



MIT REAP

Regional Entrepreneurship
Acceleration Program



REAP-NS INITIATIVE
IDE STRATEGY REPORT

CAPE BRETON STRAIT



A Message from Our REAP Team

Cape Breton Strait

Team Cape Breton Strait is made up of entrepreneurs, corporate, academic, municipal, venture capital and economic development leaders. While we are all from different communities, cultures, and backgrounds, the one thing we share is a passion for our communities and a desire to make the Cape Breton Strait Region an even greater place to live, work, and raise a family.

Our region predominantly consists of Mi'kmaq, French Acadian, Gaelic/Scottish cultures, languages and heritages, and a growing number of newcomers who have made the Cape Breton Strait region their home.

This plan is the collective efforts of our team using the Massachusetts Institute of Technology Regional Entrepreneurship Acceleration Program for Nova Scotia (MIT REAP-NS) model for creating an enabling environment that supports innovation-driven enterprises (IDEs).

MIT REAP is a proven model for preparing regions for entrepreneurial and innovation-driven economic growth. We're excited about the opportunities that lie ahead as we build an environment to support both existing and fledgling innovation entrepreneurs, attract new IDEs and make the Cape Breton Strait region a destination for IDE.

The one thing we share is a passion for our region and a desire to make the Cape Breton Strait Region an even greater place to live, work, and raise a family.

Brenda Chisholm Beaton

Carla Arsenault

Bob MacEachern

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MIT-REAP Project Introduction

Goals, Mission, and Objectives

MIT REAP

The Regional Entrepreneurship Acceleration Program (REAP) is a set of metrics and methods for a region to determine the current state of their innovation ecosystem. It's a model for ecosystem change.

The model, developed by the Massachusetts Institute of Technology (MIT) has a proven track record in supporting innovation growth and development. Since 2012, the program has been used in more than 50 regions around the world to supercharge innovation-driven entrepreneurship.

Mission

The primary mission for the project is:

To develop the local ecosystem to attract, retain and grow innovation driven enterprises.

Goals

The goals of this stage of the program include:

1. To identify the current or "as-is" state of the regional economic ecosystem for entrepreneurs and innovators (both comparative advantages and challenges),
2. Recommend PPIs (programmatic and policy interventions) that will lead to positive change in the region,
3. To define the "must-win battles" that need to be achieved to ensure positive momentum and success, and
4. To complete and deliver results for our first "Must Win Battle" (MWB 1).

The Challenge and Opportunity

The challenge set forth under this program is also its greatest opportunity - recognizing and reconnecting with the entrepreneurial and innovative heritage of the Cape Breton Strait region. Our Cape Breton Strait region is the birthplace of Canadian aviation, hydrofoils, and tele-communications. We have a history as being a creative Island, a culture still very much alive today.

Our REAP team would like to build upon our creative heritage and culture to foster and grow our Innovation ecosystem. We've come to recognize that we have IDE momentum in our region, we have enabling comparative advantages for Innovation, and we have a multitude of stakeholders ready to roll up their sleeves, put their shoulders to the wheel, and achieve success for our IDE "must win" battles to grow our region's economy.

Methodology and Process

The REAP Framework

The MIT REAP Framework consists of a series of action learning mechanisms to translate, convene, and educate teams of regional leaders through a five-stakeholder approach. The MIT REAP teams address their existing system by developing a strategy to deploy new interventions to improve it.¹

The REAP Team

The Cape Breton Strait REAP team is composed of entrepreneurs and corporate, academic, municipal, venture capital and economic development leaders from across the region. We participate in regular meetings and have collectively carried the project to its current stage, with help from support and resources from the Cape Breton Partnership.

The original core team first consisted of: Brenda Chisholm-Beaton (team champion/government stakeholder group), Carla Arsenault (project manager/government stakeholder group), Allan Eddy (corporate stakeholder group), Blaire Martell (entrepreneur stakeholder group), Jim Kehoe (venture capital stakeholder group), Edgar Samson (entrepreneur stakeholder group), Vivek Saxena (academic stakeholder group), Bob MacEachern (entrepreneur stakeholder group), Rod Googoo (entrepreneur stakeholder group) and Grace MacIntyre (corporate stakeholder group).

The composition of the core team changed mid-way due to time constraints for some of the originating members. Our core team is finishing this program with the following core members: Brenda Chisholm-Beaton (team champion), Carla Arsenault (project manager), Allan Eddy, Jim Kehoe, Vivek Saxena, Bob MacEachern, Grace MacIntyre, Iaian Langley (corporate stakeholder group), Amanda Mombourquette (Academic stakeholder group), and Chad Munro (IDE entrepreneur stakeholder group). Although some of the original members were unable to fully participate/engage throughout the entire program, they've always been ready to support in any ways needed.

We were successful in ensuring we had persons on our team representing all of MIT's identified stakeholder groups, and we were fortunate to have a good mix

of gender equity, and sector representation. Despite efforts, we weren't successful in securing a permanent core member from the Unama'ki community. Our team has discussed this at length. To honor our commitment to inclusivity, we will continue to pursue partnerships with the Unama'ki community as we continue the important work we've set for our MWBs.

We appreciate the commitment and efforts of all of our Cape Breton Strait REAP team members from the start to the end of the MIT REAP program. We also would like to acknowledge the incredible support and resources provided by the Cape Breton Partnership; former CEO Carla Arsenault has served as our team manager, and most recently, the current acting CEO Tyler Mattheis continues to assist us in a support capacity. We'd also like to acknowledge and thank our team's administrative leader Colleen Wheeliker, as well as many other Cape Breton Partnership staff including Carly Appleton, Kate Collinet, Jeremy Martell and Morgan Murray; we wouldn't have been able to achieve success without you all.

Our team would also like to acknowledge the support and resources provided by the Nova Scotia Community College and Nautical Institute; we thank you so much and consider ourselves so fortunate to have NSCC staff support. We'd also like to thank Don Bureaux and the Provincial NSCC support team, as well as Onside and their staff.

Lastly, our Cape Breton REAP team would like to thank our financial sponsors: Joe Shannon, the Strait Area Chamber of Commerce, Port Hawkesbury Paper, Superport Marine Services, Nova Scotia Community College, and the Cape Breton Partnership.

Summer 2021 Survey

A survey was administered through the MIT REAP Program to business owners throughout the Cape Breton Strait region between June 24th and July 8th, 2021. The survey consisted of 64 questions. Although more than 90 surveys were received, the team decided to only use a total of 34 responses. At that time, the team was working with a much narrower geographic region and did not include survey respondents from CBRM. (*Note: Our team may*

take the time in the future to review the complete survey data now that we've amended our geographic catchment area to include the entire island).

In addition to the survey, a total of nine qualitative interviews were carried out with business leaders and successful entrepreneurs in the region. A focus group was also held with business leaders to explore comparative advantages of the region, challenges and opportunities.

Information Gaps

Upon review of the results of the 2021 data, the REAP team determined that most of the respondents could be categorized as SMEs (small to medium-sized enterprises), with few IDEs. It is worth noting that we did have the opportunity to learn more about the offshore wind opportunity via a one-on-one interview with an IDE in that sector, as well as an offshore wind subject matter expert. Nevertheless, it was apparent that we didn't know enough about the IDE customer in the Cape Breton Strait region.

At first, our team drew a false conclusion at the end of 1st Workshop that we had an underdeveloped IDE ecosystem. It wasn't until we had IDE entrepreneur Chad Munro join our team for the 2nd workshop as a

core member that our team realized that we did have an IDE ecosystem.

As a result, two conclusions were drawn:

1. To better understand the current state of the innovation sector in the region, a directory of IDEs needs to be developed, and
2. The voice of IDEs is largely missing from the data, so IDE feedback needs to be captured and represented.

QFD and Voice of Customer

The process used to fill in these gaps and to complete the assignment is based on the QFD (Quality Function Deployment) model. This model, popularized in Japan in the 1960s, aids in product development by continually focusing on the voice of customer.²

In this case:

- The **product** is a **supportive IDE environment**.
- The **customer** is **regional IDEs**.

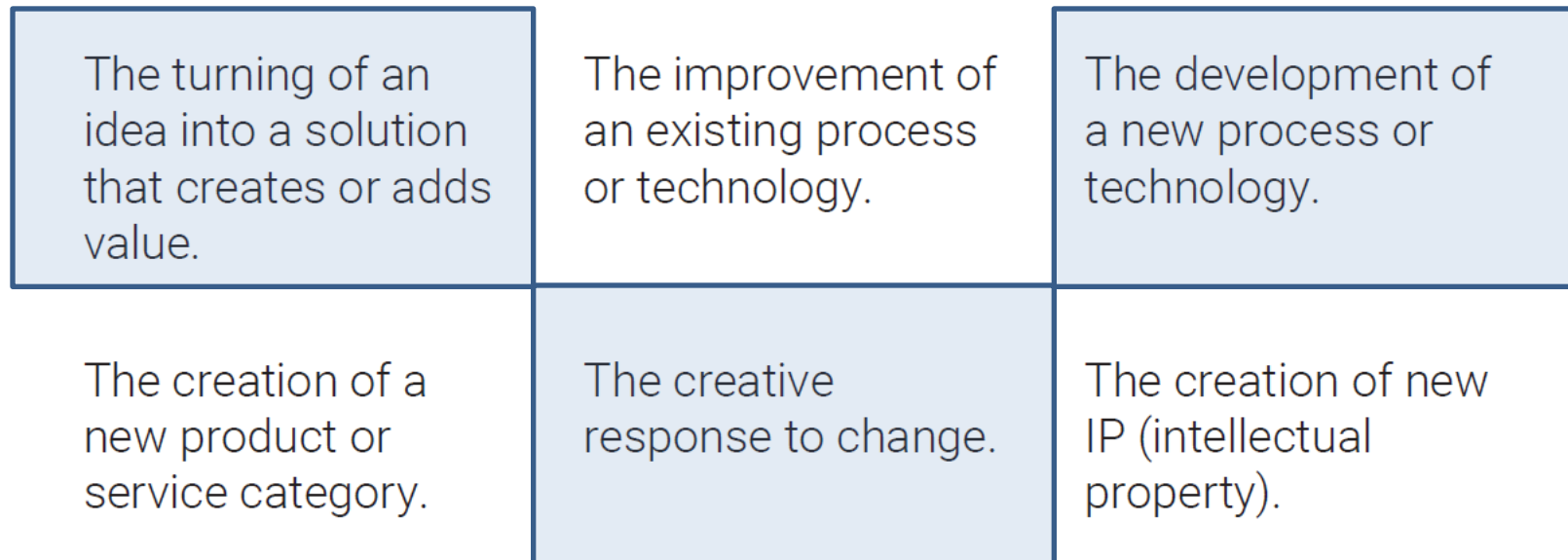
¹ MIT Management Global Programs, MIT REAP Framework, MIT REAP, 2021 <https://reap.mit.edu>

² ProductPlan, Quality Function Deployment, ProductPlan, 2021 <https://www.productplan.com/glossary/quality-function-deployment/>

Innovation Introduction

"Innovation" can be defined in a variety of ways. It's a popular industry buzzword to describe a wide range of activities.

Asking 10 different innovators to define the term will likely yield 10 slightly different responses. However, there are some universal themes that tend to best represent innovation as it relates to this assignment.



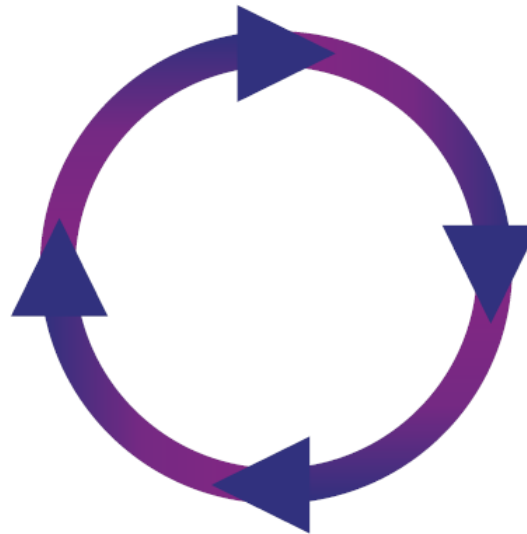
Innovation Life Cycle

Similar to the definition of “innovation”, there are varied interpretations of the innovation life cycle. It’s been defined in as few as three stages or as many as eight. Regardless of variants, the following generally describes the key stages where a product or service evolves from one state to the next.

Problem Identification

Identifying problem(s) that need solving, processes that need improving, customer needs that are being unmet.

Commercialization
Bringing the product or service to market.
Ongoing adaptation meets evolving customer demands.



