

A FASTER, MORE AGILE AND CERTAIN ATLANTIC CANADA

Report of the Atlantic Growth Strategy Subcommittee on Innovation

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A FASTER, MORE AGILE AND CERTAIN ATLANTIC CANADA

1. EXECUTIVE SUMMARY

The Government of Canada remains firmly committed to working with the Atlantic Provinces to take bold action – under the Atlantic Growth Strategy (AGS) – to create good-paying, middle class jobs, strengthen local communities, and grow the economy. The AGS has five pillars: Skilled Workforce and Immigration, Trade and Investment, Innovation, Clean Growth and Climate Change, and Infrastructure.

In connection with the Innovation pillar of the AGS, the Federal Liberal Atlantic Caucus appointed an Innovation Subcommittee (the Subcommittee) comprised of Matt DeCoursey - MP Fredericton (Chair), Sean Casey - MP Charlottetown, Andy Fillmore - MP Halifax, and Nick Whalen - MP St. John's East. The mandate of the Subcommittee is to propose meaningful and measurable action in the form of pilot programming or projects, and to recommend changes to existing programs, in both rural and urban areas, with the goal of fostering economic growth under the Innovation pillar under the AGS.

The Subcommittee held public and private consultations with stakeholders from each of the four Atlantic Provinces in Fredericton, Moncton, Charlottetown, Halifax and St. John's.

1.1 List of Recommendations

From the consultation, several key themes emerged. The Subcommittee's recommendations are grouped by theme accordingly.

- **Recommendation 1 – Support throughout the Innovation Lifecycle:**
 - Create a pre-seed capital fund (with federal, provincial and private sector funding), developed with approved incubators or accelerators so as to encourage earlier stage entrepreneurship and fund the ideation and piloting, with a focus on decreasing barriers to entry.
 - The fund should accept a risk tolerance commensurate with the understanding that many early stage companies will not result in commercial success, but those which do tend to be earn large multiples over the initial investment: success of the program should be measured statistically across many businesses and should not discourage serial entrepreneurship.
 - Support the capacity of these approved incubators or accelerators to ensure that the seed capital fund follows the world's established best practices.

- Support for the pre-seed fund should not diminish existing federal government support for initiatives in other stages of the innovation lifecycle, including those delivered through ACOA and BDC.
- **Recommendation 2 – Expand or Improve Existing Government Supports:**
 - Expand the Build in Canada Innovation Program (BCIP) to extend the duration of the offer period from 6 months to 12 months.
 - Implement a pre-qualification process under the Scientific Research and Experimental Development (SR&ED) Tax Incentive Program so that companies looking to access the program have increased operational certainty around eligibility.
 - Improve the Industrial Research Assistance Program (IRAP) to better meet the needs of applicants in the fast-paced innovation sector: for example, adjusting the program to allow applicants to be eligible for reimbursement for expenditures made between the date on which an application is filed and the date on which an application is approved, rather than only allowing for reimbursement for expenditures after the date of approval. Any such expenditures would be entirely at the applicant’s risk, but give it the opportunity to avoid delays in R&D advancement.
- **Recommendation 3 – Improve Government and Intergovernmental Communications:**
 - Develop and fund an innovation portal maintained in real time under the Government of Canada domain to 1) consolidate all aspects of government support for innovation; 2) include an opportunity for companies to avoid redundant privacy-related controls by consenting to share their information between government departments and/or levels of government; and 3) drive more agile delivery of federal government programs and services.
 - Coordinate with the Provinces to ensure the portal includes appropriate information on any corresponding provincial programs.
- **Recommendation 4 – Support for Clusters:**
 - Support the established pan-Atlantic oceans cluster in its bid to become a supercluster under the new superclusters initiative announced in Budget 2016.
 - The Atlantic oceans cluster currently operates with 1) nodes throughout the region, including in smaller municipalities; and 2) partners around the world. It includes global leaders across a wide range of ocean sectors, including in at least the following areas: defence, surveillance, security, fish harvesting, fish processing, aquaculture, packaged

foods market development, offshore oil & gas, offshore clean energy, marine conservation, navigation and mapping, biotechnology, shipping and transportation logistics, tourism, marine industry safety and training, naval architecture, and unmanned vehicles.

- Ensure that the strategy for any ocean's cluster support, continues to build upon the peer-to-peer collaboration which exists among our companies, academics and incubators. Rather than consolidation of decision making, the strategy's goal should be to strengthen relationships to create a national ocean's brand for Canada so that we can leverage opportunities including those specifically in emerging clusters such as biotechnology/bioscience, cybersecurity, smart grid/clean growth and agri-food; and coordinate program delivery throughout our region.
 - Consult directly with clusters to identify specific investments required to leverage their existing capacity. A primary example of this would be the procurement by lease, purchase or other means, of a marine research vessel to support the Atlantic Provinces' oceans cluster. A further example of this would be capital assistance for new incubation and development spaces, such as the proposed Canadian Centre for Bioscience Commercialization.
 - Provide funding to enable those representing the technical and research capacities of each of the major universities to engage in information sharing and collaboration with clusters outside the Atlantic region, in order to promote organic links to other sectors.
- **Recommendation 5 – Support for Social Enterprise:**
 - Provide social enterprises with access to funding commensurate with that offered to for-profit enterprises, and allow social enterprises in application processes to demonstrate their value in reducing more expensive government intervention.
 - Develop a strategy for this emerging sector, to include funding the infrastructure required to 1) identify and communicate social enterprise opportunities; 2) develop more effective programming for children and youth, including at post-secondary levels, and ensure that such programming is adequately supported; 3) capitalize on the opportunity presented by the connection between youth retention and social (values-based) enterprise; and 4) measure related success.

The Subcommittee believes in the capacity that exists in the technology sectors of the Atlantic region, and that government should continue to play an important role in fostering the organic growth of these sectors – particularly in the oceans, biotechnology, smart grid and other high tech sectors. It is the view of the Subcommittee that should expand programming in a way that complements, rather than

jeopardizes, existing programs. The Subcommittee makes these recommendations in light of the need to commit further departmental resources to each recommendation in order to evaluate best means of implementation, respectively.

2. OVERVIEW OF WHAT THE SUBCOMMITTEE HEARD

The federal government can better understand and be responsive to the needs of stakeholders interested in innovation. This reality must be viewed as a challenge and opportunity, by each federal department, and with the lens that stakeholder operations either are or should be rapidly changing due to technological transformation. There are valuable federal assets in Atlantic Canada, particularly the Atlantic Canada Opportunities Agency (ACOA), but there is room for increased contribution to all federal department clients and partners.

It is known that innovation is not driven only by strong institutions and policies, but also by the dynamic environment in which companies do business. The pressure to do business more efficiently every day is a global norm, but more acute in Atlantic Canada for a number of reasons. In brief, we have a smaller local market in which to test new products and services; we must overcome additional barriers to entering larger markets; we receive less research and development (R&D) funding; we have less access to capital to support new ventures; and we have less access to a skilled workforce. As such, government must prioritize support to strengthen our networks, and increase access to both capital and a skilled workforce. There is also demand to fund expanded initiatives separately, without reducing ACOA supports for existing programs.

In response to our current state, we are fortunate to have many leaders driving cultural change, to promote more innovation and entrepreneurialism among youth, students, women and men, post-secondary institutions, new and established companies, social sectors, and government itself. There is also a drive to collaborate more often and more substantially on a regional level, which generally strengthens local networks and facilitates connections to valuable networks outside the region. The federal government must encourage rather than stifle this progress, including by way of serial entrepreneurship in key sectors, and reducing any stigma associated with startup insolvency. Our region has a rich innovation history and many recent innovation successes, but there are gaps to fill.

The federal government must recognize its role to address Atlantic Canada's need to be a more competitive region, and its need to compete on a global scale. Government must invest in programs and services wisely, from those for K-12 students to all points in the innovation lifecycle. It must also ensure that these programs and services are agile enough to meet the speed of doing business, but create neither uncertainty nor unnecessary burdens.

The private and academic sectors must continue to become more comfortable taking the calculated risks that come with commercialization, and the federal government must encourage such risk-taking - and mitigate the same - by becoming more innovative itself.

Lastly, the Subcommittee also received specific feedback on 1) the need for more flexible immigration pathways, to ensure that newcomers do not choose to move to other countries simply due to obstacles in our immigration mechanisms; and 2) the need for sales and marketing support, particularly to allow for access to larger markets through international in-market business development opportunities, etc.. While not within the Innovation Subcommittee's scope, this feedback and related recommendations will be delivered to our colleagues focused on Skilled Workforce and Immigration, and Trade and Investment, respectively, under the AGS.

3. CONCLUSION

Based on what the Subcommittee heard, as laid out in more detail in Appendix A, as well as its knowledge of AGS and Innovation Agenda objectives, the above-made recommendations are the most relevant and tangible items that can be acted upon regionally and in the near-term. The Subcommittee is confident that economic growth will result from effective implementation of these, in conjunction with on-going efforts already being made by the federal government. This is an unprecedented opportunity to enable innovative leaders, spur a more innovative culture and build a healthier entrepreneurial ecosystem in Atlantic Canada - all while establishing that these efforts remain a long-term priority for the federal government in the years to come.

