



WE CHOOSE NOW

a playbook for Nova Scotians



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ONE Nova Scotia Coalition Collaborative Action Plan

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ONE Nova Scotia Coalition Collaborative Action Plan

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A DIFFERENT KIND OF PLAN

THE REPORT OF THE ONE NOVA SCOTIA COALITION IS NOT A TRADITIONAL REPORT.
AND OUR PLAN IS NOT A TRADITIONAL PLAN.

This report does not mark the end of a project. It is one step, one moment in time, in an ongoing process to create a positive trajectory for Nova Scotia through economic growth and demographic stabilization.

One feature that makes our plan different is that—like the Ivany Report—it is addressed to all Nova Scotians. It is not a report addressed only to government.

This is a very intentional message: In order to realize a different outcome from previous economic reports, Nova Scotians are being asked to work collaboratively, together. Ownership of the issues at hand—by all Nova Scotians—is critical to building solutions that will achieve different results. The importance of stakeholder and citizen involvement in creating sustainable change over a 10-year period cannot be overstated.

Members of the ONE Nova Scotia Coalition are cognizant of the sense of urgency that was expressed in the Ivany Report. Our plan has a deliberate focus on existing strengths in our economy, such as our ocean-related industries and resources, and potential for strong expansion in the information and communications technologies (ICT) sector, where we believe our best opportunities for near-term growth and economic recovery will be found.

But during our work over the past 18 months, we also realized there are foundational issues that must be addressed if our long-term prospects are to improve. That work is reflected in our recommendations for new approaches in education, beginning with early years' preschool development, and continuing right through to the post-secondary education and training system. We want to ensure that our young people have the best possible chance to maximize their future potential right here, at home, in Nova Scotia.

Nova Scotia, like many other jurisdictions, has experienced significant depopulation in rural communities. Our report provides a roadmap to enable communities to build on their individual strengths, to collaborate within regions, and to be partners in creating the solutions to stabilize rural Nova Scotia.

The other significant element that makes our plan different is the recommendation for ongoing measurement of initiatives, and public reporting of progress toward the goals in the Ivany Report. We also propose an innovative funding process to ensure the plan is advanced over its 10-year time frame.

Maintaining a business-as-usual, status-quo approach will not work. Nova Scotians are facing challenges that require unprecedented levels of private sector, public sector, and community collaboration, driven by determination and courage. We require a dramatic shift in how we respond both to our opportunities and our challenges.

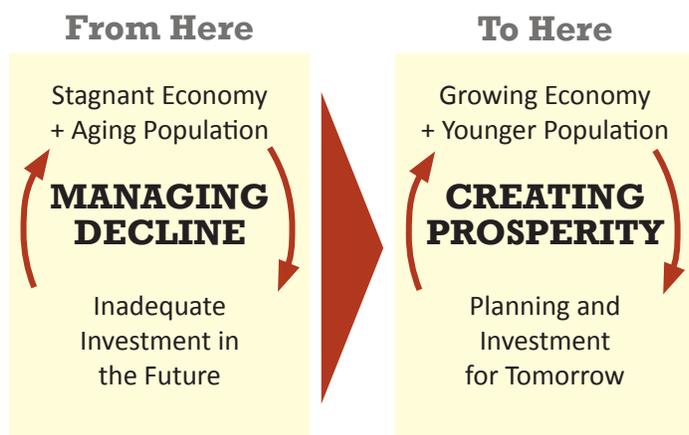
We hope you find our work to be worthy of your support.

INTRODUCTION AND OVERVIEW

This report outlines a plan of action to help create a bright future for Nova Scotians. It is the work of the 15 members of the ONE Nova Scotia Coalition, a volunteer group of engaged citizens and leaders from business, labour, municipalities, First Nations, the voluntary sector, social enterprises, the health sector, and universities and colleges. It has been chaired by Premier Stephen McNeil and co-chaired by Hon. Jamie Baillie, the leader of the opposition, and by Hon. Maureen MacDonald, leader of the provincial New Democratic Party.

The coalition came together in May 2014 at the request of the Government of Nova Scotia with a mandate to develop a 10-year plan with recommended actions to help achieve the ambitious goals set out in the report of the ONE Nova Scotia Commission on Building Our New Economy, commonly known as the Ivany Report, in reference to Commission Chair Ray Ivany (see Appendix 1). The Ivany Report called for a new politics in which all citizens work more collaboratively on broadly shared agendas for change and renewal. The makeup of the coalition, with the inclusion of the three political leaders, reflects that spirit.

The Ivany Report painted a stark image of Nova Scotia’s future, describing a province impacted by poor economic performance; an aging workforce; high dependence on government support; youth outmigration, particularly from rural communities; and limited business investment in innovation and productivity. These facts were well documented in the report and have now become familiar. Only a brief review is needed here to set the context under three headings: economic performance, demographic outlook, and certain attitudinal tendencies that have been holding Nova Scotia back.



THE ONE NOVA SCOTIA COALITION

HON. STEPHEN MCNEIL
 HON. JAMIE BAILLIE
 HON. MAUREEN MACDONALD
 RICK CLARKE
 MAYOR DAVID CORKUM
 DR. MARTHA CRAGO
 HENRY DEMONE
 JEAN-PAUL DEVEAU
 SAEED EL-DARAHALI
 JOELLA FOULDS
 DANNY GRAHAM
 JEVON MACDONALD
 RANKIN MACSWEEN
 CHIEF SIDNEY PETERS
 DR. GAYNOR WATSON-CREED

Special Advisors:

DR. KENT MACDONALD
 RICHARD HARRISON
 DR PETER NICHOLSON

See *Coalition Members, Appendix 2 (page 95)*.

For full biographies:
wechoosenow.ca/Background/Biographies

ECONOMY

Nova Scotia’s economic growth—measured as the total percentage increase of gross domestic product (GDP)—was last among Canadian provinces, on average, over the past two decades.

In 2013, Nova Scotia’s GDP per capita was ninth among the ten provinces. It must be emphasized that GDP is a measure only of the output of the economy, and not of Nova Scotia’s quality of life. But the fact

NOVA SCOTIA HAS THE SLOWEST REAL GDP GROWTH
\$CHAINED 2007 GDP 1990-2013

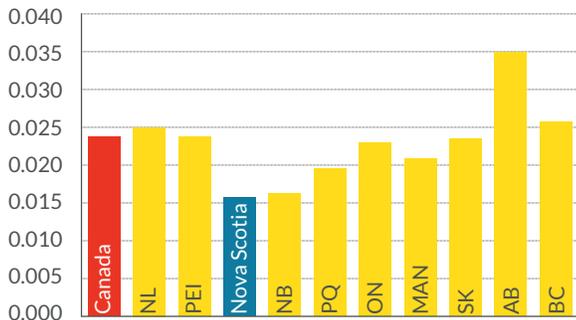


fig 1: Statistics Canada, 2014

remains that economic output correlates closely with employment opportunity and personal incomes, as well as with the ability of the public sector to provide the level of health, education, social, and other tax-financed public services that contribute vitally to the quality of life and opportunity for Nova Scotians.

DEMOGRAPHICS

The province’s weak economic performance also correlates with stagnant population growth. The perception of greater opportunity elsewhere has driven a steady net outmigration of younger people. Indeed, Nova Scotia’s long-term population outlook has worsened since the Ivany Report. The provincial Department of Finance projects that the population

will drop from about 943,000 currently, to 878,000 by 2040, a decline of almost 7 per cent.

This outcome is not inevitable, and the action plan recommended by the coalition, if well implemented, could bring about a reversal of the projected trend. In short, Nova Scotia has to build on its many advantages to create the opportunities that will attract more new residents, both from within Canada and from abroad, while at the same time giving young Nova Scotians strong reasons to stay or to return, equipped with valuable experience from the world beyond.

Nova Scotia’s population is aging, the result of a low birth rate and increasing lifespan combined with the pattern of migration—a net outflow of those under 50 and a net inflow of those over 50. A general aging trend is seen throughout the economically advanced countries but has been amplified in Nova Scotia by the migration pattern. It must be stressed that the increasing number of older Nova Scotians carries with it a great many benefits in terms of more time to volunteer and provide mentorship, together with a remarkable breadth and depth of skills and experience. Older Nova Scotians are a tremendous resource for enriching our communities and thus, for making the province more attractive for people of all ages. So we do not want fewer seniors; we want more younger people to bring the energy, innovative ideas, and entrepreneurial outlook needed to drive an economy that can sustain this province’s exceptional quality of life.

Nova Scotia’s Population 1851-2014 & Projected Population to 2040

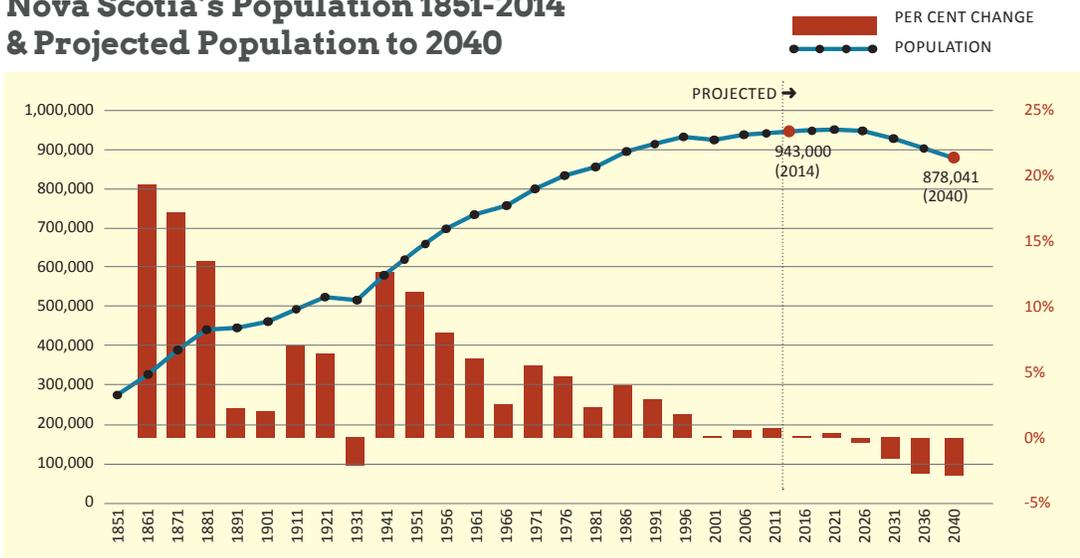


fig 2: Statistics Canada, CANSIM 051-0001; Projections, Nova Scotia Finance and Treasury Board, 2015

The demographic challenge facing the province is greatly magnified in rural and small-town Nova Scotia, where declining employment opportunities have driven outmigration, thus further diminishing economic activity. It is urgent that this self-reinforcing negative trend be halted. Quoting from the Ivany Report:

“A better future for Nova Scotia, and most emphatically for its rural regions, is not possible unless ways are found to grow the economy at a greater rate than has been the case for the past 20 years or more.... In future, as in the past, the traditional rural industries—tourism, manufacturing, mining, fisheries, forestry, and agriculture—will provide the essential foundations for Nova Scotia’s rural economy. The basic viability of many of our rural communities hinges on whether these sectors can create more and better jobs and generate more wealth. Government, industry, and community leaders need to come together to declare, in the most unequivocal terms, that our traditional rural sectors are essential foundations for the new Nova Scotia economy, now and in the future, while acknowledging that all of these sectors need to be more productive, more innovative and more competitive.” (Ivany Report, pp 54, 55)

The Ivany Report rightly emphasized the necessity of more vibrant private sector growth to strengthen Nova Scotia’s rural and small community economy. It is important also to recognize the essential role of the public sector. Good quality and widely available health, education, and other public services are not only an important source of employment but are essential if we are to stem the depopulation of our rural areas and smaller communities. Here we come full circle, because the ability of the province to maintain and improve public services depends, in the final analysis, on the strength of the economy of which the public sector is itself an important part; but only a part.

ATTITUDE

The factual picture outlined above leaves no doubt as to the magnitude of the challenges Nova Scotia faces. The Ivany Commission’s analysis went further and placed great emphasis on the role played by “attitude:”

“Throughout our discussions with Nova Scotians, we heard a frequent message that our province and our people need a ‘new attitude’ and a greater sense of being

ICELAND

Iceland is a volcanic sphere in the middle of the North Atlantic with a population (330,000) less than that of metro Halifax. Its nearest neighbour, Greenland, is 1,200 kilometres away by air. Iceland’s economy was traditionally based on the cod fishery, and it still produces among the highest quality cod products in the world. In a bid to diversify, the country established itself as a financial centre in the early 2000s and was then hit particularly hard in the global financial crisis of 2008, falling into severe recession. But it found a way to bounce back, and now has an exceptionally vibrant economy thanks to a boom in tourism and a thriving group of small technology-based companies.

Iceland has maintained an enviable social system in the Nordic model and ranks 13th in the world on the UN’s Human Development Index. It is again among the world’s most affluent countries with a per capita GDP of approximately \$54,000 and an unemployment rate that averages about 5 per cent. Iceland provides an inspiring lesson as to how rapidly a society can recover from extreme adversity provided there is a clear plan and the willingness of citizens to pull together.

citizens of Nova Scotia and not just of their local area. There is an abundance of community spirit, but some negativity as well, stigmatizing success and resisting change. There is a clear need for Nova Scotians to come together and consider not only who gets what from our collective pie, but how we can make it bigger for all to share.” (Ivany Report, p 6)

The diagnosis in the Ivany Report was blunt. It found Nova Scotia was being held back by “parochial competition over shares of a shrinking pie, rather than increased collaboration and concerted effort to grow the pie.” In the past, we have too often been divided along lines of rural and urban, young and old, Cape Breton and the mainland, one community against the next.

In a world where globalization and technology are reshaping economies, these attitudes are holding us back. Nova Scotia is not much more than a dot on a

map of the world; much too small to view a win in one community as a loss in another. We need to cheer all of our wins. We need to take to heart the old aphorism, especially apt in Nova Scotia’s case, that “a rising tide lifts all boats.”

While embracing a spirit of collaboration, it is essential also to discard any negative, defeatist attitudes—the idea that “this place is going nowhere so I have to leave to get ahead in life.” Such attitudes create self-fulfilling prophecies, and, because they are grounded in aspects of the Nova Scotian reality, they cannot be changed simply by exhortation. The attitudes will only change when the experience changes; when Nova Scotia provides the opportunities that generate optimism for the future and reasons for our young people to stop “goin’ down the road.” Other small jurisdictions like Iceland, more challenged than Nova Scotia is, have responded successfully to adversity and made remarkable progress. Nova Scotia should expect no less of itself.

The Ivany Report stirred an intensity of discussion, debate, and community-based responses in Nova Scotia unparalleled in recent decades. While people have taken various things from the diagnosis, one perception has been virtually universal: *change is needed*.

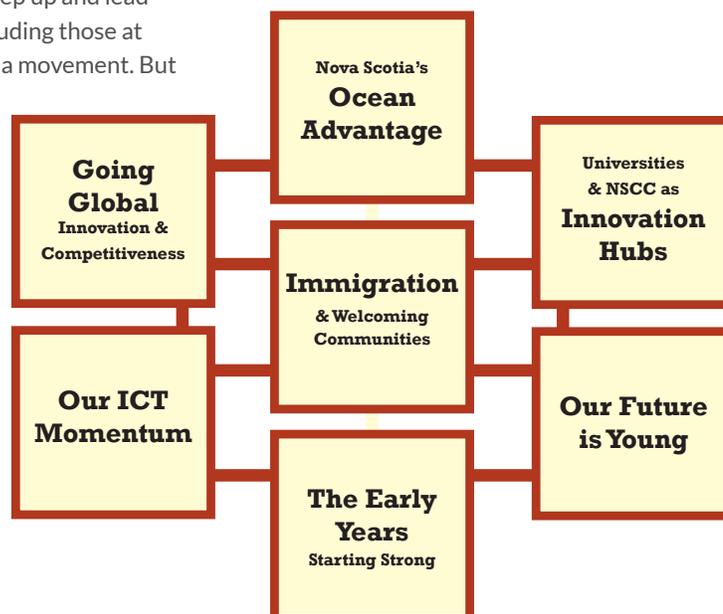
Implementing change is, of course, never easy. For many Nova Scotians, the promise of change receives a resounding cheer, until it lands with a thud on our own doorsteps. This is where strong leadership comes in. We need leaders of business, communities, organizations, and government to step up and lead by example. Some already have, including those at the forefront of the ONE Nova Scotia movement. But

a much broader push is clearly required if we are to achieve transformative change.

THE COLLABORATIVE ACTION PLAN

This report presents the coalition’s recommendations to animate collaborative action by governments, business, post-secondary education (PSE) institutions, civil society organizations, and especially Nova Scotians themselves, to create the bright future for the province that our many strengths make possible. The coalition has organized its Collaborative Action Plan under seven subject areas, plus an additional section on implementation:

1. The Early Years: Starting Strong
2. Our Future is Young
3. Universities and NSCC as Innovation Hubs
4. Immigration and Welcoming Communities
5. Our ICT Momentum
6. Going Global: Innovation and Competitiveness
7. Nova Scotia’s Ocean Advantage
8. Implementation: Ensuring Accountability and Sustaining Momentum



There are, of course, many ways in which the presentation of the issues facing Nova Scotia could be structured. The logic of the coalition's choice reflects a progression from early childhood through the education process, to consideration of the principal areas of economic opportunity. The topic of immigration—both from elsewhere in Canada and from abroad—is crosscutting and is the key to resolving Nova Scotia's demographic challenge. There are other vital crosscutting subjects: for example, the acute challenges and promising opportunities facing our rural areas and small communities; the need to ensure environmental sustainability; and the support of diversity in the workplace and in culture. Each of these is addressed in the context of the first seven subject areas noted above, all of which are themselves interrelated to varying degrees.

For example, our success in attracting and retaining younger people and immigrants will depend on the extent of economic opportunity outlined in chapters dealing with Nova Scotia's ocean advantage, going global, and ICT. Reciprocally, our economic success will depend on the quality and relevance of the training and research carried out in Nova Scotia's universities and community college campuses. And clearly, a successful approach to early childhood development will pay great dividends throughout the life-course and, particularly for disadvantaged children, is often a prerequisite for access to higher education and for success in the workplace.

The large number of recommendations in the Collaborative Action Plan, summarized on pages 81-92 reflects the breadth of the challenges and opportunities facing Nova Scotia. Each chapter contains a coherent subplan, often with cross-links to other chapters. The result is complex but mutually

consistent and self-reinforcing. While all of the recommendations are important, a smaller number are more significant in terms of the potential to be game changers. These would include, for example:

- An early years development program that welcomes and prepares the newest Nova Scotians
- Experiential learning, co-op opportunities, and entrepreneurship instruction for all students
- An enhanced role for PSE institutions as regional anchors for innovation and development
- An ambitious approach to the recognition of foreign credentials of immigrants
- Mandatory instruction in coding and other aspects of computer literacy required in grades P-12
- Attraction of outside investment through incentives that foster innovation in Nova Scotia
- Upgrading of Nova Scotia's extraordinary assets: tourism, the creative sector, and natural resources
- Creation of a leading-edge ocean industries cluster
- Measurement and regular public reporting on the progress of the Collaborative Action Plan
- New funding to help enable collaboration and to harness the energy and creativity of Nova Scotians

Many of the initiatives proposed in the coalition's plan call on various combinations of civil society organizations, business, PSE institutions, public sector agencies, and individual citizens to collaborate to achieve community objectives. These are often related, for example, to early childhood, youth, disadvantaged groups, opportunities for work, and education. The question is how to operationalize and sustain effective collaboration to confront complex challenges and opportunities in these areas. One well-tested methodology is the Collective Impact process, which is referenced in several of the coalition's recommendations and is outlined on the next page.

THE FOUR PHASES OF COLLECTIVE IMPACT



COLLECTIVE IMPACT:

A BRIEF OVERVIEW OF A COLLABORATION MODEL

1. **Common Agenda:** All participating organizations (government, non-profits, community, etc.) have a shared vision, a common understanding of the problem or opportunity, and a joint approach to solving it.
2. **Mutually Reinforcing Activities:** Engagement of a diverse set of stakeholders, typically across sectors, coordinating a set of differentiated activities through a mutually reinforcing plan of action.
3. **Shared Measurement Systems:** Agreement on the ways success will be measured and reported with a short list of key indicators across all participating organizations.
4. **Continuous Communication:** Frequent communications over a long period of time among key players within and across organizations to build trust and inform ongoing learning and adaptation of strategy.
5. **Backbone Organization:** Ongoing support provided by an independent staff dedicated to the initiative by guiding vision and strategy; supporting aligned activity; establishing shared measurement practices; building public will; advancing policy; and mobilizing funding.

The coalition's Collaborative Action Plan is broad but not all encompassing. There is a great deal already being done by governments, the private sector, and citizen organizations to achieve the vision and the specific goals put forward in the Ivany Report. That work will continue and should be complementary to the coalition's proposals. The coalition has deliberately restricted its focus to a limited set of recommended actions where there is now both exceptional need and opportunity for new initiatives, or where existing activity needs greater priority or a jolt of energy.

It is emphasized that this is a living action plan that will evolve over a 10-year time frame, during which progress toward achieving the stretch goals set out in the Ivany Report will be regularly measured, assessed, and reported to Nova Scotians as described in Chapter 8. This unique accountability will ensure the action plan adapts in response to performance results and to circumstances that inevitably will change.

The coalition's recommendations are explicit and actionable. They assign responsibility for implementation, depending on the case, to one or more of the provincial or other governments, to PSE institutions, to business, to civil society organizations, or, in a small number of instances, to Nova Scotians collectively.

It was beyond the scope of the coalition to recommend precise implementation details or to estimate budgetary requirements. These will have to be worked out by those to whom the recommendations are directed. Several recommendations propose actions to be taken by the Government of Nova Scotia, and in that regard will properly be subject to the usual political debate and legislative scrutiny. It follows that the three political leaders, while joining the coalition's consensus as to the thrust of this report, may disagree with specific recommendations that are addressed to the provincial government, including overall appropriateness, design of implementation, timing, funding, and so forth.

The gravity of the challenges facing Nova Scotia demand a sense of urgency, while the magnitude of the transformative change required will inevitably take time to accomplish fully. The time frame for the Collaborative Action Plan is 10 years, but many of the recommendations must begin to be implemented immediately; others can be phased in, although subject

to the objective that the specific goals set out in the Ivany Report should be achieved within approximately a decade.

A decade is a long time over which to sustain public attention and commitment, so mechanisms are clearly needed to maintain momentum toward achievement of the Ivany Report's goals and full implementation of the Collaborative Action Plan. The coalition, in Chapter 8, proposes two innovative ways to accomplish this: (1) a method for regularly measuring and reporting publicly on progress so as to facilitate accountability for results and to signal any need for course correction, and (2) a novel initiative to allocate funds to foster continuing collaboration and to harness the energy, creativity, and commitment of Nova Scotians in support of the Collaborative Action Plan.

Why This Time Can Be Different

Neither the Ivany Report nor this document are the first to have described the challenges and opportunities confronting Nova Scotia. In fact, since the Jones Report of 1934, there have been at least 10 major economic reports that draw comparable conclusions regarding the situation the province faces.

So why should we expect a different response and outcome this time? What makes this time different is that a persistently stagnant economy, a rapidly aging population and the resulting strain on public resources are now affecting all Nova Scotians. They are no longer just statistical abstractions. At the same time, our opportunities have never been clearer. For example:

- Nova Scotia's exceptional advanced education and research institutions are now even more valuable assets as economies everywhere become more knowledge-intensive.
- The unprecedented scale and scope of the naval ships project has the potential to anchor an advanced cluster of sophisticated ocean industries here in Nova Scotia.
- Emerging global markets are creating vast new opportunities provided we innovate and add greater value to our remarkably diverse natural resources.
- The "green shoots" of a new economy are evident in the surprising strength of Nova Scotia's young and highly entrepreneurial technology businesses.
- Nova Scotia's extraordinary beauty and charm

have always set the province apart. If further developed with sensitivity to both the natural environment and the cultural richness of the province, they can make Nova Scotia a global magnet for the discriminating traveller and for businesses seeking locations that can attract the most creative talent.

So the push of challenge and the pull of opportunity, both of which are at tipping points, combine to make this time different. But the experience of the past nine decades should convince us that simply writing a report and then waiting for government action alone to change our trajectory will never work. Disclaiming personal responsibility is clearly not the answer. So what also makes this time different is the coalition's call for concerted, collaborative action by all Nova Scotians.

Organizations such as Pictou County 20/20, NOW Lunenburg County, the Cape Breton/Mulgrave Prosperity Framework among many others, and connector programs launched by the Halifax Partnership and the Cape Breton Partnership are among the many and diverse examples of community-based programs that help to build regional strengths and that inspire broader emulation. All of these initiatives—which usually involve a heavy commitment by volunteers—are to be celebrated and encouraged. Their participants are individuals and groups who are already taking the ONE Nova Scotia message to heart and creatively setting forth to bring about change in new ways.

This report is a call for collaborative action among leaders in key sectors: business and labour; municipal, provincial, and federal governments; First Nations; business and educational institutions; social enterprises; voluntary sector organizations; communities; and, above all, individual citizens. Everyone in Nova Scotia is included in the Collaborative Action Plan, and everyone has a role to play. If the benefits of successes are to be collectively shared, then so, too, is the effort required to achieve that success.

The transformation urged by the Ivany Commission, and for which the coalition is proposing a plan of action, will be ongoing. We must start immediately, so that by 2025:

Our economy is productive and growing strongly

Our businesses are innovative, entrepreneurial, and globally competitive

Our communities are welcoming, diverse, and vibrant

Our quality of life is culturally rich and the envy of all who visit

Nova Scotians are confidently optimistic and working collaboratively for an even better future

The coalition believes this can be our Nova Scotia. The key is to pull together, for as we are reminded by the African proverb:

If you want to go fast, go alone.

If you want to go far, go together.



01 THE EARLY YEARS

STARTING STRONG

Early childhood education and development, both formal and informal, will be a vital component in an overall strategy to revitalize Nova Scotia's economy. Investing in our children – starting with how we welcome them to our communities at birth – is a compelling priority that will provide meaningful economic, health, and social returns.

A growing body of global research provides compelling evidence that the early years of a child's life are the most critical determinants of lifelong physical, emotional, social, cognitive, and language development.

This is because a child's brain becomes fully developed between the ages of six and seven, therefore, experiences in the preschool years have great influence in setting the long-term developmental paths for health, learning, and behaviour. As a result of this understanding, significant supports for families and young children have been implemented in many jurisdictions. It is emphasized that these programs are designed primarily to achieve developmental objectives; the child-care component is an added bonus. In Nova Scotia, there are enough regulated child-care spaces to accommodate approximately a quarter of children up to five years of age,¹ a level that aligns with the national average.² Early childhood education can particularly benefit children from disadvantaged backgrounds and those with learning challenges by closing the achievement gap in the critical early years.³

The 2015 OECD publication *Youth, Skills and Employability* identifies early childhood education

and development as an effective way to improve youth attachment to the workforce. Moreover, the availability of child care increases parental workforce participation,⁴ and top-notch early development programming will be an important consideration when parents with young children are making the decision whether to live and work in Nova Scotia.

The ONE Nova Scotia coalition recognizes that enhancing the education and development of preschool children will require a long-term commitment. Therefore, the coalition recommends that the Government of Nova Scotia, with support from the federal government, make early childhood education and development a significant priority with increased levels of funding to achieve the following outcomes:

- Support the development of all children in the preschool years so as to positively impact lifelong learning, health, and behaviour.
- Increase workforce participation of parents, thus contributing immediately to economic growth.
- Make the province an even more desirable place to raise children and establish a career, thereby increasing Nova Scotia's attractiveness to younger people and families.

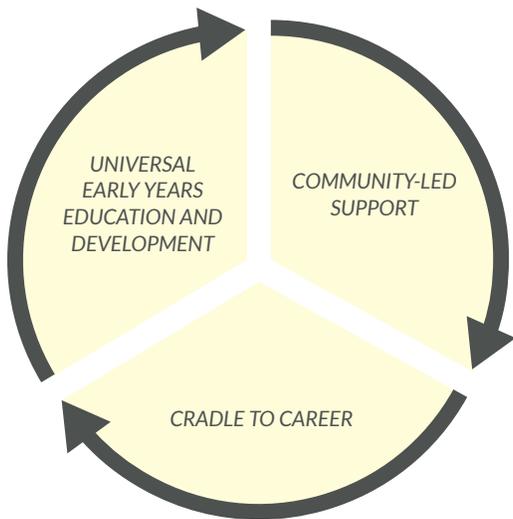
Evidence also shows that without ongoing support into the P-12 years, the achievement gap

1 (NOVA SCOTIA DEPARTMENT OF EDUCATION AND EARLY CHILDHOOD DEVELOPMENT, 2014)

2 (FERNS, 2014)

3 (JANUS & DUKU, 2007)

4 (OECD, 2015)



for these children is likely to widen again.⁵ In short, developmental education should continue from cradle to career so that all children are given the best chance for a successful life.

There is an exceptionally high return to society at large from investments in early years programming (Figure 1). Although it had been expected the return would be most apparent over a longer time frame, recent data suggests early childhood education can have a positive impact in as little as two to three years.⁶ Investment in early years programming not only has a high rate of economic return – much of it through avoided costs in health care, justice and income support – but the social fabric is also strengthened when resources and supports are available to all children and at affordable cost.