Idea and Concept

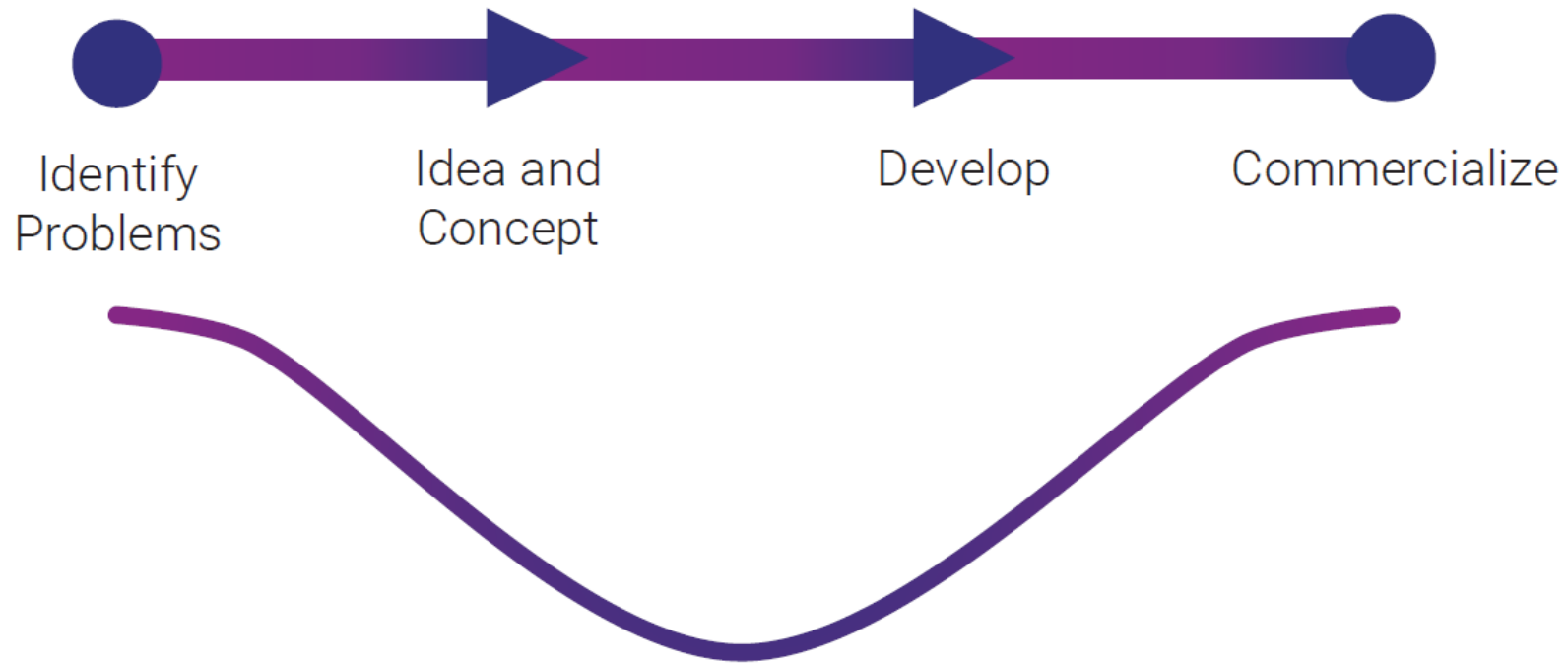
Exploring ideas to respond to and mitigate the problems.

Identify a business case that can be acted on.

Development

Designing, building, and testing the product or service.

Innovation “Valley of Death”



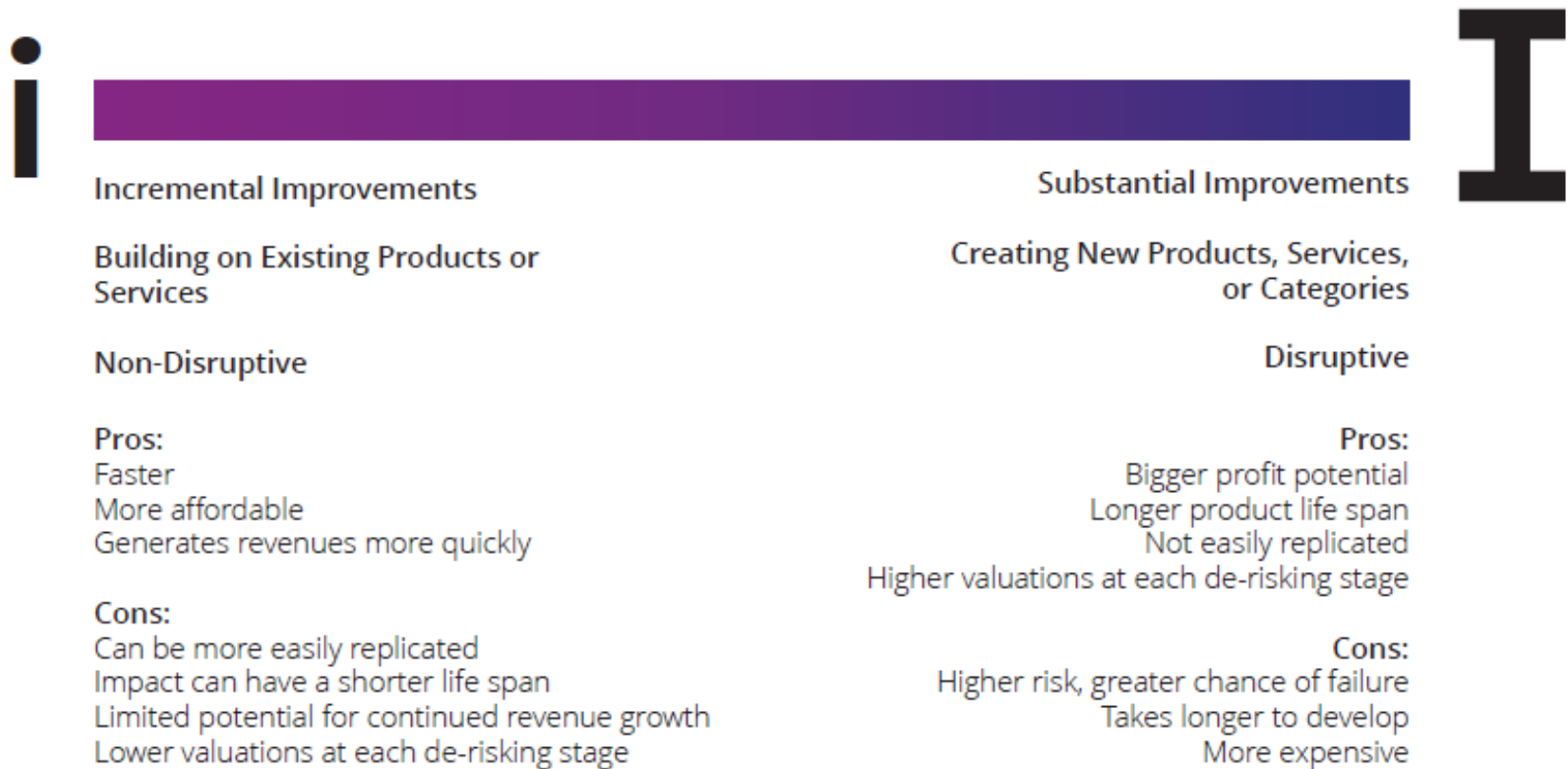
If we view the innovation cycle in a linear model, the “valley of death” is the gap between identifying an idea and then delivering it to customers.

In most cases, it's the span of time from the moment a business or project begins operations or investing in innovation (i.e. spending money) to the moment it begins selling its innovation (i.e. making money).

Innovation Spectrum

From "Little i" to "Big I"

There's an innovation spectrum that often refers to "Little i" and "Big I" innovation. Little "i" innovation represents incremental improvements on existing products, services, or processes. Little "i" typically represents improving on what was previously possible. Big "I" innovation represents more substantial steps forward, including making what was previously impossible, possible.



Entering the Valley

IDEs enter the valley when they decide they have a concept or idea that they wish to develop and commercialize. The valley represents the highest point of risk for both the entrepreneur and any potential investors.

When entering the valley, rural IDEs generally have the following options to finance their journey:

Founders' Equity

Founders' equity commonly includes sweat equity (working for no financial compensation), personal credit cards, or leveraging financing through personal guarantees and collateral.

Pre-Seed Support

This type of support typically includes investments from the founders' immediate network, including friends & family, angel investors, or community investment funds.

Small Business Loans

The Nova Scotia Small Business Loan Guarantee Program is a joint initiative of the Nova Scotia Cooperative Council, participating Credit Unions, and the province of Nova Scotia. The program can provide financing up to \$500,000 in the form of term loans, working capital, and lines of credit.³

Startup Grants

Startup grants include government-sponsored, entrepreneurship grants, startup competitions, and other sector-targeted incentives. These are frequently focused on encouraging youth to invest in innovation and entrepreneurship.

Tax Credits

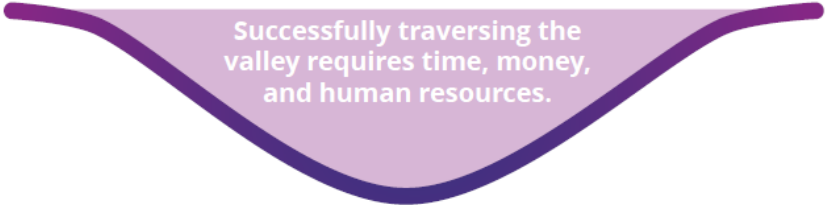
Labour-based tax credits such as SR&ED (Scientific Research & Experimental Development) and Digital Media Tax Credits are frequently used to offset development labour expenditures.

Services

For many entrepreneurs who can't fully capitalize their projects, they sell their services and expertise to generate revenues that are applied to offset R&D expenses.

Research Grants

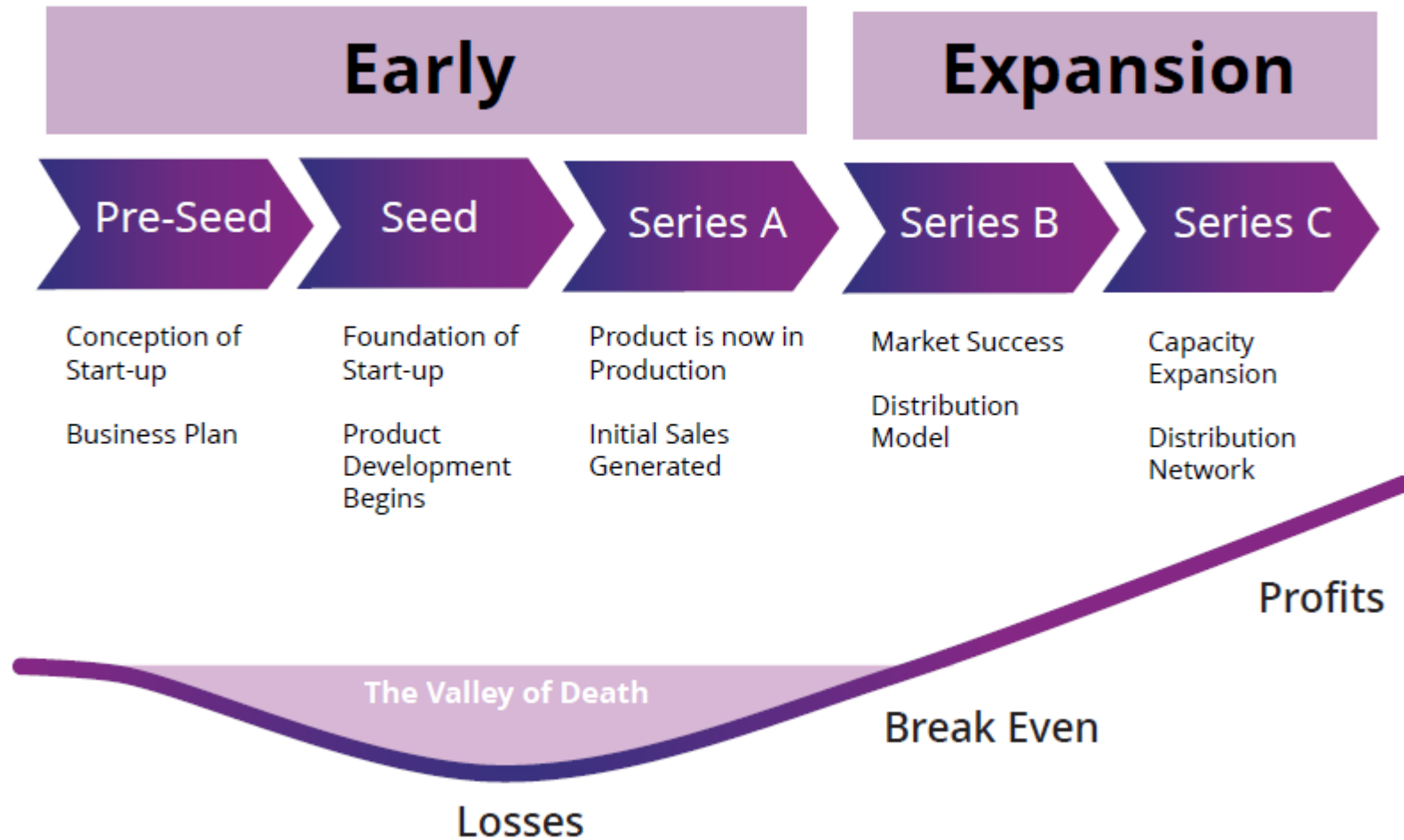
Grants through Industry Canada and the National Research Council can also be accessed.