APPENDIX A: WHAT THE SUBCOMMITTEE HEARD

1.0 Introduction

The following is one real story of an Atlantic Canada company with high-growth potential:

After exceptional growth and recognition in its early years, its leadership may soon be forced to cut the majority of the company's 20 full-time employees and move its operations out of the Atlantic region in order to preserve the company. Like many startups, "crossing the chasm" is presenting a significant challenge for this company; its product development is critical to succeed in the long-term, but it needs more time and capital to get there. Despite already having \$500,000 in revenues this year to date, they are now stalled, waiting on SR&ED and AIF processes among other federal programs. In the meantime the company pushes forward with uncertainty as to when or if this funding can be secured. Consequently, instead investing in the product development it so desperately needs, they are left to consider dedicating whatever remaining resources they have to seek alternative funding. Of course, even if the company is successful at obtaining alternate funding, it would result in a decreased market value, the loss of company control to outside investors, etc.

Many other companies from across the entire region, past and present, share a similar story. This kind of story is not necessarily unique to Atlantic Canada, but it exemplifies that there is a clear role for the federal government to play in growing our regional economy by at least: 1) enabling innovation as pragmatically as possible; and 2) ensuring that the obstacles companies face are reduced.

1.1 Quality of Federal Programs and Services

Federal government programs and services available in Atlantic Canada are recognized as having a positive impact. Federal government officers, both in Atlantic Canada and Ottawa, deliver excellent service.

But, federal programs and services could have a more significant impact. In particular, ACOA's expertise should be viewed as a significant resource and one that can have a greater impact, if given more flexibility.

1.2 Regional Approach

There is a need for a collaborative regional approach, as no one province can drive the necessary changes alone. The Atlantic Growth Strategy is seen as a positive development in this regard, one that can unite the Atlantic Caucus.

In addition to common opportunities, we need to use the critical mass of our four Atlantic provinces to our collective advantage. We are a region of just more than two million people, and we must compete on a global scale. For perspective, the market in Atlantic Canada is approximately \$100 million, versus the approximately \$1 trillion market within a couple hours drive of Waterloo.

A regional approach will better foster the economic growth that we want to see. We can identify what is working, as well as redundancies, by having more collaborative conversations. This requires a change of culture that the federal government is well-positioned to lead.

How do we overcome parochialism between regions? We need to continue to work together, and to work more effectively.

For funding to go further, Atlantic Canada has to decide what is most important to focus on. There is a need to balance the following: 1) support for traditional sectors; 2) giving untested sectors a chance to flourish; and 3) support for sectors that have the biggest growth potential and/or that will help meet clean growth requirements such as seafood, cyber-security, and ocean energy. We must build on the concept of regional priorities in a way that ensures the assets of each province are complemented.

There is also a need and an opportunity to continue to learn through partnerships outside the region. For example, innovation leaders such as Waterloo and MIT collaborate with individual Atlantic Canadian entities, but we do not disseminate such knowledge well.

While Canada has fallen in OECD innovation rankings, Atlantic Canadian provinces are dead last in terms of funding for research. This and other lost opportunities must be addressed – to do so well, we must do so as a region.

Stakeholders share in our optimism. It is understood that if certain regional economic metrics increase in comparison to our global competitors, this would have a huge impact for the economy in Atlantic Canada. In addition, the global community generally does not differentiate between Atlantic Canadian provinces or municipalities.

1.3 Processing Times

1.3.1 Delays Impede Growth

Long processing times dilute business growth, and create inefficiency and uncertainty.

Some businesses have had to obtain bridge funding while waiting for ACOA funds. These circumstances are disruptive to business development.

Faster processing times would allow companies to better address market needs, and scale up. Moving quickly is not considered reckless – the opposite is true as slow processing times reduce a company's ability to be successful.

It was suggested that Western Economic Diversification Canada (WED) has preferred processing practices, in part because of its call for proposals at certain times of year. Structured calls are particularly advantageous for companies seeking larger sums due to the benefit of increased certainty.

Four to five months can be a lifetime for a business, especially for a startup. Following the approval of an application, finalizing the related contribution agreement may take anywhere from two to 12 months, further impeding a business' opportunity to execute successfully.

1.3.2 Program Agility

Though it was recognized that due diligence is required (particularly with taxpayers in mind), and may even force improvement to some business plans, current due diligence requirements hamper business growth. In particular, delays for small amounts of funding are perceived to be unnecessary.

ACOA's preference to match its investment dollar-for-dollar with other investors, although logical, creates further unnecessary delays.

Processing systems must be more innovative in order to keep up with the speed of business.

Businesses are attracted to, and rely on, agile programs. If programs are not agile, businesses may leave the region. There are specific examples of this.

1.3.3 Decision-making

There is a perception among some that standard processing times at ACOA have increased approximately threefold over the past year and a half, and that requiring Ministerial approval unnecessarily delays the process. For example, a 30-day processing time is now taking 90 days.

Generally, centralized decision-making is viewed unfavourably as impeding the agility of programs. The Subcommittee was asked to advocate for regional decision-making in order to better address regional needs.

1.4 Disconnect between Federal Programs and Services

There is a disconnect between programs such as the Industrial Research Assistance Program (IRAP) and those administered by ACOA. If there was formal continuity between programs, duplication of paperwork and delays would be avoided. As programs and services currently operate, inflexible privacy policies cause counter-productivity and burn both time and cash.

Such disconnect is seen when a company can obtain funding for staff, but cannot for materials or prototyping.

At a government department level, it can be difficult for ACOA to leverage expertise from entities like the National Research Council (NRC). Any federal agency should be able to more easily leverage the expertise of another federal entity, if applicable. At this time, ACOA's validation processes, although beneficial, create delays.

It is also undesirable when ACOA cannot approve funding until the Business Development Bank of Canada (BDC) has approved related funding. Each of these entities is strong individually, but collaboration between them can improve.

Programs are generally difficult to navigate. There is growing interest in a harmonized innovation incentive program, which could give our region the boost it needs.

It was recommended that the federal government consider the process by which innovation happens, and aim to connect the dots by linking the drivers and the enablers.

1.5 Disconnect between Federal Programs and Services and Provincial Programs and Services

In some cases there is little alignment between federal and provincial programs. Federal and provincial programs should complement one another (e.g., target better), rather than "compete" with one another. The Government of Canada's FedNor and the Province of Ontario's Northern Development may serve as an example of how alignment could be improved for Atlantic Canada.

In relation to carbon pricing, whatever model is decided upon should enable company competitiveness (e.g., there should be new incentives for companies to adopt greener technologies, etc.).

Interdepartmental communication could be consolidated by one tax-filing exercise. Government could look to Estonia and Sweden where tax harmonization has been beneficial. Small business investor tax credit (SBITC) programs could be reviewed with this intent, though national or international tax benefits should also be considered. Further, the federal government could make SBITC investments RRSP eligible to increase the flow of capital.

Federal and provincial collaboration may be particularly advantageous for smaller sectors, such as the

arts sector. In Newfoundland and Labrador (NL), prior collaboration built capacity, but now the sector relies on the province because most applicable federal programs were terminated by the previous federal government. On a larger scale, Canadian Centre for Fisheries Innovation's (CCFI) most successful years came when it received pan-Atlantic funding. Formal partnerships will stimulate economic growth in the region.

1.6 Program Design

1.6.1 Risk Tolerance

As innovation requires risk tolerance, governments must tolerate a higher acceptable level of risk in order to increase their overall return on investment. It is understood that ACOA's current default rate is low, at 5% (or less). This could be a detriment to innovation, though it is recognized that ACOA may not be the best entity to make loans with higher levels of risk.

It is understood that raising risk tolerance can only be done in a way that 1) the public would deem to be acceptable; and 2) would maintain accountability.

1.6.2 Innovation

The term "innovation" creates uncertainty in relation to program eligibility. Rather, eligibility should focus on at least whether an investment will make a business more competitive or better positioned to profit. Funding should focus on innovation (i.e., commercialization) rather than invention (i.e., science).

Business-driven innovation (i.e., "applied innovation") should be prioritized, with one of the following two intents: 1) to grow current business, by increasing productivity, lowering costs, or expanding markets; or 2) to create new business. The federal government needs to better incentivize companies to commercialize innovation. Although fundamental research and related research chairs also drive innovation, applied research should be prioritized by the federal government.

These points align with the Ivany Report's focus on productivity, innovation, and competitiveness in traditional industries (e.g., support the increase of harvest rates in the forestry sector). The federal government is perceived to work best when it wants to provide funding to a sector, rather than when sectors are seeking money for any given reason.

There can be more emphasis on "crossing the chasm" (a.k.a, "the valley of death" in the innovation sequence, when companies attempt to establish customers, become profitable, etc.), as opposed to just supporting the research and development stage.

1.6.3 Program Agility

Any time spent by a company on fulfilling federal program requirements (a.k.a., “red tape”) takes away from its ability to build its business. If the administration of programs is too burdensome, prospective companies that could boost our economy will be lost. For some, the pursuit of federal funding is the “wrong carrot” as it takes away from a company’s focus on its business.