In addition to more formal educational programming and investment, healthy child development is best supported when children are surrounded by caring adults throughout their communities and in every environment. Parents, grandparents, friends, neighbours, and even local business and neighbourhood venues are part of these “relational and residential communities”.⁷ Together, the behaviours of these adults toward children establish the child as welcome and valued in a community. This demonstration of healthy normative attitudes toward children can, in turn, translate into strong identities, strong self-esteem, and growth-promoting and healthy exploration in our children, all of which can foster independence, critical thinking, and entrepreneurial spirit.

To achieve the beneficial outcomes identified above, the coalition recommends Nova Scotia develop and implement an early years plan focused on three areas:

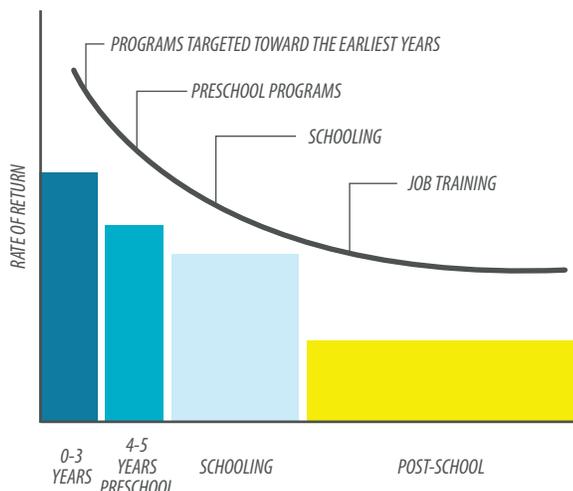
1. **Universal early years education and developmental programs**
2. **Community-led initiatives for early years**
3. **Support from cradle to career**

1. A UNIVERSAL EARLY YEARS EDUCATION AND DEVELOPMENTAL PROGRAM

The Government of Nova Scotia has been enhancing its early years programming. However, in view of the significant benefits outlined above, much more needs to be done. The cornerstone of the coalition’s plan is to make a major step forward by providing universal access to early years education and development.

High quality early years programs have been implemented in many other jurisdictions. Rather than change the current direction to replicate any particular one of these models, the coalition recommends development of a made-in-Nova Scotia model that builds on work currently in progress and is based on best practices adapted to our particular circumstances.

RATES OF RETURN TO HUMAN CAPITAL INVESTMENT AT DIFFERENT AGES



⁵ (CARO, McDONALD, & WILLIAMS, 2009)

⁶ (THE WORLD BANK, 2011)

⁷ (IRWIN, SIDDIQI, & HERTZMAN, 2009)

fig 1. Lifelong Rate of Return from Early Childhood (Heckman, James J., 2008)

GUIDING PRINCIPLES

Nova Scotia's universal early years program should be based on the following broad principles:

- Assurance that every infant, child, and family is supported and welcome in our communities.
- Universal access to early years education and development programs where children engage in meaningful play- and inquiry-based learning.
- Provision of additional supports for families that are subject to greater stress and vulnerability.
- Increased workforce participation of parents, which will contribute to economic growth.
- Staffed by persons trained in early childhood education.
- Continuous improvement based on learning from measures of success in terms of social and economic outcomes.
- Sufficient public funding to support a program that embodies these principles.

PUBLIC EXPENDITURE ON EARLY CHILDHOOD EDUCATION SERVICES AS A PERCENTAGE OF GDP

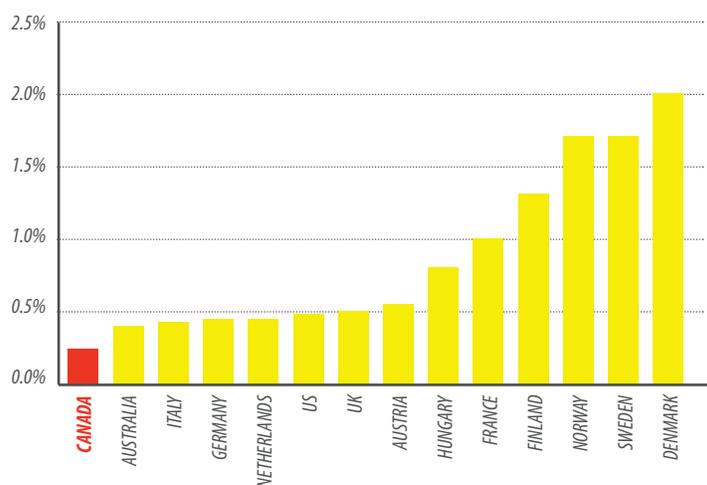


fig 2: Expenditure of Early Childhood Education in OECD Countries as Percentage of GDP (TD Economics, 2014).

Prioritize Play- and Inquiry-based Universal Programming for Three- and Four-Year-Old Children

The Nova Scotia approach could include universal early learning programs for three- and four-year-olds delivered by early childhood educators. These play- and inquiry-based programs (“playschool”) would be developmentally appropriate for this age group, and would have learning environments specifically designed for them. In 2012, the Council of Ministers of Education of Canada said: “There is now evidence that neural pathways in children’s brains are influenced and advanced in their development through exploration, thinking skills, problem solving, and language expression that occur during play.”⁸ Play-based programming, delivered by early childhood educators, would ensure the playschool reflects the developmental needs of this age group.

Culturally Appropriate Programming

It will be necessary to identify culturally appropriate forms of early education programs in consultation with various communities that experience socio-economic disadvantages, notably First Nations communities. There is a great deal of relevant experience upon which to draw, such as, in British Columbia⁹ and the Kativik School Board in Québec.¹⁰ It will obviously be essential to involve members of Nova Scotia’s diverse communities in the design of appropriate early years programming.

8 (COUNCIL OF MINISTERS OF EDUCATION CANADA, 2012)

9 (SUCCESS BY 6, 2013)

10 (KATIVIK SCHOOL BOARD)

Early Years Centres

The made-in-Nova Scotia approach should include additional Early Years Centres. In collaboration with the Margaret and Wallace McCain Family Foundation, Nova Scotia has opened eight centres, one in each of the province’s school boards. These centres, located within or near elementary schools, are designed to provide centralized access to early childhood education and child-care programs, family drop-in programs, parenting supports, public health services, and early identification and intervention programs.

Following initial program evaluation, additional centres should be established to provide broader access to service for communities throughout the province.

EARLY CHILDHOOD EDUCATION BUDGET AS A PERCENTAGE OF 2011-12 PROVINCIAL & TERRITORIAL BUDGETS

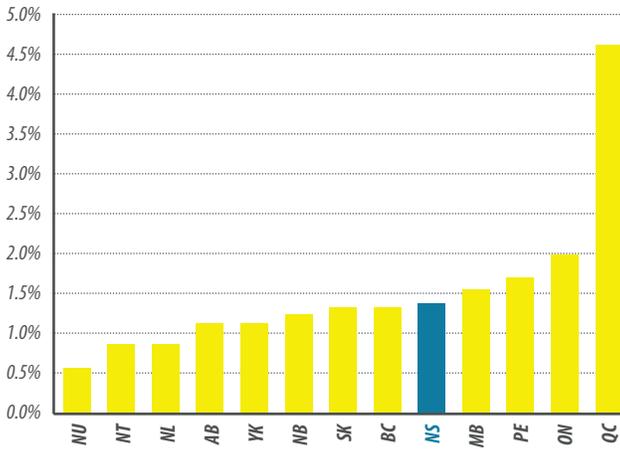


Fig 3: Provincial and Territorial Budget Allocations in Early Childhood Education as Percentage of Budgetary Expenditure (TD Economics, 2014)

Multisectoral Research

Nova Scotia needs to further develop its research expertise in the field of early childhood development to help measure and evaluate the progress of a made-in-Nova Scotia approach. The creation of a multisectoral research partnership that involves post-secondary institutions and practitioners would bring together the multiple research initiatives in Nova Scotia – currently acting largely in isolation – in an effort to improve the scope and reliability of findings.

The Human Early Learning Partnership (HELP), housed within the School of Population and Public Health at the University of British Columbia, is one example that could be emulated. By working in close partnership with communities, businesses, and government, HELP ensures that its research is relevant to actual practice and thus has been used in over 500 community initiatives.¹¹ In Nova Scotia, a research partnership could be linked to the four Early Childhood Development Support Centres located at Nova Scotia Community College campuses, which offer resources and training support to early learning and childcare professionals, students, and parents.¹² A broad research partnership could expand the network of resources available to parents, child-care providers, educators, and communities.

Innovative Approaches: Social Impact Bonds

The made-in-Nova Scotia approach to early years programming should include innovative ways to complement government financing. Social Impact Bonds (SIBs) are increasingly used to create what

SOCIAL IMPACT BONDS

A Social Impact Bond (SIB) is a financial instrument whose return to the investor depends on the extent to which a specified social policy outcome is met or exceeded. Private investors provide funds for a particular project or program that is intended to achieve certain measurable targets (see example below). Service delivery organizations use the funds provided by the SIB to undertake interventions to achieve the target outcomes. An independent evaluator measures the impact and the investor is rewarded according to a formula related to target achievement. The SIB mechanism can encourage innovative approaches to many kinds of social programming and shifts risk from the public sector to investors while rewarding success.

SIBs are being used in some jurisdictions in the context of early years programming. For example, in Utah’s “High Quality Preschool Program,” the investment bank, Goldman Sachs in 2013 partnered with J.B. Pritzker and the United Way of Salt Lake City to create a Social Impact Bond to provide targeted education to over 3,500 at-risk three- and four-year old children over a five-year period. With an objective to improve the school readiness and academic performance of these at-risk children, the program is evaluated according to the extent to which it can decrease their use of special education and remedial services. For every graduate of the Utah High Quality Preschool Program that does not require special education or remedial services, payments are made to investors at a rate equal to 95 per cent of the costs that are avoided as a result of the child not using these programs (Goldman Sachs, 2015).

11 (THE HUMAN EARLY LEARNING PARTNERSHIP)

12 (NSCC EARLY YEARS SUPPORT CENTRES)

are effectively partnerships between private funding sources – such as foundations, certain NGOs, and wealthy individuals – and public sector social agencies to invest in outcomes in early childhood education and development.

The SIB could potentially provide Nova Scotia with long-term savings by reducing the need for special intervention programs and allowing Nova Scotia to experiment with innovative approaches to lifelong education without the risk of investing in unsuccessful programs. With public, private, and not-for-profit stakeholders working to achieve a shared social outcome, the SIB could also support greater collaboration across sectors.

2. COMMUNITY-LED INITIATIVES FOR EARLY YEARS

Welcoming our Youngest Children

There is nothing more Nova Scotian than the generosity and kinship we extend to neighbours, friends, family, and others in welcoming them to our homes or to our communities. However, when we think of that big Nova Scotia welcome, we often forget to think of the 8,500 Nova Scotians who are born here each year.¹³ There are tremendous opportunities for Nova Scotians to reorient their thinking so that every adult considers how we might welcome these newest and littlest Nova Scotians into our communities in the most positive ways. Although the concept of welcome can sound small, the reality is that “welcome” is a social construct that has been proposed to impact integration and social cohesion within communities.¹⁴ “Welcome-

ness,” or “welcome-ability,” involves elements concerning the individual’s experience of legitimacy, recognition, inclusion, participation, belonging, and equality in his or her community.

If we think about the notion of extending “welcome” to each of these littlest Nova Scotians, we begin to see possibilities that were not there before. One can envision something as simple as the Finnish practice dating back to the late 1930s, when the Finnish government began to provide “maternity boxes” – a simple cardboard box that served as a first crib together with some post-natal essentials. Although the practice was begun at a time of great economic hardship, and was initially restricted to poor families, it was made universal in 1949 and persists to this day to symbolize that all Finnish babies deserve an equal start in life.

From this simple example, one can extend the notion of welcome for our children by examining which Nova Scotian children – and their families, by extension – feel unwelcome in our communities, and changing that negative starting point to a positive one for all children who enter our communities by birth or settlement. The connection beginning with that first welcome could help a new family in forging social and community bonds – in other words, finding a “home” rather than just establishing an address. The ways in which we express welcome to our children are in fact the tangible expressions of the collective support within a community. The “welcome” *acknowledges and dignifies the presence of every child* and can thus create a genuine sense of citizenship for our youngest Nova Scotians. Such a potent welcome could be universally available to all child newcomers, reinforcing a message that Nova Scotia’s communities place a high value on all children and their families, no matter their ethnicity or circumstances.

With that in mind, the coalition recommends that communities, businesses, not-for-profits, and philanthropists – with support from government and others, including the research community where appropriate – create Collective Impact projects designed to support and encourage the welcoming of Nova Scotia’s children in the following ways:

- Engaging parents and families to develop notions of what an appropriate “welcome” should be and what is most important about it
- Supporting interested citizens in building pilots

READ TO ME!

Nova Scotia’s *Read to Me!* is a not-for-profit program devoted to promoting early literacy by giving every baby born or adopted in the province a selection of books. Since 2002, over 80,000 *Read to Me!* packages have been gifted to newborns at the eleven Nova Scotia hospitals that provide maternity services. Available in multiple languages, the bright canvas bags include high quality baby book, a CD of lullabies and nursery rhymes, and a helpful month-by-month family reading guide.

¹³ (STATISTICS CANADA, 2015)

¹⁴ (R., ESSES, & FERNANDO, 2013)

“SUCCESS BY 6” IN BRITISH COLUMBIA

Acting through 120 Early Years Planning Councils, *Success by 6* encourages community leaders to become champions for young children, mobilize local resources to invest in prevention-focused early childhood programs and services; and provide funding to support early childhood development community projects and programs. Through its Aboriginal Engagement Strategy, *Success by 6* works with Aboriginal communities to promote awareness of the importance of the early years; to increase Aboriginal representation in *Success by 6* initiatives; and to strengthen community capacity.

- Drawing on examples set by other Collective Impact projects regarding the early years in other jurisdictions for ideas. This should specifically include examples set by and in First Nations, Inuit, and Metis communities.

The *Success By 6* Collective Impact initiative could provide inspiration for the work of Nova Scotians in supporting our young children. *Success By 6* promotes the healthy growth and development of young children from birth to six years. Local groups work together to identify and plan for the unique needs of young children in their community. The aim is to ensure that all children are safe, healthy, and prepared to succeed in kindergarten. Originally devised in Cincinnati,¹⁶ this proven model is expanding to other jurisdictions across North America, including British Columbia.¹⁷ It mobilizes local resources to invest in early childhood programs that are focused on preventing the negative consequences of a harmful early childhood environment. In both B.C. and Cincinnati, *Success By 6* is led by the United Way employing a Collective Impact methodology through which organizations – businesses, not-for-profits, agencies, foundations, and government – develop common goals, work together, and report on success in addressing a community challenge or opportunity. The Collective Impact approach recognizes that no single program, organization, or institution acting in isolation can bring about durable change in the case of a complex social issue. There needs to be a concerted effort around

a common agenda with the support of a backbone organization as coordinator.

3. SUPPORT FROM CRADLE TO CAREER

Canada’s largest study on the influence of early education programming, *Better Beginnings, Better Futures*, found that children enrolled in enriched early years programming to be less likely to require health, special education, social services, child welfare, and less likely to encounter the criminal justice system.¹⁸ Experience has shown, unfortunately, that if these positive effects of early education are not sustained by programming offered throughout P–12 and post-secondary education, the positive effect of an early years program is degraded. As a result, vulnerable children become more likely to leave school early and less likely to attach to the workforce or to pursue further education. Educational disparities associated with family background tend to increase as students advance in school. This is particularly critical during periods of transition from elementary school to middle school, and middle school to high school.¹⁹

Co-ordinated Government Action

The coalition recommends that the provincial government sustain efforts made in early childhood education and development throughout the period from cradle to career by

- providing high quality support for at-risk students in the P–12 school system
 - ensuring that recommendations of the Nunn Commission are being followed.²⁰
- That commission stressed the importance of collaboration among all government departments that provide programming for at-risk children and youth. Those departments include Education and Early Childhood Development, Labour and Advanced Education, Community Services, Justice, Health and Wellness
- developing metrics to evaluate the success of programs and reporting publicly on results

¹⁵ SUCCESS BY 6, 2013

¹⁶ (STRIVE PARTNERSHIP CINCINNATI AND NORTHERN KENTUCKY, 2015)

¹⁷ (SUCCESS BY 6, 2013)

¹⁸ (MCCUAIG, JANE, & SHANKER, 2012)

¹⁹ (CARO, MCDONALD, & WILLMS, 2009)

²⁰ (HON. D. MERLIN NUNN, 2006)

Community Collective Impact and Target Zones

The coalition recommends further that Collective Impact initiatives include components for sustainable and long-term funding and evaluation, with programs expected to evolve and develop as community needs change. Examples of successful community-led initiatives include Harlem Children's Zone (see below) and Cincinnati's Strive Partnership to help children and youth succeed from cradle to career. Particular areas of the province have high-density populations with a large number of children and families that are disadvantaged. These could be identified as target zones and provided with resources to mobilize community partners and businesses to build new approaches to young Nova Scotians. Initiatives should include the development of a common agenda, a collaborative action plan, shared measurement and evaluation, and a forum for continuous communication between the government and the partners.

HARLEM CHILDREN'S ZONE

The Harlem Children's Zone (HCZ) is aimed at providing comprehensive support to children and families and reweaving the very fabric of community life. The HCZ® Project began as a one-block pilot in the 1990s. With bold ambition, careful planning, and a strong infrastructure, the organization set out to address all of the issues children and families were facing within a finite geographic area: crumbling apartments, rampant drug use, failing schools, violent crime, and chronic health problems. The Children's Zone now serves more than 12,000 youth and nearly 9,500 adults. Seventy per cent of youth are engaged in programming, and their cradle-to-college approach has thousands on track to graduate from college. In 2014, 92 per cent of seniors across their high school programs were accepted to college. (Harlem Children's Zone, 2015)

ESTIMATING THE BENEFIT OF EARLY YEARS DEVELOPMENT

James Heckman, a Nobel Prize-winning economist at the University of Chicago, has devoted his career to the rigorous analysis of the benefits and costs of early childhood developmental programs. In a 2006 paper entitled *The Productivity Argument for Investing in Young Children*, Professor Heckman states: "On productivity grounds alone, it appears to make sound business sense to invest in young children from disadvantaged environments. . . . Adverse childhood environments explain a substantial part of the problems of schools, skills and crime in American society. . . . Early environments play a large role in shaping later outcomes. Skill begets skill and learning begets more learning. . . . The enriched early childhood interventions have their greatest impacts on creating motivation and successful attitudes among participants."

Professor Heckman conducted an exceptionally thorough analysis of the Perry Preschool Program undertaken as a controlled experiment in Michigan in the early 1960s. The participants who were aged three to five at the time have been followed for more than 40 years. In a detailed cost-benefit analysis reported in 2010, Professor Heckman concluded that the rate of return to society on the original investment in the Perry program was "in the range of 7 per cent to 10 per cent." (This compares favourably with the 5.8 per cent average return of the U.S. stock market since 1945.)

Professor Heckman emphasizes that such exceptional rates of social return have been achieved in the context of early childhood programs for the disadvantaged. This is because measured benefits are due primarily to the reduction of social costs – e.g., due to crime, unemployment, poor health – that are often the consequence of a disadvantaged early childhood. See (Heckman & Masterov, 2007) and (Heckman, James et. al., 2010)

SAMPLE LOGIC MODEL FOR MEASUREMENT AND EVALUATION *(subject to further development)*

ACTION POINT OUTCOME	TO CREATE THE MOST PRODUCTIVE ENVIRONMENTS FOR HIGHEST ACHIEVEMENT AND POSITIVE GROWTH AND DEVELOPMENT IN OUR YOUNGEST CITIZENS BY CREATING THE OPPORTUNITIES AND REMOVING THE BARRIERS THAT AFFECT GROWTH AND DEVELOPMENT.		
RELATED KPIS	PERIODIC SURVEY OF ATTITUDES TO SOCIAL INTEGRATION AND OPPORTUNITIES IN NOVA SCOTIA		
INITIATIVE AREAS	UNIVERSAL EARLY YEARS EDUCATION AND DEVELOPMENT	COMMUNITY-LED EARLY YEARS INITIATIVES	CRADLE TO CAREER
INITIATIVE INPUT MEASURES	# OF AVAILABLE EARLY YEARS / CHILDCARE PROGRAMS PROPORTION / LOCATION / DEMOGRAPHIC OF CHILDREN ENROLLED IN THESE PROGRAMS	# OF COLLECTIVE ACTION INITIATIVES AIMED AT NURTURING POSITIVE GROWTH AND DEVELOPMENT IN OPERATION PROPORTION / LOCATION / DEMOGRAPHIC OF CHILDREN ENGAGED IN OR REACHED BY THESE INITIATIVES	# AND LOCATION OF SUPPORT OPTIONS FOR CHILDREN ON CAREER OR EMPLOYMENT OPTIONS PROPORTION OF CHILDREN, BY DEMOGRAPHIC, MAKING USE OF THESE OPTIONS
INITIATIVE OUTPUT MEASURES	INCREASED READINESS AND REDUCED ACHIEVEMENT GAPS OF CHILDREN ENTERING SCHOOL INCREASED WORKFORCE PARTICIPATION RATE OF PARENTS OR PRIMARY CAREGIVERS	ANALYSIS OF SOCIAL COHESIVENESS, WITH A FOCUS ON YOUNG CHILDREN (REF RAVANERA) ANALYSIS OF CHANGES IN ADULT BEHAVIOURS AND ATTITUDES RELATED TO CHILDREN	INCREASED PERCENTAGE OF SCHOOL-AGE CHILDREN, BY AGE GROUP, IN FULLTIME EDUCATION OR TRAINING



02 OUR FUTURE IS YOUNG

¹ STATISTICS CANADA, 2015

² (HALIFAX PARTNERSHIP, 2015)

³ IN 2014, THE YOUTH UNEMPLOYMENT RATE WAS 17.8 PERCENT, THE HIGHEST AMONG THE PROVINCES (STATISTICS CANADA, 2015)

⁴ THERE WERE APPROXIMATELY 6,400 YOUTH IN 2014 WHO WANTED WORK BUT WERE NOT PARTICIPATING IN THE LABOUR FORCE. (STATISTICS CANADA)

⁵ IF THE LABOUR FORCE PARTICIPATION OF ABORIGINAL YOUTH MATCHED THE PROVINCIAL AVERAGE, ROUGHLY 600 MORE YOUNG PEOPLE WOULD BE AVAILABLE TO WORK. (STATISTICS CANADA, 2011).

⁶ THE UNEMPLOYMENT RATE OF AFRICAN NOVA SCOTIANS AGED 20 TO 29 YEARS WAS 22 PER CENT. THE NS AVERAGE WAS 16 PER CENT. (STATISTICS CANADA, 2011).

⁷ THE UNEMPLOYMENT RATE FOR PERSONS WITH DISABILITIES IN NOVA SCOTIA WAS 16 PER CENT IN 2012, ALMOST TWICE AS HIGH AS THE UNEMPLOYMENT RATE FOR PERSONS WITHOUT DISABILITIES (9 PER CENT) (STATISTICS CANADA, 2012).

Young Nova Scotians are the future of our province. Their vitality, skills, and commitment to community will define what we become. That is why Nova Scotia needs to create the opportunities that will give young people the confidence that they can achieve their career and family aspirations here.

The challenge is clear. Net outmigration has reduced the population of Nova Scotians aged 20 to 29 by an average of 1.3 per cent every year for the past decade.¹ From 2005/2006 to 2014/2015, this has translated to a net loss to Nova Scotia of approximately 15,000 individuals in the prime stage of career formation, and has contributed to the long-term aging of our population. The economic and demographic challenge facing Nova Scotia is reflected in the so-called “V” of net youth outmigration (Figure 1). Indeed there has been net outmigration of Nova Scotians 20–50 years of age, and net in-migration for older ages, accelerating the increase of the median age of Nova Scotians. Low oil prices have led to some recovery this year as opportunities in western Canada diminished. But if we are to achieve the goal set out in the Ivany Report to average a net gain of 1,000 inter-provincial migrants per year, the long-term trends must be countered through proactive measures.

While youth outmigration is not unique to Nova Scotia, and young people are characteristically mobile, the persistent loss has significant negative implications for our future. Taking a long-term perspective, we see that investment in youth attraction and retention can pay large net fiscal dividends. If instead of migrating away, a young person remains and works in Nova

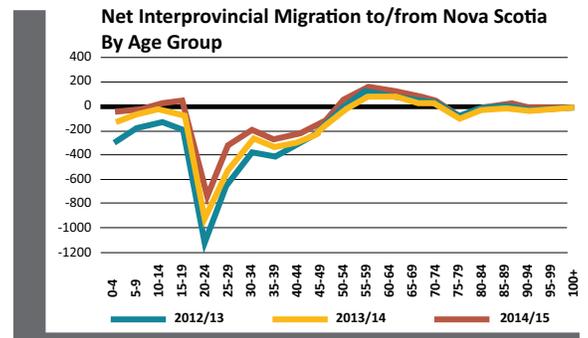


fig 1: Statistics Canada, CANSIM table 051-0012

Scotia, the extra provincial tax revenue paid over that person’s lifetime, on average, has been estimated to be approximately \$480,000.²

Nova Scotia needs to make greater strides in boosting the employment rate of youth,³ as well as the workforce participation of youth who are not in education, employment, or training.⁴ A disproportionate number are from First Nations,⁵ African Nova Scotian,⁶ or the persons with disabilities communities.⁷ Through increased focus on youth from these groups, the province could boost its growth potential while ameliorating long-standing socio-economic disparities.

Nova Scotia competes with the rest of the world to attract and retain youth. Competition comes from other parts of Canada, from highly industrialized but aging countries, and increasingly from new high-growth economies that present far more attractive opportunities than in the past. Fortunately, Nova Scotia has some significant advantages. The province is Canada's premier importer of post-secondary students. Relative to population, Nova Scotia has among the largest number of inter-provincial and international university students – almost 15,000 from elsewhere in Canada and 7,000 from abroad out of a total full-time university student body of approximately 44,000.⁸ Our universities and the Nova Scotia Community College (NSCC) play a vitally important role in preparing our young talent, instilling the knowledge and skills that are the foundation for economic and social progress.

Nova Scotia has a significant competitive advantage in what might be called its “5Cs”: culture, creativity, community, charm, and character. The Going Global chapter sets out a strategy for making the quality of life in Nova Scotia even better by enhancing the 5Cs. That way we can compete more effectively to attract and retain youthful talent, particularly since lifestyle advantages have become more important as technology enables many young people to work from anywhere.

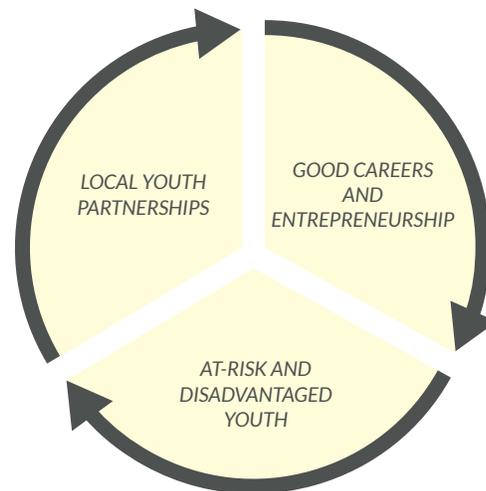
Supporting diversity and inclusion is important for our young First Nations, African Nova Scotians, persons with disabilities, under-represented groups, international students, immigrants, and, indeed, all youth who view diversity and inclusiveness as important principles. Diversity and inclusiveness bring many other benefits, including a variety of skills, experiences, and perspectives, which together lead to innovation, high performance, and better results.

The bottom line is that Nova Scotia can hope to reverse its demographic decline if we succeed in providing young people with greater opportunities and the confidence that they can enjoy a rewarding career and life in the province. Capitalizing on Nova Scotia's future-oriented sectors like information and communications technology (ICT) and oceans technology, as detailed in other chapters, promises significant opportunity to attract and retain young people provided they are equipped with the right skills.

THE PLAN FOR YOUTH

Our discussions with stakeholders demonstrated clearly that there is a desire for youth to be directly involved in the development, implementation, and operation of a youth strategy. There is also a need for a collaborative approach involving business, the education sector, community-based groups, and governments to achieve the youth-related goals in the Ivany Report. The coalition recommends, in addition to the sector-specific youth initiatives in other chapters, an action plan focused on three themes:

1. **Good careers and entrepreneurship**
2. **Supporting at-risk and disadvantaged youth**
3. **Local youth partnerships**



8 THE COMPOUND ANNUAL GROWTH RATE OF THE NUMBER OF INTERNATIONAL STUDENTS HAS AVERAGED ALMOST 13 PER CENT OVER THE PAST FIVE YEARS. (MARITIME PROVINCES HIGHER EDUCATION COMMISSION, 2015)

1. GOOD CAREERS AND ENTREPRENEURSHIP

We must improve connections between employers and students planning their future career paths. The goal is to retain thousands more of the post-secondary students from Nova Scotia and outside the province who have chosen to study here, and to increase workforce opportunities for those youth who are unemployed or under-employed and are already in Nova Scotia.

A DEMOGRAPHIC CHALLENGE

In 2015, there were 363,000 Nova Scotians under the age of 35 (38.5 per cent of the total population). From 2005 to 2015, that younger age segment declined 7.9 per cent – the second largest proportionate decline among Canadian provinces – while nationally it grew by 5.8 per cent. Meanwhile, the number of deaths in Nova Scotia in 2015 (9,150) exceeded the number of births (8,588) by 6.5 per cent. (Statistics Canada, CANSIM 051-0001)

Focus on High School Students

Nova Scotia's youth need greater access to labour market and career information as early as Grade 9 to make informed educational choices that match their aptitudes and skills. The coalition recommends that the provincial Department of Education and Early Childhood Development and school boards enhance guidance counselling services to help students understand the workforce opportunities that best align with their interests and abilities.