Successfully traversing the valley requires time, money, and human resources.

³ Nova Scotia Cooperative Council, Small Business Loan Guarantee Program, <http://www.nov>

Navigating the Valley - Formal Stages of Investment



De-Risking Events and Milestones

Regardless of the type of project or business sector, IDEs must reach key milestones as they develop their innovation and continue traversing the valley of death.

As each milestone is reached, exposure and risk is reduced, and the IDE's enterprise or project value increases.

Types of De-Risking Milestones

De-risking milestones can vary from sector to sector, but commonly include achievements like the following:

- Completion of a proof-of-concept,
- Completion of a working prototype (first minimally functional version of the innovation),
- Completion of field tests,
- Award of a patent,
- Regulatory approvals,
- First commercial sale,
- Break-even,
- And others.

Valuation

Each de-risking milestone has the capacity to increase the value of the IDE's enterprise or project, even if they are multiple stages away from initial sales or profitability.

The value of an enterprise at any of these milestones can range greatly, depending on the level of innovation, the sector, the market size/potential, and how difficult the problem is that they are attempting to solve.

Regional IDEs

Filling in the Information Gaps

As teamwork progressed during the 2nd MIT workshop, and as our team became more aware of the IDEs present in our economic region, we quickly identified the importance of identifying, understanding our IDE customers, and engaging with them. Research collected during the summer was an important look at our regional SMEs, however, our team needed a fuller picture before we could design PPIs and MWBs to grow our region's IDE ecosystem for short, medium and long-term impact.

In order to bridge the IDE information gap, the first step involved working with a few IDE leaders and IDE stakeholders to assist in researching, identifying, and then reaching out to existing IDEs across the Cape Breton Strait region.

Building a Regional IDE Directory

The directory is an evolving contact list of IDEs operating in the region. It has been compiled based on input from several members of the REAP team, IDE leaders, and IDE stakeholders. It is structured to capture the following information:

- Company name, principal contact name
- Contact information - address, email, phone
- Year founded
- Business sector (segmented into Advanced Manufacturing, Professional Services, Information Technology, Biotech-Medtech, Greentech-Cleantech, Travel-Tourism, Energy, Healthcare, Arts-Culture-Entertainment, Agri-tech, Mining, Forestry, Construction, and Real Estate)

- Products & Services
- Current Status (wound up, growth, idle, exit, and valley of death)

Voice of Customer - Regional IDE Survey

In the interest of time, a simplified IDE survey was developed to capture core information that could be used to best represent the voice of regional IDEs. This was designed based on feedback from members of the REAP team and a comparison with the more exhaustive survey carried out in the summer.

The survey consisted of about 25 questions covering the following key points:

- Background information - sector, number of employees, year founded, location
- Level of innovation
- Capitalization - current state
- Feedback on comparative challenges and advantages
- Thoughts on current state of the culture of entrepreneurship and innovation

The survey is available in Appendix A.

Identifying Regional “Sectors”

For purposes of this strategy, we defined three or more IDE companies actively operating in the region in the same sector to constitute an industry cluster. Companies that have either shut down operations or exercised an exit within the past five years were also included.

Core Sectors:

Information Technology

Generally speaking, Information Technology (IT) or Information & Communication Technology (ICT) is the most prominent sector in terms of maturity and number of IDEs operating in the region. Approximately half of the IDEs in the database to date have been categorized as operating in the IT sector.

Advanced Manufacturing

The second most established sector is advanced manufacturing. Specialized manufacturing includes companies like Protocase, Advanced Glazings, 45 Drives, and Polysteel Atlantic where patents, trade secrets and/or advanced processing methods have provided competitive advantages and market share.

Medtech-Biotech

Four companies are identified as operating in the Bio-Medtech sector; research suggests they are currently in the Valley of Death.

Marine and Ocean Tech

Four companies were identified in the Marine / Ocean Tech sector. This is the final category identified where a minimum of three companies were currently operating (i.e. to represent an industry “cluster”).

Our REAP team identified this core sector as one with huge potential for the Cape Breton Strait Area, capable of significant

growth, particularly around marine safety, marine innovation, and marine renewables.

During the 1st and 2nd MIT Workshop, our team discussed the potential of this sector at great length; core discussions centered around one undeniable geographic and strategic comparative advantage: Strait of Canso.

Compared to other regions, the Strait of Canso with its ice-free, deep-water port, our region’s multimodal transportation hub, and many other comparative advantages (discussed later in the report) truly sets our region apart.

Discussions continue about this unique Strait of Canso asset, particularly as it relates to Marine IDE and training, Ocean Tech, and Marine Renewables. The Strait of Canso is at the core of several of our Must Win Battles that we will continue to work on after the final MIT workshop.

Emerging Sectors:

Marine Renewable Energy: Offshore Wind

The Strait Area has been home to energy generation facilities that have powered the province for about 75 years. With the phasing out of coal, more attention is being focused on renewable energy sources as a way to repurpose the facilities and skills that exist in the region. A 22 MW wind farm at Point Tupper operated by Renewable Energy Services Ltd has been in operation for more than a decade, and more recently with support from the Province of Nova Scotia, Port Hawkesbury Paper and the Canada Infrastructure Bank are evaluating the potential development of a 130-megawatt wind farm in the region; once completed, it will be the largest onshore wind farm in the Province.

Offshore, Nova Scotia's wind energy generation potential has been receiving local and international attention with an estimated 900+ GW capacity. An IDE offshore wind firm Brezo Energy began to engage municipalities and other stakeholders in the Strait area. They are interested in demonstrating TRL7, TLR8 and TLR9 floating wind energy turbines in the Strait region. Efforts were made on a local level to better understand Brezo's project, as well as to better understand the broader opportunity around Offshore Wind.

Another notable learning milestone on this file came from a webinar showcasing the Nova Scotia offshore wind opportunity. Scott Urquhart (originally from Cape Breton) was a webinar host.¹ Local leaders were able to engage with Urquhart who is currently working internationally in the offshore wind sector. Our REAP team also interviewed Urquhart as an interview participant during the first round of research.

This webinar, Brezo Energy's interest in the Strait, the Marine Renewables Conference held in Halifax, and the growing interest in Nova Scotia and the Strait region by international offshore wind industry players paved the way for the genesis of the Strait Area Offshore Wind Task Force. Several members of our REAP team sit on this task force; it is co-chaired by Warden Amanda Mombourquette (Richmond County) and Mayor Brenda Chisholm-Beaton (Town of Port Hawkesbury).

With our Province's strong/consistent wind, culminated with our region's unique comparative advantages in the Strait of Canso zone, choosing offshore wind as one of our Must Win Battles is a "no-brainer".

Nova Scotia

Offshore wind farms could make Nova Scotia an 'energy-exporting region'



Marine renewable energy conference in Halifax explores province's energy and environmental options

Paul Withers - CBC News - Posted: Nov 26, 2021 6:00 AM AT | Last Updated: November 26, 2021



(This Photo highlights a news article published after a Marine Renewables Conference was held in Halifax in 2021.

<https://www.cbc.ca/news/canada/nova-scotia/offshore-wind-farms-nova-scotia-exporting-region-1.6263164>)

¹[Offshore wind – a global perspective on its applicability in Atlantic Canada](#)



Cleantech, Greentech, Agtech, and Industrial Biotech

IDE Inventory research shows that Cleantech, Greentech, Agtech, and Industrial Biotech are identified emerging sectors and areas of opportunity. One prime example of infrastructure that supports these sectors resides at the Verschuren Centre, located on the Cape Breton University (CBU) campus. A revised strategy in 2020 resulted in the Center branching off from CBU and incorporating as a not-for-profit. This allowed the Centre to become self-governed and move more quickly as it relates to entering contracts and managing its own accounting. Recent years have seen an increase in activity in collaborations and co-location and pilot opportunities at the Centre.

A program that has emerged from this strategy is the AscendBio program. AscendBio focuses on two of the world's biggest sustainability challenges: mitigating climate change and feeding the world's growing population.

The program combines the Verschuren Centre's scientific and technical expertise and infrastructure, along with Innovacorp's sector expertise, business support, and international networks.⁴

(Website photo at top of page is of the Verschuren Centre located in CBRM - <http://www.verschurencentre.ca/>)

⁴ AscendBio, 2021, Innovacorp <https://innovacorp.ca/acceleration-initiatives/ascendbio>

Analysis

Our Region's Comparative Advantages

Industry-Leading Support for Startups

IDEs interested in starting or expanding in the region have multiple options for supporting their efforts. Financial support comes in a variety of forms, including grants for IDE startups, government-guaranteed business loans, and programs through organizations like ACOA help with expansion and marketing.

Post-Secondary Educational Infrastructure

The presence of Cape Breton University in CBRM, the NSCC' campuses in Sydney and the Strait Area, and Saint Francis Xavier University (StFX) in Antigonish (mainland side of the Strait region) provide access to trained personnel and access to R&D infrastructure. Investments into this infrastructure have been advancing in recent years providing even more opportunities for students, research initiatives, and partnerships with IDEs, SMEs and industries in the Cape Breton Strait region.

IDE Momentum & Businesses Open to Innovation

The historical success of existing innovation-driven sectors (specifically ICT and Advanced Manufacturing) help position the region as a place where IDEs can grow and thrive. These are sectors that are now decades old and their established IDEs provide a model that is proven to work for the region. Further, the region has a broad clustering of SMEs who have demonstrated growth and innovation across their lifecycle, and who have demonstrated a willingness to innovate as well. The focus group, one-on-one interviews and survey data lends significant evidence that SMEs have and will innovate when the need arises and when opportunities to do so become available.

Strong Industry Base: Port Hawkesbury Paper and Other Industries

Port Hawkesbury Paper (PHP) is an important piece of existing regional industrial infrastructure. It is a world leader in the manufacture of super-calendar paper, and is focused on long-term growth and sustainability.

PHP is an industrial innovator with an on-site power plant, a broad range of industrial utilities, and a program to offer on-site development opportunities with interested innovators. Most recently PHP is leading a wind farm project that will be the largest on-land wind farm in the Province to date.

In addition to PHP, Point Tupper is the Industrial hub of the region, and includes Bear Head Energy, Cabot Gypsum, Nova Scotia Power, NuStar, Strait Supplies and Allsteel. In addition to Point Tupper, other industries and businesses can be found in the Strait of Canso zone. What makes this zone so comparatively strategic is the Strait of Canso itself - a deep water, ice free and dredge-free harbor. Further, there is significant room for growth for existing and new sector development.

There is an abundance of industrial-zoned and underdeveloped properties (brown and green-field sites) and land available for purchase in Point Tupper and elsewhere in the Strait of Canso Zone.

Comparatively, Point Tupper and other industrial properties offer some of the lowest commercial property taxes within the province of Nova Scotia, which makes development here more affordable than other locations.

Multimodal Transportation Hub

The Strait Area is a transportation hub accessible by rail, air, highway, and sea/port year-round. The infrastructure is already in place to enable companies to ship goods and materials using any of these modes of transport, all located within 15 minutes of each other. The Strait of Canso – itself - is a significant port asset that will be covered in more detail as a “natural resource.”

The Allan J MacEachen Regional Airport is located 5kms from the Canso Causeway linking Cape Breton to the mainland of the Province of Nova Scotia. Other important factors are that the airport is the closest FBO to Sable Island, 80% of its air traffic is private jets with 20% by local, medical, military, industry and government users. This airport is governed by three partner Municipalities who work closely with the Celtic Air FBO. Plans are currently underway to create a strategic plan for short, medium and long-term growth of this asset, and to outline opportunities to diversify services offered there, and to consider other aeronautical opportunities around training and economic development.

An active rail line supplies Point Tupper from the mainland; it is currently the only active rail line to Cape Breton Island. The Causeway makes road / rail transportation connections from Cape Breton to mainland Nova Scotia, with road connectors to the Newfoundland ferry terminal in CBRM easily accessible. Thus the Strait of Canso zone has a critical mass of transportation assets that constitutes a significant comparative advantage in the Cape Breton Strait region.

Emerging Ocean and Clean Tech

We have a small cluster of existing Marine and Ocean Tech companies. During the 2nd workshop, as mentioned in the former section, our REAP team identified this core sector as one with huge potential for the Cape Breton Strait Area - capable of tremendous growth. The fact that the Nova Scotia Community College and Nautical Institute has been training workforce in the Marine industry, adds tremendous value to the growth of these sectors, with potential to expand training to accommodate a growing marine sector, and additionally, training diversification into

renewables, like offshore wind. Training opportunities such as these can eventually feed into local demand, and most definitely meet the needs of current global demand.

Other comparative advantages that create a more enabling environment for growth in these and other sectors is the establishment of the Marine Innovation Centre: A'paqt Place, at the Port Hawkesbury waterfront. Our REAP team has made the design and implementation of A'paqt Place one of our Must Win Battles.

Brown and Greenfield Sites

There are plentiful greenfield sites that lack constraints imposed by prior work/construction on these sites, that would allow greenfield-based projects to develop on completely vacant sites to meet the needs of those projects.

