professionals & students
- **Sections & Committees -** Tailored engagement based on region & topical focus

PROFESSIONAL COMMITTEES

MTS Committees serve as a vehicle for members to act as experts and thought leaders — developing, reviewing, and sharing the technologies driving marine industries and influencing ocean policy.

Professional Committees :

- Bio-Inspired Marine Systems
- Buoy Technology
- Deepwater Field Development Tech
- Diving
- Dynamic Positioning
- Marine Education
- Environmental DNA (eDNA) Technology
- Marine Materials
- Marine Mineral Resources
- Ocean Exploration
- Offshore Renewable Energy
- Physical Oceanography & Meteorology
- Remotely Operated Vehicles (ROVs)
- Submarine
- Underwater Imaging
- Uncrewed Maritime Systems




PROFESSIONAL COMMITTEES GOALS

- Provide a menu of options for knowledge sharing among members

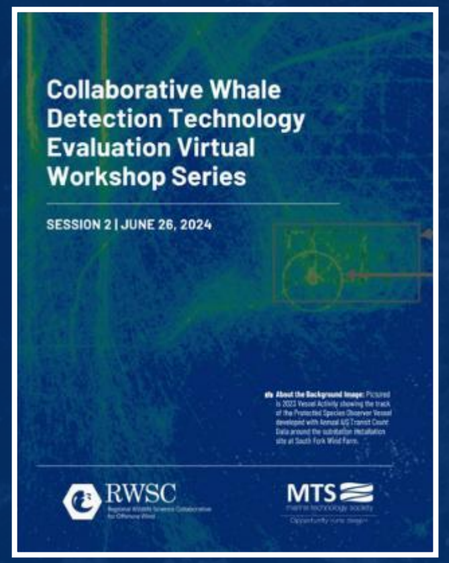
- Create and develop programs and activities that provoke thought, disseminate information and further the understanding of marine technology, education, and/or policy

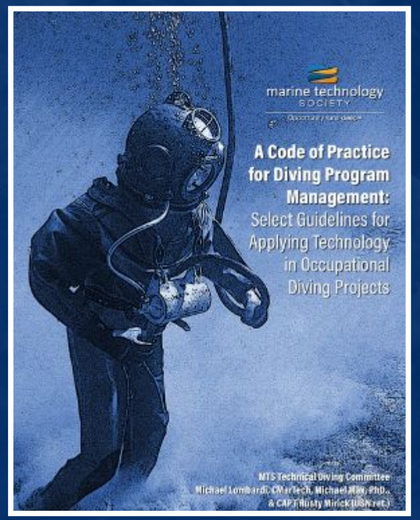
- Provide high-quality scientific, engineering, and/or industry best practices in publications, convenings, and other engagement mechanisms

- Create platforms for the development and enhancement of members' leadership skills in a technical environment

- In tandem with MTS HQ, provide up-to-date information on technology and/or policy developments in specified areas of expertise

PROFESSIONAL COMMITTEES PRODUCTS & CONVENING EXAMPLES





UNDERWATER INTERVENTION

Powered by: WORKBOAT

TO FORM A PROFESSIONAL COMMITTEE

Requires MTS Board Approval

Please submit **online** or provide a **document** that includes:

- **Justification** for the creation of the Committee
- The proposed **scope** and/or or **mission statement** of the Committee
- Names & contact information for at least **five current MTS members**
- Names & contact information for **prospective Committee officers**

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Interested?

Get Involved!

Check out our LinkTree

+ Email
+ Website
+ Publications (HABs Reports & More)
+LinkedIn Page
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