Regional business education councils, proposed by the Department of Education and Early Childhood Development, should be developed to support school boards in this role. By connecting the department to businesses, entrepreneurs, community organizations, school boards, universities and NSCC, the councils should provide information to students, parents, and teachers relating to the job opportunities that are available. Business education councils will also maintain a database of local entrepreneurs and business leaders to serve as mentors to students. To be successful, the councils must be supported by businesses and business leaders who will ensure that Nova Scotia has the robust organizations and programs to achieve this goal, with no shortage of financial support, mentorship, and volunteers to guarantee long-term and sustained success.

Expand Youth Connect/Mentor Programs

"Connector" programs provide opportunities for businesses that want to help newcomers and graduates find the right job, while providing employers with access to talented job seekers to expand and diversify their local workforce.

The Halifax Partnership's Connector Program is

a successful retention approach that helps connect immigrants and recent graduates to job opportunities in Halifax. Connectors are asked to refer the connectee to a minimum of three people in their network, and then each of these people are asked to refer the connectee to three more. These referrals could be potential employers, influential leaders within their industry, or other people who would benefit from meeting with a skilled professional. Since the program was originally developed, it has assisted over 1,300 participants and witnessed more than one-third of those participants become employed in Nova Scotia.⁹

HIGHLIGHTS 2009-2015⁹

763 CONNECTORS	1345 CONNECTEES	556 JOBS FOUND
	500 IMMIGRANTS	263
	383 INT'L STUDENTS	151
	308 RECENT GRADS	119
	154 OTHER	23

fig 2: Halifax Partnership

The Cape Breton Partnership's Mentor Connect program, based on a successful Massachusetts Institute of Technology (MIT) model, was launched in November 2014.¹⁰ It quickly drew private sector backing, showing that mentor and connector program models can be scaled and adapted to reflect a variety of regional contexts.

While these programs do not guarantee a job, the coalition recommends that they be expanded as an important component of a youth retention strategy. Since the private sector must be engaged for this to work, regional groups such as the Halifax Partnership, Cape Breton Partnership, Regional Enterprise Networks (RENs), and/or chambers of commerce should lead the expansion of connector and mentor programs, in partnership with local businesses, not-for-profits, post-secondary education (PSE) institutions, and other organizations.

Become the Co-op Leader in Canada

Co-op education programs in Atlantic Canada grew by almost 60 per cent between 1993 and 2013¹¹ and have proven to be very effective ways to connect youth with potential jobs; for example, more than 90 per cent of university and college graduates in Canada report receiving employment within three years of completing a co-op based degree.¹²

⁹ (HALIFAX PARTNERSHIP, 2015)

¹⁰ (MENTOR CONNECT, 2015)

¹¹ (CAFCE ATLANTIC, 2015)

¹² (STATISTICS CANADA, 2014)

The coalition recommends substantially expanding co-op opportunities to make Nova Scotia the co-op education leader in Canada.

- **High school co-op programs.** Current programs are popular and provide students early introductions to workplace environments. Nova Scotia should strengthen these programs, initially by expanding apprenticeship co-op options in more trade sectors.
- **Post-secondary co-ops and experiential learning.** Nova Scotia should strengthen its post-secondary education advantage by ensuring there are sufficient co-op programs, apprenticeship programs, and experiential learning opportunities provided by PSE institutions. Our goal should be to become the first province where all post-secondary students can participate in such programs. To this end, the coalition recommends that universities and NSCC consolidate and coordinate co-op and other experiential learning programs through a single window. The provincial Department of Labour and Advanced Education should be prepared to use its funding relationship with post-secondary education institutions to foster these outcomes. Under the provincial government's Strategic Cooperative Education Incentive Program ("SCEI"), almost a third of employers that applied to the program were

WATERLOO'S CO-OP SUCCESS

Since the founding of the University of Waterloo, the "Waterloo Plan" called for a new type of education to be offered on a co-operative basis with industry. The University of Waterloo's Co-op program has thus become one of the most successful in the world. It is staffed by a team of 166 who engage actively with 5,200+ employers, 18,300 students, and the University of Waterloo's 163,000 alumni to offer an integrated "Hire Waterloo" program. The co-op program not only connects students to potential employers and results in valuable work experience, but also has driven the establishment of a large number of high profile start-ups and spin-offs in the region – developments that contribute directly to innovation-based growth in the local and regional economy. (University of Waterloo, 2015)

not funded, and many qualified students were unmatched with employers. Enhanced funding for the SCEI would be an effective investment for youth employment and retention.

- **Mitacs.** Working with 60 universities, thousands of companies, and both federal and provincial governments, Mitacs is Canada's leading organization linking business and academia through unique research and training internships. Almost half of the interns in Mitacs's flagship "Accelerate" program have been hired by their partner companies.¹³ Under the Mitacs Accelerate program, the provincial government pays one-quarter of a graduate student's salary, while the federal government and the employer evenly split the other three-quarters. The federal government has announced new funding for Mitacs that will support an additional 6,000 internships nationwide over four years, effectively doubling the program by 2020. Other provinces have all increased their programs.¹⁴ The coalition strongly recommends that Nova Scotia maximize its participation in the program, thus ensuring that it captures the greatest possible benefit from the 75 per cent share of funding that is not provided by the provincial government.
- **ONE Nova Scotia Desk.** This program encourages businesses to provide co-op work terms to young people. The ONE Nova Scotia Desk matches candidates with employers in their field. This pilot, launched by Venor Search Group, should be monitored and evaluated for consideration of support and expansion. An expanded program could provide recognition for employers who make a commitment to Nova Scotia's youth workforce, in line with the goals set out in the Ivany Report.

Youth Entrepreneurship

Strong leadership from the private sector can support our youth entrepreneurs through a number of initiatives and partnerships; for example, those listed on page 26 under *Fostering Youth Entrepreneurship*, have the potential for expansion throughout the province and should be supported. One or more of these entrepreneur-led organizations should develop experiential opportunities for students interested in entrepreneurship. The coalition recommends that the provincial government and the private sector

¹³ (MITACS, 2014)

¹⁴ (MITACS, 2015)

ensure that there are sufficient resources for those organizations to achieve outcomes related to youth entrepreneurship. In particular, co-working spaces and hubs can be an important platform for young entrepreneurs to find low-cost ways to get started, and to connect with other entrepreneurs and service providers.

Post-secondary institutions are particularly well placed to foster entrepreneurial attitudes and skills. Through their “Entrepreneurship Innovation Team,” Nova Scotia’s PSE institutions are exploring opportunities to embed a culture of entrepreneurship throughout all degree programs (see chapter 3, p 31).

Youth and Social Entrepreneurship

Social enterprise – the “third sector” – is a growing field that recognizes the opportunity to add value in the social sector. It represents innovative and entrepreneurial approaches to complex social problems, generating better outcomes with less public funding. By preparing youth to be social entrepreneurs, Nova Scotia can leverage their creativity to drive social innovation, resulting in greater youth engagement and retention. Therefore, the coalition recommends that the Government of Nova Scotia

- make the comparable supports available for social enterprises as for other businesses, including those related to capacity building and access to finance
- create a mentoring network for social entrepreneurs, drawing upon existing business networks as well as successful social entrepreneurs; encourage more retirees to become mentors; and leverage Innovacorp’s approach to supporting young start-ups (including competitions, incubation and acceleration capabilities) to create a program for social enterprises
- enhance capacity building and training for social entrepreneurs; for example, in addition to the existing Credit Union Small Business Loan Program¹⁵ for social enterprises, the government should consider adding a fund similar to the Resilient Capital¹⁶ program in Vancouver. Universities should also consider adding Social Innovation Labs, similar to ones at the University of Waterloo¹⁷ and MIT.¹⁸

¹⁵ (CREDIT UNION ATLANTIC, 2015)

¹⁶ (VAN CITY & THE VANCOUVER FOUNDATION, 2015)

¹⁷ (UNIVERSITY OF WATERLOO, N.D.)

¹⁸ (MASSACHUSETTS INSTITUTE OF TECHNOLOGY DEPARTMENT OF URBAN STUDIES AND PLANNING, N.D.)

FOSTERING YOUTH ENTREPRENEURSHIP

- **Youth and Entrepreneurship Skills Nova Scotia (YES NS)** is a private sector-led initiative aimed at energizing and supporting youth entrepreneurship across the province. Started by a group of experienced business leaders, YES NS seeks to enhance mentorship, entrepreneurial literacy, and employment for youth. (Moreira, 2015)
- **Junior Achievement**, is an organization of volunteer business leaders that offers a number of awards and programs for youth of all ages providing opportunities to develop entrepreneurial skills and to become a smart consumer. (JA Canada, 2015)
- **The Centre for Entrepreneurship Education and Development (CEED)** works in schools across the province to build competencies in youth such as innovation, teamwork, leadership, risk-taking, and critical thinking, and to expand entrepreneurship competency building for grades P–12. (CEED, 2015)
- **Brilliant Labs** is an entrepreneurs-led initiative that accelerates the entrepreneurial spirit and movement to integrate new technologies and teaching practices in our schools and local communities. Brilliant Labs partners with non-government organizations and leverages private sector partnerships to deploy a series of rapid response application-based grant opportunities at a provincial level to support innovation and motivate teachers. (Brilliant Labs, 2015)

Government Leadership and Programs

The coalition recommends that all levels of government lead by example as youth-friendly employers, for example, by relaxing experience requirements in selected categories and providing promising young employees with training to close the experience gap.

As Figure 3 illustrates, just as university graduates are about to become net contributors to the public purse (in their early to mid-20s), government investment in this age group drops dramatically. This

AVERAGE PROVINCIAL GOVERNMENT SPENDING ON & TAX REVENUE GENERATED BY A UNIVERSITY GRADUATE IN NS

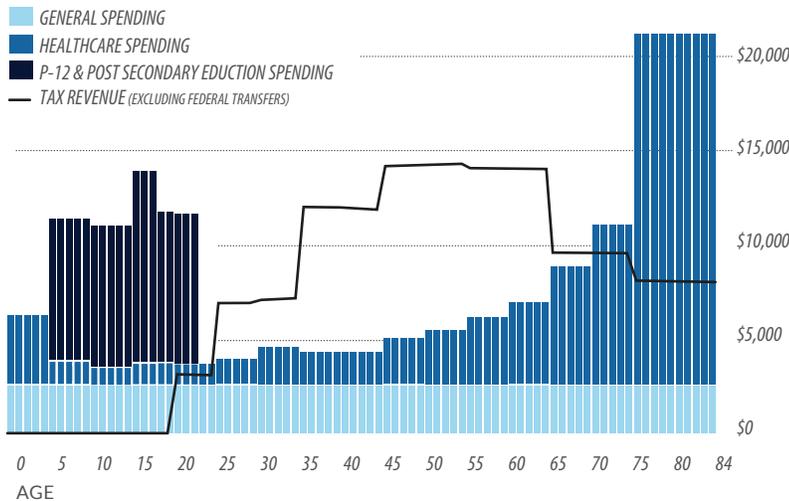


Fig 3: Average Provincial Government Spending on and Tax Revenue Generated by a University Graduate in Nova Scotia Source: Statistics Canada, 2011 National Household Survey, Halifax Partnership Calculations (Halifax Partnership, 2015)

is also the age when youth migrate out of Nova Scotia and become contributors to the economies of other jurisdictions.

The provincial Graduate to Opportunity program provides salary contributions to employers to offset the cost of hiring a recent graduate who has completed a post-secondary program over the past year. To qualify, employers must hire graduates in permanent full-time positions with minimum annual salaries of \$30,000, and be a business of fewer than 100 employees, or a start-up, social enterprise, not-for-profit organization, or registered charity.

The principles of the current program are sound, but the

criteria and funding need to be re-examined. Therefore, the coalition therefore recommends that the Graduate to Opportunity program be scaled up if it is to achieve significant results. Response to the program in the first year has been very promising and participation is set to exceed to the original target. The program should set a target of 500 students within two years, scaling up as appropriate in subsequent years.

2. SUPPORTING AT-RISK AND DISADVANTAGED YOUTH

Youth who are at-risk or from disadvantaged backgrounds can become disconnected from education or career opportunities at various stages in their lives and for a variety of reasons, including personal or family challenges, learning difficulties, problems with the legal system, or a general sense of not belonging. In typical cases, special attention and “on-ramps” are needed to help get youth back on track. It is important that the focus on re-engagement of youth be at the local level.

Enhanced Government Coordination and Programming

Investment should be targeted at early identification of students likely to need additional support to achieve self-reliance and career success. A disproportionate number of these under-represented youth are from our Mi'kmaw, African Nova Scotian, and persons with disabilities communities.

The coalition recommends that the minister responsible for youth lead a sustained initiative to close the skills gap for youth who are from under-represented communities. More specifically, the provincial government should

- work with the private sector and PSE institutions to develop a program to enhance employment of under-represented groups in the ICT workforce – e.g., similar to the U.S. TechHire program
- Implement a program of “diversity reporting” in which employers would post data on their website data regarding the diversity of their workforce. This would encourage companies to celebrate diversity, create a positive message, and begin to change attitudes toward inclusiveness

TECHNOLOGY JOBS FOR PEOPLE FACING BARRIERS

“TechHire” is a new multi-sector effort in the U.S. that matches employers with workers in ICT-related jobs. It involves 20 communities in regions with over 120,000 unfilled technology jobs, and more than 300 employer partners in need of the technology workforce. They are working together to find new ways to train, recruit, and place applicants in jobs through fast-track ICT training opportunities. Many of these ICT jobs do not require four-year degrees, and therefore the training programs often employ nontraditional approaches like coding boot camps and high-quality online courses that can prepare workers for a well-paying job, often in just a few months. The U.S. Department of Labor is launching a competition to support innovative approaches to training and employing individuals facing barriers, including those with child-care responsibilities, people with disabilities, disconnected youth, and workers with limited proficiency in English. This grant competition will support evidence-based strategies such as accelerated learning, work-based learning, and registered apprenticeships. (Office of the Press Secretary, White House, 2015)

MICHELIN'S ABORIGINAL WORKFORCE PARTNERSHIP

Michelin has implemented an Aboriginal Workforce Participation Initiative, a partnership agreement with the Confederacy of Mainland Mi'kmaq, the Union of Nova Scotia Indians, the Government of Canada, and the Province of Nova Scotia. Under this partnership, Michelin engages in aboriginal procurement, recruitment, and retention; identifies potential business development initiatives designed to meet aboriginal community priorities; and collaborates with an advisory committee of aboriginal representatives. Based on the success of this initiative, Michelin has established an African Nova Scotian Partnership and a Women's Unlimited Partnership. (Aboriginal Economic Development Aboriginal Affairs Working Group [www.aawgcedev.ca/michelin-aboriginal-workforce-participation-initiative-a-mo.html])

Community Initiatives

It is clearly important to identify best practices and replicate successful models such as “Pathways” in Spryfield, which has created a new generation of youth who, through supportive community structures, are achieving exceptional academic success. The coalition recommends that this model be expanded using a Collective Impact approach where a diversity of stakeholders comes together with youth to collaboratively identify and solve a complex social problem. Philadelphia's Project U-Turn is an example of a Collective Impact approach to enhancing opportunities for under-represented youth. Michelin's Aboriginal Workforce Partnership provides an example of how business can play a leadership role in supporting under-represented youth. The coalition recommends that the private sector take inspiration from Michelin and undertake similar initiatives.

3. LOCAL YOUTH PARTNERSHIPS

Recent research by Engage Nova Scotia confirms a clear desire among Nova Scotians to roll up their sleeves to improve the future of the province.²⁰ The only thing many respondents said they lacked were effective ways to put their goodwill into action.

In order to provide the means to act effectively and to bring to fruition the many individual initiatives proposed in this chapter, the coalition recommends the creation of local youth partnerships to foster collaboration between youth and a broad range of stakeholders. These would be locally designed and youth-partnered for every region of the province. Core funding for the partnerships should come from government, but substantial in-kind support needs to be provided by partner organizations.

To succeed, the partnerships will need to galvanize the commitment and imagination of youth and of those who understand the local challenges and opportunities best, such as the RENs, chambers of commerce, community college campuses, school boards, municipalities, trade unions, employers, and community leaders. They should be responsible for mobilizing the private sector to attach skilled youth to work opportunities, for example by ensuring that

- there is private sector leadership in the new regional business education councils

²⁰ (ENGAGE NOVA SCOTIA, 2015)

- businesses are offering co-op placements, apprenticeships, or other forms of experiential learning in high schools, universities, and the NSCC
- the Connector Program and Mentor Connect programs expand to each region
- businesses are aware of, and are hiring, Mitacs interns, as well as other programs that attach highly qualified people with their first job
- employers are connected to the Graduate to Opportunity Program
- diversity and inclusiveness in the workplace is encouraged and supported

The work outlined in this report requires ongoing leadership. Responsibility for different elements of the plan rests with disparate sectors, so a locus of coordination is required to ensure effective implementation. The coalition recommends a Collective Impact initiative that brings all sectors in a region together, building on the existing collaborative efforts. It takes time to create an effective infrastructure that allows stakeholders to work together to resolve a big challenge. Collective Impact is a marathon, not a sprint. There is no shortcut in the long-term process of social change. At the same time, early wins that demonstrate the value of working together are essential to hold a collaborative together.

The coalition recommends creation of a provincial network that links the local youth partnerships to share experience and best practices. Specific attention should be given to creating online data, organized by region, about youth who have left and hope to return. Efforts to repatriate youth are likely to be more successful if they are driven locally rather than provincially.

PATHWAYS TO EDUCATION/ CHEBUCTO CONNECTIONS

The Spryfield area includes the communities along Herring Cove Road and nearby streets. There are more than 4,000 residents with a high proportion of single-parent families, children, and youth. Spryfield is a resource-rich community with many active and engaged residents. However, the community wrestles with socio-economic issues related to poverty, high unemployment, and low education attainment in some areas. Other youth issues include lack of access to transportation, lack of after-school programming, and higher-than-average school dropout rates.

In May 2010, Pathways Spryfield launched in partnership with the local community group, Chebucto Connections, a long-standing Spryfield-based registered charity and one of the most involved and successful broad community-support models in Nova Scotia. In partnership with the public and private sector, it oversees the delivery of a five-year commitment to improve school readiness for children in the community. Chebucto Connections sought out a partnership with Pathways Spryfield after hearing from students and families that greater success in education was desired in the community. In the program's first academic year, 90 students participated. Pathways Spryfield also partners with businesses, parents, youth, and many community organizations including the United Way, Spryfield and District Business Commission, and the Halifax Regional School Board (Pathways to Education, n.d.).

The results have been impressive. Last year, there were about 200 students involved in the program, through grades 9–12. The graduation rate for students in the Pathways service area was 54 per cent when the program began; by last year it had risen to over 80 per cent (Chronicle-Herald, 2014).

SAMPLE LOGIC MODEL FOR MEASUREMENT AND EVALUATION *(subject to further development)*

ACTION POINT OUTCOME RELATED KPIS	REVERSE THE TREND OF OUT-MIGRATION (I.E. FLATTEN THE “V”) AND IMPROVE THE QUALITY OF LIFE FOR NOVA SCOTIAN YOUTH BY INCREASING WORK OPPORTUNITIES, IN PARTICULAR FOR THOSE WHO ARE CURRENTLY UNEMPLOYED OR UNDER-EMPLOYED AND ALREADY LIVING IN NOVA SCOTIA REDUCE LEVEL OF OUT-MIGRATION AMONG 20–29 YEARS OLDS PERIODIC SURVEY OF ATTITUDES TO SOCIAL INTEGRATION AND OPPORTUNITIES IN NOVA SCOTIA		
INITIATIVE AREAS	GOOD CAREERS AND YOUTH ENTREPRENEURSHIP	LOCAL YOUTH PARTNERSHIPS	UNDER-REPRESENTED, UNEMPLOYED AND UNDER-EMPLOYED YOUTH
INITIATIVE INPUT MEASURES	ESTABLISHMENT OF REGIONAL BUSINESS-EDUCATION COUNCILS PROPORTION OF JUNIOR AND SENIOR HIGH SCHOOL AND UNIVERSITY / COLLEGE CURRICULA THAT HAVE BEEN INFORMED BY PROJECTED NS LABOUR MARKET NEEDS, CONSULTATION WITH INDUSTRY / EMPLOYERS INCREASE IN YOUTH ENTREPRENEURSHIP OPPORTUNITIES EXPANSION OF CONNECTOR, CO-OP, AND MENTORING PROGRAMS EXPANSION OF THE GRADUATE TO OPPORTUNITY PROGRAM BETTER ACCESS TO LABOUR-MARKET AND CAREER INFORMATION		
INITIATIVE OUTPUT MEASURES	INCREASE IN NUMBER OF CO-OP PLACEMENTS, APPRENTICESHIPS, OR EXPERIENTIAL LEARNING OPPORTUNITIES IN HIGH SCHOOLS, UNIVERSITIES, AND THE NSCC OFFERED BY BUSINESSES INCREASED PROPORTION OF YOUTH FINDING APPROPRIATE LONG-TERM EMPLOYMENT WITHIN THREE MONTHS OF COMPLETING EDUCATION / TRAINING INCREASED PROPORTION OF YOUTH, BY DEMOGRAPHIC, WITH RELEVANT SKILLS AND EXPERIENCE INCREASED RATE OF HIRING OF INTERNS FROM MITACS AND OTHER PROGRAMS THAT ATTACH HIGHLY QUALIFIED PEOPLE WITH THEIR FIRST JOB DECREASED PROPORTION OF UNDER-REPRESENTED, UNEMPLOYED, AND UNDER-EMPLOYED YOUTH THAT ARE NOT IN AT-RISK AND DISADVANTAGED YOUTH* EMPLOYMENT, EDUCATION, OR TRAINING		

03 UNIVERSITIES AND NSCC AS INNOVATION HUBS

The number and quality of Nova Scotia’s post-secondary education (PSE) institutions is one of our greatest competitive advantages in a world where advanced skills and knowledge have become the basis for economic prosperity.

INSTITUTION	STUDENTS
DALHOUSIE	18,564
NSCC	10,745
SAINT MARY’S	7,740
ST. FRANCIS XAVIER	5,168
ACADIA	4,533
MOUNT SAINT VINCENT	3,859
CAPE BRETON	3,140
KING’S COLLEGE	1,197
NSCAD	950
UNIVERSITÉ SAINTE-ANNE	504
ATLANTIC SCHOOL OF THEOLOGY	138
TOTAL	56,538

fig 1: 2014-2015 Full- and part-time enrollments at Nova Scotia universities (Association of Atlantic Universities, 2014; Nova Scotia Community College, 2014)

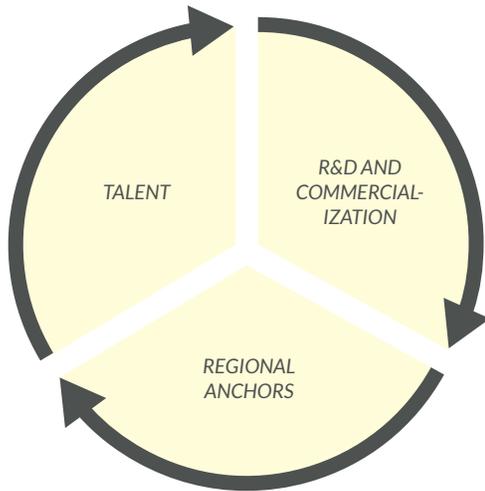
Nova Scotia is home to Dalhousie University, one of Canada’s top research universities; nine primarily undergraduate universities that include some of the top-ranked in their category; as well as the 13 campuses of the Nova Scotia Community College (NSCC) that provide advanced training in a broad spectrum of applied programs. Together, they have a student body of more than 56,000.¹

Nova Scotia is challenged to develop the talent of its young people, to create a vibrant innovation community, and to grow export markets. Our PSE institutions constitute an outstanding asset to help meet those challenges. To this end, the ONE Nova Scotia coalition recommends three key areas of focus to enhance the role of universities and NSCC as innovation hubs:

1. Enhance PSE institutions as anchors for regional economic and social development and innovation.
2. Support R&D and commercialization partnerships and collaboration between PSE institutions and the private sector to foster a knowledge-intensive economy.
3. Develop student talent and skills through co-ops and experiential learning and create environments that promote innovation, creativity, and entrepreneurship.

By focusing on these three areas, the coalition believes Nova Scotians can maximize the return on their significant investment in PSE institutions, while enabling those institutions to prosper.

¹ DURING THE 2014-15 ACADEMIC YEAR, THERE WERE 38,321 FULL-TIME AND 7,472 PART-TIME STUDENTS IN NOVA SCOTIA’S UNIVERSITIES AND 10,745 FULL- AND PART-TIME STUDENTS IN NSCC FOR A TOTAL OF MORE THAN 56,500 FULL- AND PART-TIME STUDENTS IN THE PSE SYSTEM. (ASSOCIATION OF ATLANTIC UNIVERSITIES, 2014) (NOVA SCOTIA COMMUNITY COLLEGE, 2014)



The PSE “Innovation Team”

The Ivany Report stated that Nova Scotia “should view its high concentration of universities and colleges as a fundamental asset in growing our economy.” In response, Nova Scotia’s universities and the NSCC formed an Innovation Team in partnership with the provincial Department of Labour and Advanced Education. The Innovation Team is working collaboratively to leverage the province’s PSE assets. Its focus includes R&D and commercialization, entrepreneurship, co-ops, and experiential learning.

“Much has been said already in this report about the universities and the Nova Scotia Community College as foundations for future economic growth in the province. The Commission believes there is even greater potential for these vitally important institutions to bring their immense institutional capacities to bear on the economic, social and cultural development needs of the province. In doing so, we believe the post-secondary system can model – and potentially be a catalyst for – the kind of change required more broadly throughout the province.”
(Ivany Report, p. 59)

The outcome of the work of the Innovation Team will help determine the initiatives that PSE institutions, the private sector, the social enterprise sector, and

government will undertake collaboratively. The coalition believes its recommendations in respect of PSE institutions, described below, are consistent with, and in some respects extensions of, outcomes being pursued by the Innovation Team.

1. PSE INSTITUTIONS AS REGIONAL ANCHORS

Nova Scotia’s universities and colleges play a key constructive role in regional economic and social development, particularly in less-prosperous parts of the province. These institutions are making contributions to regional economic development that go well beyond the traditional emphasis on teaching and research. They are often anchors of local economies in their roles as major employers, purchasers of local goods and services, and contributors to cultural life and the built environment. They contribute to building human capital through specialized curricula, customized training, and lifelong learning. Faculty often engage in contract research and consulting that provide technical assistance and problem solving to local firms, acting as business advisors and network builders, supporting business incubation, as well as taking leadership roles in regional development.

PSE Institutions as Regional Anchors for Development and Innovation

Nova Scotia’s PSE institutions should play a greater role as regional anchors for social and economic development and innovation. The coalition recommends PSE institutions in a particular region should

- function as anchors or hubs for innovation and development, and integrate the “anchoring” role into the fabric of their institution
- become even more active partners in economic planning and revitalization efforts by helping to mobilize knowledge in communities
- enhance innovation ecosystems generally, with particular focus on key strategic sectors, such as oceans, ICT, biotechnology and life sciences, and sustainable natural resource development
- contribute to community development initiatives where the expertise of PSE institutions can help to enhance outcomes (Reciprocally, the communities can serve as “living labs” in which to apply

research and acquire knowledge.)

- promote entrepreneurship and provide research-based advice in shaping business strategy
- foster innovation in social enterprise – for example, by offering courses for students who wish to set up companies to deliver services to communities in new ways, such as through “change labs” that bring together PSE institutions and local partners to test different solutions
- engage with high school students and teachers to enhance opportunities and outlets for innovation, creativity, and entrepreneurship
- amplify the effectiveness of early childhood and P-12 education by tutoring and mentoring vulnerable youth or under-performing students to help close the achievement gap
- support regional business development by increasing opportunities for local suppliers to the institution
- encourage faculty to be involved in the local business community or social organizations; for example, by providing time to undertake these activities, rewarding the efforts, and incorporating it into hiring, review, promotion, tenure and other policies

2. R&D AND COMMERCIALIZATION

Investment in R&D is an essential input to innovation in most knowledge-intensive activities. Moreover, R&D has potentially large spinoff benefits for the broader economy as the knowledge and techniques developed by the original R&D performer diffuse broadly. This is why so many governments provide incentives to encourage R&D. The commercialization of R&D is the responsibility of business but the process can often benefit from collaboration with PSE institutions—for example, through access to the academic sector’s well-equipped labs and breadth of faculty and student skills.

Beyond these immediate benefits, academic research indirectly fuels commercial R&D through the essential role academic research plays in the development of highly qualified people. The students who are trained at the leading edge of knowledge go on in their careers to be the ones that actually carry out R&D in commercial settings.

Almost 85 per cent of the R&D performed in Nova Scotia occurs in university and federal government labs. Very little is performed by businesses,³ reflecting the province’s economic structure which has few domestically owned manufacturers or R&D-intensive business services. In fact, business R&D intensity in Nova Scotia (R&D spending as a proportion of the economy) is the lowest in Canada,⁴ and Canada is already a very weak business R&D performer among the highly developed countries.⁵

In order to fully realize the benefits of R&D, Nova Scotia needs to expand its R&D activities beyond universities and colleges and federal labs.