There are also brownfield sites with already established infrastructure and assets. Should the various brownfield sites in our region meet the needs of any developer, project developments have the potential to become more tenable from a cost/time efficiency standpoint. As noted earlier, many of these sites enjoy the lowest commercial tax rates compared to other regions across the Province.

Natural Resources: Wind & Ice-Free Port

Nova Scotia's Wind Resource in relation to our Region

Wind is a natural resource that has often been overlooked and has been largely underutilized. Some wind energy projects have been (and will continue to be) established in the Cape Breton Strait region. The majority of these are land-based; it has only been recently that the opportunity around offshore wind energy is gaining traction.

Nova Scotia's offshore wind energy generation potential has been receiving international attention with an estimated 900+ GW capacity. This has resulted in the creation of a Strait Area Offshore Wind Taskforce – for which several of our REAP team members are a part of. Both the REAP team and task force members see the

establishment of a Nova Scotia Offshore Wind Research Center in the Strait region as an important next step to capitalize on this potential.

The deep water/ice free port, plentiful greenfield and brownfield sites, fuel storage capacity, marine training facilities, multi-modal transportation infrastructure, available expertise in marine operations and energy generation, and the potential to repurpose former Sable Offshore Energy assets, uniquely position the Strait Area to be a Provincial and National leader in this emerging sector using wind as a renewable natural resource.

The Strait of Canso

The Strait of Canso, as a port, is also an important natural resource. Although it is currently an ice-free port, it wasn't always so. The installation of the Canso Causeway, lock system, and swing-bridge in 1955 created a permanent road and rail connection between Cape Breton and the mainland of Nova Scotia. This new road, rail and marine lock transportation infrastructure completed in 1955 transitioned the Strait of Canso into an ice-free port making ports-of-call located in the Strait of Canso zone accessible year-round.

Some natural features that make the Strait of Canso a significant port is that its waters are deep, ice free and - compared to other regional harbors - does not require dredging. Other features of this harbor is that it is capable of accommodating ultra large carriers (500,000 dwt) and has a limited depth of 92 feet (27 meters), with currents of 0.5 knots - 1.5 knots. Also, an interesting natural and geographic feature is that it is only 117 nautical miles away from Sable Island.

Other Natural Resources

Another natural resource worth mentioning is abundant clean and high-quality fresh-water sources. One example is Landry Lake, which supplies Point Tupper Industries.

Culture of Innovation

The Cape Breton Strait area has a rich history of innovation, with some of history's greatest innovators choosing the island to live and work, including Alexander Graham Bell and Guglielmo Marconi to name a few. We also have grassroots innovators like Baddeck-born John Alexander Douglas McCurdy who was a pioneer in aeronautics; and like late 18th Century shipping, transportation and trade pioneers Douce Belhache from Port Hastings and Rebecca Smith from Port Hood. We are a creative Island with a rich heritage of innovation.

Affordable Real Estate, Safe Communities, and low Covid Numbers

The housing crisis in Canada is causing a generation of younger people to be locked out of home ownership. The pandemic has also loosened the connection between where we live and where we work. This has created a trend in which people are moving to more rural centers to run their businesses, and we are observing this trend in our region.

Expanding broadband helps to foster this trend, as has the fact that housing and real estate in the Cape Breton Strait region is comparatively more affordable than other regions in Nova Scotia, and even more so compared to other regions across Canada.

The Cape Breton Strait region is considered to be a safe place to live and raise their families. We heard this theme in our focus group, one-on-one interviews and surveys; many research participants discussed the importance of safety, low incidences of crime (particularly violent crime), which makes the region an attractive place to live.

Covid 19 and the global pandemic was also discussed in terms of its impact on the region. Research participants noted that Nova Scotia, and the Cape Breton Strait region in particular, having low levels of Covid cases, was also acknowledged as a positive. Some examples were discussed in the focus group session; the theme was that there is a renewed interest for families and individuals returning to Nova Scotia and Cape Breton because of the

lower cases of Covid, despite the potential of lowered income earnings. It was further noted that other families and individuals with no connections to the region are also moving to the region for the similar reasons.

Our REAP team has extensive discussions on this population trend, that many are attributing to Covid and shifting priorities (level of income vs. quality of life). We note that the biggest obstacle for our region, to truly be able to capitalize on this trend, is the availability of housing. This is an issue that our Team members have identified, but in the same token, feel that it is a challenge that is beyond the mandate of the REAP team's goals.

Collaborative Local and First Nation Governments

The One Nova Scotia Report emphasizes the importance of regional collaboration. Collaboration between Municipalities in the Cape Breton Strait region have been cultivated and fostered in multiple ways. For example, the Strait Area Mayors and Wardens have brought together Municipal leaders to discuss common challenges and opportunities. These leaders have been doing so for decades. In 2016, it was acknowledged that not all of the Strait area leadership was at the table, and Strait Area First Nation Chiefs were asked to join and participate.

The Cape Breton Strait Area has also been able to foster regional collaboration and cooperation via shared assets and services. One long-standing example is the municipal governance model of the Allan J MacEachen Regional Airport for over 50 years. Multiple Cape Breton Strait municipalities have been coming together for years to create efficiencies, reduce costs, and improve services to citizens. Some examples span from shared financial systems to land use planning to economic development.

Although our region's municipalities have long-standing inter-municipal working relationships, creating a strong spirit for regional growth and regional collaboration takes a lot of hard work and leadership. In 2012, Victoria County brought all of the Cape Breton Municipalities together to discuss common challenges and opportunities, and this annual event continued for several years.

Like the Strait Area Chiefs Mayors and Wardens, Municipal leaders acknowledged that all Island leaders weren't at the table participating, and to truly grow a strong sustainable Cape Breton, we needed to engage and collaborate with Unama'ki leaders.

For the first time in history, a "One Cape Breton – One Unama'ki" Leaders' summit co-designed and co-chaired with input from all five First Nation councils and all five Municipalities was held in Port Hawkesbury in 2017, and another leaders summit held in 2019 in Membertou First Nation. These summits created an opportunity to improve relationships, build trust, collaborate to tackle common challenges and mobilize to take advantage of common opportunities.

The spirit of collaboration between First Nation Communities and Municipalities in our region is not only strong, it has also led to positive actions. The entire region mobilized to advocate for the Provincial government to add a welcome to the Canso Causeway Swing Bridge in the First Language of the Island. This project was accomplished in the summer of 2021 and was a huge act of Truth and Reconciliation.



(Photo shows Mi'kmaq Elder Magit Poulette and several Island leaders with a rendering of the new sign that has been installed on the Strait of Canso Swing Bridge at the Gateway of Cape Breton / Unama'ki – August 2021)

Another example is the “Strait of Canso Gateway Project” which will see the revitalization of the Island’s primary road connector. These efforts have not only improved the ways local leaders work together in our region – it has improved our approach to understanding and pursuing new economic opportunities. To put this into perspective it is important to discuss Unama’ki Mi’kmaq Elder – Dr. Albert Marshall’s “Two-eyed Seeing/Etuaptmuk” approach. This is a tool for how First Nation and Western communities can work together.

(In this photo, Dr. Marshall is explaining the “Two-Eyed Seeing” approach in the context of Forest Management. Posted by UINR on their Facebook page, March 22 2019)



The approach is two-fold; one lens of focus and understanding is grounded in the strengths of Indigenous knowledge and ways of knowing, and the other lens (or eye) is grounded in the strengths of Western knowledge and ways of knowing. Combining both lenses and ways of seeing and understanding creates the best outcomes when working together inclusively.

In October 2021, Dr. Marshall was appointed as NSCC Strait Area Campus' Advisor of the College's School of Environment and Technology, and his “Two-eyed Seeing” approach is put into practice at the college, is used by Island-based organizations like CEPI and Pitu’paq, and is growing in popularity nationally.

The high level of collaboration/spirit of cooperation by local leaders in the Cape Breton Strait region has not gone unnoticed. It was discussed as a comparative advantage at our REAP team’s focus group held last summer. Our REAP team members have heard this theme articulated by industry and political leaders while working on the A’paqt Place and Offshore Wind Must Win Battles as well.

Quality of Life

Quality of Life is certainly a common thread throughout both rounds of research with SMEs and IDEs. Our REAP team identified this comparative advantage long before we engaged in the research process.

In May and June of 2019, Engage Nova Scotia mailed 80 000 Nova Scotia households to participate in a “first-of-its-kind” survey measuring quality of life across the province. The survey asked how people feel they are doing in eight key areas related to their quality of life.² These areas included education, living standards, health, time use, leisure and culture, environment, democratic engagement, and community vitality. The county of Inverness, which includes the Municipality of the County of Inverness and the Town of Port Hawkesbury, received the designation of being the

² [Eight Domains of Wellbeing — Engage Nova Scotia](#)

happiest place to live in Nova Scotia.³

Engage Nova Scotia came up with a way to measure quality of life, and to have this data on hand gives clear evidence of this comparative advantage. Our Reap team has had robust conversations about how we might capitalize on this comparative advantage. During the 2nd MIT workshop held in Halifax discussed how we can showcase our region's "Quality of life" - coupled with the other comparative advantages, to market the Cape Breton Strait region as a destination for IDEs. This concept – to cultivate the Cape Breton Strait region as an IDE destination – was chosen as one of our Must Win Battles. As we continue to grow and foster a regional IDE community, we can use our region's national and global reputation as a destination to design, plan, and host an annual IDE Retreat with our IDE Community and IDE stakeholders. This retreat would welcome innovation entrepreneurs from the Atlantic region, from other areas of Canada, and from other areas around the globe to showcase our region, its natural beauty, and more. At the core of this MWB is a focus on attracting new IDEs to our region and to Nova Scotia. (Local news coverage: Below: <https://haligoniac.ca/cape-breton-island-ranked-1-in-canada-for-the-third-straight-year-276649/> - Right: <https://www.1015thehawk.com/2021/10/14/cape-breton-rated-1-island-in-north-america-again/>)



Cape Breton Island ranked #1 in Canada for the third straight year

Cape Breton rated #1 Island in North America, again

Port Hawkesbury, NS, Canada / 101.5 The Hawk

Anastasia Payne

Oct 14, 2021 | 1:29 PM

Cape Breton is topping travel award lists again this month.

Condé Nast Traveler magazine announced the results of its 2021 Readers' Choice Awards, with Cape Breton claiming the number one spot for best island in North America.

"The credit for this goes to the extremely hard working tourism operators and staff who steadfastly deliver an exceptional experience to visitors, and to all of our residents who are always welcoming and friendly," says Terry Smith, CEO of Destination Cape Breton.

Cape Breton beat out both Prince Edward and Vancouver Islands; Overall, Cape Breton Island received the second highest score of all the island that made the list across the world.

Over 715,000 readers submitted their responses, based on their own travels. The *Condé Nast Traveler* Readers' Choice Awards are considered to be one of the most prestigious recognitions of excellence in the travel industry.

"We want to thank the readers of *Condé Nast Traveler* who gave our Island such high marks and we look forward to welcoming them again," Smith said.

To see how our island compares to others in the running, check out the [full list](#) of competitors for the "best island" category.



³ [Inverness happiest place in Nova Scotia | SaltWire](#)

Areas of Need

Alignment: Private and Educational Sectors

The private and educational sectors in the Cape Breton Strait area have historically operated in their respective silos with limited collaboration. They need to engage in more outreach, as their resources and expertise are complementary. The AscendBio program is a great example of these sectors aligning respective strengths. There is an excellent opportunity in the Cape Breton Strait region to see greater collaboration between CBU, StFX University, Nova Scotia Community Colleges (Marconi and Strait Area Campuses) and the Nautical Institute to work with SMEs and IDEs, along with industries to help accelerate economic growth, training, and new sector opportunities.

Long-Term Planning

Some of the work needed to attract, retain and grow IDEs and stimulate the IDE ecosystem can be done immediately, however the most impact will come with strategies designed for the longer-term. As our REAP team progresses with our MWBs, it will be important to design 10 and 20-year visions/plans that will support and foster IDEs in our IDE ecosystem. In the Cape Breton Strait region, as this preliminary research shows, most companies spend multiple years crossing the Valley of Death. This is why our REAP team has set MWBs that are short, medium and long-term.

Fostering and Growing an IDE Community: Communication, Awareness, and Education

Ensuring new IDEs are added to our Cape Breton Strait region IDE inventory will be an on-going task. As a REAP Team, it will be important to continue to engage, learn from and support IDEs to foster a supportive regional IDE community. It's critical that local IDEs are acknowledged, supported, and celebrated; in turn, it is important for innovation opportunities to be communicated to students interested in IDE and fledgling entrepreneurs. Having a robust IDE community will be critical for these goals to be successful.

Talent - Recruitment and Retention

For innovation-driven firms, particularly in their early stages, attracting and retaining talent is one of the most important factors for success. Having the proper talent in place ensures that firms are their most productive from the outset, and play a key role in reaching de-risking milestones as quickly as possible.

For the Cape Breton Strait region, securing talent has become a challenge, regardless of sector and geography. Competition for qualified personnel, particularly Masters and PhD-level researchers is at an all-time high. The recruitment challenge is exacerbated in rural areas. If an opportunity doesn't work out in urban areas, experts typically have little difficulty finding new employment. In rural areas where critical mass doesn't exist, transitioning to new opportunities can be more challenging.