Federal programs require a project management approach that does not fit business (i.e., strict waterfall management, with inflexible milestones). Some sectors, such as the energy sector, are more reactive (i.e., less predictable). Programs and services should allow strategic decisions to be made in real-time while balancing government's due diligence requirements. This could be implemented through process-driven funding, rather than subject-matter funding. Technology changes quickly, so companies need, and should be encouraged, to adapt more.

Small companies, and small sectors as a whole, also need better access to programs. They do not have the same resources as big companies (e.g., the social and arts sectors are disproportionately negatively affected). "Small" should apply to programs as well – current bureaucratic necessities are viewed to be an impediment to business.

Despite the demand for flexibility, programs should be sustainable and stand the test of time from government to government.

1.6.4 Debt Versus Equity

Ideally, funding would not increase company debt. Debt negatively affects bank ratios and further borrowing capacity. Though there is need for debt-based programs, this should not be the norm.

A company should only give up equity (which “dilutes” ownership of a company) for strategic reasons. If a federal entity takes equity its aim should be to support the company to scale up, not solely to support the company’s early stages.

Grant funding can attract business, but it typically comes with conditions that can be restrictive. A company should not have to ask itself if it should change its business model to access capital.

1.6.5 Program Eligibility

As discussed above, different definitions of “innovation” create ambiguity. A clear definition would create more certainty for applicants. The Conference Board of Canada’s definition may be used:

“The Conference Board defines innovation as the process through which economic and social value is extracted from knowledge through the generation, development, and implementation of ideas to produce new or improved strategies, capabilities, products, services, or processes.”

Social enterprise and not-for-profit companies (NFPs) are more challenged to access funds. Programs could better support social enterprise and give research institutes more freedom to commercialize. If an objective is to create jobs, then investment in all appropriate entities is required.

Some sectors, such as seafood, are not eligible for many programs, such as marketing or competitiveness funds. Unlike the Department of Agriculture’s Growing Forward 2 program, the Department of Fisheries and Oceans (DFO) does not have such programs.

It was also suggested that there be some flexibility for any company that has previously proven itself to the federal government.

1.6.6 Program Criteria

Programs can take a more expansive approach to economic development. Indirect jobs should be evaluated within the program criteria. An applicant may only create one job in its company, but create 20 jobs for its suppliers (e.g., a small workforce expansion at a cidery may result in the need for many more workers in apple orchards).

In some cases, applicants feel that every box is ticked (e.g., skills gap, job creation, youth, etc.), yet ACOA’s programs do not align. There is a perception that ACOA has shifted its focus to bricks and mortar investments, moving away from supporting salary costs (which are up to 80% of costs for some sectors, particularly smaller businesses). Funding for salaries has historically been available as a loan through ACOA’s Business Development Program.

A project’s impact versus its cost should be the federal government’s focus. It should be accepted that some projects will cost more administratively than others; this should be accepted provided that administration is as efficient as possible. If an outcome is intended to reach a broader geographic area, administrative costs may be higher, but with positive results.

1.6.7 Validation

The federal government should not pick company winners, but create the environment that allows winners to create themselves. Programs should be designed to have a net benefit on a sector or sectors.

There is a perception that ACOA no longer looks to the private sector to validate ideas, despite the view that industry-led vetting should be a standard. Brightspark’s approach may serve as a better validation

model. In Atlantic Canada, there aren't as many consumers to test products, such as the 30 million people in California that some of our companies' competitors have access to, so business-to-consumer testing is not easy.

Initial technical validation is more critical for some sectors, such as renewable energy. Validation is also better assessed with a clear regional priority map. Equal treatment of all sectors creates a prohibitive standard that does not enable innovation, particularly in sectors that need it the most.

There soon may be a national standard, or unifying metrics, for incubators and accelerators to follow in terms of evaluating their success. In any event, government must better measure and track 1) sustainable job creation; 2) investment generated in, and attracted to, the region; and 3) economic growth in general stemming from government support for innovation.

1.7 Access to Information

There is desire for a BizPal-like tool for funding programs. Funding tools such as that offered by Fundica could be leveraged to ensure that federal programs and services are better understood by various stakeholders in the ecosystem (e.g., LearnSphere's Commercialization Consulting and Mentoring Program Guidelines give applicants a clear understanding on how the program works).

An up-to-date funding cycle map that outlines various programs available, with links to detailed information about each, would be valuable. Whether this was led by ISED or ACOA does not matter. Such a tool could help attract people and capital to the region. Ideally, this would include all other forms of capital (angel, venture, etc.).

Various entities have attempted to offer such services, but these efforts are typically not well resourced. Ignite Fredericton has invested significantly in its Subway Model, to outline the journey of the entrepreneur, to understand where they best need to go for support. This model consists of four stages: ideation, validation, growth, and maturation, and aims to ensure that companies can enter the ecosystem smoothly, regardless of what stage they are in, and obtain direction to the programs and services they need.

The Natural Sciences and Engineering Research Council of Canada (NSERC) Research Portal is recognized as a good service initiative that accommodates business. Expanding on the portal model, a central hub could encourage collaboration, in addition to one-stop federal program and service "shopping".

Companies do not always know what they are subject to in terms of laws and regulations. Understanding regulatory pathways is a great benefit in many cases, increasing certainty and efficiency. This applies more in some sectors (e.g., in ag-tech sector, with the Canadian Food Inspection Agency). This also generally applies to sectors that depend on oceans, as well as the emerging cybersecurity

sector.

1.8 Social Innovation

The federal government can better enable the intersection between social and business innovation (e.g., social enterprises are not eligible for 95% of federal programs and services).

Although some programs are accessible in theory, subjective application of ACOA programs has typically not favoured social enterprises. Applicable programs are not known well, obscure at best, or too difficult to leverage. Federal programs and services are generally not mandated to properly support social innovation. Social impact and benefits could be part of proposal requirements.

Despite the lack of support, this sector has created 3,000 jobs in Nova Scotia (NS) alone. Such ventures often help employ socio-economically marginalized people, so the investments go further due to the reduction of social spending elsewhere (i.e., “blended returns”). Future Roots employs 13-18 year-olds in Halifax’s North End, primarily consisting of marginalized youth. The founder recognized the need to connect youth with community-based employment opportunities, which in turn mitigates social risks.

The Community Forward Fund attempts to address gaps that traditional sources of funding for the social enterprise sector can’t fill. The government could better support such initiatives, or mirror these efforts by enabling higher growth company models to include a social enterprise approach.

Although the federal government recognizes "social enterprise", this notion could be better supported. Existing Employment and Social Development Canada (ESDC) programs are not social enterprise programs - the real opportunity is to help the social enterprise sector find its business legs. We should better distinguish social enterprises for having a broader impact, and creating a more inclusive society.

Accountability requirements to programs can be challenging, but we will be better served if the federal government recognizes outcomes that have beneficial social or environmental impacts.

Also, social enterprise generally increases the livability of a community and region, which has indirect benefits on the growth of all sectors.

1.9 Skills Development

1.9.1 The Pipeline

There should be more support for the integration of computer coding in K-12 education, along with early exposure to science, technology, engineering, and math (STEM) in particular. We need to promote

information communication technology (ICT) with youth, especially with girls.

The Brilliant Labs model promotes computer literacy and STEM skills, despite generally enduring a lack of funding certainty. Brilliant Labs aims to support technology integration and spur entrepreneurial spirit in classrooms around New Brunswick (NB) and NS through technology- and project-based learning.

1.9.2 Talent Acquisition

In addition to immigration, programs would ideally enable a company to hire C level executives to support growth-stage companies. There is a need to repatriate or attract new talent to the region; otherwise businesses will leave for larger centres.

1.9.3 Immigration

As a case-in-point, the Subcommittee visited Ubisoft's office in Halifax. Ubisoft is one of the world's largest video games producers. The success of its operation in Halifax has been leveraged by immigration, primarily through the skilled labour stream. Its Halifax workforce includes two PhDs, seven postgraduates, and 15 bachelor degree holders, as well as many formally educated artisans among their 49 employees.

Immigration processes must continue to improve, to be more flexible and responsive. They must be based on accurate data at both the federal and provincial level. There is demand for an increase in Provincial Nominee Program allocations, and to create a trusted employer program.

There is desire for additional support of settlement programs (e.g., employer support services). Many companies do not have resources to provide such support, which could also serve to be a tool for companies to attract talent.

There is need for immigration generally, as opposed to just "skilled" immigrants. We need both government and businesses to be thought leaders in this regard despite challenging rhetoric that exists.

Practical delay issues in the immigration system are detrimental to business development. Some people must travel to Ottawa regularly to obtain a visa to travel to Europe for business reasons. These requirements impede business growth. For similar reasons, it is generally difficult to attract international talent.

In response to much of the feedback received on immigration, the Subcommittee was happy to promote the improvements made by the AGS Immigration Pilot.

1.9.4 Women in Entrepreneurship

The federal government must establish support specifically for women. Two-thirds of startups are led by women, but women receive only 5-7% of recorded venture capital (VC). There are various reasons for this, including maternity leaves which often result in a business being abandoned.

The SheEO fund is the type of initiative that the federal government may support.

1.9.5 Mentorship

Mentorship is important in all stages (i.e., described by some as generation; ideation; qualification; planning; implementation; return on investment; and decline) of the ecosystem, particularly to better develop talent, and increase the likelihood of growth. The ecosystem is the system that encourages and governs innovation to follow these stages - it's not accidental and it's not easy. As far as possible, the federal government should enable “collisions”, that is the human interactions that are necessary at every stage.

