Baselining How to Build Sustainable Ocean Exploration Partnerships

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Vision Statement

By 2032, the ocean exploration community will have built robust mechanisms for partnerships with existing and emerging end users of exploration information that support ongoing dialogue to ensure efficient data collection, generation of useful information from the data, and effective use of new knowledge for societal needs.

◤ Understanding partner and stakeholder needs and motivations is essential for effectively achieving shared and complementary goals.

◤ Applying lessons from past partnerships improves chances for future success.

Introduction

On the surface, the question "Why explore?" can be answered with "We seek to understand" and "We need data to inform societal needs." Diving deeper, the ocean exploration community relies on partnerships among organizations – many of which do not specialize in ocean exploration – working together to utilize complementary capabilities in pursuit of mutually beneficial outcomes. As a result, ocean exploration data collection, archiving, and accessibility requirements are chosen based on stakeholder and partner needs and how they will use the data to produce useful information. Demand for ocean exploration data will change and expand as stakeholder groups and partners try to mitigate climate change impacts, pursue conservation goals, and meet demands for renewable energy, food, and critical minerals. Determining future requirements for ocean exploration data and how they will be collected necessitates thoughtful approaches to building successful partnerships so that all organizations involved are leveraged appropriately. Understanding the perspectives of stakeholders and prospective partners is a critical first step.

> Ocean exploration is time-consuming and expensive, and it requires tremendous resources and long-term planning. An overarching challenge is to clarify the diverse motivations across the exploration community and to contextualize them in relation to society's needs by:
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> ◤ Creating a vision that a broad spectrum of stakeholders and partners buy into or can accept;
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> ◤ Identifying the actions required to achieve the vision in the short term, while also being flexible and resilient in approach to capitalize on the shifting priorities of constituent power structures to increase chances of adequate and sustained funding;
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> ◤ Identifying and providing extrinsically motivating incentives for increased levels of engagement; and
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> ◤ Appealing to those who are intrinsically motivated to complete the planned actions and build momentum for long-term success.

Effective partnerships – at the level of coordination, cooperation, and collaboration – can develop into alliances, leading to powerful communities of practice. Making progress along this path presents opportunities and requires navigating challenges, including in relation to an important ocean exploration goal to be achieved within the next 10 years: building robust and resilient mechanisms for partnerships between providers and users of ocean information that are timely, nimble, and responsive to ever-changing societal needs. While we could have chosen to focus on specific ocean exploration areas – such as deep-sea minerals, fisheries, or deep-sea carbon capture in the outer continental shelf seabed – we observed that the barriers to achieving partnership goals are shared across all ocean exploration focus areas. These challenges hinder achievement of local, national, and global research and science-to-action objectives.

Motivations Behind Partnerships

Innovative ocean exploration partnerships create opportunities for generating data and knowledge in new, cooperative ways, but the path to success can be complex. What are some barriers to achieving partnership goals?

Partnerships may fail, or fail to materialize, due to misaligned or misunderstood incentives. Analyzing intrinsic versus extrinsic incentives and increasing awareness of what others value is a pragmatic starting point when conceptualizing prospective partnerships. Intrinsically motivated behaviors derive from a sense of personal satisfaction. For example, when ocean explorers have deep curiosity for the unknown and enjoy learning, they are intrinsically motivated to write proposals and secure research funding to investigate those ideas. Extrinsically motivated behaviors, in contrast, are performed due to external influences or to avoid negative outcomes. In the professional setting, extrinsic motivations – such as financial rewards – are often used to influence someone who may otherwise not prioritize the collaborative opportunity.

Partner: A partner directly contributes to the business model or theory of change by helping design, develop, and communicate an organization's value proposition. These entities have formal or informal commitments to each other and generally combine their assets on an ongoing basis to achieve agreed-upon goals. A solid partnership succeeds in providing mutual value: all sides receive evident, tangible benefits.