Other common rural recruitment concerns include challenges in finding a doctor and securing adequate housing or accommodations. Our Reap team can work with other IDE stakeholders to consider PPIs that will assist with building capacity for IDEs in our region's talent pools, and perhaps more integration and collaboration between the IDE community, IDE stakeholders, and post-secondary institutions and industry can offer potential solutions.

Programmatic and Policy Interventions

PPI 1: Deeper Engagement with IDEs

IDE data gaps impacted the process of defining comparative advantages and PPIs. Our team engaged with local IDE leaders to develop a targeted survey and one-on-one engagement to help to determine the voice of IDEs operating in the Cape Breton Strait region. This PPI 1 will require ongoing work in our Team's efforts to build and foster an IDE community.

Regional IDE Directory

Over the period of the MIT REAP program, our team came to the realization that the voice of rural IDEs have largely been missing for some time in our region, particularly as it relates to considerations for policies and programs. To help address this, the creation of a regional IDE contact database was started as a tool to achieve the following:

- Better understand the history and mix of IDEs operating in the region,
- Identify IDE trends, sectors, and industry clusters, and
- Discover opportunities for improved outreach and communication with regional IDEs.
- Identify areas where opportunities exist but are not being pursued/leveraged.

IDE Focus Sessions / Retreats

Using the QFD model, deeper ongoing engagement with regional IDEs represents a critical step in ensuring that a supportive IDE community is created and maintained. An annual retreat, focus session, or series of similar engagement activities has been identified as an important exercise in supporting this model.

PPI 2: IDE Recruitment Support

A lack of critical mass makes it difficult to attract qualified and experienced personnel, particularly at the Masters and PhD

levels. These individuals, since they are in high demand, have certain expectations in terms of their working environments and salaries.

Programs and Strategies

Recruiting qualified individuals is a multi-layered problem. It begins with the IDE:

- Positioning themselves as an innovator, disruptor, and an exciting employment opportunity,
- Having a diverse and inclusive HR policy, and
- Developing a strong brand that focuses on marketing to talent as early as possible.

Startups and early-stage firms typically don't have the financial resources to recruit and hire senior research personnel. Programs that assist with recruitment challenges should consider the following:

- Develop attractive corporate brands, recruitment plans, and diverse/inclusive HR policies, and
- Top-up programs that help early-stage firms hire qualified personnel that would otherwise be outside their budgets.

A program once existed through ACOA called the "Productivity and Business Skills Initiative" which provided grants of up to \$50,000 to hire key personnel. Similar programs can be created to assist with talent recruitment.

PPI 3: Align Public and Private Sector IDE Investment Strategies

The REAP process identified a disconnect between the public sector (including funding agencies and policy makers) and the needs of IDEs.

Long Term Vision and Strategy

While there is a great deal of support for the startup community, this type of support ends at the early development stage. IDEs are left struggling (most frequently on their own) to carry themselves through the Valley of Death.

Explore and Adopt Proven Models of Success

Models that help IDEs navigate the valley of death exist in other jurisdictions. These models include approaches that work to better align public and private sector risk sharing and mitigation.

Small Business Investment Company (SBIC)

Specifically, the **Small Business Investment Company (SBIC)** program has been a successful model in the United States for decades. The program, an initiative of the Small Business Administration, was established in 1958 to stimulate investments in small companies. The program licenses privately and publicly managed investment funds that raise capital from private investors and combine it with capital obtained through the issuance of taxpayer-backed guaranteed debentures.⁵

Exploring Proven Models of Success makes sense. It is the right time to do so, and get the Province back on track with regard to venture capital investment. The Province has not been able to move the needle on their “Venture Capital” Goal – which is one of 19 goals laid out in the One Nova Scotia Dashboard for economic growth. Progress was made in 2017, but then in 2020, the Province’s venture capital investments were significantly reduced. The work all of the Nova Scotia REAP teams are doing in regions across the Province to grow IDE will be impacted by the progress, or lack thereof, made by the Province on this goal. Our research shows there is a VC gap some many IDEs.

(Photo below is from the OneNS Dashboard:
<https://www.onens.ca/goals/goal-13-venture-capital/deep-dive>)



GOAL 13

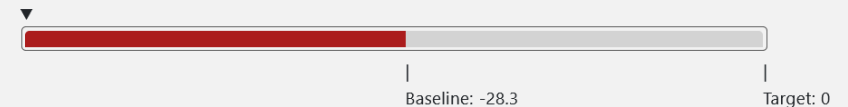
Venture Capital - Deep Dive

Home / Venture Capital / Venture Capital - Deep Dive

GOAL STATUS

Not Progressing Not On Track

Current: -58.3



At \$66.39 the annual VC funding per capita in Nova Scotia fell below 2016 levels in 2020, and has been decreasing year over year since the high of \$80.99 in 2017. While a decrease in VC funding in 2020 was experienced by Nova Scotia as well as Canadian national data, the Canadian decrease has not been as prolonged and comes after Canada's high of \$164.03 in 2019. This has resulted in the second largest gap between Nova Scotia and Canada's VC funding per capita since 2013.

The **Small Business Investment Company (SBIC)** has been in operation for nearly 65 years, is a proven model for success. The list of companies funded through the program is impressive. By the end of 2020, SBICs have invested more than \$108 Billion in funding to more than 185,000 businesses.⁶

The following is a sample of notable companies that received support through the SBIC program:

- Apple Computers
- AOL
- Under Armour
- Columbia Sportswear

- Costco
- iRobot
- Federal Express
- Intel Corporation
- Tesla
- Whole Foods
- Compaq
- Jenny Craig
- Nutrisystem
- Staples
- Sun Microsystems

The Small Business Investment Company (SBIC) provides an interesting option for the Nova Scotia Government to consider, as to also possibly look at other models / best practices that exist nationally and internationally to

expand VC investment that will have significant positive economic impacts on the Province. As the current measure of Goal 13 appears on the One Nova Scotia dashboard, it is certainly an opportune time for the Province to work with all of the Nova Scotia REAP teams on potential PPIs for an increase in Venture Capital, and to finally move the needle in the right direction on the dashboard.

Our Reap team has discussed this opportunity with MIT faculty and we have also spoken with the other regional teams. We've discussed this potential Province-wide PPI/MWB as "Rising tide" venture capital.

We'd be remiss if we didn't celebrate the amazing work the Province is doing with regard to seed/start-up programming and funding. However, many IDEs are struggling in the Valley of Death due to the lack of, and in some cases, non-existence of VC for IDEs who have surpassed the start-up phase in their IDE life-cycle.

⁵ Benefits.gov, Small Business Investment (SBIC) Program Program, <https://www.benefits.gov/benefit/4366>

⁶ Troutman Pepper, Description of the Small Business Investment (SBIC) Program Program, September 2021, <https://www.troutman.com/insights/description-of-the-small-business-investment-company-program-participation-by-unleveraged-funds-sept-2021.html>

Must Win Battles: Current and Future Work

MWB 1: IDE Ecosystem: Identify, Understand and Engage with our IDEs

Reap Team Timeline: October 2021 - January 2022+

Stakeholder Acknowledgement / Buy-In

The REAP team set out to determine the state of IDE activity in the region. High-level questions included:

- Is there sufficient innovation activity or critical mass of IDEs to claim we have an innovation sector in our region?
- Are there groups or clusters of IDEs in representing certain disciplines?
- Are there comparative strengths or advantages that the region offers that are underrepresented in the current IDE mix?
- What needs to be done to support IDEs in the region?

The results of the exercise did in fact prove there was a thriving innovation sector in the Cape Breton Strait region, and that discipline segmentation was occurring, with representation from information technology, advanced manufacturing, marine, cleantech-greentech, and medtech-biotech sectors.

Our Reap Team believes that the work to identify IDEs in our region – as was completed by January 2022 - is not exhaustive. We acknowledge that more work is needed, particularly using Dr. Albert Marshall's "Two-eyed Seeing" approach to identify more Indigenous IDEs. We also acknowledge that there are likely more IDEs to identify and add to the inventory in the

Tourism sector, aviation sector, and through the Cape Breton Partnership's "Creative Island" project work. Our team believes that this MWB should continue in tandem with other MWBs outlined in this Strategy Report so we can continue to build up our IDE inventory, and expand our regional IDE community.

Communication and Collaboration

Continued efforts on this MWB 1 will also require communication and collaboration with key stakeholders identified in the MIT REAP program to maximize success. These include IDE and SME entrepreneurs, post-secondary stakeholders, venture capital stakeholders, corporate stakeholders, government stakeholders, and for the purposes of our work plan, economic development stakeholders (such as the Cape Breton Partnership and Regional Enterprise Network, Strait Area Chamber of Commerce). Another IDE stakeholder will be other innovation spaces who may be able to help identify IDEs in the Cape Breton Strait region.

Over time, continually building a robust inventory of IDEs in our IDE ecosystem will be pivotal to understanding, engaging with, and growing a strong IDE community in the Cape Breton Strait Region.

(A Note About our Region: we began our 1st MIT workshop with an identified Cape Breton Strait region that was essentially western Cape Breton. By our 2nd MIT workshop we quickly recognized that our economic ecosystem is much larger, and we included the entire Island and mainland portion of the Strait area).

CREATIVE ISLAND

As part of the Nova Scotia Innovation Districts, the Cape Breton Partnership launched a new initiative, **Creative Island**, which is an effort to advance the innovation-driven entrepreneurial system in Cape Breton by creating a culture and environment that values and supports creativity, innovation and entrepreneurship. With support from the Province of Nova Scotia, Creative Island emphasizes celebrating Cape Breton's rich creative past and present, developing and supporting programs, services and infrastructure to support and grow the innovative capacity of Cape Bretoners and Cape Breton companies, and attracting and retaining more creative people in Cape Breton.

The efforts of the Strait – Cape Breton MIT REAP team are complementary to the Creative Island, and the strengths of both initiatives are expected to continue to align and in many cases merge to support IDEs and sustainable growth in Cape Breton – Unama'ki.

The three main areas of focus for Creative Island include: growing and celebrating a culture that values creativity, innovation, and entrepreneurship; increasing the ability of entrepreneurs, inventors, makers, creators, and companies to be more innovative; and fostering creativity, creative courage and attracting and keeping creative people in Cape Breton.



A Note about Creative Island

As noted, the Cape Breton Partnership has conducted a substantial amount of work on our Island's innovation culture and heritage. It makes sense to merge this work with the work that the Cape Breton Strait REAP team is currently doing, both on the ongoing development

of the IDE inventory and the work outlined in MWB 1, but also to help inform the next MWB2 with A'paqt Place, particularly so by re-imagining the concept of "innovation" in the context of the region's Creative heritage and history.

MWB 2: Marine / Renewables Innovation Center: A'paqt Place

Reap Team Timeline: June 2021- Ongoing

Stakeholder Acknowledgement / Buy-In

The REAP team believes that part of what is needed to build IDE capacity in the Cape Breton Strait region is to have a location that serves as an Innovation hub for IDE and SME entrepreneurs where they can access on-site or satellite programming/services to assist with their research, product development, or testing; where they can access work-space, and where they can engage in a collision space with other IDE and SME entrepreneurs.

Project stakeholders who have and will continue to support MWB 2 are the Town of Port Hawkesbury, the Cape Breton Partnership, the Nova Scotia Community College Nautical Institute, as well as some of our REAP team members. Some milestones that have been reached to date are:

- Initial focus group session with post-secondary, First Nation, Municipal, economic development, venture capital, corporate, entrepreneur and innovation stakeholders at the Strait of Canso Yacht Club in 2019, with a site visit to the "Creamery" building (property unfinished).
- Property received an infusion of \$1 Million in renovations.
- Nova Scotia Community College Nautical Institute becomes an anchor tenant.
- Innovation space renovations are completed and supported by the Town of Port Hawkesbury and the Cape Breton Partnership.
- Focus group session held in new space to assist with design, future programming, and potential IDE activities that can occur in the innovation space with multiple stakeholders.
- A'paqt Place - Mi'kmaq word for "ocean" - was chosen to reflect a desire to forge a strong relationship with this innovation space and First Nation stakeholders, and to ensure that the concept of "two-eyed seeing" continues as one of the guiding principles of the design and programming of the innovation space.

Our Reap Team continues to see synergies with the Cape Breton Partnership's "Creative Island" work, and feel that this MWB is an opportunity for this work to continue. Our team has had robust discussions on the concept "innovation" as it is understood in a Cape Breton Strait region context. Many entrepreneurs who are by definition "innovators" do not always identify as such. Re-imagining our region's innovation capacity in terms of creativity vs innovation may capture more IDE activity and allow for a more inclusive understanding and community in our IDE ecosystem.

Although this innovation space will have a Marine focus, we feel there is a substantial opportunity to allow for the development of niche IDE capacity with regard to offshore wind as an emerging sector. Other innovation program ideas shared in a recent focus group session included aquaculture, ocean farming, agriculture, and many more.