INNOVATION ECOSYSTEM

An innovation ecosystem is a dynamic network of organizations and individuals, and a surrounding environment of policies and rules, whose function it is to conduct and support innovative activity. The ecosystem encompasses entrepreneurs and inventors, PSE institutions, venture capitalists, patent experts, start-up incubators, various government subsidies and other incentives/disincentives, public and private labs – the list goes on. These stakeholders, along with one or more coordinating entities, can develop similar goals and align their activities in order to achieve economies of scale and scope that create mutual benefit and public value. Such ecosystems can be focused on sectors or clusters or regional community hubs. They may include sectors related to oceans, information and communication technology (ICT), social enterprise, life sciences, and so forth. To add to the complexity, innovation ecosystems have been shown to be more effective when connected through global pipelines to international partners and markets. The ecosystem metaphor is helpful in that it focuses attention on the interconnected, multi-faceted nature of the innovation process and forces consideration of how elements interact to reinforce or counteract one another. But the relevance of the metaphor is also its weakness, since the components of an innovation ecosystem and their interactions are far too complex to model its behaviour predictively.

³ STATISTICS CANADA REPORTS THAT OF \$531 MILLION SPENT ON R&D IN NOVA SCOTIA IN 2013, PSE INSTITUTIONS PERFORMED 73.5 PER CENT, WHEREAS BUSINESSES PERFORMED ONLY 11.3 PER CENT. THE REMAINING 15.2 PER CENT WAS PERFORMED BY FEDERAL GOVERNMENT ENTITIES. DATA DOES NOT INCLUDE PROVINCIAL GOVERNMENT ENTITIES, RESEARCH ORGANIZATIONS AND THE NON-PROFIT SECTOR. (STATISTICS CANADA, 2015)

⁴ (STATISTICS CANADA, 2015)

⁵ (OECD, 2014)

This can be accomplished by enhancing collaborative efforts among PSE institutions and the private sector to create linkages between R&D and the commercialization of ideas (Figure 2). But for collaboration to be productive, Nova Scotia must become home to more businesses that are committed to R&D, and researchers at post-secondary institutions must be willing to devote time and energy to commercially relevant challenges. (Several promising new opportunities are outlined in the subsequent chapters on Going Global and Nova Scotia's Ocean Advantage.)

While the government, principally through the Department of Labour and Advanced Education, has an essential fiscal and policy role to play, the responsibility to collaborate rests with the business and PSE sectors and, in the context of commercial R&D, the lead clearly must be taken by business.

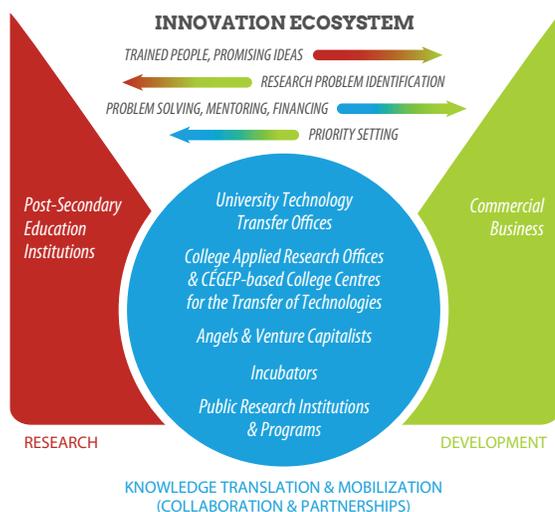


fig 2: The Innovation Ecosystem: Converting "Research" into "Innovation" (Review of Federal Support to Research and Development, 2011)

Principles for R&D Collaboration

The coalition advocates increased collaboration among PSE institutions, the private sector, and government to enhance business-led R&D and commercialization, and recommends that initiatives be based on the following principles:

- **Focus:** Focus provincial research funding on areas of greatest strategic impact for the province.

- **Leverage:** Ensure, whenever possible, that provincial research dollars leverage further funding and benefits from non-provincial sources, including the federal government and the private sector. (For example, competitively awarded federal research support often requires matching funds to be provided by, or on behalf of, successful applicants.)
- **High Quality Talent:** (1) Increase research funding to high quality graduate students who are working in relevant programs that can translate R&D into commercial products; (2) develop opportunities for undergraduate researchers to collaborate with researchers across institutions; and (3) facilitate research placements with industry through Mitacs and similar programs.
- **Global Excellence:** Build on the research excellence of Dalhousie University, Atlantic Canada's globally ranked research-intensive university, and on the research excellence in particular areas of strength within the other Nova Scotia universities.

Provincial Government Support for R&D

The coalition recommends that the provincial government increase its support of R&D, with funding focused in areas of provincial priorities and designed to provide incentives for business to increase R&D spending relevant to those priorities. This can include encouraging business-led partnerships with universities and/or NSCC. The province should, over

PROVINCIAL GOVERNMENT R&D FUNDING 2013-14 \$ PER CAPITA

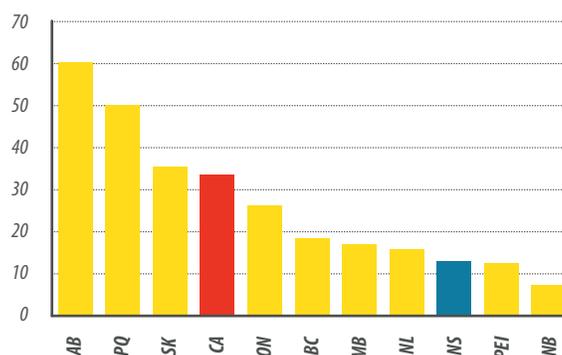


fig 3: Statistics Canada, CANSIM 358-0162 & 051-0001

time, raise its level of direct R&D support to the national per capita average. (This initiative is discussed further in the Going Global chapter.)

Elevating Dalhousie to the Global Top 200 Research Universities

Dalhousie is the only university in Atlantic Canada in the U15, the group of top research universities in Canada.⁶ This is a strong base on which to build the global reputation of Nova Scotia as a site of research excellence and, as such, a location to be considered when knowledge-based companies are considering investments and new establishments. A world-class flagship research university would bring benefits to Nova Scotia's PSE sector generally, since any enhancement of the knowledge base of the economy, or any additional attraction of highly trained people, will increase the demand for what PSEs have to offer. The coalition therefore recommends Dalhousie be broadly supported in its ambition to become ranked among the Top 200 universities in the world.

R&D EXPENDITURES BY ALL SECTORS: 2013
\$ PER CAPITA, BY FUNDING SOURCES

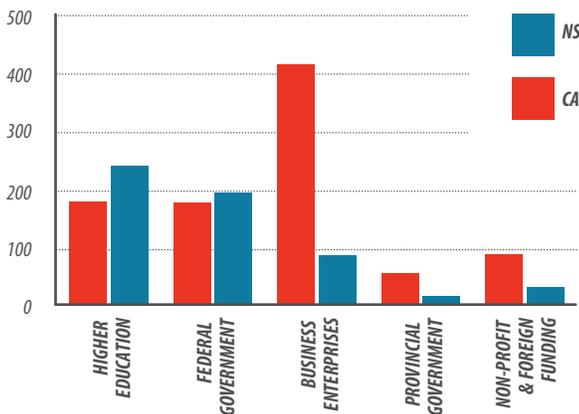


Fig 4: Statistics Canada, CANSIM 051-0001 & 358-0001

3. ENHANCING STUDENT SKILLS: CO-OPS, EXPERIENTIAL LEARNING & ENTREPRENEURSHIP

The development of an innovation economy depends ultimately on talented people who have the right knowledge, skills, and attitudes to drive the continuous improvement of performance. The good news is that Nova Scotia has long been one of Canada's premier education destinations. Our universities attract students at an impressive rate, with nearly half of the student body coming from outside the province.⁷ This influx of youth and talent can fuel the kind of workforce and R&D community that is the aspiration of jurisdictions worldwide.

Co-ops and Experiential Learning

Many university students are calling for better connections between their academic programs and the labour market. While it is certainly not expected that every program will link directly to a specific job, students should nevertheless be assisted in determining how their field of study relates to potential career paths after graduation. Co-ops and other forms of experiential learning are probably the best way to make these connections while helping to reduce youth unemployment. (This issue is examined in the preceding chapter, *Our Future is Young*.)

Through co-ops and experiential learning, students become more deeply engaged as they test their skills and knowledge in an applied setting. By providing more opportunities for students to engage in co-ops

6 (U 15 GROUP OF CANADIAN UNIVERSITIES, 2015)

7 (MARITIME PROVINCES HIGHER EDUCATION COMMISSION, 2014)

EXAMPLES OF CO-OPS & EXPERIENTIAL LEARNING

- | | |
|---|-----------------------------------|
| APPLIED RESEARCH | JOB SHADOWING |
| APPRENTICESHIPS | INTERNSHIPS & GRADUATE PLACEMENTS |
| CO-OP PROGRAMS | LABS & SIMULATIONS |
| CLINICAL EXPERIENCES | PRACTICUMS |
| EXTRACURRICULAR & COCURRICULAR ACTIVITIES | SERVICE LEARNING |
| FELLOWSHIP EXPERIENCES | STUDENT TEACHING |
| FIELD WORK | INTERNATIONAL & STUDY ABROAD |
| | VOLUNTEERING |

and experiential learning, PSE institutions will foster better linkages between students and the labour market. This has the mutual benefit of connecting students with potential future employers, and enabling businesses to benefit from work placements, while also serving as a trial period for potential hires.

Many programs offered by PSE institutions already provide options for experiential learning. Nevertheless, in view of the benefits outlined above, more options should be available to students across all post-secondary programs in Nova Scotia. To take advantage of this opportunity, PSE institutions will have to encourage employers to further engage in work-integrated learning opportunities. The coalition therefore recommends collaborative efforts among PSE institutions, the private and social enterprise sectors, and government to build connections with employers that will maximize work placements, co-ops, and other forms of experiential learning. This initiative would include the following features:

- Co-ops and experiential learning opportunities should be significantly expanded to enable Nova Scotia's PSE institutions to offer the most co-ops and experiential learning programs per student in Canada.
- All PSE students should have the opportunity to engage in experiential learning, regardless of their program or institution. Institutions will therefore have to engage the non-profit and social enterprise sectors to find ways for students to access experiential learning beyond the more technically focused activities.
- Private sector organizations, such as chambers of commerce and Regional Enterprise Networks, should champion co-ops and experiential learning, and work to maximize participation by businesses.
- The Nova Scotia Apprenticeship Agency should work with PSE institutions and the private sector to expand apprenticeship programs into new growth areas, such as ICT, to ensure apprenticeship opportunities remain closely linked to economic growth and job opportunities.
- The provincial government, through its funding of PSE institutions, should create incentives and provide support to ensure that the intended outcomes of this initiative are achieved.

SANDBOXES

Universities and the NSCC have come together to create six "sandboxes" where students, innovators, and industry can develop new ideas that could lead to businesses. Sandboxes are based on successful approaches used at the Massachusetts Institute of Technology and the University of Waterloo. The six sandboxes in Nova Scotia are:

- **Shiftkey Labs** – Focused on ICT, this sandbox is hosted by Dalhousie University's Faculty of Computer Science. It is a collaboration between Dalhousie's Faculties of Management and Computer Science, Saint Mary's University, NSCAD, NSCC, and Volta Labs.
- **Cultiv8** – Focused on agricultural innovation, this sandbox is hosted by Dalhousie's Faculty of Agriculture. Cultiv8 is a collaboration between Dalhousie, Acadia, and the NSCC.
- **Spark Zone** – Focused on business and social enterprise, this sandbox is hosted by St Mary's. SparkZone is a collaboration between Saint Mary's, Mount Saint Vincent University, NSCAD, and NSCC.
- **Island Sandbox** – Focused on clean tech and social enterprise, this sandbox is hosted at CBU's Verschuren Centre. It is a collaboration between CBU, NSCC Marconi Campus, and includes satellites at New Dawn Innovation Centre (downtown Sydney), Cape Breton Regional Library, and NSCC Strait Campus.
- **Launch Box** – Focused on developing entrepreneurs, this sandbox is hosted at Acadia University. Launch Box (Think it – Grow It – Show It) is a collaboration between Acadia, Dalhousie's Faculty of Agriculture, and a wide range of partnerships including the Acadia Entrepreneurship Centre, the Rural Innovation Centre, and Université Ste. Anne.
- **IDEA Sandbox** – Focused on providing maker space and business support to engineering students, the IDEA Sandbox involves collaboration between Dalhousie and NSCAD's Design Division.

Innovation, Creativity, and Entrepreneurship

Successful early stage start-ups are often founded by well-rounded and diverse teams of individuals from a variety of disciplinary backgrounds. By fostering an entrepreneurial culture, Nova Scotia's PSE institutions can become hotbeds of activity for start-ups, bringing students, faculty, and businesses together to share ideas and to encourage knowledge transfer. By creating environments conducive to innovation, we also would encourage young people to stay in Nova Scotia to create businesses here.

The coalition recommends that the PSE and P-12 systems collaborate with the shared goal of developing entrepreneurial talent, consistent with the frameworks identified by the OECD⁸ as international best practice. Consistent with the advice of the Innovation Team, the goal is to create a Nova Scotia entrepreneurship network, anchored in Halifax and mutually reinforced by regional sub-networks that would place the province in the top-20 global start-up communities. This initiative would include the following principal features:

- PSE institutions should ensure all students are provided an opportunity to pursue a significant experience – a course or an internship – focused

on innovation, creativity, and entrepreneurship. These experiences could be related, for example, to business, social enterprise, culture, or public service.

- PSE institutions, businesses, social-enterprises, and government should ensure there are sufficient platforms for innovation, creativity, and entrepreneurship – for example, “sandboxes,” change labs, science and technology parks, incubators and accelerators. Nova Scotia can leverage the sandboxes already created with PSE institutions by expanding into innovation or design labs in cases where the post-secondary institution and businesses have potential to compete globally. Innovation or design labs bring together a variety of stakeholders to develop a common understanding of a problem, from which participants can design solutions through multiple iterations of information collection, analysis, creative engagement, and prototyping. In order to reduce the barriers facing would-be entrepreneurs, these platforms should feature modest rents, infrastructure support and services, with the private sector providing mentoring and in-kind services.

8 (OECD, 2012)

SAMPLE LOGIC MODEL FOR MEASUREMENT AND EVALUATION *(subject to further development)*

ACTION POINT OUTCOME RELATED KPIs	TO ENHANCE NOVA SCOTIA'S UNIVERSITIES AND NSCC AS ANCHORS FOR ECONOMIC GROWTH AND INNOVATION THROUGH THEIR ROLE IN PROVIDING TALENT, R&D RESOURCES, AND SOURCES OF INNOVATIVE IDEAS TO INDUSTRIES IN THE KNOWLEDGE ECONOMY IN NOVA SCOTIA		
	PER CENT OF PSE GRADUATES FINDING APPROPRIATE PSE GRADUATE-LEVEL EMPLOYMENT IN NOVA SCOTIA		
	PER CENT OF PROVINCIAL GDP ATTRIBUTED TO OUTPUT FROM USE OF INNOVATIVE TECHNOLOGIES IN TRADITIONAL INDUSTRIES		
INITIATIVE AREAS	STRENGTHEN REGIONAL INNOVATION NETWORKS BY INCREASING LEVELS OF COLLABORATION AMONG INNOVATORS AND ENTREPRENEURS IN SUPPORT OF COMMUNITIES	INCREASE COLLABORATION BETWEEN PSE AND THE PRIVATE SECTOR TO FOSTER A KNOWLEDGE-INTENSIVE ECONOMY	STRENGTHEN NOVA SCOTIA'S HIGHLY EDUCATED AND SKILLED WORKFORCE
INITIATIVE INPUT MEASURES	# OF BUSINESSES AND PSEs PARTICIPATING IN OR CONTRIBUTING TO REGIONAL INNOVATION NETWORKS	\$ SPENT BY BUSINESS ON INDUSTRY-PSE R&D PARTNERSHIPS USE PSE R&D FUNDING TO LEVERAGE GREATER BUSINESS R&D INVESTMENT	PROPORTION OF STUDENTS FROM NS ENROLLED IN NS PSEs

04 IMMIGRATION AND WELCOMING COMMUNITIES

Nova Scotia's population is both declining and aging. Unless we are able to slow and ultimately reverse current trends, our population is projected to fall from its current level of 943,000 to 878,000 by 2040.¹ This would be accompanied by a severe reduction in our labour force, with more seniors retiring and a declining number of young people to replace them.²

A shrinking and aging population translates into a stagnant economy that becomes progressively less able to generate the tax revenue to support present levels of health care, education, and other public and social services. This is not an acceptable future for Nova Scotia.

We need to grow our population, increase our number of entrepreneurs, and renew our labour force. Having more people will lead to more business

start-ups, expanded investment, and new ways of thinking. Attracting and retaining greater numbers of international and out-of-province immigrants is critical to overcoming the economic and demographic challenges Nova Scotia faces. Other chapters in this report describe ways to create the new opportunities and welcoming attitude needed to support immigration and retention of young people and students.

¹ (STATISTICS CANADA, 2015)

² (NOVA SCOTIA OFFICE OF IMMIGRATION, 2015).

CHANGING AGE PROFILE - NOVA SCOTIA (2015-2040 NS FINANCE PROJECTIONS)

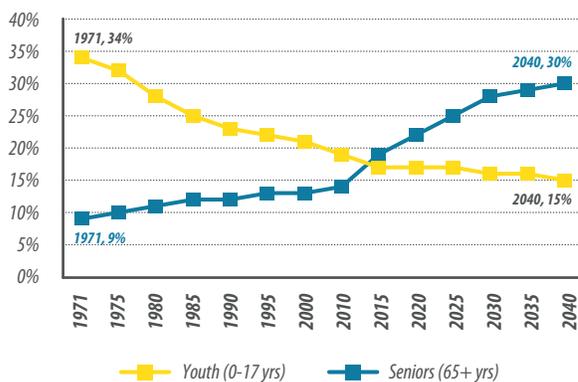


fig 1. Statistics Canada, CANSIM 051-0001; Projected Changing Age Profile, (Statistics Canada; Nova Scotia Finance and Treasury Board, 2015)

INTERNATIONAL IMMIGRANTS TO NOVA SCOTIA

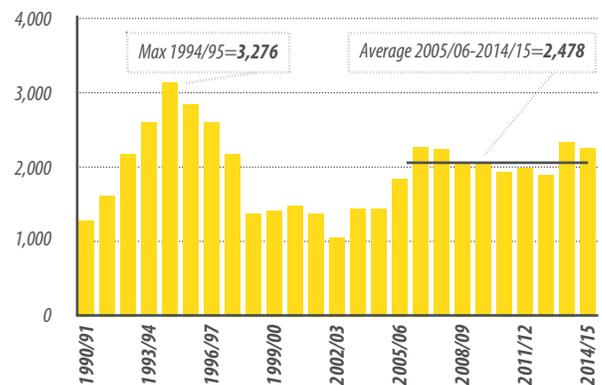


fig 2. Source: Statistics Canada 2015, Immigration in Nova Scotia, 1970-2014

	NOVA SCOTIA			MANITOBA			SASKATCHEWAN		
	2006	2014	% CHANGE	2006	2014	% CHANGE	2006	2014	% CHANGE
TOTAL POTENTIAL WORKING-AGE POPULATION (15+)	763,900	783,000	2.5%	891,900	976,400	9.5%	749,200	852,200	13.7%
BORN IN CANADA	719,400	721,700	0.3%	742,500	763,700	2.9%	697,700	742,300	6.4%
LANDED IMMIGRANTS	34,700	46,000	32.6%	136,400	195,300	43.2%	44,600	87,900	97.1%
% BORN IN CANADA	94.2%	92.2%	--	83.2%	78.2%	--	93.1%	87.1%	--
% LANDED IMMIGRANTS	4.5%	5.9%	--	15.3%	20.0%	--	6.0%	10.3%	--

fig 3. Source: Statistics Canada 2015: Comparison of Immigration Dynamics in Nova Scotia, Manitoba and Saskatchewan

Nova Scotia’s immigrant population increased by a third between 2006 and 2014, while its Canadian-born population remained roughly constant. As a result, immigrants accounted for 5.9 per cent of its adult population in 2014, compared to 4.5 per cent in 2006. This still falls far short of the national immigrant proportion of 20.6 per cent.³ Given the low birth rates in the Canadian-born segment of Nova Scotia’s population, combined with interprovincial out-migration, immigration must increase by much higher amounts to enable Nova Scotia to avoid a decrease in its adult population.

Comparison with the recent experience of Manitoba and Saskatchewan is instructive (Figure 3). Nova Scotia’s population aged 15 years and over was similar to that of the two Western provinces in 2006. Furthermore, the percentage of landed immigrants in Nova Scotia, Manitoba, and Saskatchewan was 4.5 per cent, 15.3 per cent, and 6.0 per cent, respectively, of that age group in 2006. However, by 2014, the percentage of landed immigrants had increased to 20 per cent in Manitoba, 10.3 per cent in Saskatchewan but only to 5.9 per cent in Nova Scotia. The substantial immigrant growth in Manitoba and Saskatchewan, contributed significantly to overall increases of 9.5 per cent and 13.7 per cent, respectively, in their adult population between 2006 and 2014.

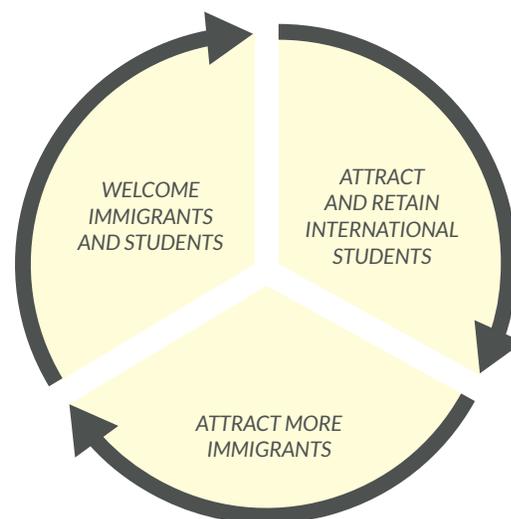
During the same period, Nova Scotia’s population increased by only 2.5 per cent. With a creative and fully committed approach to increased immigration, we can do much better.

The Plan

The Ivany Report included two specific goals in respect of immigration and international student attraction within a decade:

- With the co-operation of the federal government, Nova Scotia will be receiving annually its proportionate share (2.7 per cent) of all new international immigrants to Canada, i.e., approximately 7,000 new permanent residents per year. (The current five-year average is approximately 2,400 permanent residents per year.)
- Ten per cent of foreign students graduating from Nova Scotia post-secondary institutions will choose to become permanent residents of the province.

3 (STATISTICS CANADA, 2015)



To help achieve these goals by 2025, the coalition recommends Nova Scotia pursue an ambitious strategy to attract and retain greater numbers of international students and immigrants, based on the following objectives:

1. Increase the number of immigrants allocated for Nova Scotia by the federal government under the Provincial Nominee Program and continuously enhance the streams for eligibility
2. Build on the province's strengths in attracting and retaining out-of-province and international students
3. Ensure a welcoming environment for international students and immigrants, with help in getting settled and finding meaningful careers

1. INCREASING IMMIGRATION TO NOVA SCOTIA

Nova Scotia's history is rich with immigration stories. Like Canada itself, our province has been powerfully shaped by centuries of immigration. Attracting and retaining more immigrants will continue to push our province forward by building a more diverse economy and creating new opportunities for all Nova Scotians. Increased interprovincial immigration is also clearly an opportunity for Nova Scotia in view of the province's excellent quality of life and the prospect of increased economic opportunity that can result from the recommendations in this report.

Enhancing the Provincial Nominee Program

The Nova Scotia Nominee Program falls under the federal Economic Class of immigration. The provincial government may nominate individuals for permanent residency, provided they have the skills and experience to fill Nova Scotia's labour-market needs. There are several streams under the Nova Scotia Nominee Program that are intended to attract newcomers who wish to settle permanently in the province. They include

- **The Skilled Worker** stream, which was recently opened to international graduates, focuses on immigrants who have an offer of full-time permanent work with a Nova Scotia employer.
- **The Nova Scotia Demand: Express Entry** stream provides a faster route for skilled immigrants to enter Nova Scotia in response to labour-market

demands.

- **The Nova Scotia Experience: Express Entry** stream focuses on international graduates and other temporary foreign workers who have at least one year of experience working for a Nova Scotia employer.
- **The Immigrant Entrepreneur** stream attracts those who want to start or buy, and actively manage, a business in Nova Scotia.
- **The International Graduate Entrepreneur** stream provides an immigration opportunity for students who have graduated from a Nova Scotia university or community college and have started their own business.
- **The Family Business Worker** stream helps employers hire workers who are close relatives. They must also have the work experience and required skills for positions employers have been unable to fill with a permanent resident or Canadian citizen.

The coalition recommends that the Government of Nova Scotia work with the federal government and the business community to steadily increase the annual number of immigrants allocated to Nova Scotia by the federal government.

The provincial Office of Immigration has been making good progress in growing the nominee allocation for Nova Scotia and enhancing the immigration streams. In 2014, the nominee allocation was 700. At the beginning of 2015, the federal government agreed to a 50 per cent increase, bringing that allocation to 1,050. After demonstrating success throughout the first half of 2015, the federal government increased Nova Scotia's allocation for 2015 to 1,350, effectively doubling the 2014 level. In 2015, the Nova Scotia Demand: Express Entry, Immigrant Entrepreneur, and International Graduate Entrepreneur streams were launched, and in 2014 international students became eligible for the Skilled Worker stream.⁴

This is a clear recognition that Nova Scotians – business, government, universities, and communities – are working together to enhance immigration. It takes collaboration, clarity about the skills needed, and specific geographic targets to achieve success in increasing the number of immigrants; and it will take a welcoming community to successfully integrate these new Nova Scotians into our society.

⁴ (NOVA SCOTIA OFFICE OF IMMIGRATION, 2015)

Improving International Qualifications Recognition (IQR)

Too many immigrants who come to Nova Scotia do not stay because their professional or trade credentials are not recognized. As a small province facing a significant demographic challenge, Nova Scotia must make particular efforts to ensure that it is best-in-class in International Qualifications Recognition (IQR).

Nova Scotia's approach is founded on the *Fair Registration Practices Act*⁵ (FRPA), which compels regulatory bodies to have transparent, objective, impartial, and procedurally fair registration processes. Regarding practical matters of implementation, Nova Scotia has a Multi-stakeholder Work Group that takes a collaborative approach to complex IQR challenges. Profession-specific roundtables bring all key stakeholders together regularly for informed discussion to develop practical and sustainable solutions. There are currently 12 active working groups that encompass 19 regulated occupations.⁶ By sharing responsibility for IQR, this model has engaged partners on a consistent basis, avoided silos, and resulted in significant accomplishments.

The coalition strongly believes that Nova Scotia should be among the North American leaders in International Qualifications Recognition and endorses the collaborative approaches adopted by the Multi-stakeholder Work Group. More specifically, the coalition recommends that all new immigrants with professional credentials from their home jurisdiction be provided a fast track to allow recognition of these credentials in Nova Scotia.

2. OUT-OF-PROVINCE AND INTERNATIONAL STUDENTS

Undergraduate and graduate enrolment in Nova Scotia has remained relatively stable over the past decade.⁷ Increasing enrolment of out-of-province and international students has offset a decline in students from a shrinking provincial population of young people. Nova Scotia's universities are among the most successful in Canada in terms of the percentage (33 per cent) of students they attract from other parts of Canada.⁸ Our international student enrolment has been strongly increasing in recent years. In 2013–14, Nova Scotia's universities recruited about 7,000

UNIVERSITY STUDENTS BY ORIGIN 2013-2014

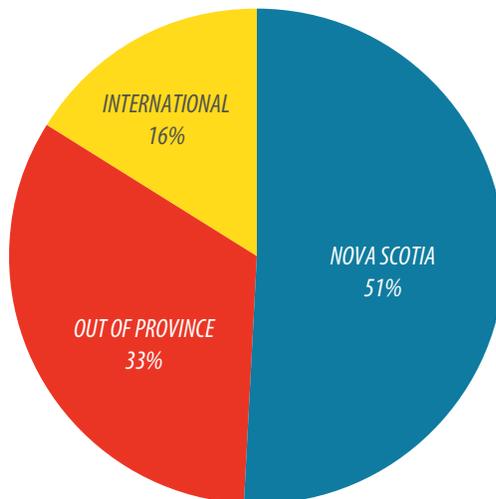


fig 4: Maritime Provinces Higher Education Commission, 2014.

international students, or 16 per cent of its full-time enrolment.

About 1,000 international students graduate from our universities each year.⁹ A 2009 report by the Maritime Provinces Higher Education Commission (MPHEC) suggested that about 20 per cent would like to stay here to find work.¹⁰ However, an estimate informed by visa applications suggests only about 5 per cent do so. Here is a case of clear opportunity that is confronted by challenges.

Student Recruitment and Retention

Nova Scotia's universities and NSCC have established an Innovation Team in collaboration with the government. The team's Student Recruitment and Retention Working Committee is developing a strategy focused on three primary priorities: recruitment, retention, and residency. These priorities are reflected in a planned pilot project that aims to recruit students from China, India, and the Philippines. The project will also support collaborative recruitment activities in the Greater Ottawa Area, with the goal of increasing the number of out-of-province students. Students recruited through the pilot project will be provided with additional supports to help them succeed. Many of these supports will be provided through eligibility for provincial programs such as the Graduate to Opportunity and the Graduate Scholarship Program.

