the PIER
PORT INNOVATION | ENGAGEMENT | RESEARCH
A GLOBAL CENTRE OF EXCELLENCE
FOR MARITIME INNOVATION

STRUCTURE

- **The PIER** is an entity of the Halifax Port Authority.

- The **PIER Network** is a structure created to empower Canadian Port Authorities to leverage the innovation ecosystem, link innovation communities, and collaborate between ports.

- Co-founded the **Port Innovators Network** – global network of innovation hubs linked to ports.

- Financially supported by membership ~55 members total.
- Success begins with Founding/Industry/Port members bringing forward problem statements, seeking new solutions, testing/demonstrating and potential adopting.
- Technology agnostic and lifecycle stage agnostic.
- No venture capital or investment from The PIER in member companies, no intellectual property taken
- Most projects are TRL 6-8 (testing and demonstration in the real world).
- Some projects to support Founding members are TRL 9 – commercialized, but “new to us” and fast pilots can bridge the adoption gap.

THE PROBLEMS WE'RE TRYING TO SOLVE

Problems observed:

- Port capacity, mandate to create new productions/solutions to solve problems in the supply chain is challenging; engaging the private sector critical.
- Collaboration mechanism - there are supply chain problems larger than just one entity, or one port
- "Solutions" are too often developed, then pushed to the end-user; need to partner early to pull solutions aligned with market demand.
- Adopting innovation can often fail as the end-user has not built organizational capacity; need to partner in the testing of innovation.
- Innovation communities connected to ports are too often siloed; need to link innovation communities.
- Sometimes we're looking for solutions to problems that have been resolved elsewhere; need to improve knowledge transfer and make adopting innovation more efficient.

THE PROBLEMS WE'RE TRYING TO SOLVE

Create Innovation

Early partnering end-users with innovators; **co-creation**

Align innovators to problems worth solving; **market pull**

Complex value chains, innovation benefit broadly realized, but costs localized; **multi-partner collaboration**

Test Innovation

Solutions need real-world test environment and feedback; **living lab**

End-users provide foundation to put innovation into operation; **organizational capacity**

Strong solution from structured test processes, iterative development; **co-development**

Adopt Innovation

Reduce duplication of effort; **do not innovate in silos**

Leverage organizational capacity to adopt innovation; **change and transformation management**

Lessons learned from other deployments; **knowledge transfer**

THE PIER NETWORK – THE PROBLEMS WE'RE SOLVING

SUPPLY CHAIN & LOGISTICS

- Efficiency
- Visibility/ Transparency
- Resilience
- Sustainability

INTERCONNECTED PORT CITY

- Sustainability
- Community Engagement
- Future Workforce
- Regional Transportation

POLICY & REGULATORY DEVELOPMENT

- Regulatory
- Policy
- Sustainability

USING PLATFORM TECHNOLOGIES SUCH AS

- Blockchain
- IoT Sensors
- AI & Machine Learning
- Digital Twinning

ACHIEVING IMPACTS SUCH AS

- Decarbonization
- Economic Growth
- Waste Reduction
- Mitigate Climate Change

WHY THE PIER IS UNIQUE

Enhanced competitiveness, asset utilization, supply chain efficiency, resilience of critical supply chains – first to last mile

The first Living Lab in North America dedicated to transportation, supply chain and logistics - enabling testing and demonstration in a real-world environment

An authentic community environment built on existing connections between major supply chain partners

Supply Chains and an Interconnected Port City - where the land meets the sea, encompassing both marine technology and landside operations

