SMART Ocean – SMART Industries: Ocean and Climate Observations from Commercial Vessels and Infrastructure

Paul Holthus, CEO
World Ocean Council
paul.holthus@oceancouncil.org
www.oceancouncil.org

WOC – the Global “Blue Economy” Business and Investment Organization
Growing Ocean Use

- Cruise and coastal tourism
- Shipping
- Mariculture/Aquaculture
- Offshore oil and gas
- Mining / Seabed mining
- Fisheries
- Dredging
- Submarine cables/pipelines
- Offshore wind energy
- Wave/tidal energy
- Ports/marinas
- Recreational boating/use
- Desalination
- Navy/military use
- Carbon sequestration

Expanding
- Kinds of use
- Levels of activity
  - Duration
  - Intensity
  - Frequency
- Location of activity
  - Geographical Extent
  - Frequency

- Diverse ‘ecosystem’ of support sectors
- Finance/Investment
- Insurance
- Maritime Legal
• Ocean industries require access and social license to use ocean space and resources
• Many of the critical issues creating impacts and affecting access and social license are cross-cutting or cumulative
• Sustaining ocean health and productivity requires responsible use and stewardship by all users
• Best efforts by a single company, or an entire industry sector, are not enough to secure ocean health
• Ocean industries will benefit from collaboration with other sectors to create synergies and economies of scale to address impacts and ensure access and social license
• Need structure/process for leadership and collaboration
World Ocean Council (WOC)

International, Cross-Sectoral Business Leadership Alliance

- Bringing ocean industries together, e.g. shipping, cruise tourism, fisheries, aquaculture, offshore renewables, oil/gas, investment, etc.

- Catalyzing private sector leadership, collaboration and action in:
  - Advancing “Corporate Ocean Responsibility”
  - Communicating responsible ocean industry/economy

- 75+ members globally; 100’s of actively engaged companies; 34,000+ in global network
- Research, scientific and academic institution members as well

**Goal:** Healthy, productive global ocean and its sustainable use and stewardship by responsible ocean business community

**Creating business value for responsible companies**
- Access and social license for responsible ocean use
- Synergies and economies of scale in addressing issues
- Stability and predictability in ocean operations
WOC Partnerships and Formal Recognition

UNESCO Intergovernmental Oceanographic Commission (IOC) – Partnership Agreement

World Meterological Organization (WMO) – MOU

Group on Earth Observations (GEO) – Accredited Partner

International Hydrographic Organization (IHO) – Official Observer

International Seabed Authority (ISA) – Accredited Observer

Convention on Biological Diversity (CBD) – Accredited to SBSTTAs and COPs

International Whaling Commission (IWC) – Accredited Observer

UN Framework Convention on Climate Change (UNFCC) – Accredited to COPs

Ocean Climate Platform – Accredited Partner

China Belt and Road Network – Partner

International Standards Organization (ISO) – Underwater Acoustics Sub-Committee

Global Business Alliance for Sustainable Dev’t of Int’l Chamber of Commerce (ICC) – Member

WOC CEO - first ocean industry organization invited to address UN General Assembly
Cross-Cutting Framework Areas for Leadership, Collaboration and Action:

- Sustainable Development Goals (SDGs) for the Ocean Business Community
- Ocean Investment Platform
- Digital Ocean / Big Ocean Data / Ocean Cloud
- Young Ocean Professionals Network
- Regional Ocean Leadership Groups
- Sustainable Ocean Summit (SOS)
• **Improving Ocean Governance, Policy and Planning**  
  - UNCLOS/BBNJ, UNFCCC, SDGs, Convention on Biological Diversity ...  
  - Marine Spatial Planning  
    • Inter-industry Conflicts/Synergies

• **Reducing Anthropogenic Impacts**  
  - Biofouling/Invasive species  
  - Marine sound  
  - Plastics/Port Reception Facilities

• **Conserving Marine Biodiversity**  
  - Marine protected areas  
  - Marine mammal ‘Ship strikes’

• **Ensuring Food Security**  
  - Sustainable fisheries/reduced IUU fishing  
  - Sustainable aquaculture
WOC Programs: Priority Areas for Action (2)

• **Improving Ocean Knowledge** (SDG14a)
  - SMART Ocean - SMART Industries:
    • Data collection from Industry “Ships/Platforms of Opportunity”

• **Reducing Disaster Risk**
  - Port/coastal infrastructure adaptation and resilience

• **Addressing Climate Change**
  - Ocean NETs: Negative Emissions Technologies in the ocean
  - Ocean acidification

• **Advancing Low Carbon Energy from the Sea**
  - Ocean-based renewable energy
Global Ocean Industry Leadership: SMART Ocean - SMART Industries

