INNOVATION ECOSYSTEM STRATEGIC OPPORTUNITIES

CANADA'S OCEAN SUPERCLUSTER

VISION

We are growing the Ocean Economy through an integrated plan of technology leadership and innovation ecosystem programs, built with a broad range of supercluster members and partners to increase commercialization, make ocean R&D investments go further, and in the process build a stronger sustainable ocean economy - which is a competitive advantage for all ocean organizations.

PURPOSE

Improve the innovation landscape by addressing gaps, leveraging strengths, and planning for a digitally empowered ocean economy.

Support capacity and quality of Tech Leadership Projects (TLPs) and members' ability to commercialize and grow their businesses in Canada.

KEY PRINCIPLES

- Collaboration, sharing of costs, risks and rewards
- Market pull and innovation push
- Industry leadership with inclusive economic and ecosystem impact

IMPROVING THE STRENGTH & INTEGRATION OF THE ECOSYSTEM

An Innovation Ecosystem is a complex network of community stakeholders and their capabilities functioning together as a strategic economic development unit, critical for innovation and GDP growth.

The OSC's Innovation Ecosystem program is mobilizing the ecosystem to collaborate on ocean initiatives that transform the innovation landscape and have lasting impacts on the ocean economy.

OCEAN INNOVATION ECOSYSTEM
DEVELOPMENT OBJECTIVES

1. Increase sustainable economic growth (GDP) from ocean enterprises;
2. Grow Canada's talent pool and technical expertise in the ocean economy;
3. Foster the creation and growth of more ocean technology companies;
4. Enhance access to and effectiveness of ocean innovation facilities and institutions;
5. Increase collaborations between ocean companies and member organizations;
6. Increase available investment capital in Canada's ocean economy;
7. Increase commercialization and IP-generation in the private sector and post-secondary institutions;
8. Improve inclusion and participation of Indigenous and other under-represented groups in Canada's ocean industries; and
9. Position Canada as a global leader in collaborative cross- sectoral sustainable ocean innovation.

ROLE OF THE OSC

Through **technology leadership** and **innovation ecosystem activities** (IEAs), the OSC is a **catalyst of economic growth** by fostering and funding new collaborations that improve world leading entrepreneurial and R&D capacity. The OSC will leverage Canada's comparative advantages and address innovation ecosystem gaps through **collaborative partnerships with OSC Members**.

WHAT WE DO

- The OSC scopes IEAs that address gaps in the innovation ecosystem, and partners with key organizations to develop new collaborations to fill those gaps.
- The OSC provides financial and in-kind support for approved projects.
- The OSC fosters new relationships by facilitating an environment where members can work together on shared opportunities, rather than thinking locally or operating in silos.
- The OSC co-invests in strategic initiatives that provide value to the greater cluster.
- The OSC leverages existing infrastructure, resources, or initiatives for the delivery of IEAs.

WHAT WE DON'T DO

- The OSC will not provide core funding for members, or fund IEAs that only benefit one organization.
- The OSC invests in incremental activities and will not duplicate projects or activities currently in the innovation ecosystem.
- The OSC will not be a delivery agent of IEAs that could be delivered by member organizations.

HOW WE WORK WITH MEMBERS AND PARTNERS

- Member organizations can submit IE proposals that are in line with the OSC strategy.
- Members can opt into being a delivery partner for one or more IEAs.
- Members can participate in cluster direction setting through various channels, including:
  - Technology Leadership Working Group (TLWG)
  - Innovation Ecosystem Working Group (IEWG)
  - Indigenous Working Group (IWG)
  - OSC Board of directors
  - Ad hoc working groups or committees
  - Through workshops and cluster events.

OCEAN INNOVATION ECOSYSTEM
GAPS AND ADVANTAGES

Canada's ocean innovation ecosystem is growing but lacks connectivity and scale when compared to other marine clusters such as San Diego, New England (USA), and Norway. Canada has many competitive advantages that can be leveraged to stimulate more commercialization, partnerships, and sustainable economic growth. Innovation ecosystem activities are focused on leveraging existing assets, bolstering strengths, and addressing gaps and opportunities.

OVERARCHING CHALLENGES

- The uniquely high cost and risk of ocean innovation
- The strength and integration of innovation ecosystem
- Fostering collaborations and connectivity across the 2nd largest country in the world

GAPS

- Lack of shared infrastructure, regional connectivity and innovative culture
- SMEs linked to large corporates and scale of supply chain partnerships
- Commercialization from academia and research organizations
- Strategic investment capital in ocean economy
- New entrants into ocean economy, both talent and companies

ADVANTAGES

- Educated population (hundreds of Ocean PHDs, strong research institutions) and Indigenous peoples with traditional ecological knowledge
- Quality of place (#1 country in the world in 2020 for Quality of Life)
- Diversified economy (range of growing sectors)
- Rich with environmental resources
- Federal government dedicated to innovation
- Strong private sector leadership

INNOVATION ECOSYSTEM PROGRAM DEVELOPMENT

The Innovation Ecosystem Program has thematic areas of cluster development that OSC members and stakeholders have identified as priorities. Specific projects and initiatives are supported as part of each program, which are expected to respond to gaps, create opportunities to accelerate, as well as build on areas of strength and competitive advantage for the supercluster.