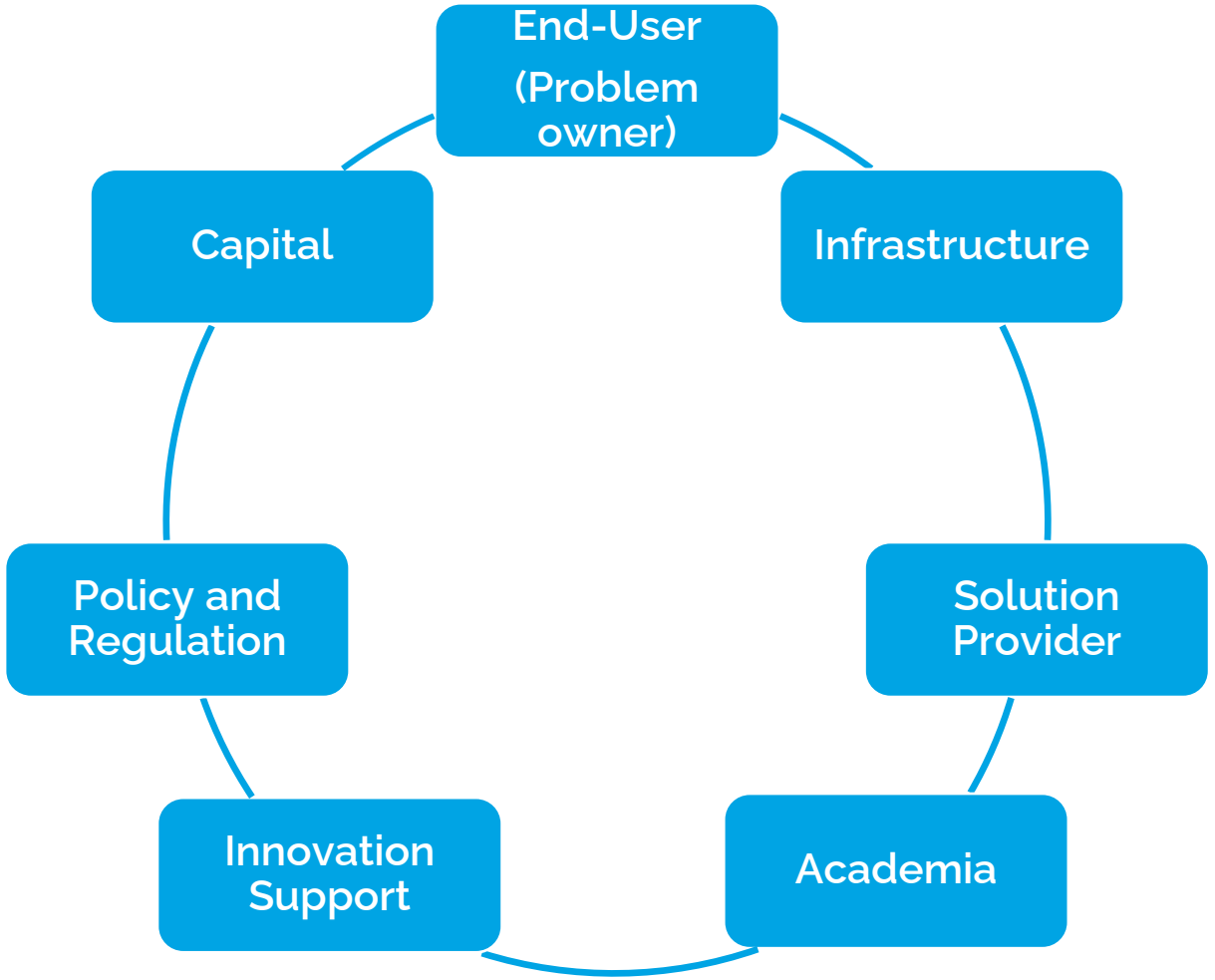
An active marketplace, with adopters and solution providers sharing common goals

Focused on developing and adopting solutions to problems.

Member supported, focused on projects to tackle problems aligned with corporate priorities

Supporting Port Authorities to: implement marine policies that provide Canada with the marine infrastructure that it needs, offer effective support for the achievement of social and economic objectives, and promote & safeguard Canada's competitiveness and trade objectives.

INNOVATION ECOSYSTEM



Includes concept ideas from MIT REAP and Strategic Coupling of Global Producing Networks

CONNECTING INNOVATION ECOSYSTEMS

Local

- The PIER Living Lab – Port of Halifax
- Test, demonstrate, pilot and adopt
- Includes the physical living lab on port property

National

- The PIER Network
- Canadian Ports: now includes Port Saint John
- Connecting innovation communities
- Collaborative projects between ports

International

- Port Innovators Network: Global network of innovation hubs linked to ports
- Founded by homePORT (Hamburg), Opentop (Valencia), The PIER (Halifax).
- Now includes Cubo Maritime (Brazil), SmartPortLab (Bahia Blanca, Argentina)
- More to come!

ASPIN KEMP & ASSOCIATES
OTCNS
OCEAN TECHNOLOGY COUNCIL OF NOVA SCOTIA
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