Stakeholder: A stakeholder is an entity potentially affected by an organization's business activity or pursuit of a theory of change. Stakeholders may be directly or indirectly impacted by the organization's decisions, actions, and behaviors. Even though stakeholders don't necessarily have an ongoing working relationship with the primary effort, they have interests in it and may influence decision making.

Coordination: Exchanging information and shifting activities towards a common purpose.

Cooperation: Exchanging information, shifting activities, and sharing resources while working towards mutual goals and objectives.

Collaboration: The act or process of working with other people and organizations to achieve a common purpose – such as creating a product or pursuing an intellectual endeavor – while enhancing the capacity of the other partners for mutual benefit.

Alliance: An association to further the common interests of cooperating partners.

A common blind spot is to assume that others are motivated by and respond to the same drivers and values that one espouses. For example, an academic scientist may become frustrated when a policymaker does not take their work into account. The researcher may be unaware that the influences on the policymaker's decisions derive from extrinsic sources (e.g., financial resource limitations, political considerations, other stakeholder needs) that are disconnected from the researcher's aspirations. In government, much work is dictated by extrinsic sources such as White House priorities, which may shift every four to eight years, with "societal needs" being shaped in the process. In the private sector, extrinsic sources include shareholders who seek increased profitability and wealthy individual donors whose interests are tied to funding. Philanthropic foundations may create extrinsic drivers of collaboration with the aim of meeting the objectives of grantor, grantees, and other partners. The dynamics of these motivations are important to understand when navigating any partnership, and, when seeking common ground, it is imperative to listen as much as it is to explain one's own view.

Building and Sustaining Effective Partnerships

Cutting to the core of a problem or opportunity requires clearly defining it using a concise statement of the issue. A challenge therein is that partners and stakeholders may define the issue only from their perspective. Differences in mindsets, combined with incomplete listening skills or an adversarial posture, tend to set the stage for miscommunication and common organizational, cultural, and interpersonal barriers to partnering, including insufficient respect and trust. As the ocean exploration community considers ways to overcome challenges inherent in partnerships, it is helpful to clarify the underlying interests each party has for coming together. Asking the important "why" question of each potential partner provides greater mutual understanding that will engender the required trust and clarity for articulating a cohesive and mutually beneficial statement of the issue at hand.

As prospective partners achieve clarity on their exploration motivations (the "why"), they should also work to resolve the "how":

◥ How does each partner break down silos and other barriers to achieve deep and effective relationships, create an environment of trust, and rise together to meet the ocean exploration challenge?

◥ How do partners gain acceptance of the communities the science is intended to help, so that data collection can be transformed into useful information for decision making?

◥ How does a partnership achieve a shared vision when its members and stakeholders have differing motivations and mission needs, or operate under different authorities that may be competing with one another?

◥ Once overlapping and complementary needs are identified, how should they be communicated (and to whom) so that duplicative efforts are minimized, particularly when resources are limited?

Partnerships entail hard work, and investment in partner consultation is a continuous – not one-time – effort.

Examples of Partnership Challenges and Successes

1. **Citizen science.** Views differ on the value of citizen science for scientific research and ecosystem observation. Some are concerned about data quality. Others are concerned about how programs may marginalize participants, including Indigenous groups, when projects are created with extrinsically imposed objectives – such as academic scientists who seek data for their research. Citizen science also affords a chance to generate and analyze data at a scale not possible otherwise, to empower communities, and to expand opportunities for exploring the natural world. The challenge lies in how to create an effective citizen science partnership that optimizes all partner and stakeholder needs. An example of a success is the Wildlife Conservation Society's *Citizen Science for the Amazon*[1] effort, which required over four years of discussion to align partners on vision, objectives, priorities, and approaches for monitoring the Amazon Basin's aquatic systems. The process required multiple in-person meetings and an open dialogue approach to allow listening, building trust, finding common ground, and orienting collectively towards a shared path forward prior to any observation or data collection. Understanding incentives and the cultural norms of each partner was essential to create this citizen science effort.