For example, the “fail fast, fail cheap” notion can only occur with strong mentorship, and that mentorship encourages effective and collaborative behaviour, rather than simply “being busy”.

There is a growing network of mentors and investors in the region. We must be mindful of how to leverage this.

1.10 Access to Capital

There are varying views on access to capital, from the need for more “patient” capital to allow deeper development, to the need for capital for social enterprises. What is overwhelmingly agreed is the need for more capital in the region - government must play a role in ensuring that Atlantic Canada is adequately supported.

Although the undercapitalization of innovation is a national problem, as we are competing with better-funded companies around the world, this problem is more acute in Atlantic Canada. For example, NB alone loses approximately \$4 billion annually in private investment. Our region has been relieved in the past by the injection of capital provided by the sale of Q1Labs (a return in 2012 of \$205 million on \$9 million invested) and Radian6 (a return in 2011 of \$276 million and \$50 million in stock). The absence of further injections is hurting the entire regional ecosystem, particularly as it matures.

There are competing points in the ecosystem in terms of where or when support should be given.

Support at all stages must exist to maximize the success of new companies, and new products or services from existing companies. The need for later-stage support has led to entities such as the New Brunswick Innovation Foundation (NBIF) re-investing in companies, to ensure they are adequately supported to scale up.

Independent entities (e.g., Build Ventures) provide significant value in serving to fulfill federal government objectives. Build Ventures has invested capital provided by the federal government, leveraged by private sector funds. Independent entities have the professionals to best manage, mentor, and grow companies. The federal government must visualize long-term capital needs, and rely to an appropriate extent on existing incubators, accelerators, and funds to vet capital needs of the ecosystem.

There is a need to enable access to capital by traditional companies and small-and-medium enterprises (SMEs) specifically for innovation. There is also demand for funding for private sector-led research for key sectors of the economy. While the federal government has taken clear steps to support innovation, it must further address the need to bring back private sector funds to the assets that need them most. The US and Israel have had success in this regard.

1.10.1 Pre-seed Capital

The need for pre-seed (i.e., early stage) funding is clear. There is an essence of time in this regard. The addition of pre-seed funds would also raise the spirit of the entrepreneurial community.

The arts sector serves as an analogy for the benefit of pre-seed funding, as follows: if money is available for short film production, the talent pool develops despite most of the short films not bringing in significant revenues; eventually the talent pool (e.g., including actors and producers) attracts much more outside capital into the region for bigger budget productions (e.g., Republic of Doyle). This “fail fast and fail cheap” model applies across all sectors, though we can learn to accept “failure” better due to its necessity in the ecosystem, provided that serial entrepreneurialism is encouraged - a need discussed further below.

There are varying perspectives on what is an adequate amount of initial funds for a company - but, this may best be considered by sector. In some cases \$10,000 is adequate (e.g., ICT sector), in other cases \$100,000 is adequate (e.g., energy sector).

There is not significant angel investment in this region, which supports the pre-seed and seed stages. In some jurisdictions, angel investment tends to “care” for the ecosystem in a way that accelerates the natural process rather than supplanting it.

Once the ideation phase is complete and a company has traction, seed funding such as that provided by NBIF, Innovacorp, and others allows a company to develop further. But, companies cannot get to this point without initial funding. An ecosystem builds upon itself (i.e., without adequate support for earlier

stages, later stages are not as strong).

1.10.2 Seed Capital

Seed capital helps companies develop their business and unlock other funding, such as that for marketing activities or skills attraction.

A recent Genesis Centre study found that companies initially capitalized in the amount of \$60,000 to \$100,000 are more successful. Success is dependent on progress, not just a business plan. For comparison, typical accelerators in the US give approximately \$120,000, in conjunction with intense programming that aims to position companies to access more funding.

BDC is not providing seed funds to the same extent anymore, apparently in part due to the lack of ability to properly do the valuations. And, again entities such as NBIF, Innovacorp, and Build Ventures support this space, but their focus may be diluted by the need to support the pre-seed stage and/or VC or Series A stages as well.

1.10.3 Venture Capital

There also isn't enough capital available in the post-seed, pre-revenue stage (which VCs typically do not support). For this report, VC includes early stage VC, Series A capital, and, later-stage VC.

VC is hard to secure in today's economy, and in some cases impossible for start-ups to obtain. Growth stage companies, such as cybersecurity companies, will likely require more substantial investment at this point, but it should pay off considerably. As noted above, there must be support to allow companies to take good ideas to market (i.e., commercialization), as opposed to funding simply being available for R&D and for companies to launch.

Many commented on the need for Build Ventures to be re-capitalized. There is uncertainty of this at this point. Build Ventures, initially formed as Atlantic Canada Regional Venture Fund was capitalized with the following contributions: the governments of NB and NS – each \$15 million; the government of Prince Edward Island (PEI) – \$2.5 million; BDC Venture Capital – \$10 million; Technology Venture Corp., a Moncton-based private sector company - \$5 million; and 1\$ million from the fund managers.

It was also raised whether any VCAP funds have made its way to Atlantic Canada. The previous federal government injected \$400 million into this program, to be managed by four different funds and leveraged to a total of \$1.35 billion – a fund of funds. But, similar to the lack of research funding that makes its way into the region, VCAP has resulted in little investment (of the \$886 million invested to date) into Atlantic Canada. By comparison, recent statistics show that VCAP has contributed to the creation of 43 jobs in Atlantic Canada versus 3,841 jobs in Ontario.

The lack of such funds results in competitive companies being dissolved because they are not adequately funded to “cross the chasm”, that is, the stage required to allow a company to become sustainable. This is often completed through early-adopters which, although pay for the product or service, represent only a small portion of the target market.

The Subcommittee was pleased to learn that the government of NS is working on the creation of a seed fund in the amount of \$25 million. It was suggested that the other three Atlantic Provinces join to make this a bigger fund. Such funds have also proven to attract further Series A capital.

Lastly, GrowthWorks, previously an early stage VC funder, is sun-setting. The lack of Growthworks funding will have a detrimental effect in Atlantic Canada. This has resulted from federal government changes to the LSVCC tax credit. This credit essentially serves to enhance the credit available for RRSP contributions.

1.11 Culture

In addition to creating an entrepreneurial culture among our youth, and enabling collaboration between companies, there is a clear need for a more business-driven innovation culture. The culture of innovation has to be entrenched.

A company typically invests in itself as follows: 70% into core offerings; 20% into adjacent offerings (i.e., new products or services that a company would generally be familiar with); and 10% into transformational initiatives. Yet, value created is inversely proportional to such investment. Companies should be explicit about the type of innovation they invest in, be open to deep unconventional insights, and be disciplined in these efforts.

There may be a greater fear of failure in this region. Businesses can ultimately “fail” yet create many benefits (e.g., incomes, skills development, networks, etc.). In comparison, failure is not ridiculed in Israel. Given Canada’s conservative business nature, sales cycles are prohibitively long, particularly with large businesses and with government. Long sales cycles are particularly challenging for start-ups. We do not celebrate an effective salesperson enough - we must create an equal passion for sales as we have for ideas.

Innovation should be cyclical, or serial. People must be encouraged to invest in a second business after their first success or failure. There are many positive examples of this, yet we need more. We must also encourage more companies to embrace serial innovation. Ubisoft’s Halifax office aims to continuously provide on-going mentoring and training to allow everyone to develop current skill sets, address its customers’ demands, improve key performance indicators, and tries to stay ahead of wherever its market is going.

Whatever the reasons behind our lagging innovative culture, which should be studied and better understood, the federal government must aim to incentivize all businesses to be innovative. Further, federal government programs can and should play a role in changing the narrative on “failure”. Some unsuccessful companies have been perceived to be subject to a “public shaming” by ACOA and the media. Rather, we must all generally accept and encourage a certain degree of failure, as it results in increased economic impact overall (e.g., the purpose of an accelerator program is to validate an idea, so it's acceptable if a company fails as this identifies the need to pursue another idea).

1.11.1 Collaboration between Corporations

In addition to culture, collaboration between companies touches on many areas outlined in this report, such as: mentorship, validation, early adoption, marketing and sales, etc..

Established sectors, and big companies in particular, are not structured in a way that easily enables innovation. Traditional, finance and insurance sectors, among others, cannot quickly adapt. This reality can be conveniently coupled with startups, to better solve problems. These two groups of companies should collaborate more.

There are numerous examples of success from such collaboration around the region. McCain has actively engaged the startup community in real problems. This has resulted in success for Resson Aerospace. Other commercialization opportunities are missed due to the failure of establishing these links.

The federal government should enable this kind of relationship as much as possible, and can better support the connection of drivers of innovation with the enablers of innovation. CCFI, with its science and technology facilities and expertise, serves as a good model for this. CCFI is owned by Memorial University, funded by government, and directed by industry. It has worked with thousands of experts around the world, to support the fisheries industry as a whole along with many SMEs. CCFI supports the entire region (e.g., if a problem appears in the PEI mussels sector, CCFI has the flexibility to assist).