Communication and Collaboration

Buy-in needs to be established with policy makers and government leaders, particularly those responsible for funding IDE programs/activity. In discussions with our REAP team, we understand that at least for the onset, the innovation center may have to rely on satellite programming/services until more IDE capacity can be established on site. We also acknowledge that we want to align programs and services and design the innovation space to meet the needs of local SMEs and IDEs, and that finding the right fit will take some time as we grow our IDE community and IDE ecosystem.

It is also important to note that we were fortunate to have First Nation engagement in both the early focus group sessions and in the most recent focus group session held at A'paqt Place. First Nation Unama'ki communities will be an important stakeholder in the ongoing development of this MWB2.

MWB 3: Rising tIDE: Province-wide Plan to Increase Venture Capital to Mid-growth and Mature IDEs

Reap Team Timeline: January 2022 - Ongoing

Statement of the Problem

Innovation is the development of a new product or service. These developments come with unknowns. These unknowns are solved through de-risking processes funded by venture capital (VC). Innovation based economic activity is one of the best ways to increase productivity, raise living standards and create high value growth for any region's economy.

Nova Scotia remains below the national level of venture capital that is deployed per capita. This gap equates to \$50 million in venture capital that is not being invested into Nova Scotia's innovation economy each year.

Venture Capital investment in Nova Scotia is also currently very focused on early stages, with 78.7% of capital being invested in the seed stage over the last five years. There is also no VC fund in the province that has a mandate to invest in sectors like medtech or biotech projects beyond the seed stage. To maintain a healthy innovation ecosystem, there must be professional venture capital deployed as the companies graduate through various stages of the IDE life-cycle.

Furthermore, there are very low levels of venture capital deployed in the rural areas of Nova Scotia. This is despite the fact that Nova Scotia has some significant innovation opportunities and innovation assets outside of Halifax Regional Municipality (HRM).

Undercapitalized innovation companies are more likely to fail, create fewer jobs, create fewer spin offs, support fewer SME jobs and have lower valuations.

Collaborating on Solutions

Our REAP team would like to work collaboratively with the other regional teams and Onside to explore PPIs with the Province that will increase venture capital funding levels. PPIs could be in collaboration with existing VC funds (SandPiper, Build, Concrete, Innovacorp), through direct investments or through private partnerships to establish new venture capital funds.

Our REAP team would also like to work together on an all-teams MWB to encourage the government to look at mechanisms to increase venture capital Province wide, but to also ensure there are mechanisms that will also fund rural innovation projects.

Lastly, as already mentioned, the One Nova Scotia Dashboard is a tool used by the Province to measure economic growth using 19 key indicators. This MWB aligns with the Province's Goal 13: Venture Capital: for the three-year annual average for per capita venture capital investment will be equal or better than the Canadian average.⁴ In 2020, annual venture capital (VC) funding in Nova Scotia decreased from its 2017 high of \$80.99 per capita to \$66.39 per capita. This places us well below the Canadian average and shows that we have significant work to do on the VC front.

Communication and Collaboration

We have discussed this MWB idea with MIT faculty on an all-teams call, and we also participated in an all-teams virtual meeting organized by Onside. There seems to be broad support to work together on this MWB to be able to improve the venture capital that is currently available to all IDEs who are at various stages of the IDE life-cycle post-start-up.

Once this MWB and corresponding PPIs are agreed upon by the other NS REAP regional teams, we will need to seek "buy-in" from both the Provincial and Federal policy makers and government

⁴ <https://www.onens.ca/goals/goal-13-venture-capital>

leaders who have the power to assist with bridging this VC gap and moving the needle in the positive direction for Goal 13 on the One NS Dashboard.

MWB 4: Nova Scotia Offshore Wind Research Center

Reap Team Timeline: September 2021 - Ongoing

Create a Business Plan to establish an Offshore Wind Research Center

Building upon Offshore Wind as an emerging sector, our REAP team members have identified the need for an Offshore Wind Research Center for Nova Scotia. Step one will be to create a Business Plan to establish the Center in the Cape Breton Strait region. We see this MWB 4 as a necessary step to attract and support Rural IDEs seeking to capitalize on the region's combination of wind resources, infrastructure and abundant comparative advantages.

An Offshore Wind Research Centre could be physically established in the newly created A'paqt Place/Marine Innovation Centre, and grow to use the ample supply of industrial and waterfront space and infrastructure throughout the Strait of Canso.

The recent establishment of the Strait Area Offshore Wind Taskforce has generated significant local interest in establishing a research and development organization in the region to capitalize on the wind energy potential of the Strait of Canso and Nova Scotia as a whole - which is estimated at 900+ GW by industry expert Aegir.

The US Jones Act offers an opportunity for Strait of Canso based IDEs to serve the US Offshore Wind industry in the short term, while building local capacity and an innovation ecosystem to serve a Canadian industry once legislation is established.

The general interest in this opportunity, however, needs a specific geographic space for new research and development to apply internationally proven technology and regulation to a Canadian context. This will enable local and International IDEs with an interest in the Offshore Wind industry to see themselves supported and succeeding in the Cape Breton Strait region.

Part of this MWB 4 will be to advocate for the timely establishment of Legislation and enabling regulations based on best practices from existing comparable jurisdictions.

Nova Scotia and Canada have already created joint legislation for the regulation of the offshore Oil and Gas industry, as well as regulation for tidal infrastructure in the Bay of Fundy and the Bras D'or Lakes in Cape Breton.

This established federal-provincial framework and experience combined with the ability to be a "fast follower" and learn from recently established regulatory regimes in Europe and the US, gives us an excellent platform to advocate for a streamlined process to swiftly adopt the necessary legislation.

Examine the potential for Hydrogen Production and Energy Storage.

Nova Scotia has an urgent need for energy, a stable energy source to replace Cape Breton's three coal-fired generating stations, and ensure domestic supply of energy.

Hydrogen is a solution being pursued by many jurisdictions - including Alberta, Germany and other parts of Europe - as a green fuel that can enable the storage of offshore wind energy, use existing natural gas pipeline infrastructure, and be easily converted to other fuels such as ammonia when necessary.

Even as Nova Scotia pursues interconnected links such as the Atlantic Loop to assure access to markets, redundancy in cases of emergency and sources of energy ourselves, domestic energy production is critical for self-sustainability and energy security.

The Strait of Canso's deep water/ice free port, plentiful greenfield sites, fuel storage capacity, marine training facilities, multi-modal transportation infrastructure, available expertise in marine operations and energy generation, and the potential to repurpose former Sable Offshore Energy assets, uniquely position the Strait Area to be a provincial and national leader in this emerging sector.

Communication and Collaboration

Buy-in needs to be established with policy makers and government leaders in all levels of government once a business plan for a Nova Scotia Offshore Wind Research Center is complete.

Continued efforts on this MWB 4 will also require communication and collaboration with key stakeholders working together on the Offshore Wind Taskforce, members of the REAP team, as well as multiple stakeholders identified in the MIT REAP program to maximize success. These include IDE and SME entrepreneurs, post-secondary stakeholders, venture capital stakeholders, corporate stakeholders, government stakeholders, and for the purposes of our work plan, economic development stakeholders (such as the Cape Breton Partnership and Regional Enterprise Network, Strait Area Chamber of Commerce).

We are fortunate that the current Task force membership includes stakeholders from many of these groups already; however, we still need to recruit members from the Unama'ki communities, as well as from StFX University, Cape Breton University and other Universities and Post-Secondary Institutions.

We've been engaging with numerous political stakeholders who represent Federal, Provincial, First Nation and Municipal governments. We've been engaging with Offshore wind IDEs and industry leaders. We've been engaging with Offshore Wind subject matter experts, Marine Renewables subject matter experts, as well as economic development stakeholders in the region.

This engagement has largely been to present the opportunity for offshore wind in the Cape Breton Strait region and Nova Scotia

more generally, to highlight our comparative advantages for offshore wind, and to highlight the growing political interest and the work of the Offshore wind task force.

MWB 5: Annual IDE Retreats: Cultivating the Cape Breton Strait Region as an IDE Destination

Reap Team Timeline: TBD

With MWB 1 completed and ongoing, and as we continue to grow our region's IDE inventory, community and ecosystem, our REAP team has had significant discussions about "how" we might establish and grow the Cape Breton Strait region as an IDE Destination.

Attraction Strategies in Action

Whereas MWB 1 was an exercise in identifying, understanding and engaging IDEs in our IDE ecosystem, and to begin to foster an IDE community as a "retention" strategy, our MWB 5 will be an ongoing strategy for "attraction" of new IDEs regionally, provincially, nationally, and internationally.

Our Island has many attractive features that are connected to a high quality of life, safety, affordability, natural beauty, and more. An annual Innovators retreat will not only be an important tool we can use to build a stronger IDE culture, it can also be used as significant opportunity to market our region as a place to innovate in one of the most beautiful places in the world.

Communication and Collaboration

Buy-in needs to be established with political leaders in all levels of government, especially those who might enable support with the corresponding funding bodies/programs to see MWB 5 become a reality.

Continued efforts on this MWB 5 will also require communication and collaboration with our region's IDE community, with IDE stakeholders, with our REAP team, and other key stakeholders who can assist with design, marketing, and implementation.

It will take a significant amount of time to design and plan the first inaugural IDE Retreat, and that is okay. We want to ensure we are packaging and marketing this MWG in the best possible way so that we can maximize our goal to make the Cape Breton Strait region a destination for IDE.

Key stakeholders we should communicate and collaborate with are potential funding bodies (ACOA, Province), IDE and SME entrepreneurs, post-secondary stakeholders, venture capital stakeholders (we discussed the possibility of incorporating a "pitch event" into the retreat), corporate stakeholders, government stakeholders (Parks Canada), and for the purposes of our work plan, economic development and tourism stakeholders (such as the Cape Breton Partnership/Regional Enterprise Network, Destination Cape Breton, and the region's Chambers of Commerce).

MWB 6: Building Regional IDE Capacity to Support the IDE Community through all stages of the IDE lifecycle.

Reap Team Timeline: TBD

Design Lifecycle Programs to Support Our Region's Rural IDEs

An IDE support strategy needs to be developed using the QFD model, using the voice of IDEs as the core driver for policy and program design.

It's generally agreed that the region has done a good job encouraging and helping startups get established. A number of programs and initiatives exist for

starting a business, as well as programs that help with business expansion and market development.

Existing programs, however, don't meet the specific needs of IDEs, particularly those navigating the Valley of Death. These program gaps need to be filled with investment and funding strategies that support IDEs in post-startup phases.

Identify Needs and Challenges Unique to Rural IDEs

The innovation sector in rural areas is less developed than in urban centers. This is one of the key reasons the Cape Breton Strait region is looking to develop a regional IDE strategy.

A lack of critical mass poses a unique set of challenges in rural areas that don't exist in urban ones. A focus on assisting rural IDEs (particularly those in the early stages) in honing in on their objectives, establishing a sound HR strategy, and defining/reaching their de-risking milestones could play a critical role in ensuring that rural IDEs don't represent higher risk than their urban counterparts.

Examine Successful Models Like SBICs and Tax Credit Programs, and Tailor them to the Region's Specific Sector Needs

Programs like SBICs have proven to be extremely successful in leveraging private investment capital. Models such as this could be designed where public funds can strategically attract private capital into rural IDEs in our region and other regions across the Province of Nova Scotia.

Rural IDEs, particularly in the early stages of any regional growth strategy, will likely present higher risk. Investment into regions with developing innovation infrastructure could be offered a stronger ratio of government-guaranteed or matching dollars. Programs like the Nova Scotia Digital Media Tax Credit Program, for instance, provide a regional bonus of 10% for qualifying projects occurring in rural areas.

Recruitment Programs to Support Rural IDEs

With talent recruitment being such a challenge across all sectors, it's even more important for rural IDEs to get the support they need to (a) hire the personnel, and (b) acquire the skills necessary to meet their innovation objectives.

This MWB could be considered a micro strategy as part of a larger rural IDE initiative, as it represents a critical part of any IDE's ability to reach any de-risking milestones.

Program Example

In the late 2000's ACOA identified a recruitment and skills gap in small Atlantic Canadian businesses. They launched a program called the Productivity and Business Skills Initiative (PBSI) as a sub-program of their Regional Economic Growth through Innovation program (REGI).

The program provided grants of up to \$50,000 to hire key personnel. Based on ACOA records, the program appears to have been retired in 2010.⁷ Programs such as this, updated to meet the needs of today's IDEs, could play an important role in the early stages of an IDE's ability to meet those early de-risking milestones.

Communication and Collaboration

Buy-in needs to be established with policy makers and political leaders in all levels of government and with funding bodies that will allow/enable various PPIs to assist in the goals set out by MWB 6.

Continued efforts on this MWB 6 will also require communication and collaboration with key stakeholders working together on the Offshore Wind Taskforce, members of the REAP team, as well as multiple stakeholders identified in the MIT REAP program to maximize success.

REAP Team Cape Breton Strait: Final Thoughts

As the MIT Reap program winds down and as our Cape Breton Strait Team members prepare our final assignments and prepare for graduation, we wanted to take a moment to reflect on what comes next. As outlined in this strategic report, we have several MWBs that we have identified as a team, some at various stages of progress and some yet to be started. Our team has reached a much better understanding of the MIT REAP program, and the tools it offers to accelerate economic growth by identifying and building upon a region's strengths. Our team feels confident that we will be able to apply these MIT REAP tools in our future MWBs to grow and accelerate economic development in our region and in our Province.