Ensure a **wide range of industry vessels and platforms** are:

- **Providing routine, sustained, standardized information** on the ocean and atmosphere
- Contributing to describing the **status, trends and variability** of oceanographic and atmospheric conditions
- **Improving the understanding, modeling and forecasting** of oceanic ecosystems, resources, weather, climate variability and climate change

Establish a program to:

- **Expand the number of vessels and platforms** that collect standardized ocean, weather and climate data
- **Improve the coordination and efficiency of data sharing** and input to national/international systems
- Build on existing “ships/platforms of opportunity” programs
Opportunities of Ships

50,054 ships (Oct 2010)

- Tankers: 13,175
- Bulk Carriers: 8,687
- Container ships: 4,831
- Passenger ships: 6,597
Opportunities of Fishing Vessels

- 3-4 million vessels
- Many operating in less well known ocean areas, e.g. Southern Ocean
- Over 85% of world fishing fleet is in Asia
Opportunities of Submarine Cables

- More than 1 million km of telecom cables
- Subsea power cables increasing for grids, platforms and renewables
Other Ship and Platform Opportunities

- Oil and gas
- Aquaculture
- Ferries
- Offshore wind energy
- Wave/tidal energy
International Ship/Platform Data Collection

**Comprehensive**
- Incorporates needs and opportunities from different industries
- Addresses ocean, weather and climate data needs

**Scaleable**
- Within industries
- Across industries
- Upgradeable over time

**Entry Options**
- Retrofit – existing vessels and platforms
- New builds

**Cost-Efficient**
- Synergies – within and between industries
- Economies of scale
SMART Ocean-SMART Industries: How it works

WOC...

• Engages scientific institutions to identify:
  o Priority data collection needs and areas
  o Appropriate, cost-effective, ship-suitable technology

• Identifies and recruits companies:
  o With vessels/platforms operating in the priority areas
  o Interested/capable of hosting/deploying instruments or hosting scientists

• Instigates and facilitates working relationship between the company and the scientific institution

• Monitors, coordinates and supports interaction between company and scientific institution

• Ensures industry data collection efforts are efficient, cost effective and contribute to national and international public science programs
SMART Ocean-SMART Industries: Next Steps

Develop pilot projects to put “SMART Industries” to work
- Identify leadership companies to take a company/fleet level approach
- Key parameters, e.g. ocean pH, bathymetry, microplastics
- Extreme weather or ocean events, e.g. tsunamis
- Regional scaling up, e.g. Caribbean, Arctic

Continue to build overall program
- Define value proposition / rationale for industry and science
- Inventory existing ships / platforms of opportunity programs
- Define the “menu of options” for voluntary observations
- Define interface requirements for platforms / payload
- Develop principles, practice and platform for industry data sharing and access
Project: Installing Tsunami Detection Instruments on Ships Traversing Pacific

- University of Hawaii scientists approach WOC SO-SI program for help
- WOC reaches out to shipping industry with information and call to assist
- Within weeks, Maersk and Matson volunteer 8 ships for an initial 2 year project
- Within a few months, ships are equipped with prototype real-time geodetic GPS systems and satellite communications links
- Data begins streaming via satellite to a land-based data center for processing and analysis for tsunami signals in a ground-breaking, far-reaching pilot project
A well-developed ocean business leadership organization such as the WOC furthers ocean sustainable development by...

- Serving as the portal and bridge to the entire diverse global ocean business community
- **Identifying and involving leadership companies** and industry organizations from a comprehensive network to participate in programs and projects
- Eliciting industry ideas and input early on, e.g. identifying priorities, designing projects, engaging additional sectors and companies, etc. - and then getting to work
- Bringing private sector partners together to develop and implement projects
- Establishing the institutional basis for continued, sustained interaction with the ocean business community, e.g. identifying additional companies to engage
- Developing specific, targeted workshops and seminars with industry
- **Identifying and facilitating access to where the private sector is gathering**, e.g. the annual WOC Sustainable Ocean Summit
HOW to Advance Multi-Sector Industry Action in Ocean Sustainable Development

Working with and though an ocean business leadership organization such as the WOC that...

- Is a unique, private sector boundary/intermediary organization
- Brings together a global, multi-industry leadership alliance on implementation
- Has as its core mission to work with industry on sustainable development
- Knows the business community and has the working relationships with industry:
  - at individual, company and/or sector level
  - at national, regional and/or global scale
- Knows the sustainable development issues and how they relate to industry
- Provides long term commitment to engaging the business community
- Is constantly expanding its international ocean business network of companies informed and engaged on sustainable development, science and stewardship
- Is a credible 3rd party business organization known and respected by industry and will be involved in ocean sustainable development over the long term
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