IEAs should both meet the needs of industry and address opportunities within the broader innovation ecosystem. The activities listed in this document have been identified as opportunities through the following mechanisms:

1. During OSC development - through events, surveys, and workshops;
2. Shared challenges that have surfaced through OSC working groups and member portal;
3. Innovation Superclusters Initiative parameters.

PROJECT DEVELOPMENT PROCESS

STEP ONE

OSC shares a challenge to be addressed with key stakeholders, members, and the broader ecosystem.

CHALLENGES INFORMED BY MEMBER NEEDS

Program A: Company Creation and Growth
Example: How can we double the number of new ocean-focused tech startups?

Program B: Inclusive Talent Attraction and Transformation
Example: How do we support timely HQP availability/ aquisition for TL projects?

Program C: Ocean Innovation Resources & Collaborations
Example: What ocean assets and capabilities are available and where can I find them?

PROJECT DEVELOPMENT PROCESS

STEP ONE

OSC shares challenges to be addressed with key stakeholders, members, and the broader ecosystem. Stemmed from IE Strategy and annual priorities.

STEP TWO

Call for Proposals
OSC opens a competitive call for proposals to solve the challenge.

Cluster Members
Ecosystem/Members collaborate/agree on solution and Ecosystem invited to submit one project proposal to the OSC.

OSC Internal
OSC advances cluster building activity internally leveraging global cluster best practices and seeks delivery partners / member participation.

STEP THREE

OSC reviews solutions (proposals) and assesses against IE program criteria. Successful projects are selected.

STEP FOUR

Project is contracted with delivery partners (if applicable).

STEP FIVE

Project announcement and launch.

What's unique about OSC IE funding:

- Fosters collaboration and new relationships
- Peer reviewed selection process
- Backed by industry / all challenges informed by industry need
- Emphasis on building inclusive ocean industries

INNOVATION ECOSYSTEM ACTIVITIES

The Ocean Supercluster has organized innovation ecosystem activities (IEAs) into three strategic program themes to fulfill its strategy and meet the objectives of the federal government. Innovation ecosystem activities must align with program objectives. Some examples of projects and activities are highlighted below.

OSC Co-Funds

- Specific scope and impact defined with OSC members
- Activity is delivered collaboratively by 3 or more OSC members
- Multiple funders (eg: provincial, ACOA, NRC, private, etc.)
- Meets eligibility criteria

OSC Delivers

- OSC directly involved in delivery
- Outsourced support as needed
- Potential other funders as needed

OSC Catalyzes

- Minimal or no OSC funding leveraged
- Leverages OSC brand and global awareness
- Inspired by collective member needs and voice
- OSC an enabler or initiator of activity, but not directly involved

PROGRAM A: Company Creation & Growth

This program is designed to foster new ocean startups, create regional partnerships, connect entrepreneurs to resources, incentivize increased commercialization, facilitate SME-supply chain collaborations, and support ocean industry leadership through innovation.

Current & Future Program Activities

Ocean Startups

Collaborative programs and initiatives to increase the quantity of ocean-related technology startups and public awareness of Canada's ocean innovation opportunity.

Industry Challenges

Matching Commercial Ocean Problems with Solution Providers

Industry challenge identification relationship development between big ocean companies and OSC small to medium sized businesses (SMEs) looking for partnerships, joint ventures and syndicated opportunities.

Ocean Supply Chain Development

Strengthening the Ocean Innovation Supply Chain

Catalyzing and supporting activities to help strengthen and accelerate project collaborations between the larger players in the ocean industry supply chain and the innovative ocean SMEs. Activities may include joint industry technology demonstration and validation programs, supply chain technology pitch events, focused hacking workshops, as well as targeted events to facilitate interactions between innovation end-users and technology providers.

Ocean Research Commercialization

Ecosystem Collaborations that support an increase of research commercialization, such as Lab2Market Ocean, as well as increasing available investment capital for ocean R&D driven SMEs.

Supercluster Technology Forums

Showcasing Technology Leadership Projects

Supercluster-led events within each of the core technology leadership (TL) Program areas to showcase progress in TL activities. The forums bring together ocean technology users, developers, researchers, and investors, among others.