Again, business-driven or applied innovation should be our focus, to make all sectors more innovative. Programs that incentivize collaboration should be promoted. This could simply be an add-on to existing programs. The results of such collaboration could be rewarded when impacts are shown to be positive.

In addition to collaboration, regional competition is healthy as it prepares companies for global competition. Confidentiality and competition concerns exist, given the unequal bargaining positions of startups and established businesses, but these concerns can be overcome.

1.12 Ocean Cluster

There is an opportunity to further support the maturation of Atlantic Canada's oceans expertise. Stakeholders strongly support the notion of superclusters and ISED's approach to clusters in general, particularly to scale up and encourage more intimate collaboration across applicable entities. Atlantic Canada has strengths and natural advantages, including our long-established ocean economy, newly-established Oceans Frontier Institute (OFI), post-secondary capacity, Naval presence, active private sector, etc..

There are some apparent federal program gaps. Although innovation in the seafood sector has lagged, there are few federal programs available to change this. AgCan offers only two programs, one for international marketing (which is difficult to access by companies not already in international markets), and one for food traceability. Lack of support has led to industry losing \$10 million annually in NS lobster mortality alone, and the inability to capitalize on waste by-products such as chitin extract. The challenge includes the need to innovate NL's resurging cod industry in the face of a "demographic timebomb" – harvesting and processing technologies are not automated enough. Fortunately, the cod fishery has been sustained in certain areas through partnerships with innovative entities such as CCFI, by driving the industry's aim to extract the most value it can from its efforts.

What does the region need to enable our \$5 million companies to become \$500 million companies? There is need for a research vessel. Some also believe further expertise should be attracted to the region via a recruitment program (though others believe our region already has the expertise required). The key is to enhance commercialization opportunities through further R&D, and marketing and sales efforts. Applicable sectors include Ocean Data/Analytics, Ocean Sensors, Energy Storage, AUVs & Robotics, Genomics, Advanced Materials and AI.

Our oceans cluster is a real growth opportunity. This area currently represents only 2% of the Canadian economy in comparison with 5% of the global economy. The ocean economy is predicted to grow to 15% of the global economy due to population growth and loss of other food supplies, etc.. The future ocean economy will be managed with the assistance of complex algorithms and by fish capture with robotics and drones. We need to invest to understand our oceans even better, to know its resources and address climate change, etc..

The potential \$400 million Comprehensive Economic and Trade Agreement (CETA) fund should be forward thinking, rather than "back-filling" or "band-aiding". It should be administered by ACOA, due to its economic development expertise, rather than by DFO (though DFO should certainly be involved).

2. MORE FROM POST-SECONDARY EDUCATION INSTITUTIONS

Post-secondary education institutions (PSEs) are proud of their role in the ecosystem, to create IP and

then make it available, as well to train our workforce. PSEs are effective in this regard, in sectors including fisheries, bio-tech, food, and cybersecurity, among others.

The private sector also strongly recognizes that PSEs create or can leverage many opportunities. Again, collaboration is an asset, and the willingness of successful business persons to get involved has amplified the effect of the ecosystem (e.g., PSE-based projects have had success in terms of Series A funding).

PSEs also demonstrate an understanding of the need to work regionally, and to aim to commercialize when possible, including by obtaining third party validation (e.g., as our peers in the US tend to do).

2.1 Research

PSEs must continue to build on existing partnerships. Dalhousie University (Dal) has partnerships with MIT, on a Regional Entrepreneurship Acceleration Program, and Tesla, on its world-leading positive Lithium ion (i.e., battery) expertise. Government must ensure that such partnerships are enabled as much as possible. Springboard's positive impact is intended to be leveraged further in this regard, as shown by the federal government recent \$9.2 million investment.

Whereas UNB identifies a broader range of research areas and aims to address provincial needs, Dalhousie has identified its four priority research areas as follows: oceans; materials and clean tech; health and wellness; society, law of governance. Dal has further identified its economic development priorities as being the ICT sector and exporting to China. MUN, UPEI, and other publically funded PSEs in Atlantic Canada have different approaches to setting research priorities. Is there a way for government to drive more strategic collaboration across all Atlantic Canadian PSEs?

Entities such as Canadian Manufacturers & Exporters (CME) also promote industry-driven programs aimed at PSE-partnerships in R&D and commercialization, citing undeveloped linkages to the entrepreneurialism of the private sector. CCFI, as discussed above, may serve as a model that addresses this gap.

2.2 Innovation Curriculums and Programs

There are many PSE activities around the region specifically designed to spur innovation.

Dal views its role in the ecosystem to have the following three responsibilities: 1) build capacity; 2) nurture sector growth; and 3) develop partnerships. UNB's Technology Management and Entrepreneurship (TME) program has boosted the region's ecosystem, by nurturing upper year students, primarily in tech faculties. The TME curriculum is focused on entrepreneurial projects coupled with

strong mentorship (i.e., “a think tank approach”).

In addition to its partnership with Communitech at Waterloo, which among other objectives aims to marry small and large businesses, Dal has partnered with George Washington University to launch its Starting Lean program. This program pairs screened research with entrepreneurs, to apply the Lean Startup Method in real-world customer settings. The program does not try to turn researchers into entrepreneurs, but aims to facilitate collaboration between researchers and business minds.

Further to this Starting Lean program, NS is in the process of unrolling a pilot to grant researchers \$10,000 to \$15,000 to fund industry applications, modeled on the I-CORP program in the US. But, some expressed doubt as to whether this amount is sufficient because the US program provides much more (e.g., \$50,000+). Again, the correct amount of pre-seed funding has been debated, and likely is sector-dependent. If the ideation, programming, etc. are proven, why adapt the program differently?

2.3 Immigration

Feedback from the PSE sector was generally similar to that of others provided on immigration - it is a lost opportunity if not improved. The opportunity to attract international students was generally highlighted to us.

Although the startup visa was noted as being a good option for international student graduates, simpler systems or additional resources and guidance would ease the process. International student graduates feel disadvantaged because they must spend their valuable business time on immigration papers, etc..

2.4 Oceans

Further to the ocean cluster discussion above, the OFI serves as an excellent example of both Atlantic Canada’s expertise in oceans, as well as for further opportunity. OFI was established with \$93 million Canada First Research Excellence Fund (CFREF) funding to a partnership between Dal, UPEI and MUN.

In addition to capacity at Dal and UPEI, MUN has world-leading schools in fisheries, maritime studies, ocean tech, and safety. These schools have a culture of working with industry, whether in the world’s largest flume tank, or in advanced training simulators. MUN’s schools also include the Centre for Community Based Education Delivery, which educates people as far away as Nunavut; and the Centre for Sustainable Aquatic Resources, which companies such as Clearwater, based in Halifax, use to design, test, and optimize innovations in a cost-effective setting.

Initial investments in these schools were to foster economic development, for fisherman who could not

access education. Even today, most wealth in NL and many other regions in Atlantic Canada is dependent on the ocean.

3. MORE FROM THE STARTUP COMMUNITY

3.1 Processing Times

By their nature, startups' expenditures are greater than their revenues. This reality typically remains for a few years, while the product or service is being developed. Therefore, cash flow management is crucial, and made more difficult by processing delays. During this period, there is also the potential for a company to pivot, that is to change from its initial business plan because it has identified a better opportunity. This norm tends to make processing times longer because ACOA has to re-assess business plans.

Though ACOA has a less intense process for applications seeking smaller amounts (i.e., under \$250,000), there is desire for such funding to be accessed even faster.

3.2 Incubators and Accelerators

Initial support allows companies to better launch, and ideation can be leveraged at places like Planet Hatch, to enhance engagement and collaboration.

Incubators, such as Planet Hatch in Fredericton, usually have defined intake processes and timelines (e.g., a couple intakes per year). When programs revolve, there is less certainty for interested applicants, but the quality of cohorts can differ in any event. Although Planet Hatch initially took advantage of provincial grant money made available for companies accepted into its cohorts, this money is no longer available.

Independent entities are better positioned to manage seed funding, as opposed to ACOA or another federal government entity. Ignite Fredericton's Smart Grid incubator gives companies up to \$25,000, following a board assessment. A company will not receive funds if it does not present a high quality business plan.

There's generally demand for further support Incubators and accelerators. Some companies benefit from Propel ICT's regional accelerator, an entity funded by ACOA. Propel's program also potentially opens the door for a BDC note in amount of \$150,000. It is also built around mentorship. But, there is need for more access to strong incubator and accelerator programming.

There is a trend of private accelerators attracting better companies by providing funding for them.

UNB's newly launched Energia accelerator (through the TME program) aims to attract national and international talent. It believes that it must provide seed capital on a competitive basis (i.e., \$75,000 to \$100,000), to be a leading accelerator, in exchange for 5-7% equity. Given this trend, programs offered by other incubators and accelerators in the region are underfunded, particularly compared to competitive global incubators and accelerators.

Other examples in the region include the Genesis Centre's accelerator launched in partnership with MaRS, and Bio Food Tech in PEI. These programs include strong mentorship, through an Entrepreneur in Residence or otherwise. Common Good Solutions' (CGS) Impact Incubator has been recently created, with support from the Social Enterprise Network of Nova Scotia. This social enterprise incubator will aim to launch 36 enterprises annually. Although not all business plans submitted to CGS will be focused on high growth, they will be focused on creating sustainable community-benefitting enterprises. Scaling out, rather than up, can be less costly for governments provided government enables entrepreneurship to tackle social issues. Two main considerations are given to applicants: the business model, and the social model - both must be viable. This program will be self-sustaining, after the initial investment.