5 (OFFICE OF THE LEGISLATIVE COUNSEL, NOVA SCOTIA HOUSE OF ASSEMBLY, 2008, BILL NO. 211)

6 THE 12 WORKING GROUPS ARE: ENGINEERS, PHARMACISTS, PHYSICIANS, LAWYERS, NURSES, DENTAL PROFESSIONALS, MEDICAL LABORATORY TECHNOLOGISTS, DIETITIANS, CONSTRUCTION ELECTRICIANS, ARCHITECTS, SOCIAL WORKERS AND TEACHERS. (INFORMATION PROVIDED BY NOVA SCOTIA DEPARTMENT OF LABOUR AND ADVANCED EDUCATION, 2015)

7 (MARITIME PROVINCES HIGHER EDUCATION COMMISSION, 2014)

8 (STUDENTS NS, 2015)

9 (MARITIME PROVINCES HIGHER EDUCATION COMMISSION, 2014)

10 (MINISTER'S POST-SECONDARY EDUCATION RESEARCH ADVISORY PANEL, 2009)

International students who feel welcome in their new community, and feel they are able to establish fulfilling careers, are more likely to stay in Nova Scotia. Over the summer of 2015, the provincial government conducted a series of Community Conversations across the province on immigration and welcoming newcomers. Many communities expressed interest in mobilizing community-led support for immigrants.

A Welcome Like No Other

Building on this base of goodwill, the coalition recommends that Nova Scotians offer out-of-province and international students “A Welcome Like No Other.” This would be a collaborative effort among post-secondary institutions, municipalities, immigrant settlement partners, and individual Nova Scotians to provide arriving students with

- a welcome at the airport
- an event that celebrates local music, food, and culture
- opportunities to connect with a Nova Scotia employer in their field of study;
- a personal experience – such as an at-home meal with a Nova Scotia family
- a subsequent mentoring opportunity in which volunteers would share experience, in a structured way, in areas related to the student’s chosen field

Existing groups like Fusion Halifax, Pulse Pictou County, Cape Breton Partnership, Halifax Partnership, and NextGen CB could play an initial role in creating welcome teams.

While universities are committed to recruiting international students, there is a programming gap in delivering settlement services. Several universities and community groups are already providing services to retain international students in the province post-graduation. Although finding meaningful career opportunities will likely be the determining factor for retaining these students, support for settlement services will also be important. If appropriate, this could extend to welcoming out-of-province students.

Ivany Report Game Changer VIII:

Becoming A More Inclusive and Welcoming Province. “Welcoming Programs have been highly successful in some communities, but need to be enthusiastically embraced throughout the province. When an immigrant family settles in a place successfully they often encourage other family members and friends to come. Having clusters of people with shared cultural backgrounds helps with attraction and retention for future immigration. Welcoming workplaces are also important. Employer organizations need to be more active in encouraging their members to make sure of available tools for international credential recognition, assessment of occupational competencies, and recognition of prior learning. Having effective employee engagement programs and implementing harassment-free workplace policies are also essential steps.”

(The Ivany Report , 2014, p. 59)

3. A WELCOMING PROVINCE AND WORKFORCE ATTACHMENT

Nova Scotia has an advantage in attracting immigrants owing to an excellent quality of life based on the 5Cs – culture, creativity, community, charm, and character, described in the Going Global chapter. Attracting immigrants is only half of the story; the second challenge is retaining those who come.

Fortunately, Nova Scotia’s immigrant retention rate has been improving over the years. Considering those immigrants who landed between 5 and 10 years ago in Nova Scotia, retention in 2012 was 58 per cent of those who arrived between 2002 and 2007—significantly greater than the 30 per cent retention in 2001.¹¹

The Ivany Report commissioned survey research that found Nova Scotians, particularly in rural areas, are less welcoming of international immigrants than of those who move to the province from other parts of Canada.¹² If we are to increase immigration and retention, Nova Scotians will have to be more welcoming to newcomers and embrace their skills, diverse experiences, and entrepreneurial energy.

11 RETENTION RATES ARE CALCULATED AS THE PERCENTAGE OF IMMIGRANTS STILL RESIDENT IN THE PROVINCE THEY LANDED IN. (STATISTICS CANADA, 2015)

12 (THE IVANY REPORT, 2014)

Welcoming Communities

The challenges faced by new Nova Scotians are varied and complex and must be addressed before immigration can fulfill its potential to contribute to Nova Scotia's economic turnaround.¹³ Addressing these challenges through a warm welcome is one approach that is particularly important in small communities where limited access to resources make it difficult for new families to adjust.

Welcoming communities share a collective commitment to foster a culture of inclusiveness where newcomers feel that they belong and that their skills are being utilized.¹⁴ Communities across Canada have begun to create welcoming strategies where businesses, educational institutions, not-for-profit organizations and governments come together to create Local Immigration Partnerships (LIPs). Typically LIPs, which are supported by the federal government, form coordinating councils to develop local settlement strategies and targeted action plans. By integrating the needs of newcomers within community planning processes,¹⁵ LIPs represent an effective tool to help to build welcoming communities.

The coalition recommends the following actions to enhance Nova Scotia's welcome:

- Undertake a community and business led "Collective Impact" initiative, via Local Immigration Partnerships, to make immigrants feel more welcome both within communities and at work. It should have the structure and resources needed to support long-term effort.
- Gather evidence (using volunteer agencies and/or regional enterprise networks) to determine how welcoming a community is to newcomers. (The First Impressions Community Exchange in Ontario provides a model that exemplifies the benefit of this approach and how it could be undertaken.)

Settlement Services

Although Halifax is the primary destination for immigrants to Nova Scotia, almost a quarter settle in smaller communities across the province.¹⁶ Provision of settlement services in these communities can be challenging as these services generally serve the Halifax area. In 2014, the provincial Office of Immigration launched an integrated approach to delivering settlement services across the province. This approach encourages partnerships between

THE HALIFAX CONNECTOR PROGRAM

The Halifax Connector Program is a simple but effective referral process that helps immigrants, international students and young and emerging talent build a professional network, and connect with job opportunities to help them settle successfully in Halifax. Local immigrant-serving organizations and post-secondary career centres refer employment-ready participants to the program. The program assists participants in tapping into existing business networks and local businesspeople and government leaders (known as Connectors) who are willing to share their professional networks. Since the program was originally developed, it has assisted over 1,300 participants and witnessed a third of those participants become employed in Nova Scotia (Halifax Partnership, 2015).

existing service providers, such as Immigrant Services Association of Nova Scotia and the YMCA, and uses existing government infrastructure at the Careers Nova Scotia Centres. This work should continue and improvements continually sought to ensure services are provided where newcomers need them.

Connecting and Mentoring

There is a need for greater employer engagement in the recruitment and retention of immigrants. Currently, there is a gap in matching services for immigrants, international students, and businesses when meeting labour market needs.¹⁷ While government has made strides in this area through strong partnerships with chambers of commerce, industry organizations, and employers, more needs to be done to mobilize private sector leadership of the type exemplified by the Halifax Partnership's Connector Program.

The coalition recommends that connector programs be expanded across the province, creating a network of retention specialists. This model is scalable and has already had proven results in Nova Scotia.

Immigrant Entrepreneurship

Because immigrants have been prepared to pull up stakes in search of better opportunity, disproportionate numbers are likely to be risk takers

¹³ (UNION OF NOVA SCOTIA MUNICIPALITIES; NOVA SCOTIA ASSOCIATION OF REGIONAL DEVELOPMENT AUTHORITIES; NOVA SCOTIA CHAMBERS OF COMMERCE, 2011)

¹⁴ (UNION OF NOVA SCOTIA MUNICIPALITIES; NOVA SCOTIA ASSOCIATION OF REGIONAL DEVELOPMENT AUTHORITIES; NOVA SCOTIA CHAMBERS OF COMMERCE, 2011)

¹⁵ (CITIZENSHIP AND IMMIGRATION CANADA, 2013)

¹⁶ (STATISTICS CANADA, 2015)

¹⁷ (UNION OF NOVA SCOTIA MUNICIPALITIES; NOVA SCOTIA ASSOCIATION OF REGIONAL DEVELOPMENT AUTHORITIES; NOVA SCOTIA CHAMBERS OF COMMERCE, 2011)

and innovators. That is a key reason why immigration can be such a powerful economic stimulant. There are also opportunities for immigrant entrepreneurs to acquire small businesses as part of succession planning from business owners, including small farms.

Innovacorp has been designated as an organization that can recommend entrepreneurs to receive a work visa from Citizenship and Immigration Canada under the federal government’s new five-year pilot Start-Up Visa Program. The program is intended to attract entrepreneurs from other countries that want to establish businesses with high-growth potential in Canada. The coalition recommends the provincial government encourage and support immigrant entrepreneurs, whether as part of founding start-ups or by acquiring Nova Scotia businesses.

SAMPLE LOGIC MODEL FOR MEASUREMENT AND EVALUATION *(subject to further development)*

ACTION POINT OUTCOME RELATED KPIs	<p>TO ATTRACT AND RETAIN GREATER NUMBERS OF INTERNATIONAL STUDENTS AND IMMIGRANTS</p> <p>PROGRESS TOWARD AVERAGING A NET GAIN OF 1,000 WORKING-AGE PERSONS PER YEAR</p> <p>PROGRESS TOWARD RECEIVING ANNUALLY NOVA SCOTIA'S PROPORTIONATE SHARE (2.7 PER CENT) OF ALL NEW INTERNATIONAL IMMIGRANTS TO CANADA, I.E., APPROXIMATELY 7,000 NEW PERMANENT RESIDENTS PER YEAR (THE CURRENT 5-YEAR AVERAGE IS 2,400 PER YEAR).</p> <p>10 PER CENT OF FOREIGN STUDENTS GRADUATING FROM NOVA SCOTIA UNIVERSITIES, THE NSCC, AND OTHER EDUCATION AND TRAINING BODIES WILL CHOOSE TO BECOME PERMANENT RESIDENTS OF THE PROVINCE</p>
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INITIATIVE AREAS	INCREASING IMMIGRATION TO NOVA SCOTIA	OUT-OF-PROVINCE AND INTERNATIONAL STUDENTS	A WELCOMING PROVINCE AND WORKFORCE ATTACHMENT
INITIATIVE INPUT MEASURES	<p>CONTINUED INCREASES IN NOMINEE ALLOCATIONS IN PROVINCIAL NOMINEE PROGRAM</p> <p>REDUCED PROCESSING TIMES FOR RECOGNITION / APPROVAL OF PROFESSIONAL CREDENTIALS FROM FOREIGN JURISDICTIONS</p>	<p>LAUNCH AND GROWTH OF STUDENT RETENTION PROGRAMS INCLUDING THOSE IN DEVELOPMENT WITH THE NS UNIVERSITIES AND NSCC INNOVATION TEAM</p> <p>DEVELOPMENT AND LAUNCH OF "A WELCOME LIKE NO OTHER PROGRAM"</p>	<p>DEVELOPMENT AND LAUNCH OF "A WELCOME LIKE NO OTHER PROGRAM"</p> <p>CONTINUED REFINEMENT OF SETTLEMENT SERVICES APPROACHES</p> <p>EXPANSION OF CONNECTOR, CO-OP AND MENTORING PROGRAMS</p> <p>CONTINUED UPTAKE OF THE START-UP VISA PROGRAM</p>

05 OUR ICT MOMENTUM

Information and communications technology (ICT) is the main driver of economic and social change in the world today. ICT is a “general-purpose technology”, transforming everything it touches by virtue of the fact that it amplifies the human mind and does so more powerfully and cheaply with every passing year. Its technological limits are still nowhere in sight.

The exponentially increasing power of ICT is reflected in growth statistics that are without precedent for any previous technology. As Figure 1 below shows, between 1995 and 2014, the number of Internet users globally grew 80-fold from 35 million to 2.8 billion,¹ or to almost 40 per cent of the world’s population.² Mobile phone penetration has been even more spectacular – from 80 million users to more than 5.2 billion in just two decades³.

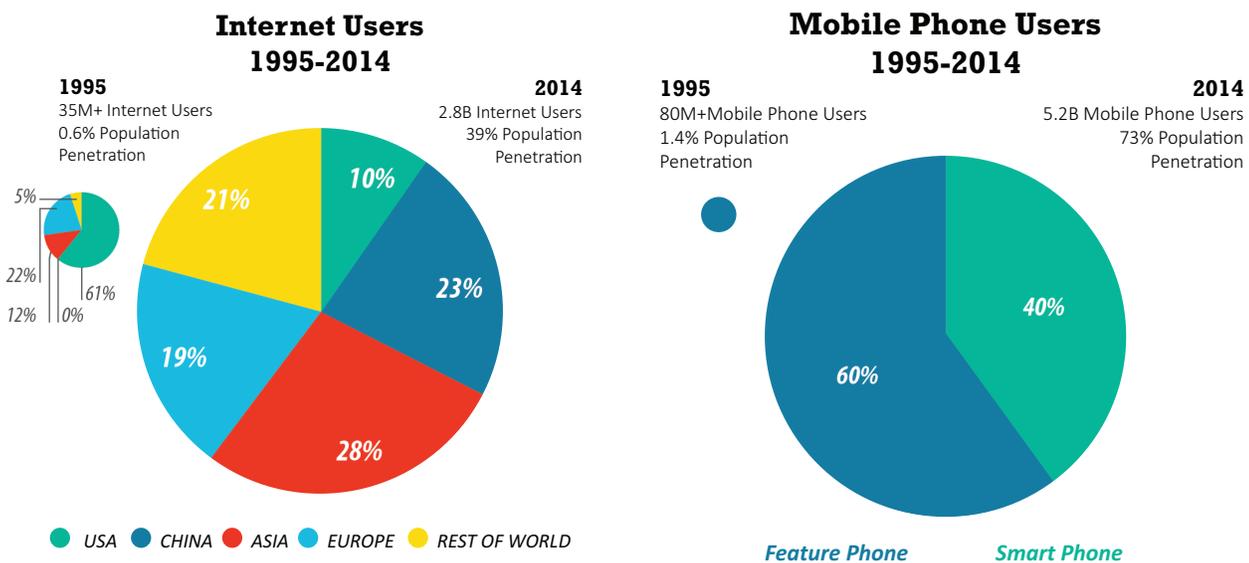


fig 1: Global Internet Users in 1995 Compared to 2014 (Kleiner Perkins Caufield & Byers, 2014)

fig 2: (Kleiner Perkins Caufield & Byers, 2014)

1 (KLEINER PERKINS CAUFIELD & BYERS, 2014)

2 (US CENSUS BUREAU, 2015)

3 (KLEINER PERKINS CAUFIELD & BYERS, 2014)

From an economic perspective, it is important to distinguish between (i) ICT as an industry in its own right – production of hardware, software, “apps,” and services, and (ii) ICT as an enabler of either more efficient processes or entirely new capabilities in virtually every business and other human activity. The enabling power of ICT is actually the more economically significant, since most of the value of ICT derives from its diffusion and adoption throughout society.

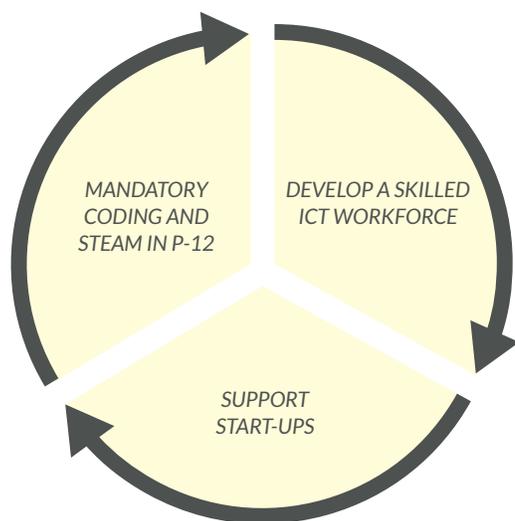
The pervasiveness and seemingly unlimited growth prospects of information and communication technologies imply that competence in ICT production and application are “table stakes” in today’s economy.

How is Nova Scotia doing? The story is mixed but with growing momentum:

- The ICT industry in the province contributes 8.2 per cent of business sector GDP compared to 7.7 per cent nationally.⁴
- Nova Scotia has spawned a very impressive ICT start-up community. In the Banham Group’s 2015 list of the top 25 Canadian up-and-coming ICT start-ups, Nova Scotia was first on a per capita basis and second overall. Many of these are based at the Volta Labs incubator in Halifax.⁵
- Two global corporations (IBM and EY) have recently established advanced data analytics operations in Halifax.
- Homegrown sectors – including shipbuilding and aquaculture, among many others – are poised to multiply their growth opportunities through ICT applications.

4 OVER THE PAST DECADE, THE SECTOR GREW BY 20 PER CENT AND WAS AMONG NOVA SCOTIA’S FASTEST GROWING SECTORS. THE SECTOR HAS ALSO ACCOUNTED THE LARGEST PORTION OF THE PROVINCE’S TECHNOLOGY START-UPS AND VENTURE CAPITAL INVESTMENT IN RECENT YEARS.” (NOVA SCOTIA DEPARTMENT OF BUSINESS, 2015)

5 (BRANDHAM GROUP INC., 2015)



* STEAM - Science, Technology, Engineering, Arts, Mathematics

The ONE Nova Scotia coalition recommends Nova Scotia build on its ICT momentum by focusing in three areas:

1. Coding instruction and STEAM* in grades P-12.
2. Development of a skilled ICT workforce.
3. Support for ICT start-ups.

1. CODING INSTRUCTION AND STEAM IN GRADES P-12

The coalition recommends that the provincial government require instruction in computer coding and related skills as a foundational component of the P-12 curriculum.

An ability to creatively employ the growing power and versatility of ICT will become part of tomorrow’s definition of basic literacy, joining the traditional foundational skills of reading, writing, and arithmetic. Compulsory coding instruction already exists in a growing number of jurisdictions such as the United Kingdom, Finland and Chicago (see the U.K. model on page 48). The coalition is convinced that coding instruction, combined with a deeper understanding of computers and their effective use, should begin in grade primary, continuing each year through graduation.

An investment to make coding skills universal will eventually help to make Nova Scotia a location of choice for businesses and, even more importantly, will “future proof” our young people by equipping them with superior skills in the literacy of the 21st century. Most ICT curricula today focus only on basic applications such as using word processing software, image manipulation, or creating Power Point presentations. While it is important for students to learn how to use mainstream software, greater insight is required to be able to exploit the limitless creative potential of the technology.

Implementing instruction in coding and related skills in P-12 would teach students

- analytical abilities – to think systematically in order to break down complex issues into their basic components and logical interconnections, which are essential skills in today’s technology-intensive economy
- creativity – the ability to code programs creates boundless opportunity to create new content such as games, animations, models and simulations

- collaboration and teamwork – students creating a video game, for example, can divide the work and collaborate, so that one might develop character movement, another the visual and environment, and another the narrative and logical structure. Coding projects are among the most effective ways to foster the development of collaboration and teamwork skills.

In Canada, the movement to teach students to code has been gaining momentum at the local level. Still, no province has implemented mandatory coding classes for P-12 students and most initiatives are maintained through non-profits. For example, the Ottawa Network for Education⁶ implemented a coding program called TechU.me designed to pair Grade 10 and Grade 3 students. Similar initiatives are underway in other jurisdictions including Waterloo, Ontario. Cross-Canada programs such as Code.org⁷ provide resources to bring computer sciences and coding to public schools, including professional development programs for teachers and curriculum

materials. Other national programs, such as ‘Kids Learning Code’,⁸ provide after school workshops and camps.

The coding movement in Canada is still only in the beginning stages. Therefore, Nova Scotia has a window of opportunity to be a leader, thus better equipping our young people for the future, while at the same time establishing a superior skills base for tomorrow’s economy.

Education for the New Economy

The importance of coding in the curriculum will help Nova Scotia build an ICT advantage, but it is not sufficient by itself to drive economic growth. The education system as a whole must be strong. Several studies have linked higher education test scores with higher economic growth rates.⁹ Put simply, an educated population is almost always a prosperous one. Studies have also suggested that math and science education provide a more direct measure of a country’s human capital and cognitive skills, and have a significant impact on economic growth rates.¹⁰ Math and science education is particularly important in the knowledge-based economy because the so-called STEM sector

6 (OTTAWA NETWORK FOR EDUCATION, 2015)

7 (CODE.ORG., 2015)

8 (LADIES LEARNING CODE, 2015)

9 (HANUSHEK & WOESSMANN, 2010)

10 (OECD PROGRAMME FOR INTERNATIONAL STUDENT ASSESSMENT, 2010)

PROGRAM FOR INTERNATIONAL STUDENT ASSESSMENT COMPOSITE MATHEMATICS RESULTS: 2012



PROGRAM FOR INTERNATIONAL STUDENT ASSESSMENT COMPOSITE SCIENCE RESULTS: 2012

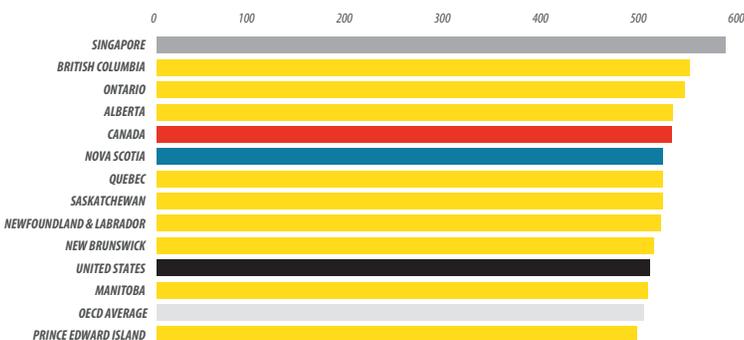


fig 3: Brochu, Pierre, Marie- Anne Deussing, Koffi Houme and Maria Choy. *Measuring Up: Canadian Results of the OECD PISA Study, the Performance of Canada’s Youth in Mathematics, Reading and Science, 2012 First Results for Canadians Aged 15.* Council of Ministers of Education, Canada. 2013.

CODING AND COMPUTER PROGRAMMING CURRICULUM IN THE UNITED KINGDOM

The United Kingdom's Department of Education is working in partnership with ICT companies to revamp its computer education curriculum to include mandatory coding and computer programming in all P-12 schools. Designed to equip students with transferrable logic and problem-solving skills and to close the skills gap between the number of ICT jobs available and the number of people qualified to fill them, the Department of Education strives to teach students "not just how to work a computer, but how a computer can work for them" through a curriculum that is divided into four key stages. In Key Stage 1, students aged 5 to 6 learn what algorithms are and begin to use devices to create, organize, store, manipulate and retrieve their own digital content. As they reach the ages of 7 to 11, primary students expand upon their logical reasoning skills by creating and debugging programs and learning how to use websites. Key Stage 3 builds upon this foundation by teaching middle school students Boolean logic, how to work with binary numbers and how to use programming languages to create their own programs. Key Stage 4 provides high school students with opportunities to study aspects of information technology and computer science in depth, allowing them to progress to higher education and a professional career in the ICT sector. The new curriculum was incorporated in 2014 and students have responded positively to it and have begun to see the practical use of learning these new skills.

(science, technology, engineering, and math) plays a significant role in economic growth and associated job creation.

Nova Scotia maintains a strong overall education system, but is below the national average in math and science skills on the Pan-Canadian Assessment Program (PCAP) and Program for International Student Assessment (PISA) tests.¹¹ (Figure 4) Enhancing math and science skills at the P-12 level would help young Nova Scotians develop the fundamental capabilities needed to work in STEM-related fields and encourage more students to pursue post-secondary degrees in the STEM subjects. This would help to ensure that Nova Scotia will have the

human capital required to participate and attract businesses in the growing STEM-intensive sectors. The coalition therefore recommends a significant focus on P-12 math and science skills, with an aim to place in the top quartile in Canada.

It is emphasized that STEM and coding instruction must be complemented by wide-ranging skills such as critical thinking, creativity, innovation, and entrepreneurship. This truth is reflected in an evolution of STEM to "STEAM", as "A" for Arts has been added to the acronym. Students today must be equipped to think critically, collaborate with others, and apply existing concepts to problems in creative ways. Critical thinking, creativity, innovation and entrepreneurship can be taught throughout a wide range of disciplines, including math, science, social studies, literature, computer programming and the arts. The coalition recommends that Nova Scotia's P-12 education system adapt current curricula and teaching strategies to equip students with the capacity to learn, create, innovate, and apply new skills throughout their lives. Education that develops critical thinking, creativity, innovation and entrepreneurship would provide Nova Scotia with a powerful competitive advantage in the global economy.

¹¹ THE PCAP AND PISA TESTS ARE DESIGNED TO TEST THE QUALITY OF EDUCATIONAL CONTENT BEING PROVIDED TO CHILDREN AT THE NATIONAL AND INTERNATIONAL LEVELS RESPECTIVELY (NOVA SCOTIA SCHOOL BOARDS' ASSOCIATION, 2012).

COMPUTER JOB DEMAND IS OUT-STRIPPING SUPPLY

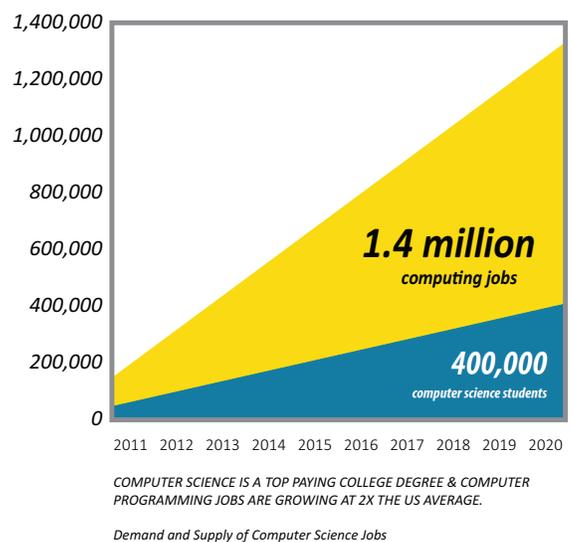


fig 4: Demand and Supply of Computer Science Jobs (Code.org, 2015)

2. DEVELOPMENT OF A SKILLED ICT WORKFORCE

The growing economic impact of ICT is generating a corresponding requirement for an exceptionally broad range of skills ranging from the advanced post-graduate level to technical and sales professionals. That is why Nova Scotia's universities and NSCC need to develop programs to keep our workforce at the leading edge and to accept the "hand-off" from the grade school system which, once mandatory coding is implemented, will generate greatly increased demand for advanced training across the spectrum of ICT disciplines. This implies the need for co-ordination between the provincial departments of Education and Early Childhood Development (responsible for P-12) and Labour and Advanced Education (responsible for provincial funding and policies regarding PSE institutions).

ICT Talent Development

The demand for professionals within the ICT sector itself is growing rapidly while specialized computer skills are also in great demand in finance, manufacturing, and professional services – in fact, in virtually all sectors, including government, education, and health care. Despite the burgeoning opportunities, the supply of more sophisticated skills has not been growing to match the increased demand. It must be emphasized that a four-year degree in computer science is by no means the only entry point to an ICT career. We need a balanced mix of those trained to a high level in theory, and to a high level with hands-on skills.

Successful ICT education and skills development will

- provide start-ups with a local supply of the skilled workers required to grow rapidly
- build a highly-qualified talent base to support the growth of existing enterprises and to attract investment to Nova Scotia
- create new opportunities to increase the workforce participation of under-represented groups and new immigrants.

The coalition therefore recommends that post-secondary education institutions support a talent development strategy that encompasses at least the following features:

- Universities and NSCC should expand and enhance ICT programs at the undergraduate and graduate level, although the pace of expansion will be governed by the extent of student preparedness to enroll in degree programs in ICT fields.
- Teacher training specialties in the ICT disciplines must be provided in order to implement the universal coding instruction in P-12 and a broader and deeper curriculum of ICT-relevant education in Nova Scotia's schools.
- One or more universities or the NSCC should develop a high-quality, 6-to-12-month program for ICT and computer science. This program would be designed to facilitate career change or to add ICT skills to an existing career. The one-year UIT immersion program offered in collaboration with Cape Breton University is a good example.¹² Such programs should be complemented with a range of shorter, less formal training such as coding boot camps, and continuing professional development short courses that are particularly necessary in this fast-evolving field.

THE ICT SANDBOX

University "sandboxes", modeled after successful initiatives at the Massachusetts Institute of Technology (MIT) and the University of Waterloo, create environments where student innovators and industry can develop new ideas that could become commercial. ShiftKey Labs, a joint initiative of Dalhousie University, Saint Mary's University, the NSCAD University, the Nova Scotia Community College, and Volta Labs, is an ICT sandbox. It offers a broad mix of resources and supports, including free space, for students who want to experiment with and develop ICT start-up ideas. (Shiftkey Labs, 2015).

¹² (UIT STARTUP IMMERSION, 2015)

- Post-secondary education institutions and the private sector should develop co-op programs for students in ICT-related fields. (Refer also to the chapter on Universities and NSCC as Innovation Hubs.) The Nova Scotia Apprenticeship Agency¹³ is well placed to work with NSCC and the private sector to develop a computer science and ICT-apprenticeship program. There are many successful prototypes to emulate such as those in Germany, the U.S., the U.K., and Australia.
- Post-secondary education institutions, incubators, and accelerators should develop diploma programs for sales skills in technology and in the use of technology to increase sales across all industries.

3. SUPPORT FOR ICT START-UPS

High-growth start-ups are the primary ICT job and wealth creators. Numerous studies show that they have contributed almost all net-new ICT-related employment over several decades.¹⁴ Nova Scotia's growing ICT start-up community is an under-recognized strength and a high potential base to be expanded.