In a sense, our team is realizing that the conclusion of this MIT REAP program isn't an end at all, but really – it is just the beginning. Our team is committed to continuing our work and to seeing our team's MWBs become reality. We feel their success will lend to our region's overall economic growth and prosperity.

An Invitation to MIT Faculty

Our Team would like MIT faculty to know that you are all still welcome to attend our Inaugural IDE Retreat (TBD). We would love to have MIT faculty – if there is interest – to be one of our partners on this MWB5.

We have learned a lot from MIT faculty and the REAP program. We have a much clearer picture of the synergies between IDEs and SMEs, and the growth of IDE ecosystems can stimulate and accelerate economic growth, especially when multiple stakeholders are working to create an enabling environment for this economic growth.

Working together as a team has been a tremendous gift. We have motivated and inspired each other, which was especially important during such an uncertain time. We have created a safe space to have robust and divergent discussions about how we understand our economic ecosystem and how best to grow it. We have taken diverse perspectives to the table from each of our stakeholder groups. We have contributed the best of ourselves, our knowledge and connections, our skills and experience, and most importantly, an open mind about this new process.

Covid 19 has made for a topsy-turvy adventure, but in the end, our team is walking away feeling inspired, confident, and motivated to win all of our battles for the betterment of our region and our Province.

In Friendship;

Team Cape Breton Strait

Appendices

Appendix A: Innovation-Driven Entrepreneur Survey

The screenshot displays a survey form titled "Innovation-Driven Entrepreneur Survey" for the "Cape Breton - Strait Region". The form is divided into two main sections. The left section contains a header with the survey title and a sub-header, followed by a paragraph of introductory text and a confidentiality statement. The right section, titled "Background Information", contains a sub-header and a list of radio button options for selecting a business sector.

Innovation-Driven Entrepreneur (IDE) Survey
Cape Breton - Strait Region

Innovation-Driven Entrepreneur Survey

Thank you for participating in this survey. Your participation plays an important role in the Massachusetts Institute of Technology Regional Entrepreneurship Acceleration Program for Nova Scotia (MIT REAP-NS). This survey has been designed to engage innovators like you to better understand the challenges and opportunities associated with operating in the Cape Breton and Strait regions.

Responses will be kept confidential and results will be presented only in aggregate form.

Section 2 of 8

Background Information

This section collects basic information about your business or project, including founding year, number of employees, and the type of business or operating sector.

Please indicate the sector that most closely represents your business or project. *

- Clean-tech
- Bio-tech
- Agri-tech
- Information Technology
- Marine and Ocean Tech
- Advanced Manufacturing
- Travel / Tourism
- Creative Sector, Including Arts, Culture, Craft, Music, and Entertainment
- Healthcare and medicine
- Mining
- Energy
- Forestry
- Construction
- Real Estate
- N/A - I don't have a business
- Other...

How many employees do you have? *

- 1-10
- 11-25
- 26-50
- 51-100
- More than 100
- N/A - I don't have any employees

If you operate a business, what year did you start?

Short answer text

If you operate a business, where did you start your business? (please name the town/city, province/region, and country)

Short answer text

Where are your customers? (check all that apply)

- Local (within the province of NS)
- Regional (Atlantic Canada)
- National (Across Canada)
- International (Outside of Canada)
- N/A - I currently don't have any customers

If you operate a business, are you still operating your business in the same general area or region where you started?

1. Yes
2. No
3. N/A

After section 2 Continue to next section

Section 3 of 8

Now Operating in a Different Area

Description (optional)

You identified that your business is operating in a different area than when it started. Have you moved it TO the Cape Breton-Strait area, or have you moved it AWAY FROM the Cape Breton-Strait area?

- I moved my business to the Cape Breton-Strait region.
- I moved my business away from the Cape Breton-Strait region.

Where are you now operating your business or developing your project? (please name the town/city, province/region, and country)

Short answer text

Why did you move your business? (Check all that apply)

- I needed to be closer to markets
- I needed to be closer to investment capital
- I needed better access to human resources
- I required access to research and/or lab facilities
- I moved for lifestyle / quality of life reasons
- I moved because my partner or spouse was unable to find employment locally
- I wanted to operate in a more supportive entrepreneurial environment / culture
- I moved due to regulatory barriers
- There was a lack of available housing in the area
- Other...

After section 3 Continue to next section

Section 4 of 8

Level of Innovation

This section helps us understand the level of innovation practiced by your business or involved in your project.

Does your business or project include patents, patents pending, or trade secrets? *

1. Yes
2. No

Does your business or project provide any services in exchange for fees? *

1. Yes
2. No
3. N/A

Do you or your business develop products (either physical or digital) that you sell or license to customers? *

1. Yes
2. No
3. N/A

Has your business or project ever qualified for SRED (Scientific Research & Experimental Development) tax credits? *

1. Yes
2. No
3. N/A

Does your business develop products or services that IMPROVE existing products, applications, or processes? *

1. Yes
2. No
3. N/A

Does your business develop products or services that REPLACE existing products, applications, or processes? *

- 1. Yes
- 2. No
- 3. N/A

Do you or your business regularly participate in research and development activities? *

- 1. Yes
- 2. No
- 3. N/A

Do you have investors or board members who are experienced in your area of innovation? *

- 1. Yes
- 2. No
- 3. N/A

After section 4 Continue to next section

Section 5 of 8

Capitalization

This section helps us understand your business or project's current state of capitalization and future needs.

Does your business or project currently require funding? *

- 1. Yes
- 2. No
- 3. N/A

In terms of capital requirements at which stage is your business or project? *

- Startup / pre-seed
- Seed
- Series A
- Series B
- Series C
- N/A - I am not looking to raise any investment capital at this time
- Other...

If you are seeking investment capital, approximately how much are you currently seeking? *

- Less than \$100,000
- Between \$100,000 and \$500,000
- Between \$500,000 and \$1,000,000
- More than \$1,000,000
- N/A - not currently seeking investment
- Other...

If your business or project has received funding or investment capital in the past, what form(s) has it taken? (please check all that apply) *

- Government loan
- SR&ED tax credit
- Research grant
- Government equity investment
- Private investment - individual or angel investor
- Private investment - investment fund
- N/A - I haven't received any funding or investment in the past
- Other...

Section 6 of 8

IDE Perspectives

This section helps us understand your experiences as an entrepreneur either currently running a business or project in the Cape Breton-Strait region (or has in the past).

What challenges have you experienced in operating your business in the Cape Breton - Strait Region? (check all that apply)

- Access to markets
- Access to financial support and/or investment capital
- Recruiting employees
- Retaining employees
- Availability of housing
- Partner / spouse finding employment
- Access to high-speed Internet
- Lack of culture of innovation or entrepreneurship
- Lack of critical mass for sector representation
- Access to expertise
- Access to infrastructure - operating space, lab space, research facilities
- I haven't experience challenges operating in the Cape Breton-Strait Region
- Other...

On a scale of 1 to 5, how would you rate the "culture of entrepreneurship & innovation" in your community?

1 2 3 4 5

There is no culture of entrepreneurship in my community There is a strong culture of entrepreneurship in my community

How would you rate the following statements as they relate to your experiences with local economic development agencies? (1 is 'strongly disagree' and 5 is 'strongly agree').

	1	2	3	4	5	N/A
They underst...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They wanted...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My project a...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Their progra...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would reco...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They play a c...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What do you feel are some of the comparative advantages in operating a business in the Cape Breton - Strait area? (check all that apply)

- Cost of living
- Lower operating costs and overheads
- Quality of life
- Local culture of creativity and innovation
- Government programs and support
- Geographic location
- Access to R&D infrastructure, including research facilities, labs, etc.
- Access to post-secondary educational resources
- Access to qualified employees
- Employee retention
- Other...

⋮

We are building a contact registry of Innovation-Driven Entrepreneurs in the area. We would like to include your business or project in our registry. We will not share your contact information or use it for any other purpose other than those related to the MIT REAP-NS project.

Yes, I will provide my business or project contact information

No, I prefer not to provide my business or project contact information

After section 6 Continue to next section ▾

Section 7 of 8

Respondent Contact Information

Description (optional)

Your Name

Short answer text

Business or Project Name

Short answer text

Email Address

Short answer text

Phone Number

Short answer text

Your voice is important to us. Any feedback you can provide will help the REAP-NS team understand your needs and serve you better. Would you be willing to participate in a follow up session or focus group to discuss your specific challenges, experiences, and recommendations?

Yes

No

After section 7 Continue to next section ▾

Section 8 of 8



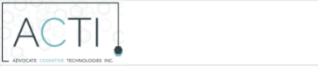







End of Survey












Description (optional)












Thank you for participating in our survey! Your responses will help our team understand how to better support innovators like you. If you would like to add any other comments or suggestions, please enter them below.




Long answer text

Appendix B: Innovation-Driven Enterprise (IDE) Inventory

Company Name	Town/City	Website	Business Sector	Products & Services	Description	Logo
45 Drives	Sydney	https://www.45drives.com	Adv. Manufacturing	Mass Storage Server Solutions	45Drives solutions help you safely store & organize all your files in one place. We provide open source solutions and give you the most cost effective storage with no restrictive contracts.	
Advanced Glazings Ltd.	Sydney	https://www.advancedglazings.com	Adv. Manufacturing	Architectural Daylighting Solutions	At AGL, we put our 20+ years of experience behind architects who create great buildings. Solera® and SoleraWall® are engineered light diffusers that convert harsh direct beam sunlight into uniform natural light. They are the building blocks you need to create great daylighted spaces.	
Advocate Cognitive Technologies	Sydney	http://www.advocatecognitive.com	Information Technology	Legal Document Solutions Using Machine Learning and Natural Language Processing	Hux uses machine learning and natural language processing to read and understand human written text and present the user lawyer with completed legal documents.	
Aramax IP Services Ltd.	Sydney	http://www.aramaxip.com/	Professional Services	Patent and Intellectual Property Services	Aramax IP Services is dedicated to bringing access to quality local, national and international expertise to fill many of the gaps creating uncertainty for innovative technology entrepreneurs in the Atlantic Canadian region. As part of the innovation eco-system for startups, innovative businesses and university tech transfer offices, AramaxIP adds-value by helping with specialized services so you can get on with building and growing your business with confidence. We work with you, the client to determine your needs and the stage you are at, and provide you with a quotation with a particular team to assist you.	
Bill Did It	Sydney		Adv. Manufacturing	Accessories for Drummers and Musicians		
Breton Air	Sydney	https://www.bretonair.com/	Travel-Tourism	Helicopter Charter & Utility Aviation	In late 2016, two Royal Canadian Air Force Officers were approached with an opportunity of a lifetime. The need was there for safe, executive, high performance helicopter services for those who set their sights on the Maritime Provinces for adventure, relaxation and all that comes with it. After retirement, Parker Horton and Matt Wallace seized the opportunity and studied market requirements to provide precise helicopter services that the region required. Delivering upon these needs, Breton Air was born. Based at J.A. Douglas McCurdy Airport in Sydney, Cape Breton, air charter services are offered in concert with Gateway Sydney's FBO (fixed-based operator), executive lounge, and Maritime Air Charter's fixed-wing extended reach. Conveniently located for all this island has to offer, including 3 of the top 10 Canadian golf courses, Breton Air is your link to the Links.	
Brezo Energy	Port Hawkesbury	https://brezoenergy.com/	Marine & Ocean Tech	Floating Platforms, Mooring Systems, and Marine Operations for the Floating Offshore Wind Power Industry	In partnership with the best Wind Turbine Manufacturers, and experienced EPC companies, we offer to Large Renewable Energy Developers and Government a full-package for Construction, Operations & Maintenance of Floating Offshore Wind Farms, anywhere in the world.	
Celtic Air	Port Hastings	https://celticairservices.com/	Travel-Tourism	Executive FBO Concierge and Aircraft Services	Let Celtic Air Services be your gateway to Cape Breton Island and your inside connection to planning an unforgettable trip right down to the smallest details. Our Aircraft Services are first class. Everything done to your complete satisfaction. Check out our comfortable, well appointed lounge while you wait.	
Click2Order	Sydney	www.click2order.co	Information Technology	Food Delivery App	Click2Order began in 2015 as a software company based in Cape Breton, Nova Scotia. Our mission is to provide restaurants with the digital solutions needed to compete in a high-tech world without breaking the bank.	
Cornerstone Research			Biotech-Medtech	Health Economics and Outcomes Research (HEOR) Services	EVERSANA™, the leading independent provider of commercial services to the life science industry, today announced an agreement to acquire Canada-based Cornerstone Research Group, Inc. Headquartered in Burlington, Ontario with an additional location in Sydney, Nova Scotia, Cornerstone Research Group is the leader in Health Economics and Outcomes Research (HEOR) services, working with leading pharmaceutical and medical device companies across the globe.	
DSM Nutrition	Mulgrave	www.dsm.com	Marine & Ocean Tech	Accessible Food and Nutrition Solutions	DSM Nutritional Products Canada Inc is located in Mulgrave, NS, Canada and is part of the Seafood Product Preparation and Packaging Industry. DSM Nutritional Products Canada Inc has 150 employees at this location. There are 346 companies in the DSM Nutritional Products Canada Inc corporate family.	
Encyt	Membertou	https://encyt.net/	Biotech-Medtech	Advancing Science in the Battle Against Cancer	Today's cancer treatment methods often employ a "shotgun" approach because we lock the tools to determine the cancer's next move. Taking advantage of the fact that cancer cells can hijack the body's normal wound healing processes provides us with insight into cancer cell behavior. By studying how cancer cells utilize the inflammatory pathway triggered by our treatments, we can predict those patients who still harbor micrometastatic disease after treatment, and at the same time provide far more effective therapies for the treatment of cancer.	
Golnstant	Sydney		Information Technology	Shared Web Session Software		
Green Robot Studios	Sydney	https://greenrobotstudios.com	Information Technology	Video Games, Virtual Reality Applications, Immersive Cultural Experiences	Green Robot Studios is a digital entertainment studio focused on creating immersive and interactive experiences including VR Pods and video games focusing on historical and culturally themed stories and experiences.	