3.3 Social Enterprise

Social enterprise brings community and business together. As stated above, it increases livability in any region.

Younger generations are attracted to this kind of work if offered the opportunity to make a difference rather than to make a higher wage. Many passionate and educated youth are not interested in traditional industries. The Digby Neck Collective Society, driven by millennials, has rallied their community, saved a school building, and may create a community cafe.

Social enterprises will not solve all government problems, but can solve many. These enterprises aim to be profitable, and have a viable social model. They generally result in reduced government spending due to the social benefits they provide, such as jobs for at-risk youth. The Government of NS spends \$60,000 annually on survey stakes that could be made by a social enterprise that employs people whom would otherwise rely on government programs.

Similarly, entities such as the Prescott Group Society, which offers vocational training opportunities for adults with disabilities, appreciates any government support it receives. But, it faces challenges to meet demand and provide one-on-one support staff, despite the increased quality of life and related reduction in other government costs that result from its work.

Although there is more recognition of the value that social enterprises have, such as Ventures for Canada's inclusion of social enterprises among their fellowship partners, government could: 1) take a broader lens when assessing issues; 2) consider enterprise solutions; and 3) enable collaboration in this

regard. Social issues are complex, and should not be assessed in isolation (e.g., through the lens of itemized budgets). Many stakeholders may be required to ensure collaboration is effective, and to ensure that solutions are aimed at root causes. Government can foster such innovation by making data available (i.e., open), prioritizing related applied research, and investing in related infrastructure/networks. Scotland is an international leader in social impact analysis, and could be drawn upon.

Unfortunately, social enterprises are generally not successful in accessing most funding, and there is little government spending specifically allocated to them. ESDC's applicable national budget is approximately \$9 million, and ISED's applicable budget is less.

3.4 Workspace

Access to a proper workspace, without the burden of a five-year lease, could enable startups to focus more on their business. It is generally difficult to obtain property to expand.

4. MORE FROM SMALL AND MEDIUM-SIZED ENTERPRISES

The notion that Atlantic Canada is built on SMEs must be reinforced. SMEs must be leveraged to assist growth better. In terms of regional economics, only 6% to 8% of our economy is dependent on high-tech sectors, so programs must be designed with the other 90%+ of businesses in mind.

There is a perception that programs (e.g., Scientific Research and Experimental Development Tax Incentive Program (SR&ED)) are generally designed for big business, not SMEs. We must incentivize SMEs to take risk as well (i.e., to spend without knowing what the return on investment will be). As the best way to validate technology is through customer use, the Small Business Innovation Research (SBIR) program in the US may be great program to adopt.

BDC would like to see established businesses be more innovative as well, by embracing automation, etc.. BDC's vision is to make Canadian SMEs the most competitive in the world.

There is a bias against SMEs in the federal government's procurement system, which generally views SMEs to be too risky. This can have the effect of forcing SMEs to have to test foreign markets before establishing themselves in locally. United Kingdom could be looked to for favourable procurement reforms focused on SMEs.

5. MORE FROM TRADITIONAL AND ESTABLISHED INDUSTRIES

Large organizations need incentives as well. Disruptive technologies will impact every company and every sector, yet many Atlantic Canadian businesses are complacent. There is a big gap, as our collective goal should be to see that entities apply innovation across their operations. This approach to innovation generally results in more success, as opposed to a focus simply on creating an innovative product. A company with an innovative culture continuously looks to leverage existing customers, considers its infrastructure and people, and identifies how to use its skills to serve other businesses, etc..

Large companies should also be encouraged to work more with startups (i.e., large corporations generally focus on creating efficiencies and selling). McCain is a leader in this regard, as it engages the startup community in real problems, such as Resson Aerospace. Smaller divisions in large companies could be incentivized with similar access to funding to that available to startups.

Good policy can encourage entrepreneurialism indirectly, and does not have to relate solely to tech sectors. Malley Industries saw an opportunity for increased sales when Ford stopped producing a particular product, which Malley Industries developed and now sells across North America. PAL Airlines was born from a 1988 federal government decision that gave it an opportunity to bid on a contract, which it won. The federal government at the time decided it was not appropriate work for the military to do. This opportunity allowed PAL to build expertise which it now exports around the world. PAL also credits the federal government for challenging it to meet difficult specifications, essentially demanding innovation. In a slightly different context, NB Power took a chance on Green LED Lighting Solutions, a company now well established.

Specific programs do help, but could do more. NRCan's Investments in Forest Industry Transformation (IFIT) program is intended to transition industry to more value-added products, but it is oversubscribed and under-funded. \$190 million to date has been invested across the country, but apparently without taking into account how dependent a region is on forestry. There could be more funds like these, and they could be distributed better.

Despite some companies' efforts to foster innovation with the intent of always being more competitive, multi-nationals are positioned to mimic such innovation and erode local businesses' profits. There is hope that strong regulations will someday address this reality. That said, some suggested that foreign companies be treated more equally to attract their business.

Lastly, regulatory hurdles, though often provincial jurisdiction, cause unnecessary burdens to innovation, particularly in traditional sectors.

6. ON BUSINESS DEVELOPMENT AND SALES

Other than LearnSphere's commercialization programs and ACOA's Business Development Program there is generally little support in the region for business development and sales. It is difficult for

companies to attract C level talent, who have the ability to drive sales.

Efforts are being made to grow export sales teams and find better ways to send more orders back to Atlantic Canada, where more jobs could be created. The challenge for many is not in establishing a sales strategy, but establishing an in-market presence (i.e., “feet in the field”). In-market positions are generally not funded in the case a company aims to expand its distribution network. It's expensive (and financially riskier) for salespeople to travel to such markets. The federal government must ensure that there is easier access into and from the region. Airport rents could be lowered to mitigate the higher costs of air travel.

There is limiting eligibility criteria to the CanExport program, which is intended to assist SMEs specifically. For example, if a company has made a small sale in a target market, it would not qualify for funding support to further such sales (even if attempting to market a completely new product or service). Canada Wood is recognized as a valuable program with in-market specialists around the world - this could serve as a model for other sectors.

Some also believe that funding programs are arguably export-focussed, at least in the sense they do not enable one's ability to find a first sale more locally. Conversely, we must support the acceptance of innovation locally, to better enable such sales.

The lack of sales expertise is a nationwide problem. There is a need for training. Sales training is not taught at a PSE level anywhere, yet without sales a company will not be sustainable. Sales programs should aim to put entrepreneurs in front of customers. Although the Canada Job Grant program subsidizes up to \$10,000 for training, there is limited funding and a lack of strong programming.

The Trade Commissioner Service can be valuable, but is inconsistent. Again, air travel can also be prohibitively expensive.

Lastly, some assert that a company's ability to sell, will forgive a lot of deficiencies and is crucial to its sustainability in our fast-changing world.

7. ON SPECIFIC PROGRAMS AND SERVICES

Specific feedback was provided on other federal programs and services, as generally listed below to be favourable (pros) or unfavourable (cons).

7.1 Industrial Research Assistance Program (IRAP)

Pros:

- Some assert that IRAP is the best federal program.

- IRAP is often the first federal program to assess a project, taking the highest technical risk. IRAP is able to validate technology for entities such as ACOA.

Cons:

- There is a perception that, due to the limited funds available, projects are typically invested in early in the federal government's fiscal year, then again late in the fiscal year when money becomes available. It would be favourable if money was available for the best companies throughout the year. Generally only larger corporations can adequately plan over such longer terms.
- A company cannot work on project until funding gets approved, as any such work disqualifies applicants from IRAP altogether. It would be more favourable if approved funds could be allocated back to the application date (as ACOA does). This restriction is viewed to be arbitrary and not give companies the ability to take the risk of spending their own money if its application is not approved.
- International students cannot qualify for IRAP funding even in the case they are seeking permanent resident status. A small change to this process would be beneficial. Ideally, the startup visa program would be harmonized with the IRAP process. Currently, international students must be employed to obtain permanent residence, yet employment opportunities would be far better if IRAP could be triggered in advance or in conjunction with such a hiring. Some students in these circumstances leave to the US, and other countries.
- Engineers, etc. can obtain IRAP funding, but business graduates cannot access such funding even if collaborating with others with more technical backgrounds.

7.2 Scientific Research and Experimental Development Tax Incentive Program (SR&ED)

Pros:

- The Canada Revenue Agency's effort to be a more client-focused agency, e.g., through online and telephone services, and programs such as the Liaison Officer Initiative, is well received, particularly by SMEs.

Cons:

- The SR&ED process is viewed to be disproportionately burdensome, to the extent that people are now more likely to ignore it. SR&ED used to allow companies to plan - it is now unpredictable. And, there is now a perception that these credits have to be earned twice (spend money on the R&D, document it and be ready to defend such work).
- SR&ED is now best used by larger companies who can efficiently take advantage of it, and still results in 30-40% of the funds going to big accounting firms.
- SR&ED funding has gone down, so competition has gone up, and slowed processing times - again, particularly in Atlantic Canada. Industry feels that SR&ED audits are stricter. This and others factors have led to a general avoidance of the program by many. Lower usage in this region should not be viewed as an indicator of our innovation.
- SR&ED should allow for more direct investment. Losing eligibility for capital expenditures has been a detriment to innovation, and is particularly tough on manufacturers.