Two goals set out in the Ivany Report were to increase the annual number of start-ups by 50 per cent and reach or exceed the national per capita level of seed and venture investment by 2025. It can

¹³ (PROVINCE OF NOVA SCOTIA, 2014)

¹⁴ (KANE, 2010)

25 UP-AND-COMING ICT STARTUPS

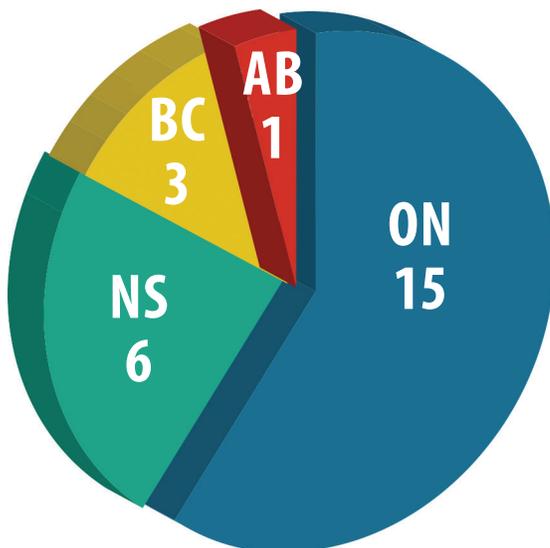


fig 5: Banham Group, 2015 list of top ICT start-ups in Canada.

EQUITY TAX CREDIT

The Ivany Report, Savoie Report, the Broten Report and the Duruflé Report each identified the opportunity for Nova Scotia to enhance its equity tax credit (ETC) to support investment in start-ups. The ETC should be designed to be revenue-neutral by focusing on high growth, innovative companies in growth sectors – i.e. companies that are expected to eventually pay taxes sufficient to at least make up for the cost of the ETC. Nova Scotia should work collaboratively with other Atlantic Canadian provinces to make the ETC reciprocal to investors from those provinces, with the aim of benefitting the ICT startup ecosystem more broadly. Investor eligibility for the ETC should also be expanded to include corporations, trusts and Limited Partnerships and preference shares and convertible debentures should become eligible investments.

(Savoie, 2010), (Broten, 2014), (Duruflé, 2014) (The ONE Nova Scotia Commission for Building our Economy, 2013)

be expected that successful efforts to promote and facilitate ICT-related start-ups would contribute significantly to both of these goals.

The ONE Nova Scotia coalition recommends that Nova Scotia foster a vibrant start-up community by:

- focusing provincial government support for access to capital via indirect mechanisms that leverage private sector investment in high growth start-ups;
- enhancing support for “sandboxes,” incubators, and accelerators to increase the chances that a start-up will succeed; and,
- developing a global approach to start-ups.

The following are the coalition's specific recommendations in respect of these three broad initiatives.

Provincial Support for Access to Capital

The early stages of business growth depend critically on adequate flow of investment funding to support enterprises until sufficient sales revenue materializes. For a variety of reasons, governments have rarely been successful in making direct investments in start-up companies. Public sector

venture capital has been more effective through indirect mechanisms, such as fund-of-funds or co-investment programs that leverage private sector investment and management expertise.¹⁵

The coalition recommends that the provincial government encourage and complement increased private-sector early-stage capital through the following approaches:

- Enhance the equity tax credit (ETC) to leverage private-sector seed investment, while seeking regional harmonization and reciprocal treatment among other Maritime (or Atlantic) provinces.
- Develop a private sector-led early stage venture capital fund to complement the private sector-led venture capital already established through Build Ventures.¹⁶
- Adopt a co-investment approach for seed and venture capital, with approved angel or seed investment groups and venture capital funds.
- Require, as a condition of government financing, that there be coordination with mentorship, incubator and/or accelerator support.

There is particular value when the investor's money comes bundled with management and mentoring – so-called “smart money.” Business founders benefit enormously through mentorship or proximity with other entrepreneurs. Therefore, angel and venture programs should have specific mentoring programs embedded such as the new Scale Up Ventures Fund in Ontario,¹⁷ which matches start-ups with mentors who are already successful entrepreneurs and business leaders.

One prototype that has largely met its goals, at least to date, is the New Zealand Co-Investment Fund. This program was designed to encourage early stage seed capital funds through the use of matching public sector funds to direct broadly where investments should go.

Incubators, Accelerators, and Sandboxes

The coalition recommends that the provincial government support ICT graduates in starting their own business through at least the following mechanisms:

- Locating Volta Labs and related partners at the former Halifax Library on Spring Garden Road, which will be a central magnet for entrepreneurs and students as well as for local, national, and

global companies seeking the benefits of a dynamic innovation community.

- Expanding support for “sandboxes” following evaluation (based on standard metrics) of the six pilots that have already been established at PSE institutions.
- increasing support for incubation/accelerator facilities (e.g., Innovacorp, Volta, Holy Angels) to provide space and mentorship for the anticipated growth in the number of entrepreneurs starting ICT companies. (This is a good example of ecosystem-based policy since the intended growth in start-ups cannot be separated from expansion of the supporting infrastructure. A system perspective is required.)

NEW ZEALAND CO-INVESTMENT FUND

The New Zealand Co-investment Fund is aimed at early stage businesses with strong growth potential. The Fund provides matched investment alongside selected Seed co-investment partners on a 1:1 basis. The key objectives are to stimulate investment in innovative start-up companies, and to increase capacity in the market for matching experienced angel investors with these start-ups. The fund commenced in July 2005, and by the end of 2014 it had invested over NZ\$130 million in 167 companies (New Zealand Venture Investment Fund Limited, 2014).

ISRAEL'S YOZMA PROGRAM

Israel has one of the most active venture capital (VC) networks in the world. In 1991, Israel had almost nothing in the way of venture capital. Today, it has a host of local VC funds that together invest nearly twice as much per capita as those in the United States. While the U.S. might lead the world in venture capital investments in absolute amounts, Israel has surpassed it relative to the size of its economy. The Yozma program (started in 1993) is often credited with initiating the VC industry in Israel. It provided tax incentives for foreign VC investments, and the fund was used to match investments. This provided a mechanism of due-diligence for the investments since professional VCs had vetted the firms. Yozma was also used to invest in existing domestic VC funds to help support the new industry (Sorenson, 2012).

15 THE RECENT DURUFLÉ REPORT, FUELING ENTREPRENEURSHIP & INNOVATION: A REVIEW OF THE NOVA SCOTIA GOVERNMENT'S ROLE IN VENTURE CAPITAL PROVISION (DURUFLÉ, 2014), OUTLINES THE CASE FOR GOVERNMENT INTERVENTION TO SUPPORT THE ANGEL AND VENTURE CAPITAL INDUSTRY, AND SUPPORTING INCUBATORS AND ACCELERATORS.

16 (BUILD VENTURES, 2015)

17 (GOVERNMENT OF ONTARIO, 2015)

WATERLOO'S COMMUNITECH

As home to over 50 technology start-up companies, Communitech, has become the key centre for the innovation community in Waterloo, Ontario. Communitech is a “digital media and mobile” accelerator and provides an attractive location for entrepreneurs, companies and academic institutions to interact in a 2,800 square-metre, state-of-the-art space. The Hub has representatives from some of the larger firms in the region, including Google, BlackBerry, Open Text, Christie and Agfa. Through a wide range of programs administered by Communitech, the mission is to build global digital media companies by mentoring tenant start-ups, creating linkages with more established companies in the region, and helping secure financing for digital media ideas. The facility has space to accommodate more than 100 start-ups and Communitech is already working with more than 200 young firms in the region through its executive-in-residence program and mentoring activities. The Hub also contains separate facilities to house students from the University of Waterloo’s VeloCity program (its entrepreneurial residence program) side by side with the other companies being incubated in the facility. (City of Kitchener, 2014; Communitech Corporation, 2025; University of Waterloo, 2015)

VOLTA LABS

Volta Labs, in operation in Halifax since May 2013, provides world-class mentorship and support to new and potential entrepreneurs in the ICT industry. It is based on the Communitech model and the CEO of Communitech is a board member. Volta encourages the establishment of new start-ups, fosters growth and maturity in existing start-ups, and develops community-driven education and support frameworks. Volta offers selected entrepreneurs the infrastructure required to create a start-up, such as subsidized office space, Internet access, and pro bono legal and accounting advice. It has already hosted a number of successes and is seen as a key catalyst in the province’s growing ICT sector. In the first year of operations, Volta hosted 18 start-ups that raised more than \$12.8-million in financing and created more than 80 jobs. (Casey, 2014)

This initiative needs to be bold to have impact. Success will depend on achieving significant start-up density in order to trigger a self-reinforcing “cluster dynamic” to maximize the benefits co-location or close proximity

Attracting Early-stage ICT Companies to Nova Scotia

Some start-ups that began in larger ICT centres have recently located their computer programming and related operations in Nova Scotia. By implementing the initiatives described earlier (Development of a Skilled ICT Workforce) Nova Scotia can leverage this trend through an investment-attraction strategy focused on ICT start-ups. The coalition therefore recommends that Nova Scotia Buisness Inc. (NSBI) and Innovacorp collaborate with the Atlantic Canada Opportunities Agency (ACOA) to

- develop relationships with out-of-province incubators/accelerators and venture capital firms, particularly in high-cost markets such as Boston, New York, and Toronto, whose start-up clients are experiencing difficulty finding the ICT talent they need to grow; business development programs need to be designed to make it easy for that specific segment of companies to locate in Nova Scotia
- build on the success of Innovacorp’s Cleantech Open and launch an international “ICT Open” competition to find and fund high-potential, early-stage ICT companies willing to relocate operations in Nova Scotia.

Young start-ups are often acquired by global players. This is not seen as a long-term strategy for growth, but in the early years of a start-up community it is a crucial benchmark for success and reputation-building and can lead to massive influxes of capital. The coalition recommends NSBI create a “growth squad” to work with companies that might be considering ICT-related acquisitions in order to identify the companies’ growth targets and needs and, on that basis, to develop a plan to support their acquisition objectives.

SAMPLE LOGIC MODEL FOR MEASUREMENT AND EVALUATION *(subject to further development)*

ACTION POINT	TO ESTABLISH A THRIVING ICT AND TECH START-UP ECONOMY IN NOVA SCOTIA WITH A SKILLED ICT WORKFORCE AND A VIBRANT START-UP ECOSYSTEM TO SUPPORT ITS GROWTH AND PROSPERITY		
OUTCOME RELATED KPIs	ICT AND TECH START-UP ACTIVITY AS A PERCENTAGE OF PROVINCIAL GDP PER CENT OF WORKFORCE EMPLOYED IN ICT OR TECH START-UPS SKILL / EDUCATION LEVEL OF THIS WORKFORCE		
INITIATIVE AREAS	MANDATORY CODING IN P-12 SCHOOLS	DEVELOPING A SKILLED ICT WORKFORCE	SUPPORTING ICT START-UPS
INITIATIVE INPUT MEASURES	PROPORTION OF SCHOOLS OFFERING CODING AS PART OF THE CURRICULUM PROPORTION OF STUDENTS TAKING CODING OPTIONS	PROPORTION OF EDUCATION AND TRAINING EXPERIENCES THAT ARE DELIVERED IN CONJUNCTION WITH INDUSTRY / EMPLOYERS PROPORTION OF THOSE IN TRAINING OR FURTHER EDUCATION ENROLLED IN THESE EXPERIENCES	# OR VALUE OF SUPPORT MECHANISMS (E.G. # OF INCUBATOR SPACES, \$ OF INVESTMENT, ETC) AVAILABLE TO ICT START-UPS # OF ICT START-UPS AVAILING THEMSELVES OF THESE MECHANISMS
INITIATIVE OUTPUT MEASURES	INCREASED PROPORTION OF SCHOOLS OFFERING CODING AS PART OF THE CURRICULUM INCREASED PROPORTION OF HIGH SCHOOL GRADUATES WHOSE DIPLOMA-LEVEL COURSES INCLUDE CODING	INCREASED DIVERSITY OF EDUCATION AND TRAINING EXPERIENCES, MATCHED TO VARIETY OF ROLES AND CAREERS IN ICT INCREASED PROPORTION OF WORKING AGE POPULATION, BY DEMOGRAPHIC, WITH RELEVANT ICTS SKILLS AND EXPERIENCE INCREASED PROPORTION OF WORKING AGE POPULATION FINDING APPROPRIATE LONG-TERM EMPLOYMENT WITHIN 3 MONTHS OF COMPLETING EDUCATION / TRAINING	INCREASED PROPORTION OF ICT START-UPS OUT OF TOTAL STARTUPS ANNUALLY INCREASED PROPORTION OF ICT START-UPS WITH MORE THAN 3 YEARS OF PROFITABLE OPERATION

06 GOING GLOBAL

INNOVATION AND COMPETITIVENESS

The main drivers of today's economy are innovation and globalization. They are mutually reinforcing. Innovation leads to new or better ways of doing things, thus creating value through novelty and/or efficiency. Globalization expands market opportunities and intensifies competitive pressure, thus motivating business innovation.

For a business enterprise, a province, or a nation, the key to benefiting from this dynamic growth process is *competitiveness*. In simplest terms, global competitiveness implies the ability of a business to sell its product(s) on a world market at a profit that is sufficient to support the maintenance, or preferably the expansion of the business. In the shorter term, competitiveness can be achieved by a depreciating currency or eroded by an appreciating one – a see-saw process familiar to major commodity producers like Canada. Sustainable competitiveness, on the other hand, depends on being able to meet the global market test without the aid of a weak currency. This durable form of competitiveness is determined by the performance of individual business enterprises and depends on a combination of (i) *innovation*, to make one's product more attractive, and (ii) *productivity*, to make it more cost-efficiently. This is how the interrelated phenomena of globalization, innovation, and competitiveness lead to durable economic prosperity.

Export performance is a broad indicator of competitiveness, particularly over the longer term as the impact of fluctuations in currencies and business cycles tend to average out. Export success contributes

to the growth of output and jobs, and is ultimately the way in which imports are paid for. Moreover, successful exporting firms, almost by definition, tend to be innovative, productive, and growth-oriented. Exporters are therefore the principal source of dynamism in an economy.

How does Nova Scotia measure up? Clearly, there is work to do (Figure 1). Nova Scotia's exports improved during the 1990s, buoyed by the implementation of NAFTA and a more favourable exchange rate. Exports

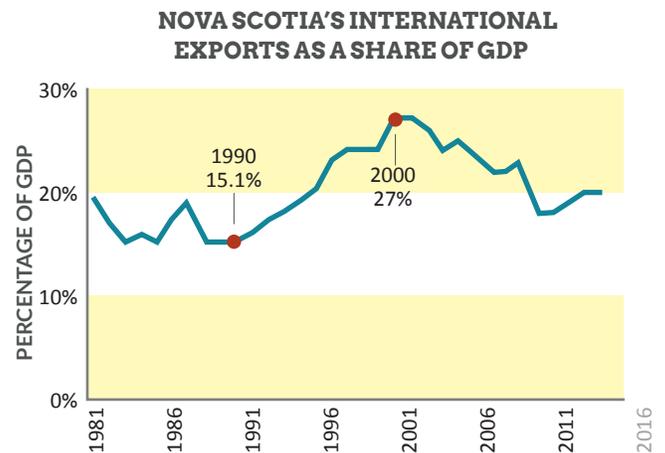


fig 1 (Statistics Canada, 2014)

PRINCIPAL INTERNATIONAL MERCHANDISE \$ MILLIONS, CUSTOM-BASED

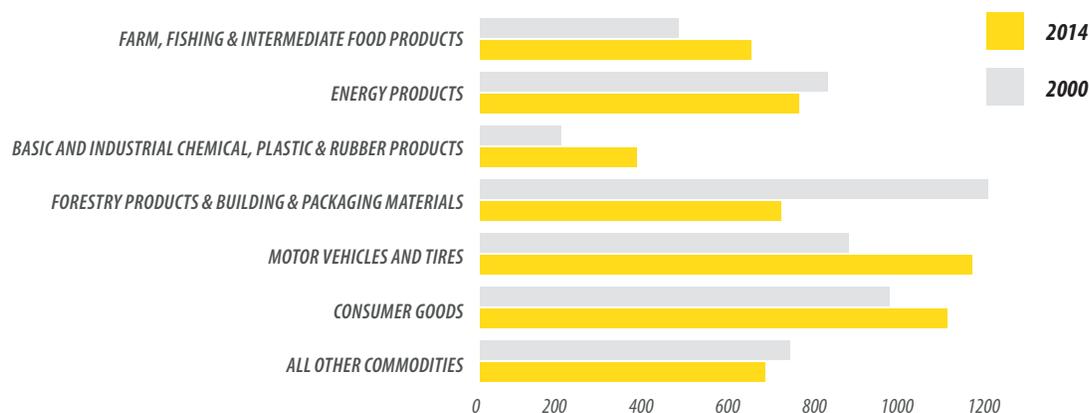


fig 2: Statistics Canada, CANSIM

NOVA SCOTIA BUSINESS INVESTMENT AS PER CENT GDP

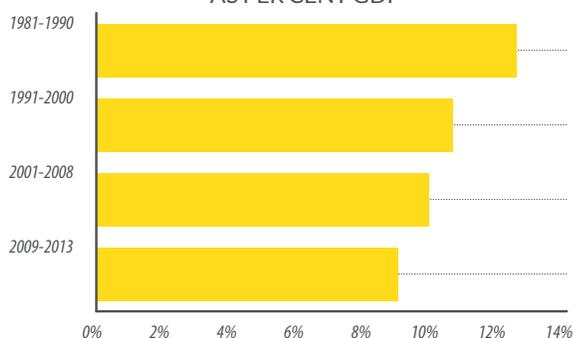


fig 3: Statistics Canada, 2014

NOVA SCOTIA'S EXPORTS TRAIL (INTERNATIONAL & INTERPROVINCIAL) \$CURRENT PER CAPITA (2013)

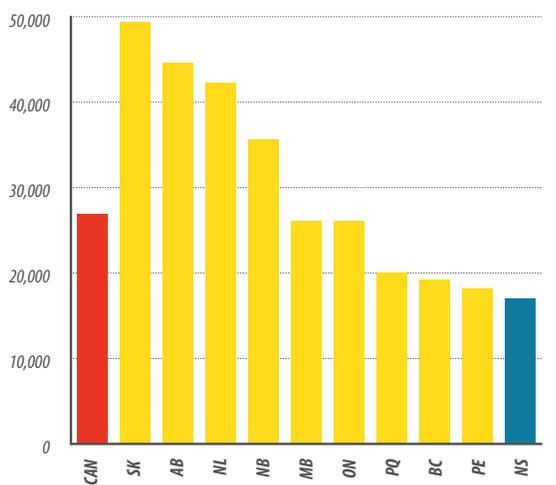


fig 4: Statistics Canada, 2014

as a proportion of GDP peaked at 27 per cent in 2000, but with the global economic downturn, falling natural gas output, restructuring in the forestry sector, and, until recently, a strong Canadian dollar, the province's exports have recently been contributing relatively less to prosperity.¹

Despite low interest rates, and, until recently, the strong purchasing power of the Canadian dollar, Nova Scotia firms, on average, have been investing less in structures, machinery, and intellectual property, and thus the foundations of durable competitiveness have degraded (Figure 3).²

The province has long maintained a significant trade deficit.³ Weak commodity exports together with limited value-added manufacturing⁴ have generated insufficient income to fund Nova Scotia's import levels, which are comparable to the national average⁵ (Figure 2). The only way to sustain such a deficit over time is through continued transfers from the rest of Canada, including equalization payments and disproportionately high direct federal spending in the province. These factors are ultimately outside of Nova Scotia's control. Consequently, there is a pressing need to grow the economy through expanded exports.

At present, Nova Scotia has relatively few export-focused firms, and export values are dominated by a handful of resource and international manufacturing firms. To counteract persistent export weakness, Nova Scotia needs to help its smaller firms,⁶ and particularly those in technologically sophisticated sectors, to increase their capability to succeed in the global market.

1 (STATISTICS CANADA, 2014)

2 IT IS EMPHASIZED THAT DATA AGGREGATED TO THE PROVINCIAL LEVEL CONCEAL A GREAT DEAL OF VARIATION IN THE PERFORMANCE OF INDIVIDUAL FIRMS, MANY OF WHICH ARE GLOBALLY COMPETITIVE AND SUCCESSFUL EXPORTERS IN THEIR INDUSTRY. NOVA SCOTIA'S SUB-PAR EXPORT PERFORMANCE SIMPLY INDICATES THAT WE HAVE TOO FEW FIRMS THAT MEET THE GLOBAL MARKET TEST. CANSIM TABLE 384-0038 (STATISTICS CANADA, 2014)

3 TOTAL EXPORTS LESS TOTAL IMPORTS ARE NEGATIVE FOR NS WITH THE DEFICIT WIDENING SHARPLY SINCE 2003. CANSIM TABLE 384-0038 (STATISTICS CANADA, 2014)

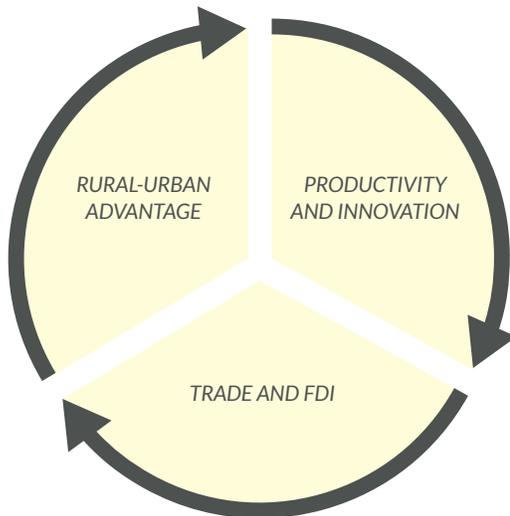
4 NS HAS 2ND LOWEST MANUFACTURING GDP PER CAPITA (NOMINAL, 2007-2011 AVERAGE). CANSIM TABLE 051-0001, (STATISTICS CANADA, 2014)

5 CANSIM TABLE 384-0038. (STATISTICS CANADA, 2014)

6 IN 2014, RESOURCE AND LARGE MANUFACTURING DOMESTIC EXPORTS ACCOUNTED FOR OVER 72 PER CENT OF TOTAL DOMESTIC EXPORTS (CANADA, INDUSTRY CANADA, N.D.)

The coalition recommends a strategy for growing and attracting globally competitive companies that is focused around three themes:

1. **Productivity and Innovation**
2. **Trade and Foreign Direct Investment (FDI)**
3. **Nova Scotia's Unique Rural-Urban Advantage**



1. PRODUCTIVITY AND INNOVATION

Productivity – defined as economic output per hour worked – is the most important determinant of GDP and per capita income over the long term. Productivity is not about working longer and harder; in fact, it is just the opposite. Productivity is about getting more from less. It is about working smarter and is, therefore, intimately connected with innovation, together with investment in both workforce skills and up-to-date capital equipment.

All innovation begins with creative ideas, but implementation depends on entrepreneurship. Innovative entrepreneurs are the keys to catalyze higher productivity and thus global competitiveness. Where innovation and entrepreneurship are strong, jurisdictions are able to benefit from globalization, trade liberalization, and an increasingly rapid rate of technological change. Being equipped to succeed in this environment is a precondition for improved standards of living, including the availability of educational, health, and social services that are otherwise threatened by a stagnant economy and an aging population.

The impetus to grow Nova Scotia's economy, and its export sectors, needs to come primarily from business. But success can be greatly facilitated through development of an innovation "ecosystem" with the support of well-designed public policies at the federal, provincial, and municipal levels. The coalition believes that Nova Scotia can significantly enhance productivity and innovation through the following initiatives.

Encouraging Business-driven R&D and Commercialization

The coalition recommends that the Government of Nova Scotia create incentives for more business-led R&D and related commercialization. To that end, the mandate of the provincial Department of Business should include leadership of a multisector effort – including businesses, universities, NSCC, research institutions, and governments – with the following key elements:

- Provincial government support of R&D and commercialization should create incentives for greater business innovative activity in areas of provincial priority, with funding eventually coming in line with the national per capita average. This approach depends on an explicit identification of priority areas.
- Government funding in this context should be allocated through a centralized process to which businesses can apply to undertake R&D in collaboration with a post-secondary education (PSE) or other research institution. An independent, expert-based selection process would be used to ensure sound and objective technical evaluation. An innovation pilot and commercial demonstration program, such as suggested in the Ivany Report, would be one example of this approach.
- The provincial government should ensure that its research dollars leverage, to the greatest feasible extent, further funding and benefits from non-provincial sources. These include, for example, funding from the Canada Foundation for Innovation, the new Canada First Research Excellence Fund, and offsets associated with defence procurement (see Nova Scotia's Ocean Advantage.)
- The Department of Business should lead – in partnership with businesses, PSE institutions, and

BUSINESS RESEARCH AND DEVELOPMENT AS SHARE OF GDP

2013

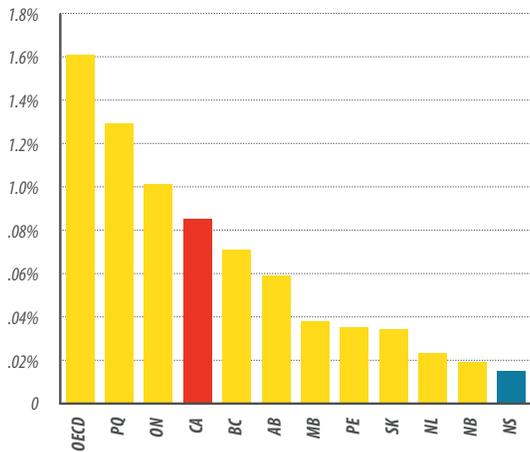


fig 5: Statistics Canada, 2014

federal and provincial agencies – the development of clusters of innovative activities (e.g., focused research, start-ups and larger firms, professional and consulting services) in strategic priority areas for Nova Scotia (and Atlantic Canada, as appropriate). Cluster strategies should create environments that can attract larger businesses as anchors. The newly created Invest Nova Scotia, working with the Department of Business, Nova Scotia Business Inc. (NSBI), and Innovacorp, should make coordinated strategic investments that benefit multiple firms in a cluster.

- The federal and provincial governments should maintain the Scientific Research and Experimental Development (SR&ED) tax credit, which has proven to be of significant benefit, particularly for smaller innovative companies.

Using Public Procurement to Stimulate Innovation

The coalition recommends that the Government of Nova Scotia target a limited portion of procurement in health, education, and other public services to support commercialization of locally developed innovation. This might be done through a program similar to the federal Build in Canada Innovation Program, which helps companies achieve broader market acceptance of innovative products while exposing public sector customers to innovative local suppliers.

For example, the health-care sector is on the cusp of a new wave of ICT adoption. Nova Scotia has an aging population, thus creating a heavy burden of

chronic disease, the management of which can be facilitated with a combination of mobile technology and real-time data analysis. These challenging circumstances create an opportunity for Nova Scotia to establish leadership in certain niche aspects of the use of data analytics and mobile technology to transform health-care delivery. Nova Scotia should exploit its demographics, medical research expertise, and big data and technology assets to be an incubator for specific aspects of health-care transformation in Canada, which could then be exported globally.

2. TRADE AND FOREIGN DIRECT INVESTMENT

Nova Scotia's large and persistent trade deficit implies both the need and significant opportunity to grow the economy through export development. The responsibility to do so rests primarily with business but there are important ways in which government can help.

“Innovation equates with higher productivity, greater competitiveness, and better wages. Nova Scotia cannot compete using subsidies in industries producing undifferentiated goods and relying on lower-skilled and lower-paid jobs. We can succeed by focusing on producing new and differentiated goods and services in innovative ways, and selling them in non-traditional markets. We have excellent university graduates in Nova Scotia, and if we do not make better use of their skills, others will.” (Lynch, 2014)

*Kevin Lynch, vice chairman,
BMO Financial Group*

A New Way to Support Talent, Innovation, and Commercialization

Subsidies targeted on individual businesses are usually an inefficient tool of economic development policy since they distort the signals coming from the market. Moreover, businesses that require subsidies may never become viable or else might leave the jurisdiction once the subsidy is eliminated. But this is not inevitably the case and there are many examples where a subsidy, or other favourable consideration, attracted a business that then prospered and grew into a robust job-creator. Particularly when seeking

to attract foreign direct investment (FDI) it can be difficult or impossible to avoid subsidies if competing jurisdictions have chosen to employ them. If subsidies are to be used to attract or retain firms in Nova Scotia, they should be tailored wherever possible to drive innovation, and not simply to reduce labour costs or other normal costs of doing business.

The coalition therefore recommends that NSBI shift its FDI incentives toward the support of innovation. Companies that currently might have been offered a payroll rebate, for example, could be provided instead with vouchers or credits to be used at Nova Scotia's universities or NSCC to:

- develop education and training programs tailored specifically for the targeted businesses
- attract top students for co-ops, internships, or work placements
- undertake R&D, or develop innovative products or processes, in collaboration with PSE institutions
- build facilities for R&D and other elements of the innovation process

This approach seeks to integrate the private sector more closely into Nova Scotia's innovation networks and to attract companies that are prepared to sink deeper roots into the economy and thus create employment that is durable.

Removing Trade Barriers and Improving the Ease of Doing Business

It is the responsibility of the provincial government to ensure that the environment for doing business in Nova Scotia is as welcoming and attractive as possible. The government should make it easier for entrepreneurs to start a new business by reducing regulatory burdens and business start-up costs. Ideally this should be done on an Atlantic-wide or at least a Maritimes-wide basis. The coalition therefore recommends:

- The Government of Nova Scotia should seek to harmonize regulations and remove trade barriers among the Atlantic or Maritime provinces through a "New East Partnership" (similar to the New West Partnership, which is an internal trade agreement among Canada's western provinces⁷).
- The new provincial Office of Regulatory and Service Effectiveness, which operates jointly with New Brunswick, should evaluate the attractiveness of Nova Scotia in comparison

to other provinces. The initial focus should be to speed up and simplify the process for incorporation of companies, taking a cue from the user-friendly approach in British Columbia which has received an "A" from the Canadian Federation of Independent Business in its 2015 Red Tape Report Card.⁸ Nova Scotia's approach should feature public accountability based on rigorous metrics and an ambition to be the best place in Canada to start and run a business.