Innovation Ecosystem Gaps Addressed

- Pipeline of new ocean startups
- Connectivity of SMEs to customers
- Commercialization rate of ocean research
- Scaling of ocean companies

Assets & Partners Leveraged

- Accelerators and Incubators
- Universities and Colleges
- Trade Associations
- National Research Facilities
- Government

PROGRAM B: Inclusive Talent Attraction & Transformation

This program is designed to address shared talent challenges identified by OSC member companies, attract the leading entrepreneurs to Canada, support the growth of work integrated learning environments and skill agility of the ocean economy workforce. Projects foster new partnerships between Indigenous organizations, talent development non-profits and the private sector, to develop a diverse set of initiatives with a long-term impact.

Current & Future Program Activites

International Rockstars

Attracting the Best Entrepreneurs and Talent to Canada's Ocean Economy

A creative initiative to attract high-potential entrepreneurs and startups to Canada, and activities to attract world-leading HQP in R&D and business, relevant to the success of Ocean Supercluster member projects and to support the aggregate needs of ocean SMEs.

Mitacs Partnership

Embedding and Retaining Post-graduate Talent in the Ocean Industries

The OSC will build on the success of this national program which provides opportunities for graduate students and postdoctoral fellows to be embedded with industry. The OSC co-funds an ocean-specific dedicated Mitacs resource to identify ocean industry placement opportunities, manage student resources for TL projects, etc.

Developing Ocean Talent

Modernizing Talent Development for a Transforming Ocean Economy

Catalyzing partnerships with OSC members, regional universities and colleges to facilitate innovative new work-integrated learning opportunities. Focused, self-directed micro-credential training and certifications has been identified as a high value solution for the digital economy. The OSC will make investments in technology and programs that accelerate adoption and certification of such transformative training delivery platforms.

Diversity and Inclusion in Ocean Tech

Building Canada's Diversity Strength into Ocean Industries

Fostering and supporting strategic initiatives that create opportunities for training, experiential learning, mentorship, and employment connected to Technology Leadership and Innovation Ecosystem projects.

Indigenous Engagement

Indigenous Participation in the Ocean Economy

Working with Indigenous organizations, the OSC has co-created an Indigenous Engagement Strategy with an Indigenous Working Group (IWG), that focuses on Indigenous founders creating ocean tech companies, and Indigenous entrants into oceans- related workforce and research opportunities.

Innovation Ecosystem Gaps Addressed

- Availability of specific world-class ocean experts in Canada
- Preparedness of workforce to support a digital ocean economy
- Inclusion of a diverse workforce
- Lack of rapid-response training programs
- Availability of senior and experienced talent

Potential Partners

- Immigration and diversity support organizations
- Indigenous business-focused non-profits
- Provincial Governments
- Colleges, PSEs

PROGRAM C: Ocean Innovation Resources & Collaborations

Canada has a complex network of assets and organizations. This program is designed to cultivate a Canadian ocean innovation system that is connected, accessible, collaborative, and valuable to international supply-chain and cluster organizations.

Current & Future Program Activites

Ocean Asset Map

Catalyzing an Open Landscape of our Ocean Assets and Expertise

Supporting ACOA and NRC in the creation of a comprehensive inventory of private and public sector assets, companies, capabilities, and expertise in the region. This open and dynamic tool will support the OSC's vision of increased collaborative innovation within the region, removing silos and future duplication in the ecosystem and providing visibility for international collaborators.

Science Resource Access

Leveraging Canada's Scientific Agencies and Institutes

The OSC will work with Canada's R&D and scientific agencies and institutes within departments like Natural Resources Canada, Fisheries and Oceans Canada, and National Research Council Canada to foster activities that will streamline access and leverage opportunities for OSC Members. Both the physical assets and expertise within Canada's agencies can provide critical value to companies in Canada's ocean industries as well as their global partners, and the OSC is positioned to catalyze preferred access, discounted cost and unique collaborative research opportunities.

Domestic and International Collaborations

Establish formal relationships with leading ocean clusters and innovation hubs to accelerate the connectivity and interactivity between all regional cluster elements (SMEs, large firms, Government, Academic, etc.) and peer entities internationally.

Innovation Ecosystem Gaps Addressed

- Accessibility and awareness of collaborative ocean innovation space
- Cost of testing, trialing, and validation of new technologies
- SME access to Canada's world class R&D facilities and specialized expertise
- Lack of connectivity and "market pull" in Canada's public and academic scientific institutes
- Lack of connectivity between ocean R&D programs, facilities and users

Assets & Partners Leveraged

- Canadian Research Institutes
- University and College R&D teams and labs
- Provincial and National Centres of Excellence
- Technology Transfer and Industry Collaboration Organizations
- Canadian Technology Institutes and Testing Facilities