- Although tax credits de-risk R&D, there is little evidence that credits incentivize an innovative culture. Alternatively, such funds would be better served by making them accessible to qualified companies up front. The administration of SR&ED often leads to companies finding ways to reduce spending, rather than supporting growth.
- Entities such as CME have called for a complete review and modernization of the SR&ED program. Cuts to SR&ED have reduced business uptake of this program. Furthermore, it needs to be refocused to support its original intention – economic growth through innovation and commercialization of products and processes.
- Credits could be increased for foreign companies to be equal to those for local companies, for example they are currently 15% non-refundable versus 35% refundable, respectively.

7.3 Build in Canada Innovation Program (BCIP)

Pros:

- The BCIP and its enabling of technology demonstration and validation by governments is viewed overwhelmingly as valuable, while creating more efficiencies for government.
- Expansion of BCIP was also generally favoured. Some suggest that the success of BCIP could be expanded on by supporting the cost of product development and commercialization - with a small fraction of the billions of public procurement dollars spent. Others suggest allowing for a standing offer rather than requiring tenders, or that BCIP could apply equally to provincial and municipal governments. There could be a benefit to allowing a municipality or province to endorse a product or service, in part to speed up the time to obtain an early-adopter. Other suggestions for expansion included the adoption of the SBIR model from the US, and providing the private sector with a tax credit for a similar early adoption-like program.
- BCIP may be best leveraged by the complement of innovative regulators, such as Transport Canada in the way it facilitates and encourages companies in meeting international standards.
- Governments should generally introduce a “first-buyer” approach for new technologies and products to expand and support scale up and production. For comparison, European grants for ocean tech generally require the use of European-made equipment. Conversely, international agreements could open up international markets for early-adopter-like research projects.

Cons:

- There are some practical issues that can be improved upon.

7.4 Other

- *NRC Concierge* service is viewed favourably, but also as not being comprehensive. It was recognized that ACOA’s convening of all federal partners under the *Accelerated Growth Services*

program will take the Concierge service further.

- The *Industrial and Regional Benefits (IRB) Policy* is beneficial, but favours larger companies such as Bombardier as opposed to SMEs.
- *Export Development Canada (EDC)* is a valuable entity, but the *Canadian Commercial Corporation* does not support SMEs well.
- *AgCan's AgriMarketing* is a good program, but lag times create uncertainty. *The Canadian Agriculture Loans Act Program* is also viewed favourably.

APPENDIX B: LIST OF STAKEHOLDERS ENGAGED

In Fredericton:

Jake Arsenault	Black Arcs
Karina LeBlanc	Pond Deshpande Centre
Nick Scott	NB Social Research Policy Network
Frank McMinniman	Fit Right Denture Clinic
Brennan Sisk	Mycodev Group
Meaghan Seagrave	BioNB
Mike Legere	Forest NB
Amit Virmani	Naveco Power
Kevin Kilbride	Therma Ray
Calvin Milbury	New Brunswick Innovation Foundation
Larry Shaw	Ignite Fredericton
Karen Murdock	Ignite Fredericton
Joel Richardson	Canadian Manufacturers & Exporters
Adam Clawson	Red Rover Brewing
Peter Clark	GrowthWorks Atlantic Venture Fund
David Burns	University of New Brunswick
Dominic Blakely	University of New Brunswick
Ed Rodriguez	Energia Ventures
Mike LeBlanc	Leading Edge Geomatics
Devashis Mitra	Dean of Business
Eddy Campbell	University of New Brunswick
Martin Wielemaker	University of New Brunswick
Kevin Brown	NB Regional Development Commission
Hemant Kumar	NB Jobs Board
Asif Hasan	Simptek Technologies
Rivers Corbett	Relish Gourmet Burgers
Duncan McSporran	Kognitiv Spark
Drew Cameron	TotalPave
Kumaran	Smart Skin Technologies
Thillainadarajah	

In Moncton:

Ed McGinley	Tech Impact
Dave Grebenc	Innovatia

Curtis Howe	Mariner Partners
Doug Robertson	Venn Centre
Keith Parlee	Apex Industries
Roddy Awad	TSi
Venky Kulkarny	Medavie Blue Cross
Thomas Raffy	Conseil Économique du Nouveau-Brunswick
Kathy Malley	Malley Industries
Terry Malley	Malley Industries

In Charlottetown:

Rory Francis	PEI BioAlliance
John Rowe	Island Abbey Foods & Timeless Technologies
Jim Smith	Bio Food Tech
Mitch Cobb	Upstreet Craft Brewing
Hon. Heath MacDonald	Minister of Economic Development and Tourism (PEI)
Peter Crooks	Canada's Smartest Kitchen
Dr. Russ Kerr	Nautilus Biosciences Inc.
Dr. Denis Kay	Neurodyn Inc.
Crystal Trevors	ViTrack Systems Inc.
Dr. Robert Gilmour	University of Prince Edward Island
Martin Yuill	Emergence BioIncubator

In Halifax:

Jonathan Underwood	Dingbot
Scott Moffitt	BioNova
Mark Jollymore	Vemco
Chris Loadman	Turbulent Research
Common Good Solutions	
Dave Rideout	Stone Hearth Bakery
DeRico Symonds	Future Roots
Cathy Deagle Gammon	
Hana Nelson	Afishionado
Rob Niven	Carboncure
Peter Moreira	Entrevestor Data Analysis
Gordon McArthur	Eosense
Chuck Cartmill	LED Roadway Lighting
Michael Dennis	Innovacorp
Cat Adalay	Aurea
Marlene Moore	Green Power Labs

Melody Pardoe	Volta
Dr. Jeremy Koenig	Athletigen
Iaian Archibald	Swell Advantage
Alastair Jarvis	Woodscamp
Mike Brown	Swept
Scott Burke	Atlantic Lottery Corporation
Patrick Keefe	Build Ventures
Matthew Pickup	Fosch Capital
Jesse Rodgers	Volta
Dr. Richard Florizone	Dalhousie University
Matt Hebb	Dalhousie University
Sara Daniels	Dalhousie University
Stephen Hartlen	Dalhousie University
Jeff Larsen	Dalhousie University
Stephen Duff	Innovacorp
Mary Kilfoil	Dalhousie University
Susan Slaunwhite	Prescott Group
Sabrina Poirier	Ventures for Canada
Ubisoft Halifax	
Ron Hanlon	Halifax Partnership
Jim Hanlon	Institute for Ocean Research Enterprise
Greg Dickie	Business Development Bank of Canada
Anne-Marie Leger	Department of Innovation, Science and Economic Development

In St. John's:

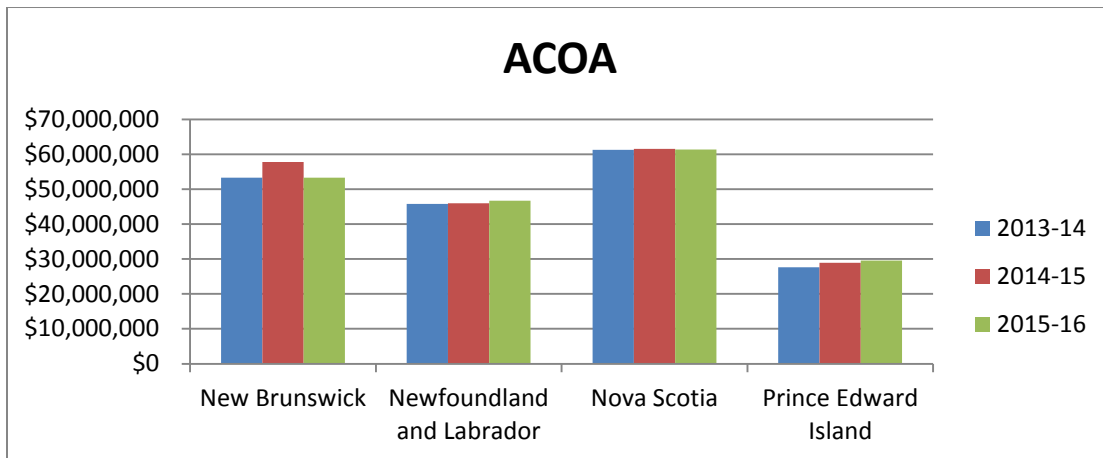
Des Whelan	Training Works
Dorothy Keating	Noseworthy Chapman
Lesley Galgay	St. John's Board of Trade
Nancy Healey	St. John's Board of Trade
David Noseworthy	Deloitte
Ajay Pande	Newfoundland and Labrador Association of Technology Industries
Nick Pearce	Radiant 360
Sydney Ryan	Telelink
Byron Skinner	Crosbie Group
Ron Subramanim	Go Productivity
Dr. Gary Kachanoski	Memorial University
Michelle Simms	Genesis Centre