2. **Competition among major programs.** The ocean exploration community is currently participating in several efforts that may appear to be competing for human, time, and financial resources: mapping the U.S. outer continental shelf and nearshore Alaska by 2030, conserving 30% of U.S. waters by 2030, and advancing the United Nations Decade of Ocean Science for Sustainable Development, to name a few. Assessing each ocean exploration organization's responsibilities within these efforts can contribute towards achieving clarity of purpose and reduce the likelihood of redundant effort, insufficient resources dedicated to any one effort, and miscommunication. Unfortunately, one unintended consequence of this transparency is that dozens of committees have been established, many of which have overlapping responsibilities and reporting requirements. The consequence is a new barrier: redundant communication, obscuring of salient information, and inefficiency. A strong community of practice that supports ongoing dialogue would anticipate this point of friction.

3. **Expanding the scope of ocean exploration for natural resources.** A consequence of expanding the geographic extent of ocean exploration is that greater utilization of the ocean for its resources may lead to more frequent conflicts among ocean resource users. For example, with the advancement of the blue economy, there is increased vessel traffic, highlighting the need to provision vessel location data to support law enforcement and collision avoidance. When attempting to address conflict among stakeholders and with

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each ocean resource viewed as equally important, coastal managers and energy developers must consider geospatial data and scientific research from a host of sources when making decisions – often under tight deadlines. One solution for this multi-faceted challenge was the development of *Marine Cadastre*[2], where BOEM built upon past successful partnerships and existing alliances with the U.S. Coast Guard and the National Oceanic and Atmospheric Administration (NOAA). This tool provides spatial data, visualization, and analytical tools in one location, making it an essential tool for ocean energy and marine planning. Key to the success of this project and its continued use for decision making is that each party involved was open and honest about their needs and motivations for what the project's final products would look like, communicating effectively throughout the process. Each partner committed to being accessible and flexible, and each also agreed for the project to have measurable results so that there could be continuous, mutually beneficial advancements as needs evolved.

Closing Thoughts

Successful partnerships rest on a basis of trust, a clear understanding of what motivates each member, effective communication, and the passion and ambition to persevere despite challenges. Prospective ocean exploration partners should reach agreement on management methods (including roles and responsibilities) and contingency plans to navigate obstacles when they arise. These elements of a partnership plan should be crafted before embarking on a new project, since each has unique challenges. When planning how work will be conducted, it is equally important to determine what evidence will be used when evaluating the effectiveness of the partnership in meeting its goals. Coordinated planning and execution within and between ocean exploration partnerships should help avoid creation of databases that are insufficiently accessed and may be deleterious to sustaining efforts.

Looking to the future, we suggest that a missing piece for realizing the vision laid out at the beginning of this paper is the need for a culture of engagement and care as a way to advance ocean exploration and research effectively in support of societal needs. In addition, successful partnerships too often conclude their engagement after a project is completed, thereby forfeiting the opportunity to generate lessons that could be shared with others. Furthermore, strong partnerships and alliances that are sustainable require commitment beyond those conducting research and venturing out to sea. Communicating success stories to those that are making decisions for resource allocation and articulating an understanding of mistakes so they will not be repeated are both critical for obtaining the needed commitments from decision makers to build future opportunities for partnerships and to cultivate and support long-term alliances.

In the spirit of "building a blueprint" for developing a robust community of practice for the ocean exploration community, a partner and stakeholder consultation approach should be created following the *2022 National Ocean Exploration Forum*. Within this plan, there should be regular check-ins with leaders of and contributors to large-scale efforts to identify lessons learned and uncover assumptions that either helped achieve goals or led programs astray. Plan organizers should also consider the contingency that a partnership may be successfully established but delayed due to insufficient funding. A flexible plan for ongoing communication among partners and stakeholders will ensure engagement is regular, including during gaps between projects. Transitioning from interactions that are primarily transactional to ones focused on developing deeper relationships will result in foundational trust and respect across the community and lead to greater success with all ocean exploration endeavors.