Growing SME Exports

Many of the most innovative and potentially high-growth Nova Scotia companies are small- to medium-sized (SMEs). While exporting is often the key to their growth, they may need help in the early stages when experience is lacking and cost barriers are high relative to revenue. The coalition therefore recommends as follows:

- The provincial government, in collaboration with the business sector, other Atlantic provinces, and federal agencies, should develop reverse-trade missions focusing on the most promising global opportunities. A reverse-trade mission brings global opportunities to us, rather than us travelling to them. They can thus engage very large numbers of local firms, particularly SMEs, at much lower cost and higher impact, than anything we do today.
- The provincial government should create a tax incentive to facilitate the growth of small business exports. Qualifying companies would receive a tax reduction based on the annual growth of their exports relative to some moving average of previous years' exports. The incentive would thus apply only to the increment of export growth and would be phased out as the size of the company increased.

Enhanced Trade Programs

The coalition recommends that the trade-enhancement activities of NSBI focus on improving the ability of companies to grow and diversify beyond their existing markets. More specifically NSBI should:

- In collaboration with Atlantic Canada Opportunities Agency and the federal department of Foreign Affairs Trade and Development, develop tools to help companies comply with

⁷ (NEW WEST PARTNERSHIP TRADE AGREEMENT, 2015)

⁸ (CANADIAN FEDERATION OF INDEPENDENT BUSINESSES, 2015).

**INTERPROVINCIAL TRADE BALANCE,
SHARE OF GDP
(2013)**

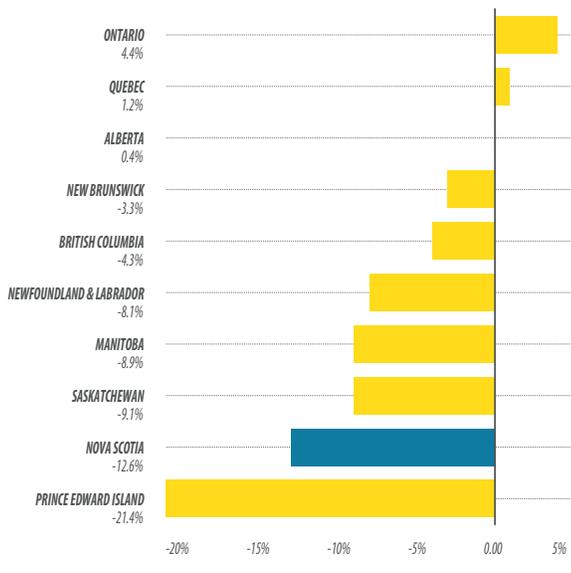


fig 6: Statistics Canada, 2014

interprovincial and international regulations, customs, tax, and other such requirements. This might be done through a certification centre, as was suggested in the Ivany Report, to help companies obtain the certifications and approvals needed to trade globally.

- Leverage the ConnectNS network of current and former residents, university alumni networks, and international students to mentor Nova Scotia exporters and to attract international companies to locate here.
- Introduce programming that addresses the specific needs of Nova Scotia’s “creative industries” to market interprovincially and internationally.

3. NOVA SCOTIA’S UNIQUE RURAL-URBAN ADVANTAGE

Nova Scotia is among the most rural areas in Canada in terms of the distribution of population.⁹ But unlike the larger provinces, the great majority of Nova Scotia’s residents have relatively easy access to the major urban centre (Halifax),¹⁰ as well as to a network of small, and medium-size communities that rings the province. This network provides a scaffold for rural economic development that can build on the remarkably diverse

resources of Nova Scotia – the traditional natural resources of fish, farm and forest; our exceptional cultural and scenic resources; the intellectual resources embodied in an unusually large number of post-secondary education centres located throughout the province; and human resources that can now be connected instantly to the world by the Internet.

Rural and small-town Nova Scotia is nevertheless challenged, as are rural areas throughout North America, to maintain economic vitality as the locus of opportunity and wealth-generation shifts toward knowledge-intensive activities that tend to thrive in areas of high population concentration. Nova Scotia is fortunate because its compact geography, pattern of settlement, and resource diversity can facilitate a viable rural/small community economic strategy that offers the best of both worlds. Halifax provides urban dynamism and both direct and indirect economic support for the rest of the province, while the extraordinary resources of Nova Scotia’s rural areas and smaller communities – readily accessible to metro residents – make Halifax far more attractive to footloose talent from around the world. This complementarity is too little recognized. But it does depend on implementing deliberate measures to

RICHARD FLORIDA ON THE CREATIVE ECONOMY

“Today’s economy is fundamentally a Creative Economy. I certainly agree with those who say that the advanced nations are shifting to information-based, knowledge-driven economies. . . Yet I see creativity. . . as the key driver. In my formulation, ‘knowledge’ and ‘information’ are the tools and materials of creativity.

The economic need for creativity has registered itself in the rise of a new class, which I call the Creative Class. Some 38 million Americans, 30 per cent of all employed people, belong to this new class. I define the core of the Creative Class to include people in science and engineering, architecture and design, education, arts, music and entertainment, whose economic function is to create new ideas, new technology and/or new creative content. Around the core, the Creative Class also includes a broader group of creative professionals in business and finance, law, health care and related fields.” (Florida, 2002)

9 FIGURE 3 (STATISTICS CANADA, 2012)

10 ABOUT 65 PER CENT OF NOVA SCOTIA’S POPULATION LIVES IN THE COUNTIES OF HALIFAX, LUNenburg, KINGS, HANTS, COLCHESTER CANSIM TABLE 051-0062 (STATISTICS CANADA, 2015)

sustain the rural-and small-community economy, and to continually upgrade the quality of the experience that can be afforded by Nova Scotia's exceptional assets.

In the context of a more globally oriented economic strategy, the coalition believes that there is both a requirement and an exceptional opportunity to develop the province's creative industries, tourism, and rural entrepreneurial capabilities in a complementary fashion. We recommend actions under the following headings:

- **Creative Industries and the 5Cs**
- **Tourism**
- **Rural Innovation and Entrepreneurship**

Creative Industries and the "5Cs"

Culture, creativity, community, charm, and character – the 5Cs – are what is genuinely unique about Nova Scotia and thus constitute a powerful competitive advantage if properly developed and communicated. The 5Cs are Nova Scotia's "secret sauce."

We have wonderful arts, music, film, festivals, concerts, beaches, golf, sailing, hiking, and much more. It is because of the 5Cs that many Nova Scotians wish to stay here or long to return once they have explored the world. It also means that those who come here to work or to be educated often want to plant roots in Nova Scotia. We know, for example, that knowledge-based companies – whose workers belong to what Richard Florida has called the "creative class" – prefer to locate in creative and livable areas; one more reason why we need to celebrate and build on the 5Cs. But in doing so we need to aim high in light of the competing alternatives globally. In other words, Nova Scotia needs to think of places like Ireland, New Zealand, British Columbia, or Austin, Texas, as our competition, and make investments in the 5Cs that will appeal to those with global alternatives as to where they choose to live and start a business.

An Action Plan for Nova Scotia's Creative Sector

The creative economy – which includes, for example, artists in various media, performers, film-makers, writers, designers, and supporting infrastructure and services – is a vital contributor to the 5Cs. It generates significant employment and exports while promoting social inclusion, cultural diversity, and human development. The coalition

recommends that the Department of Communities, Culture and Heritage, working with the Creative Nova Scotia Leadership Council, develop an action plan for the creative sector that includes at least the following elements:

- Integrate entrepreneurship training into arts and design programs at high school and post-secondary levels.
- Pilot small-business development training courses for entrepreneurial artists.
- Use arts and cultural districts to encourage co-location of innovative businesses.
- Establish creative public spaces to improve livability and quality of life.
- Include arts education along with the STEM disciplines (Science, Technology, Engineering and Math) by adding an "A for Arts" to create STEAM, recognizing that the creative arts are core to an innovation culture – for example, a great deal of software is being created today by those with backgrounds in the arts.

Tourism

Tourism is a US \$1.5-trillion industry globally and one of the fastest-growing sectors in the world economy.¹¹ An expanding middle class, together with the increased availability of affordable air travel, is driving tourism growth worldwide. In addition, North American and European baby boomers are retiring with relatively good health and disposable

**TOURISM VISITATION TO NOVA SCOTIA
BY ORIGIN 2014**

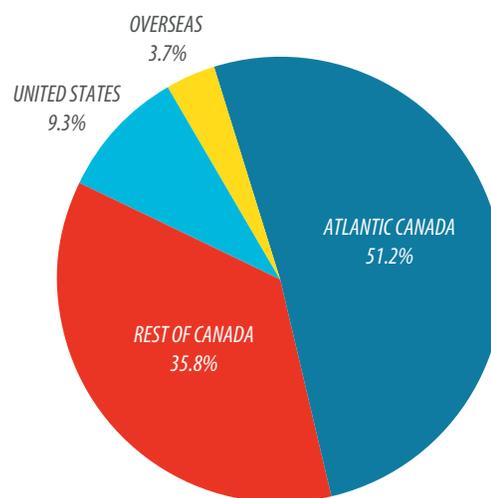


fig 7: Source: Tourism Nova Scotia, 2014

¹¹ (WORLD TOURISM ORGANIZATION UNWTO, 2015)

income. With this growth opportunity comes a new type of tourist with high expectations for memorable experiences and a willingness to pay for exceptional quality.

Nova Scotia offers a broad range of outstanding tourist experiences making the industry an important generator of income and employment, particularly in rural and small communities. Tourism accounts for approximately 2 per cent of provincial GDP and generates more than \$2 billion in revenue annually.¹² The goal set out in the Ivany Report and embraced by the industry is to double that number within ten years. Nova Scotia has significant assets to attract global travellers: our coastal location and accessible wilderness interior, unique historical and world heritage sites, national parks, festivals and events, local food and crafts are all components of the 5Cs. The foundation is here, but Nova Scotia tourism is competing on a global scale and must continually upgrade the visitor experience to meet the rising expectations and choice of alternative destinations available to travellers today.

Upgrading Nova Scotia's Tourism Experiences

The coalition recommends that Tourism Nova Scotia, the Tourism Industry Association of Nova Scotia, tourism businesses, and the creative and cultural sectors, collaborate in a strategy that includes the following actions:

- Significantly expand Nova Scotia's calendar of festivals and events, with the goal of eventually having at least two signature events of the calibre of Celtic Colours International Festival, the Royal Nova Scotia International Tattoo, or the Halifax Jazz Festival each month from May through October. These anchor events would be complemented by a great many more in communities throughout the province. A collaborative marketing strategy will be needed.
- Invest to create a select number of signature destinations, i.e., of the calibre of the new world-ranked Cabot Links and Cabot Cliffs golf courses. There is a need as well for more year-round and off-season attractions to support greater investment in our tourism assets.
- Bring the province's wine, craft beer, spirits and culinary experiences, which have improved dramatically in recent years, to an even higher level that is unequivocally world-class. In view of the increasing popularity of high quality cuisine, particularly based on the freshest local ingredients,

Nova Scotia has an extraordinary opportunity to establish itself as a global culinary destination based on an exceptional variety of seafood, boutique agriculture, and local game.

- Improve air access with convenient and affordable air routes to larger urban centres as well as expanded cruise opportunities.
- Develop research-driven marketing strategies for Nova Scotia to get more visitors to come, stay longer, and spend more.

Local Food and Beverage

Nova Scotia benefits from very high quality local food and beverage, including meat, fish, fruits, vegetables, juice, milk, wine, spirits, and beer. Our farmers, fishermen, vintners, processors, and merchants stimulate local economies, primarily in rural areas, and their products typically have a lower environmental footprint than similar imported products. Nova Scotia restaurants and their customers are embracing local food and beverage. Our farmers' markets have proven to be an increasingly popular feature of the 5Cs and a significant tourist attraction. The coalition recommends that Nova Scotians purchase local food and beverages whenever possible.

Rural Innovation and Entrepreneurship

Nova Scotia possesses exceptional assets on which to build a prosperous, sustainable, rural- and small- community economy. A missing ingredient has been a broadly shared optimistic vision of what could be possible. As the Ivany Report emphasized, a change in attitude is needed. To upgrade the 5Cs and to derive greater value from Nova Scotia's natural resources – both of which are required to improve export performance – Nova Scotia needs to boost its “entrepreneurship quotient.” Our traditional businesses need to become much more focused on innovation to meet today's stringent standards for global competitiveness. Other chapters – particularly those dealing with post-secondary institutions, ICT, and our ocean advantage – describe initiatives in this regard that can make essential contributions to the economic development process in Nova Scotia.

Encouraging Rural Innovation

The coalition recommends that the Government of Nova Scotia and ACOA, in partnership with the new Regional Enterprise Networks (RENs), should

¹² (TOURISM NOVA SCOTIA, 2013)

develop a rural innovation and entrepreneurship strategy, perhaps similar to the EU's Rural Innovation and Business Systems program. The objectives of the strategy should be to:

- create enterprise hubs focused on sectors, e.g., local food, tourism, bio-energy, ICT, creative industries
- maximize the impact of Nova Scotia's universities and NSCC campuses as regional hubs for innovation. (see Universities and NSCC as Innovation Hubs)
- focus economic development initiatives in the resource-based industries on R&D, innovation and the ability to compete globally, as was done by New Zealand in its agricultural sector
- facilitate access to advanced business support services enabled by very high-speed Internet.
- employ the RENs to bring together the local business communities, all three levels of government, and other groups involved in economic development, to ensure a collaborative effort.

Upfront Planning for Resource Development.

It is essential that Nova Scotia enhance both the 5Cs and the economic potential of its natural resources including forestry, mining, oil & gas, renewable energy, fisheries, aquaculture, and agriculture. While resource development and the 5Cs can be complementary, this requires a balanced approach based on local consultation and smart, practical regulation. The coalition recommends as follows:

- The Government of Nova Scotia should implement comprehensive land-use and ocean-use planning informed by public engagement and First Nations consultation processes. This could include legislation to establish "resource development zones" and to provide guidelines for the "social licence."
- The provincial Office of Regulatory Affairs and Service Effectiveness should review all legislation, regulations, policies, and processes affecting resource industries to ensure that they are fair, effective, transparent, timely, and predictable, while delivering on the environmental, health, and safety protections expected by Nova Scotians.
- The provincial government should establish an independent regulatory approach, similar to that

of the Utility and Review Board, for approvals and enforcement in order to create a fair and transparent environment.

- The government should consider developing a royalty-sharing arrangement that includes First Nations, local communities, and municipalities.

INNOVATION, TRADE, AND GROWTH IN NEW ZEALAND'S AGRICULTURAL SECTOR

New Zealand has always been dependent on foreign technology and the export market. Its historical development since the 1890s was stimulated by the opportunity to sell primary products like wool, dairy products, and meat to the United Kingdom and other industrialized countries. New Zealand's small domestic market continues to limit the range of economic activities that can be undertaken on a commercial scale without exports. Its agricultural sector continues to depend heavily on international markets i.e., some 90 per cent of all pastoral production and more than 95 per cent of dairy products are exported. In order to be globally competitive, New Zealand unilaterally opened itself to international trade and invested heavily in R&D and innovation in the resource sector. As a result, R&D is dominant in its agribusiness and forestry sectors. Notably, this has led to important spillovers to high-value agriculture-related manufacturing and services, including processing, packaging, and agri-tech.

Facilitating the Transition of Small-Business Ownership

It is increasingly the case that family-owned businesses in rural and small-town Nova Scotia have no one to take over when the present owner retires. The transition from a going concern to a shuttered enterprise can have a significant impact in areas where the economy is already fragile. It is therefore in the broader public interest that new operators, whether already in Nova Scotia or prospective immigrants, be found. To increase that likelihood, the coalition recommends that the Department of Business or NSBI create, maintain, and promote an online database as a definitive, up-to-date source of information describing

small businesses for sale in Nova Scotia. Once a template was created this could be done very cost-efficiently – for example, existing business owners would provide standardized information, with the option to preserve anonymity, and pay a fee to cover the modest administrative cost.

In addition, there can be a market gap with respect to financing the purchase of small businesses, particularly in rural areas. The Nova Scotia Credit Union Small Business Loan Guarantee Program provides loans to small businesses, including capital loans with up to a 90 per cent guarantee by the provincial government. Special financing streams are available for immigrant entrepreneurs, social enterprises, and certain higher-risk sectors. The Credit Union Small Business Loan Guarantee Program can be used to finance the acquisition of small businesses. The coalition recommends that the provincial government review the program to determine whether it is effective in addressing market gaps in financing the purchase of small businesses in rural areas and small communities.

ENVIRONMENTAL REGULATION AND COMPETITIVENESS

Harvard economist Michael Porter suggested in a 1991 article that stringent environmental policies could increase competitiveness provided they encourage greater investment in more efficient equipment and technology. The OECD reported in 2014 that empirical analysis across member countries over the last 20 years showed that well-designed, but strict environmental policies could sustain current levels of productivity growth provided they do not frustrate competition and new entrants and do not impose undue compliance costs. Moreover, as environmental consciousness has increased worldwide, responsible corporate behaviour in this regard can be a condition of export market access (Klep, Maroussia, 2014).

SAMPLE LOGIC MODEL FOR MEASUREMENT AND EVALUATION *(subject to further development)*

ACTION POINT OUTCOME RELATED KPIs	TO ENABLE BUSINESSES TO ADOPT INNOVATIVE BUSINESS MODELS AND APPROACHES TO IMPROVING EFFICIENCY TO ENHANCE THE COMPETIVENESS OF NOVA SCOTIA'S INDUSTRY IN THE GLOBAL ECONOMY				
	TO ATTRACT INWARD INVESTMENT				
	RANKING (COMPARED TO OTHER CANADIAN PROVINCES AND TERRITORIES) OF THE NS TRADE BALANCE AS A PROPORTION OF PROVINCIAL GDP (INTER PROVINCIAL AND INTERNATIONAL) COMPARED WITH OTHER CANADIAN PROVINCES				
	RANKING (COMPARED TO OTHER CANADIAN PROVINCES AND TERRITORIES) OF THE LEVEL OF INWARD INVESTMENT AS A PROPORTION OF PROVINCIAL GDP				
INITIATIVE AREAS	PRODUCTIVITY & INNOVATION	TRADE	RURAL GROWTH	CREATIVE INDUSTRIES AND THE SCS	TOURISM
INITIATIVE INPUT MEASURES	INCREASED LEVELS OF EXPENDITURE ON INNOVATIVE, VALUE-ADDING PRODUCT AND SERVICE FEATURES THROUGHOUT THE VALUE-CHAIN	# OF NEW BUSINESS REGISTRATIONS # OF BUSINESSES ENGAGED IN EXPORT ACTIVITIES	# OF NON-HRM BASED NATURAL RESOURCES BUSINESSES	# OF CREATIVE INDUSTRIES AND THE SCS BUSINESSES	# OF TOURISM BUSINESSES

07 NOVA SCOTIA'S OCEAN ADVANTAGE

Nova Scotia's history and development have been inextricably linked to the ocean and always will be.

The ocean is an indefinitely sustainable comparative advantage based on Nova Scotia's location, with a coastline as long as the distance across Canada. Ocean-related activity is a major contributor to our economy, accounting directly for approximately 7 per cent of GDP and some 35,000 jobs.¹ The ocean economy has become progressively more knowledge-based and technology-intensive. It includes many industries of the future that will attract entrepreneurial talent and investment, and provide growing opportunities that can retain Nova Scotia's young people.

Naval facilities, shipbuilding, offshore oil and gas, global and regional shipping, fishing and seafood processing, aquaculture, tourism, and a broad range of marine research and support activities have been mainstay contributors to our ocean economy. Governments at all levels contribute to these ocean sectors through their own spending on ocean-related public services and functions, as well as with policies that support them. The \$25 billion naval defence contract with Irving Shipbuilding, for example, will bring over 25 years of activity to the Halifax Shipyard, providing this province's most significant new economic opportunity.

Nova Scotia's ocean-technology industry comprises about 60 knowledge-intensive companies – mostly small-to medium-sized, but also including

multinationals – that develop sophisticated goods and services for global markets. The revenue of this sector doubled from \$500 million in 2009 to \$1 billion in 2011.² The ocean-technology industry accounts for about one-third of total research and development among businesses in Nova Scotia.

NOVA SCOTIA OCEAN SECTOR GDP IMPACT (\$Millions)

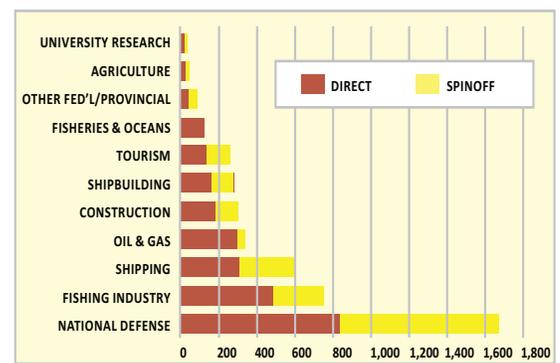


Fig 1: Nova Scotia Ocean Sector GDP Impact (\$ millions) (Gardner Pinfold, 2014)

In order to achieve Nova Scotia's extraordinary ocean potential, the coalition recommends a three-part strategy:

1. Build a leading-edge ocean industries cluster in Nova Scotia
2. Maximize growth opportunities in seafood, with a focus on the burgeoning global potential of aquaculture
3. Enhance longer-term prospects in marine energy, including a strategy to position Nova Scotia at the forefront of tidal energy development

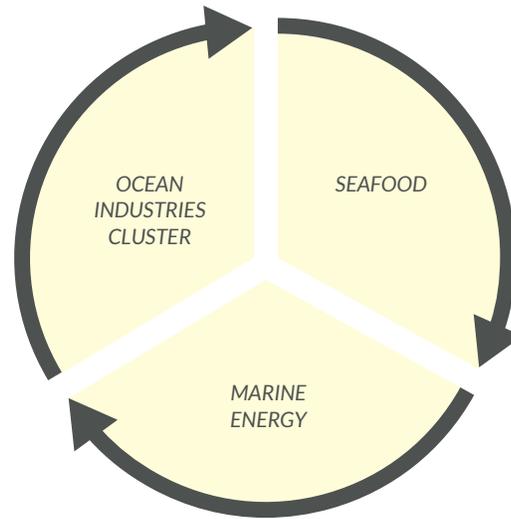
¹ IT IS ESTIMATED THAT WHEN SPINOFF ACTIVITY IS INCLUDED, THE OCEAN ECONOMY IN NOVA SCOTIA CREATES MORE THAN 63,000 JOBS. (GARDNER PINFOLD, 2014)

² (GOVERNMENT OF NOVA SCOTIA, 2011)

1. BUILD A LEADING-EDGE OCEAN INDUSTRIES CLUSTER

Nova Scotia has an unprecedented opportunity to build a globally competitive ocean industries cluster – a concentrated collection of firms, research capabilities, and allied services that constitute an oceans innovation ecosystem (Figure 2). This would include not only producers of a broad range of specialized ocean technology goods and services but also related and supporting activities in ICT, analysis of very large data sets, and marine environmental services, among others. This more comprehensive concept of the ocean sector is important because the application of ICT, marine biology, oceanography, and other areas of ocean-relevant science and technology are already transforming a broad range of ocean industries, including fisheries, aquaculture, offshore hydrocarbon and mineral extraction, shipping, defence, and tidal energy.

The Halifax area is the location of a relatively small but growing ocean industry cluster, but something much larger is in prospect. Existing firms produce products ranging from marine robotics and



subsea vehicles to communications and electronic navigation equipment. Nova Scotia has developed an international reputation for ocean observation and measurement – with strengths in sensors, platforms, and analytics.

The coalition recommends that Nova Scotia collectively should set a goal to be home to one of the

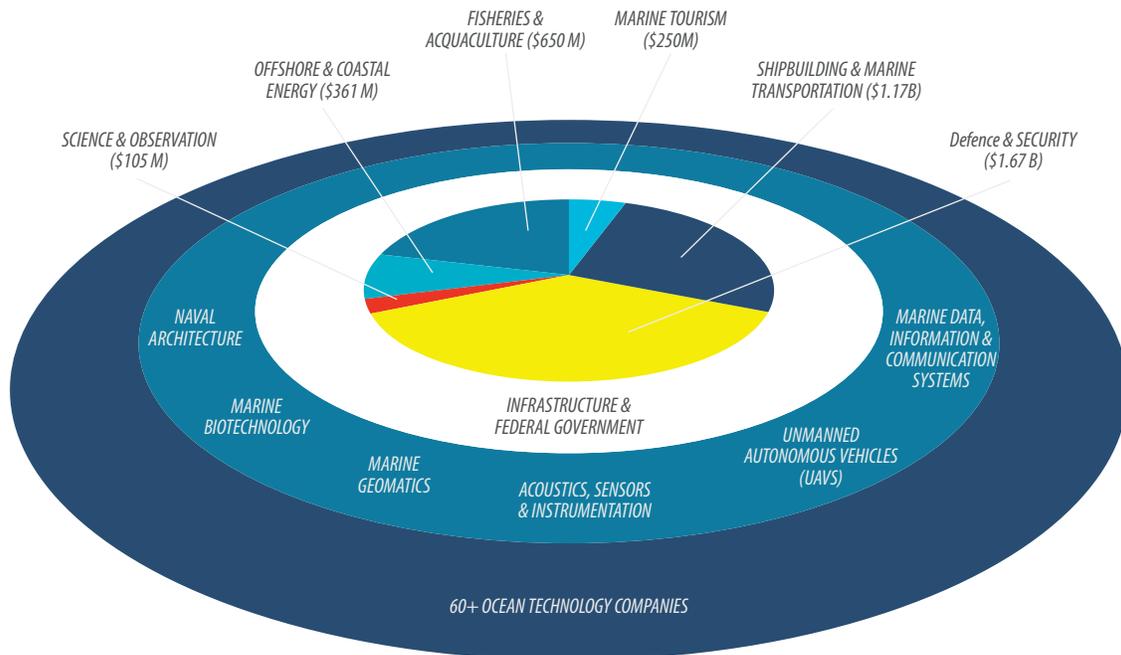


fig 2: Nova Scotia's Ocean Cluster (Nova Scotia Department of Business, 2015)



world's top five ocean industry clusters. Following are the key elements:

- An anchor facility for ocean industries innovation
- World-class research strength and facilities to support ocean industry R&D
- A source of powerful “demand-pull” to drive the growth of ocean industry firms – in this case, the long-term contracts under the National Shipbuilding Procurement Strategy
- A coordinating body to facilitate private-sector leadership

COVE: Anchor Facility for Ocean Industries Innovation

The Government of Nova Scotia has purchased the site of the former Coast Guard base in Dartmouth, making it available to develop a Centre for Ocean Ventures & Entrepreneurship (COVE). The facility will enable established companies, start-ups, and researchers to share valuable waterfront space, equipment, and ideas. It will provide the infrastructure needed to accelerate knowledge transfer, commercialization of research, and the incubation of ocean industry start-ups.

The coalition recommends as follows:

- The private sector, with support from the provincial and federal governments, should establish and support COVE. It will be essential to attract some multinational companies as anchor tenants and to provide

NOVA SCOTIA'S OCEAN RESEARCH ASSETS

- Nova Scotia has the among highest concentration of oceans-related PhDs in the world.
- Bedford Institute of Oceanography – Canada's largest centre for oceans with 700 scientists, engineers, and technicians. (Government of Nova Scotia, 2011)
- NRC's Institute for Marine Bioscience – a versatile marine research facility.
- Defence R&D Canada – experts in anti-submarine, mine, and torpedo defence.
- Dalhousie University has 25 per cent of all NSERC oceans research grants. (Halifax Partnership , 2015)

linkage to global pipelines. These would be complemented by local small-and-medium enterprises (SMEs) and start-ups including a student-innovator “sandbox” and an ocean incubator/accelerator capacity.

- Innovacorp should create an “Oceantech Fund,” similar to the Nova Scotia Cleantech Fund, to provide support to start-ups and SMEs including an “Oceantech Open” challenge, similar to the Cleantech Open, that would award, on a competitive basis, space and mentoring to selected start-ups.

- Invest Nova Scotia should support development of the ocean science and technology sector, including a program to assist start-ups in building a customer base.
- Nova Scotia Business Inc. should work with the Institute for Ocean Research Enterprise (IORE), universities, and other research institutions to attract multinationals and SMEs to the site.

Ocean Frontier Institute: World-class Research Strength

Dalhousie University, a global leader in ocean science, has formed the Ocean Frontier Institute (OFI). This multidisciplinary institute will strengthen existing international partnerships and forge new ones to deepen Canada’s participation in the global oceans economy. Programs offered through the OFI will connect students and postdoctoral researchers to the proposed COVE facility. OFI will link national and international research councils, allowing students to collaboratively develop technical and research skills in ocean science and technology from globally recognized authorities.

The coalition recommends:

- the OFI receive the support needed to become an R&D powerhouse at the centre of an oceans cluster in Nova Scotia; this should include support of OFI’s imminent bid for a federal Canada First Research Excellence Fund award
- Nova Scotia’s PSE institutions should work with industry to develop research internships and co-op experiences for students in ocean-related studies, and seek leveraged funding through organizations such as Mitacs, the Natural Sciences and Engineering Research Council (NSERC), and the National Research Council.