Company Name	Town/City	Website	Business Sector	Products & Services	Description	Logo
Halifax Biomedical	Mabou	halifaxbiomedical.com	Biotech-Medtech	Orthopaedic Clinical Measurement Technologies	Halifax Biomedical Inc. (HBI) is an Evidence Based Orthopaedic clinical measurements company headquartered in Nova Scotia, Canada. HBI is a world leading provider of micro-instability assessment services using very precise proprietary Stereo Orthopaedic Radiography (SOR) imaging technology (HALIFAX exams). HBI focuses on two clinical problems: detection of implant loosening for total hip and knee replacements, and quantification of instability of the spinal column in patients with chronic low back pain. Halifax Biomedical is the only company worldwide currently providing a complete product and service solution for conducting SOR-based research. We support the fundamental principles of phased innovation – the practice of clinically testing products before general market release.	
Health Outcomes Worldwide	New Waterford	https://www.healthoutcomesww.com	Biotech-Medtech	Wound Care Management Software Platform	At Health Outcomes Worldwide (HOW), we believe in a day when people suffering from chronic wounds is a thing of the past. And if they do occur, that people receive timely best practice interventions so that they can heal as quickly as possible. We provide desktop and mobile e-health solutions to assist healthcare organizations deliver better patient outcomes and reduce costs. Our innovative platform – how2trak – provides real-time, point-of-care tools to clinicians at the bedside for treating wounds, and keeping track of surgical incisions post-discharge.	
Hydrotroniks Ltd.	Cheticamp	https://www.hydrotroniks.com/	Marine & Ocean Tech	Electrification of Commercial and Pleasure Vessels	Hydrotroniks is a collective of engineers, designers, and environmental scientists who work together to create electric based solutions for pleasure boats and commercial boats. We work with our partners to develop new technology and provide clean alternatives to current boat engines by making use of electric energy storage, and propulsions options. We coordinate recharging station installations and partner with academic institutions to advance energy storage research.	
Lobsters R Us	Lower L'Ardoise	https://www.lobstersrus.ca/	Marine & Ocean Tech	Atlantic Lobster and Snow Crab	Our premium quality product is shipped nationally and internationally with the whole process beginning at our state of the art facility in Little Harbour, Lower L'Ardoise, Nova Scotia, Canada. Lobsters 'R' Us is an award winning, family owned and operated business that was created in 1992 and began operations in 2004. In 2011, we designed our own Lobster Storage Facility in conjunction with Efficiency Nova Scotia guide lines, making energy efficiency the top priority for every aspect of operations. The advantage of using an efficient data system and scanning process allows us complete traceability of our product from the bottom of the ocean through the sorting and grading process, to storage and shipment and to its final destination.	
Lokol.me	Sydney	lokol.me	Information Technology	Hyper-Local News and Content	lokol community websites are unique because we find and share local (and only local) content from all over the Internet - news, events, sports, jobs, people, blogs, coupons, Twitter, Facebook, YouTube, and more! And, we make it easy for you to share your own local news too.	
Louisbourg Seafoods Limited	Louisbourg	https://louisbourgseafoods.ca	Marine & Ocean Tech	Seafood Harvesting and Processing,	Louisbourg Seafoods Ltd., home of Mira Bay seafood products, is a family-operated seafood business. James and Lori Kennedy, owners, credit the company's success with their levels of control and expertise at all stages of seafood production. The company harvests its product using its own fleet of vessels, and has direct control over each stage of production. This innovative Nova Scotian company is committed to the conservation and care of ocean species and habitat.	
Mabel Systems	Sydney	https://www.mabelsystems.com	Information Technology	Computer Vision and Inventory Tracking System	Founded in 2019, Mabel Systems builds on Atlantic Canada's history of pioneering communications technology. Just as Mabel and Alexander Graham Bell connected people separated by languages and oceans, Mabel Systems' innovative data capture platform lets food processors understand their inventory like never before. Because actions speak louder than words – and your inventory is speaking to you every second it's being processed.	
Marcato Festival	Sydney		Information Technology	Festival Management Software		
MediaSpark	Sydney	http://www.mediaspark.com	Information Technology	Educational Software and Business Simulations	MediaSpark is a software development, publishing, and gamification company. We have been an industry pioneer for over two decades, designing, producing, and commercializing innovative solutions under our own brands or those of our clients. Our work is global and we impact people in all walks of life.	
Mimir Networks	Sydney	mimirnetworks.com	Information Technology	Network Security	Founded in 2014, Mimir Networks is developing technology to change how carriers, enterprise and government can protect their critical networks and internet facing applications from all forms of attacks. Distributed Denial-of-Service attacks flood an organization's network or website with unwanted traffic, making online functions unavailable to its intended users. Mimir Networks' solution identifies legitimate and illicit traffic, filtering out the bad traffic, while letting the good traffic through.	
Navita Digital Ocean Services	Sydney		Information Technology	Visual Computing for the Oceans Sector	Navita uses 3D, virtual reality, augmented reality, and visual computing systems to create ocean simulations for exploration and educational applications.	
Orenda Solutions	Membertou	https://orendasolutions.com/		Social Data Insight Solutions	At Orenda, we believe that a brand is not determined by what organizations tell the public, but what the public tells one another. Our goal is to analyze and leverage social data for candid feedback, criticism, and insight.	

Company Name	Town/City	Website	Business Sector	Products & Services	Description	Logo
Ozonebio	Sydney	http://ozonebio.ca/	Greentech-Cleantech	Superscalable Zombie Cells Chemistry	OzoneBio is a Canadian biotech company that uses innovative technology to improve high value products by reducing their environmental footprint in the early stages of the supply chain. Our unique technology of dead cell fermentation («Zombie cells») allows us to convert toxic waste into high value materials and products through an emission-negative process.	
Pelagica SciTech Consulting/Citizen Science Technologies	Sydney		Marine & Ocean Tech			
Polysteel Atlantic	Edwardsville	www.polysteel.ca	Adv. Manufacturing	High-Tensile Strength Rope	Polysteel Atlantic Limited / East Coast Rope Limited are manufacturers of high tensile strength three strand synthetic rope, with production capabilities in excess of 4,000,000 lbs per year.	
Port Hawkesbury Paper	Port Hawkesbury	www.porthawkesburypaper.com	Adv. Manufacturing	Supercalendered Paper	At Port Hawkesbury Paper, we are the leader in supercalendered paper manufacturing in North America. Our ownership focuses on building and investing for the long-term and is dedicated to developing a flexible and sustainable business. We believe that every employee's actions make a difference and we rely on committed, skilled people to use leading-edge processes and technology to develop best-in-class products. The secret to our effectiveness is shown in our products consistent and reliable quality and our open communication and problem-solving with our employees, suppliers, and customers. The SC machine (PM2) is capable of producing 400,000 tons of SCA++, SCA+, SCA and SCB papers for use in retail inserts, magazines, and catalogs and delivers the highest quality and most efficient paper production available.	
Premium Seafoods	Arichat	http://www.premiumseafoods.ns.ca/	Marine & Ocean Tech	Fresh and Frozen Seafood Products	Premium Seafoods Group specializes in fresh and frozen seafood. The majority of our seafood is either harvested by us or purchased directly from local fishers. We specialize in fresh North Atlantic seafood including Atlantic Snow Crab, Canadian Lobster, Northern Shrimp and Ocean Perch. Since 1984 Premium Seafoods Group has grown to numerous companies employing over 200 workers, buying and or processing in excess of 15 million pounds of seafood annually for sale to the world.	
Protocase	Sydney	https://www.protocase.com	Adv. Manufacturing	Mass Customization. Custom Enclosures for Scientists & Engineers in 2-3 Days with no Minimum Order.	We manufacture custom sheet metal and CNC machined electronic enclosures, mounting hardware, and miscellaneous components. We start from your design, and build them in 2-3 days, with no minimum order requirements. Products are built from your choice of aluminum, copper, steel, stainless, or galvanized, and are fully finished, including fasteners, hardware, welding, powdercoating, and silkscreen.	
Redtail POS	Sydney	https://redtailpos.com	Information Technology	Point of Sale Software	RedTail POS Inc. is a Canadian Corporation, specializing in Point of Sale and Business Management Software. Built around our core module, RedTail POS, we develop a comprehensive suite of business management modules. All of our software is developed, maintained and supported by our own team of software specialists. Built on the philosophy that our products are used directly in front of important people - our customer's customers - RedTail is built to perform. Its intuitive interface and robust back end makes it extremely reliable in processing high volume transactions effortlessly. Turn your organization and web site into a fully integrated web store using RedTailSecure Pay - our online platform for e-commerce.	
Rest Assured Health		http://www.restassuredhealth.com	Biotech-Medtech	Communications App for Healthcare Providers and Families of Patients	Rest Assured is a web app designed to improve communication between healthcare professionals and family members. This application provides real-time updates to family members about the status of their loved ones in hospitals and long-term care facilities	
Security	Sydney	https://www.security.com/	Information Technology	Security is an information security management platform for businesses selling to large enterprises.	The Security platform uses industry-leading best practices to generate information security policies and automatically create implementation tasks. Security acts as your command center, providing access to the tools, resources, and advisors your business needs for building and maintaining security compliance.	
Stamp Labs	Edwardsville		Adv. Manufacturing	Electric Guitar Pedals		
Superport Marine Services	Port Hawkesbury	http://superport.ns.ca/	Marine & Ocean Tech	Marine Services	Superport Marine is one of the leading marine services companies in Atlantic Canada. Our team of experienced, skilled marine personnel works tirelessly to provide the right vessels and the best support services for your project. We are a privately held corporation that knows the commitment and dedication that is needed to excel in the marine field. With over 100 employees, we are proud of our 40 years of bringing the right technology together with the right people.	
Talem Health Analytics	Sydney	https://talemhealthanalytics.com	Biotech-Medtech	Injury and Recovery Insights Software	We provide auto insurers with innovative injury and recovery insights to help make effective, transparent, and customer-centric decisions from the start of a claim to settlement.	
Tapnbe	Dominion	https://tapnbe.com	Information Technology	Customer Engagement Using QR Codes and NFC	Every Tapnbe #BIGYELLOWTAG comes with NFC "Tap" that you can connect your online content to. No need to program NFC chips with Tapnbe! More and more modern smartphones can "Tap" without downloading an App. Get your content to your customers with a simple "TAP"!	
Techlink Entertainment	Sydney		Information Technology	Responsible Gaming System	Responsible gaming platform and related technologies for gaming sector.	
UpSell Technologies	Sydney	https://www.upsellstadium.com/	Information Technology	In-Seat Ordering Software	UpSell technologies develops in-seat ordering software and applications for stadiums and arenas.	

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Verschuren Centre	Sydney	http://www.verschurencentre.co/	Greentech-Cleantech	Cleantech Research and Development Services	The Verschuren Centre (VC) is an industrial solutions, development and deployment centre, advancing sustainable resource management in our key fields of expertise - Renewable energy, Bio-processing, Aquaculture and Nano materials.	
VMP Group	Sydney	www.vmpgroup.com	Information Technology	Digital Services and Artificial Intelligence Solutions	VMP Group is a digital agency established in 1995. It has a services division that provides a range of digital solutions to business, and a product development division that develops personalization technologies using artificial intelligence and machine learning.	
VR Therapies	Sydney		Biotech-Medtech	Virtual Reality Applications	VR Therapies is developing virtual reality applications for the treatment of anxiety disorders.	
Woopla Gaming		https://www.wooplagaming.com	Information Technology	Extreme Value Sweepstakes	We are the brand that players trust to deliver the best-in-class unique games, fastest payouts on the planet, and regulatory-compliant fair experience. Everything we do is rooted in fun and we never settle for average. We design what players want today and we shape what they'll be playing tomorrow. We're the winning idea that blends the interactivity and adrenaline from social and traditional games with the rewards of a sweepstakes experience.	
Xtal Labs	Sydney					