Angelo Casanas	Genesis Centre
Colin Corcoran	Genesis Centre
Genesis Centre	Hollett & Sons
Derek Scott	PAL Aerospace
Lee Shinkle	Stantec
David Robbins	AMEC
Capt. Sid Hynes	Oceanex
Martin Sullivan	Ocean Choice International
Kim Keating	Cahill Group of Companies
Fraser Edison	Rutter
Glenda Leyte	Kracken Sonar
Capt. Tony Patterson	VMT Technology
Mike Paulin	INTECSEA Canada (division of Worley Parsons)
Alberto Wareham	Icewater
Brent McNamara	Newfound Resources Ltd.
Phil Barnes	Phil Barnes
Laura Halfyard	Sunrise Fish Farms Inc.
Cathy Hogan	OceansAdvance
Des Power	C-CORE
C-CORE	Regional Development Corporation
Dave Finn	PRNL
Robert Verge	CCFI
Glenn Blackwood	Marine Institute
Mark Lane	NAIA
Derek Butler	Association of Seafood Producers
Chris Hearn	Marine Institute
Carey Bonnell	Marine Institute
Bill Carter	Marine Institute
Rob Greenwood	Memorial University
Paul Snelgrove	Memorial University
Jen Winsor	Writer's Alliance of Newfoundland
Sharon King – Campbell	Animateur
Jennice Ripley	Newfoundland Independent Filmmakers Co-operative (NIFCO)
Calla LaChance	Neighbourhood Dance Works
Rebecca Rose	Breakwater Books
Rowena House	NL Craft Council
Mark O'Neill	IATSE/PAN
Paul Pope	PAN

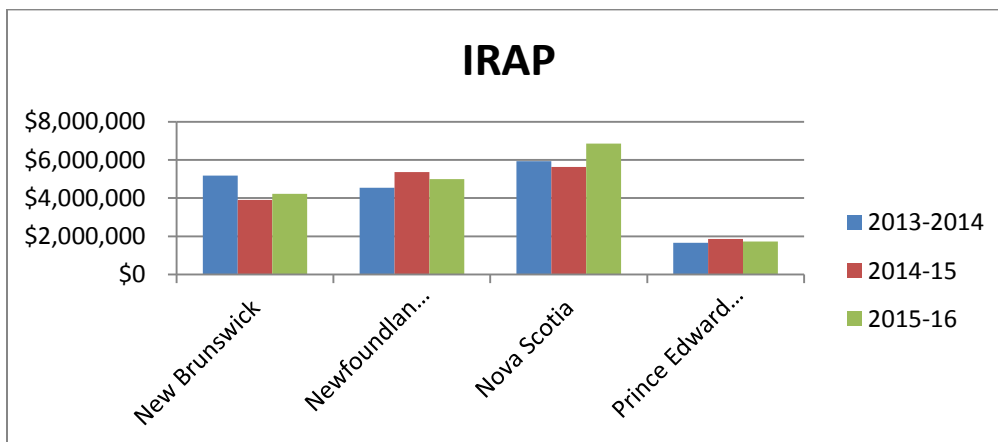
Noreen Golfman	Memorial University
Ane Christensen	Nickel
Mark Sexton	Newfoundland and Labrador Film Development Corporation (NLFDC)
Dorian Rowe	NLFDC
Rob Blackie	Producer
Deanne Foley	Producer
Jennice Ripley	NIFCO
Marlene Cahill	ACTRA
John Doyle	NIFCO
Anna Petras	NIFCO
Deirdre Ayre	Other Ocean Interactive

APPENDIX C: INDICATORS OF FUNDING FOR ATLANTIC CANADA

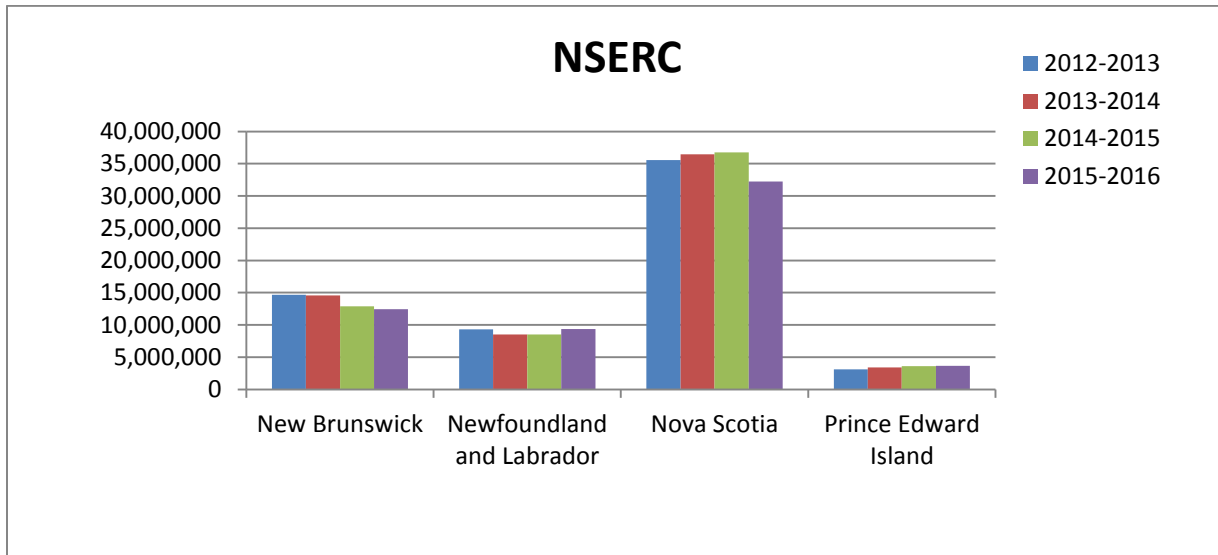
ACOA			
	2013-14	2014-15	2015-16
New Brunswick	\$53,326,685	\$57,815,283	\$53,322,063
Newfoundland and Labrador	\$45,807,922	\$45,912,845	\$46,715,234
Nova Scotia	\$61,222,277	\$61,555,259	\$61,326,334
Prince Edward Island	\$27,617,255	\$28,910,645	\$29,534,804
Canada Total	\$224,414,156	\$231,078,546	\$227,264,745



IRAP			
	2013-2014	2014-15	2015-16
New Brunswick	\$5,174,606	\$3,899,366	\$4,231,960
Newfoundland and Labrador	\$4,542,927	\$5,363,607	\$4,989,792
Nova Scotia	\$5,942,268	\$5,638,900	\$6,851,088
Prince Edward Island	\$1,664,763	\$1,858,357	\$1,736,586
Canada Total	\$271,565,591	\$254,892,130	\$301,283,582



NSERC				
	2012-2013	2013-2014	2014-2015	2015-2016
New Brunswick	14,662,191	14,557,373	12,890,620	12,447,246
Newfoundland and Labrador	9,327,472	8,538,098	8,507,542	9,360,497
Nova Scotia	35,586,873	36,478,466	36,771,886	32,260,930
Prince Edward Island	3,128,463	3,417,298	3,596,831	3,640,769
Canada Total	1,021,894,152	1,018,139,165	1,038,149,414	1,068,044,894



APPENDIX D: GLOSSARY OF ACRONYMS

Agriculture Canada	- AgCan
Atlantic Growth Strategy	- AGS
Bio New Brunswick	- BioNB
Build in Canada Innovation Program	- BCIP
Canada First Research Excellence Fund	- CFREF
Canadian Commercial Corporation	- CCC
Canadian Centre for Fisheries Innovation	- CCFI
Canadian Food Inspection Agency	- CFIA
Community Forward Fund	- CFF
Comprehensive Economic and Trade Agreement	- CETA
Dalhousie University	- Dal
Department of Fisheries and Oceans	- DFO
Employment and Social Development Canada	- ESDC
Export Development Canada	- EDC
Federal Economic Development Agency for Southern Ontario	- FedDev
Ignite Fredericton	- Ignite
Industrial and Regional Benefits Policy	- IRB Policy
Industrial Research Assistance Program	- IRAP
Information and Communications Technology	- ICT
Innovation, Science and Economic Development Canada	- ISED
Innovation Subcommittee	- the Subcommittee
Investments in Forest Industry Transformation	- IFIT
Intellectual Property	- IP
Labour-Sponsored Venture Capital Corporation	- LSVCC
Memorial University	- MUN
National Research Council	- NRC
New Brunswick	- NB
New Brunswick Innovation Foundation	- NBIF
Newfoundland and Labrador	- NL
Northern Ontario Development Program	- FedNor
Not-for-profit	- NFP
Nova Scotia	- NS
Oceans Frontier Institute	- OFI
Oil and Gas	- O&G
Opportunities New Brunswick	- ONB
Organization for Economic Co-operation and Development	- OECD
Post-secondary Institutions	- PSEs
Prince Edward Island	- PEI
Research and Development	- R&D

Scientific Research and Experimental Development Tax Incentive Program	- SR&ED
Small and Medium-sized Enterprises	- SMEs
Small Business Investor Tax Credit	- SBITC
Registered Retirement Savings Plan	- RRSP
United States of America	- US
University of New Brunswick	- UNB
University of Prince Edward Island	- UPEI
Venture Capital	- VC
Western Economic Diversification	- WD