Driving the Growth of the Oceans Industry in Nova Scotia

The Irving naval shipbuilding contract is valued at approximately \$25 billion and will extend over more than 25 years. Nova Scotia will benefit significantly from work undertaken in the Halifax Shipyard, but the great majority of the contract value will be for leading-edge systems and their integration into the combat ships. While these contracts will be led by

multinational defence companies, Nova Scotia’s technology sector has a once-in-a-generation opportunity to qualify for subcontracts that will be lucrative in their own right, but will also position the successful companies for ongoing inclusion in the global supply chains of the prime contractors, and to provide sophisticated repair and maintenance services over the long term.

The new federal Industrial and Technological Benefits (ITB) program features a requirement that all bids on large components of the ships’ contract must include a plan (a “value proposition”) to contribute to economic development in Canada. The quality of these plans will be rated when selecting the contract winners.³ This will create, for the first time, a powerful incentive for multinational bidders to seek ways to work with Canadian subcontractors and research centres to maximize the longer-term developmental benefit of the relationship.

The award to Irving of the ship procurement contract carried with it an obligation to invest 0.5 per cent of revenue under the initial NSPS contract⁴ in a marine industry centre of excellence to contribute to training, research, and development of the marine technology sector.⁵ The funds to be provided under this obligation are estimated to be \$44 million – the full allocation of which has yet to be determined – and could make a very significant contribution to the development of the ocean industry cluster in Nova Scotia.

The coalition recommends that the provincial government, in collaboration with the relevant industry participants and post-secondary institutions, should take all steps necessary to maximize the value of the naval shipbuilding contract for companies and research institutions in the province. This begins with the allocation of Irving’s existing obligation for the marine industry centre of excellence, and would continue as further major subcontracts are awarded in the context of the new ITB/value proposition policy.

³ (CANADA, INDUSTRY CANADA, 2014)

⁴ (CANADA, PUBLIC WORKS AND GOVERNMENT SERVICES, 2014)

⁵ (NOVA SCOTIA COMMUNITY COLLEGE, 2015)

Institute for Ocean Research Enterprise: A Coordinating Body

The proposed ocean industries cluster needs a coordinating body to address the collective interests of the participants, including representation of the cluster with government, PSE institutions, the media, and with similar ocean industry groupings



worldwide. The coordinating body must have strong industry, research, and community representation in its governing structure. It should be organized to integrate a range of ocean industries and to facilitate national and international collaboration with local industry and post-secondary institutions.

To fulfill these objectives, the coalition recommends:

- the Institute for Ocean Research Enterprise (IORE), with an expanded scope and board, become the coordinating body for the ocean-tech cluster
- IORE establish stretch goals for the cluster in consultation with stakeholders; these goals must be future-oriented in view of rapidly evolving ocean technologies that are radically changing the face of marine industries worldwide.

Education Through an Oceans Lens

The Ivany Report emphasizes the need to pursue excellence in the STEM subjects – science, technology, engineering, and mathematics – if Nova Scotia is to succeed in today’s knowledge-based and technology-intensive economy. And specifically, to maximize Nova Scotia’s ocean advantage, the appropriate STEM skills need to be instilled in the P-12 curriculum. One important initiative in this regard is the coalition’s recommendation that coding and related computer instruction be required in the province’s grade school curriculum.

To lay a strong foundation for the locally developed human talent that must be part of an ocean industries cluster strategy, we should go further and present many of the key concepts of science and mathematics from the perspective of the ocean environment and not just, as is conventionally taught, in the terrestrial

context. Professor Boris Worm and other researchers at Dalhousie are developing an “Ocean School” – inspired by astronaut Chris Hadfield’s Space School – that would bring ocean education to P-12 schools across the country and even globally. The target is the junior high grades where retaining student engagement with science and math is most critical. The objective is to help teachers relate core science curriculum content through an innovative oceans lens by providing ready-made, visually exciting material that is easily used and engages student in asking deeper questions about the world around them.

The coalition recommends that the development of the Ocean School initiative be supported by governments and that the material that is created be introduced in Nova Scotia’s junior high school curriculum over the next few years.

Dalhousie University has Canada’s first and only multidisciplinary bachelor’s degree program; ocean sciences, as well as a marine biology major at the bachelor’s level. It also has many students enrolled in master’s and doctoral programs in oceanography, marine biology, marine management, and marine law. Other academic institutions have also developed ocean-related programs, such as NSCC’s Advanced Diploma in Ocean Technology. These programs reinforce and support the existing ecosystem and are designed in collaboration with industry and other key stakeholders to ensure graduates are prepared. The coalition recommends that Nova Scotia’s universities and NSCC, with the support of government, devote increased focus on education and training programs tailored to the ocean industry, including co-op, apprenticeship, and internship placements.

2. MAXIMIZE GROWTH OPPORTUNITIES IN SEAFOOD

The fishery has always been linked closely with the development and culture of Nova Scotia. It is a bulwark of our exports and the primary source of employment and income in many coastal communities. While the ocean (“capture”) fishery is mature, it is increasingly subject to technological innovation, i.e. related to automated processes that will determine those enterprises that will survive and thrive in the face of global competition. Meanwhile, aquaculture is a booming sector internationally and presents an

opportunity with great unexploited potential for further development in Nova Scotia.

Nova Scotia's Aquaculture Opportunity

Aquaculture is the fastest-growing source of animal protein in the world today. Farmed fish production now exceeds beef production globally. Almost half of human seafood consumption is farm-raised. Aquaculture will inevitably continue to expand for years to come, since most capture fisheries appear to be at, or even beyond, sustainable limits,⁶ while the global demand for dietary protein increases as the world population grows and becomes more affluent.⁷

With a current value of production of \$54 million,⁸ Nova Scotia's aquaculture industry has tremendous growth potential. The province has a number key advantages: access to clean ocean water; more than 7,400 kilometres of coastline; extensive fisheries infrastructure and experience; established access to world seafood markets; and a strong ocean-sciences background.

Both the Doelle-Lahey report (December, 2014)⁹ and the Ivany Report identified aquaculture as a major export opportunity for Nova Scotia. But for this to happen, local concerns need to be addressed through research on environmental impacts in order to ensure that appropriate protective regulations and policies are in place. Technological and regulatory solutions to the challenges posed by the expansion of fish farming could benefit both the aquaculture and marine technology sectors.

The aquaculture industry can provide skilled, well-paying work for young people in rural Nova Scotia. There is a wide array of trades and professions associated with the industry that provide additional employment opportunities. The rural base of the industry also creates opportunities for greater First Nations participation. Recent projections indicate that by 2020, aquaculture in Nova Scotia could generate

- increased employment of 2,400 persons beyond the existing workforce of approximately 650
- a very significant increase in annual "farm-gate" sales, up from \$54 million in 2013 to about \$280 million
- additional provincial tax revenue of approximately \$9 million per year¹⁰

AQUACULTURE'S BRIGHT FUTURE

- One billion people depend solely on seafood for protein while 2.9 billion depend on seafood for at least 20 per cent of their protein. (Food and Agriculture Organization of the United Nations, 2014)
- Worldwide fish capture was 91.3 million metric tons (mt) in 2012. Continued reliance on the capture fishery for food would require the catch to grow to about 120 million mt by 2030, an amount that is unsustainable. (Food and Agriculture Organization of the United Nations, 2014)
- Global aquaculture production totalled 70.5 million tonnes in 2013, and the industry employed 58.3 million people at a growth rate of 8 per cent per year. Aquaculture is projected to surpass the value of the capture fishery by 2023, and its contribution to human consumption by 2030. (The World Bank, 2013; Food and Agriculture Organization of the United Nations, 2014; National Oceanic and Atmospheric Administration, 2012)

INTERNATIONAL EXPORTS NOVA SCOTIA FISH & SEAFOOD (by major destination, 2013)

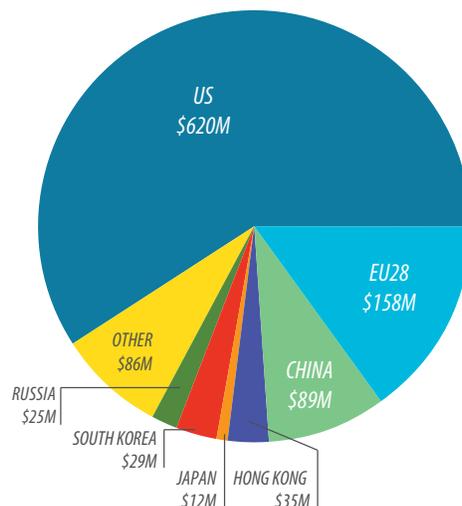


fig 3: International Exports of Nova Scotia Fish and Seafood by Major Destination, 2013 (million \$2013) (Nova Scotia Department of Fisheries and Aquaculture, 2014)

6 (FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, 2014)

7 (REUTERS, 2012)

8 (GOVERNMENT OF NOVA SCOTIA FISHERIES AND AQUACULTURE, 2014)

9 (INDEPENDENT AQUACULTURE REGULATORY REVIEW FOR NOVA SCOTIA [THE DOELLE-LAHEY PANEL], 2014)

10 (2020 PROJECTIONS PREPARED BY NOVA SCOTIA DEPARTMENT OF FISHERIES AND AQUACULTURE)

INTERNATIONAL EXPORTS FISH & SEAFOOD 1999-2013

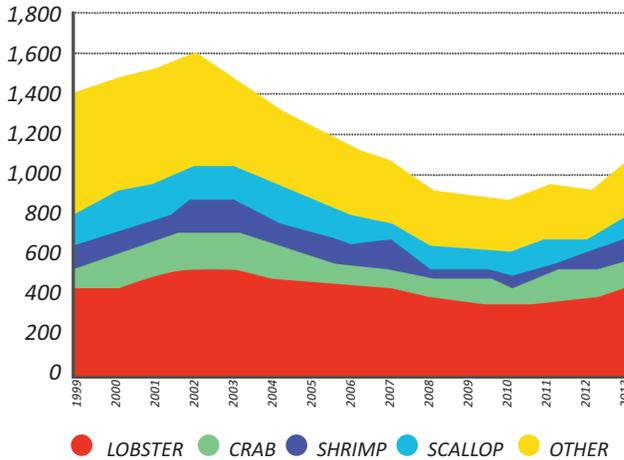


fig 4: International Exports of Nova Scotia Fish and Seafood 1999-2012 (Nova Scotia Department of Fisheries and Aquaculture, 2014)

The coalition recommends a strategy for aquaculture development built around the following elements:

- The provincial government should implement a regulatory regime for aquaculture (based on recommendations from the Doelle-Lahey report) that is fair, effective, predictable, and transparent with an independent regulatory approach such as described in the Upfront Planning for Resource Development section in the Going Global chapter. Regulatory compliance and enforcement functions associated with aquaculture would be separated from industry development.
- The government should work with existing industry players to maximize business opportunities while also seeking to attract sustainable, growth-oriented aquaculture operators to Nova Scotia.
- Universities and the private sector should collaborate to establish an R&D and commercialization agenda including, for example, methods to increase production potential of leading aquaculture species, assessment of market potential of new production species, and development of the most environmentally appropriate practices.
- The private sector and the provincial government should continue to partner in

fostering trade opportunities in traditional (U.S., European) and new (Asian) markets for aquaculture products.

- The provincial government, with support from communities, should identify areas of the coastline suitable for aquaculture development, including the evaluation of biological, physical, and economic development potential.

Adding Greater Value to Ocean Fisheries

The ocean fishery has been a mainstay of Nova Scotia's economy and culture for generations, and will continue to be. By adding greater value to the resource and delivering that value to targeted markets, Nova Scotia could be one of the world's top suppliers of quality seafood.

The coalition recommends that the industry, post-secondary institutions, and government collaborate in a strategy to maximize the marketed value of Nova Scotia's exceptional fisheries resource. This would include the following actions:

- The industry, in collaboration with academic institutions and with support from the provincial government, should develop, for the various fisheries subsectors, innovation

INTERNATIONAL EXPORTS NOVA SCOTIA FISH & SEAFOOD (by species, 2013)

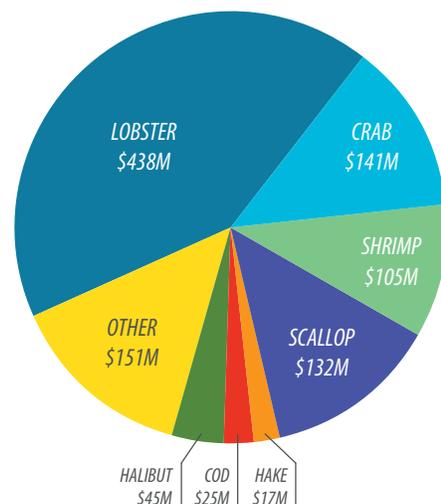


fig 5: international Exports of Nova Scotia Fish and Seafood by Species, 2013 (million \$2013) (Nova Scotia Department of Fisheries and Aquaculture, 2014)

agendas focused on improving product quality throughout the catch-to-plate value chain. The industry should qualify for internationally recognized certification models that deliver a science-based approach to food safety, sustainability, and high quality products. Obtaining third-party certification and enhancing quality management will yield long-term financial benefits.

- In parallel, and contingent on achieving the highest standards of quality, the provincial Department of Fisheries and Aquaculture and NSBI should collaborate with federal partners and other Atlantic provinces and industry associations to develop strategies for priority markets in the European Union, Asia, and the U.S., positioning Atlantic Canada as a supplier of premium and sustainable products. Plans would be operationalized through incoming and outgoing missions, trade shows, promotional events, and branding activities.
- A focus on maximizing the economic return for every pound of seafood produced in the province is required. The participants in the fishery, with enabling support from government, should adopt a value chain approach in order to maximise the value of the resource. For example, generic marketing, quality programs, product development and branding are all means that support obtaining higher value for seafood.
- The seafood industry is having significant difficulty finding and retaining workers, due primarily to declining rural populations and a change in worker preferences. Several government departments should work collaboratively with the industry to address these challenges. Attracting workers to the industry and improving the productivity of seafood processing facilities through automation should be areas of focus.

3. NEW OPPORTUNITIES IN MARINE ENERGY

The offshore and coastal energy sectors provide significant opportunities for the Nova Scotia economy based on the following advantages:

- Nova Scotia's experience in exploration

and development of offshore hydrocarbons has created a group of knowledge-based enterprises that supply services and products to facilitate the process from exploration through transportation, while mitigating environmental impacts. With 30 per cent of the global oil and gas supply coming from offshore reserves, Nova Scotia's expertise presents a services export opportunity.

- Our particular geography affords the opportunity to be a global leader in tidal energy.
- Nova Scotia's location and existing infrastructure are creating opportunities for the export of liquefied natural gas (LNG).
- Although not currently cost competitive, offshore wind could potentially become a renewable energy source for Nova Scotia in the longer term.

In view of these advantages the coalition recommends initiatives in three areas: tidal energy generation, offshore oil and gas, and LNG shipping terminals.

Tidal Energy

During each daily tidal cycle, 160 billion tonnes of water flows in and out of the Bay of Fundy. This is four times the combined daily flow of the



11 (BAY OF FUNDY TOURISM PARTNERSHIP, 2015)

12 (NOVA SCOTIA POWER, 2015)

13 (FUNDY OCEAN RESEARCH CENTRE, 2015)

world's freshwater rivers.¹¹ Nova Scotia is therefore exceptionally well positioned to be a leading player in tidal energy in view of the Fundy resource combined with relatively low access costs to the grid and legislated emissions reduction targets already in place. In fact, Nova Scotia has been taking advantage of the power of the tides for more than 30 years through the small Annapolis Tidal Generating Station.¹² There

is now an opportunity to expand the opportunity through in-stream tidal projects in the Bay of Fundy.

The estimated theoretical potential of Fundy tidal energy is up to 60,000 megawatts (MW) of energy, of which up to 2,500 MW – or more than double the amount of energy used by Nova Scotia’s homes – may be extracted without significant impact on the marine environment. Extensive research is still required to develop economically viable technology and to mitigate marine environmental impact.

Tidal power is clean, renewable, and perfectly regular. By accelerating commercial tidal energy development in Nova Scotia, Canada can become one of a small number of global leaders, and gain early mover advantage in international trade for this developing sector. Nova Scotia should be seeking niche areas of expertise – for example, environmental monitoring, site assessment, grid connection, and deployment and recovery of generators.

Important progress is already being made. The Fundy Ocean Research Center for Energy (FORCE),¹⁴ a not-for-profit corporation, was established to operate a tidal turbine demonstration facility and enable public and private research into tidal energy extraction and its effects. The provincial government has already embarked on the path toward a goal of extracting 300 MW of tidal energy (sufficient to power a quarter of Nova Scotia’s homes) by approving more than 20 MW as qualifying for a feed-in tariff for tidal energy supplied to the electricity grid.¹⁴ This tariff is designed to encourage early commercial development.

In view of the very significant long-term potential of tidal energy for Nova Scotia, while recognizing the extensive research and development required to achieve economically viable generation, the coalition recommends that the private sector, with support from post-secondary institutions and the federal and provincial governments, collaborate on R&D as well as on manufacturing and operational service infrastructure that can lead to common benefits – e.g., deployment, mooring, and operating tidal energy devices.

Offshore Oil and Gas

The provincial government’s Offshore Growth Strategy aims to promote new exploration for hydrocarbons. This continues the successful experience of the original Play Fairway Analysis (PFA), which provided the oil and gas industry with

geoscience research and analysis of the offshore area and which estimated significant hydrocarbon potential. The PFA is cited by Shell and BP as one of the factors that led them to explore the Nova Scotia offshore. The two companies have agreed to spend approximately \$1 billion each by 2020 on further exploration with Shell expected to begin drilling late in 2015.¹⁵

In view of the enormous payoff if exploration identifies commercially significant hydrocarbon concentrations, the coalition recommends that the provincial government continue to invest in offshore geoscience research as a cost-effective way to attract investment by the oil and gas sector.

Liquefied Natural Gas (LNG)

Traditional patterns in natural gas markets are changing because of growing production in North America from shale formations. One consequence is that Canadian exports to the United States have



decreased because of the new production there. Fortunately, other markets around the world are looking for more diverse, low-cost, and sustainable supplies of natural gas, creating a new opportunity for North American LNG exports.

Nova Scotia is an attractive location for the development of LNG shipping terminals owing to the combination of tidewater access and existing pipeline infrastructure for gas from both western Canada and Appalachia. Two large-scale projects, Bear Head LNG and Pieridae Energy, have received environmental approvals from provincial regulators, as well as import and export licences from the National Energy Board. These projects alone represent a potential capital investment of more than \$15 billion. Several others of varying sizes have expressed potential interest in Nova Scotia. The provincial environmental assessment

14 (NOVA SCOTIA DEPARTMENT OF ENERGY, 2015)

15 (NOVA SCOTIA DEPARTMENT OF ENERGY, 2015)

approvals contain conditions to ensure LNG projects are among the cleanest in the world, including requirements for a greenhouse gas management plan.

The development of LNG export would open up a higher-priced market for domestically produced natural gas, which could encourage further development of Nova Scotia’s offshore resources. There are a number of prospective sites located near existing offshore infrastructure that could become more attractive to investment if associated with LNG export.

The LNG opportunity rests on prospective conditions of long-term supply and demand in the world market, as well as on the merits of competing terminal sites. The extent of Nova Scotia’s opportunity will thus depend primarily on corporate investment decisions in a global context.

The coalition recommends that in light of the significance of the potential opportunity

- Nova Scotia should continue to work with the current offshore licence holders, LNG export companies, and other interested parties to encourage further development of our offshore gas resources as part of the supply for LNG export
- in addition, the provincial government should develop a coordinated regulatory response to these projects to ensure safety and sustainability, while allowing the projects to be economically developed.

SAMPLE LOGIC MODEL FOR MEASUREMENT AND EVALUATION *(subject to further development)*

ACTION POINT OUTCOME RELATED KPIs	TO CAPITALIZE ON NOVA SCOTIA'S POTENTIAL IN INTERNATIONALLY ATTRACTIVE SECTORS INCLUDING OCEAN TECHNOLOGY, ENERGY, TRANSPORTATION, AEROSPACE, DEFENCE AND FOOD SECTORS		
	PER CENT OF PROVINCIAL GDP FROM THESE SECTORS		
	PER CENT OF EMPLOYMENT IN THESE SECTORS		
	PER CENT OF INVESTMENT IN THESE SECTORS AS A PROPORTION OF TOTAL INDUSTRY INVESTMENT		
INITIATIVE AREAS	BUILD A WORLD-CLASS OCEAN TECHNOLOGY CLUSTER IN NOVA SCOTIA	MAXIMIZE GROWTH OPPORTUNITIES IN SEAFOOD, WITH A FOCUS ON THE BURGEONING GLOBAL POTENTIAL OF AQUACULTURE	ENHANCE LONGER-TERM PROSPECTS IN MARINE ENERGY, INCLUDING A STRATEGY TO POSITION NOVA SCOTIA AT THE FOREFRONT OF TIDAL ENERGY DEVELOPMENT
INITIATIVE INPUT MEASURES	# OF START-UPS IN THE SECTOR TOTAL # OF BUSINESSES IN THE SECTOR INCREASED ITBS AND IRBS CONTINUED EFFORTS TO MAXIMIZE THE NS-BASED OPPORTUNITIES ARISING FROM THE NATIONAL SHIPBUILDING PROCUREMENT STRATEGY	# OF SEAFOOD BUSINESSES # OF AQUA CULTURE BUSINESSES AS A PROPORTION OF SEAFOOD BUSINESSES INCREASED LEVELS OF EXPENDITURE ON INNOVATIVE, VALUE-ADDING PRODUCT AND SERVICE FEATURES THROUGHOUT THE VALUE CHAIN	PROVINCIAL AND FEDERAL GOVERNMENT FUNDING LEVELS FOR TIDAL ENERGY # OF TIDAL ENERGY BUSINESSES # OF OFFSHORE OIL & GAS BUSINESSES # OF LNG BUSINESSES
INITIATIVE OUTPUT MEASURES	COVE IS ESTABLISHED AS THE PIVOTAL FACILITY FOR THE OCEANS SECTOR IN NS – DEFINED THROUGH A COMBINATION OF MEASURES INCLUDING, FOR EXAMPLE, A COMPARATIVELY STRONGER PERFORMANCE BY INCUBATED COMPANIES THAN OTHERS, STEADY GROWTH IN # OF NEW PRODUCTS AND SERVICES BEING LAUNCHED AS A RESULT OF COLLABORATIVE R&D UNDERTAKEN THROUGH COVE		



08 IMPLEMENTATION: ENSURING ACCOUNTABILITY AND SUSTAINING MOMENTUM

The coalition is determined that this report not suffer the fate of so many documents before it—to be launched with fanfare but then forgotten, gathering dust on everyone’s bookshelf. To avoid such a fate, it is essential to establish mechanisms from the outset that will (1) keep the coalition’s Collaborative Action Plan in the public eye, (2) provide the means for it to remain relevant and on course, and (3) stimulate the continuing collaborative engagement on which many of the proposed actions depend.

The coalition recommends two significant initiatives to accomplish those objectives:

- Ongoing public accountability enabled by a well-defined process of measurement and public reporting on progress toward achievement of both the Collaborative Action Plan and the quantitative goals set out in the Ivany Report.
- An innovative way to foster continuing collaboration and to harness the energy, creativity, and commitment of Nova Scotians in support of the Collaborative Action Plan.

Both of these initiatives would be ongoing throughout at least the 10-year time frame to achieve the goals of the Ivany Report and the full implementation of the coalition’s Action Plan. A description of each follows.

Measurement, Reporting, and Accountability

“However beautiful the strategy, you should occasionally look at the results.” -Winston Churchill

The Ivany Report proposed 19* goals and 12 “game changers” to guide the development of a 10-year action plan for transformation and renewal in Nova Scotia. The coalition’s Collaborative Action Plan, described in the previous seven chapters, set out concrete actions for multisectoral efforts to help achieve the goals and align with the game changers. Figures 1 and 2 below show broadly how the actions recommended in each of the preceding seven chapters serve this objective.

**THE IVANY REPORT CONTAINED 19 GOALS BUT THREE WERE UNDER THE EXCLUSIVE PURVIEW OF GOVERNMENT AND WERE NOT ADDRESSED BY THE COALITION.*

Ivany Report Goals and Game Changers

	The Early Years	Our Future is Young	Innovation Hubs	Immigration & Welcoming Communities	Our ICT Momentum	Going Global	Ocean Advantage
GOALS							
1	■	■		■	■	■	■
2		■	■	■	■	■	■
3	■	■	■	■	■	■	■
4			■	■	■	■	■
5						■	■
6						■	■
7	■	■		■	■		
8	■	■	■		■		
9	■	■	■		■		
10	■	■	■		■		
11			■			■	■
12			■		■	■	■
13					■	■	■
14						■	■
15						■	■
16						■	

fig 1: Goals identified in the Ivany Report

	The Early Years	Our Future is Young	Innovation Hubs	Immigration & Welcoming Communities	Our ICT Momentum	Going Global	Ocean Advantage
GAME CHANGERS							
I	■	■	■	■	■	■	■
II	■	■	■	■	■	■	■
III	■	■	■	■	■	■	■
IV		■	■		■	■	■
V			■	■	■	■	■
VI						■	■
VII	■	■	■	■	■	■	■
VIII	■	■	■	■			
IX	■	■	■	■	■	■	■
X	■	■	■	■	■	■	■
XI	■	■	■	■	■	■	■
XII	■	■	■	■	■	■	■

fig 2: Game Changers identified in the Ivany Report

For a list of the Goals and Game Changers identified in the Ivany Report, see Appendix 1, page 94).

In order to sustain momentum toward implementation of the Collaborative Action Plan and achievement of the Ivany goals, it is essential both to measure and to report regularly to Nova Scotians on progress. It is important to distinguish in this regard between (1) the results of the Collaborative Action Plan and (2) progress toward the Ivany goals. The specific recommendations in the action plan will contribute to the Ivany goals. For example, there will typically be several recommended actions drawn from among the seven areas of the Collaborative Action Plan that will contribute, in varying degrees, to any particular Ivany goal. But there will be many other initiatives by government and by a variety of

OUTCOMES:

Outcomes are broad, clear, and general statements of what is intended to be accomplished under the strategic areas in terms of overall vision and general aims and aspirations, e.g. maximizing work opportunities or increasing our population.

GOALS:

Goals are clear statements that describe in precise and more detailed measurable terms the specific, observable, and desired results pertaining to the actions taken under the plan and aligned with the vision and mission of the plan.

INITIATIVES:

Initiatives are strategically aligned actions, activities, and programs undertaken to achieve the goals and outcomes.

KEY PERFORMANCE INDICATORS (KPIs):

KPIs follow the SMART criteria, which means that each KPI has a Specific purpose, and is Measurable, Achievable, and Relevant to success, and is Time phased, which means the value or outcomes are shown for a predefined and relevant period. In order to be evaluated, KPIs are linked to target values, so that the value of the measure can be assessed as meeting expectations or not.

stakeholders that must also be counted on to help achieve the Ivany goals. The Collaborative Action Plan cannot be expected to do the job by itself. Similarly, there are initiatives in the coalition's action plan that can be expected to have significant impact in areas other than those covered explicitly by the Ivany Report's goals and game changers. For example, the coalition's recommendations in respect of early childhood, while contributing to certain of the Ivany goals, would also have impact beyond them. Therefore, two sets of measurement and reporting are needed: one to track progress toward the Ivany goals, and the other to track the progress of the Collaborative Action Plan.

The coalition has proposed, at the conclusion of each of the previous seven chapters, specific indicators of inputs, outputs, and outcomes in respect of the principal recommendations in the chapter. These indicators will be subject to refinement as a result of feedback from stakeholders to create a transparent and objective basis on which to assess progress toward both the Ivany goals and the Collaborative Action Plan. The coalition recommends the following:

1. An independent organization should be tasked to measure on a periodic basis: (i) the indicators specified in the 16 goals set out in the Ivany Report, and (ii) appropriate input, output, and outcome indicators in respect of the recommendations in the Collaborative Action Plan. The organization must have deep experience in the collection, quality control, and presentation of the relevant types of statistical data. (The coalition does not recommend a specific organization, but examples would include an accounting firm or a non-governmental organization such as the Atlantic Provinces Economic Council or the Centre for the Study of Living Standards.)
2. A website containing a "dashboard" summary of the foregoing data should be established and maintained.
3. A full report of the progress data, presented so as to facilitate interpretation by the public, should be prepared and published annually.
4. It would be the responsibility of the provincial government to ensure that the foregoing elements are put in place in a way that preserves objectivity and transparency.

LOGIC MODELS

A logic model is a tool used to measure and evaluate a plan showing the logical relationships between inputs, outputs, and outcomes. KPIs provide data that can be used to evaluate whether the initiatives are on track to achieve the outcomes. By using this approach, we can measure progress toward achieving the outcomes of the Collaborative Action Plan, and, in turn, determine if they are contributing to achieving the related goals from the Ivany Report. Each of the chapters on the seven action areas includes a logic model template.

DASHBOARD

A dashboard is a type of progress report that is easy to read, and provides a simple graphical presentation of progress and results, including KPIs and outcomes. Dashboards are often displayed on websites and updated regularly. Figure 3, to the right, is an example of pages from a possible dashboard. A dashboard would be used over time to show progress toward implementing the Collaborative Action Plan and achieving the goals set out in the Ivany Report.

Implementation of this recommendation would keep progress in respect of the Ivany goals and the Collaborative Action Plan in the public eye and would, therefore, maintain momentum toward their achievement.

Another option that could be considered would be to create an all-party committee of the legislature to consider the periodic progress reports and whether adjustment of certain goals or indicators might be warranted as circumstances evolve; and also to consider whether the goals and accountability procedures should be reflected in legislation.

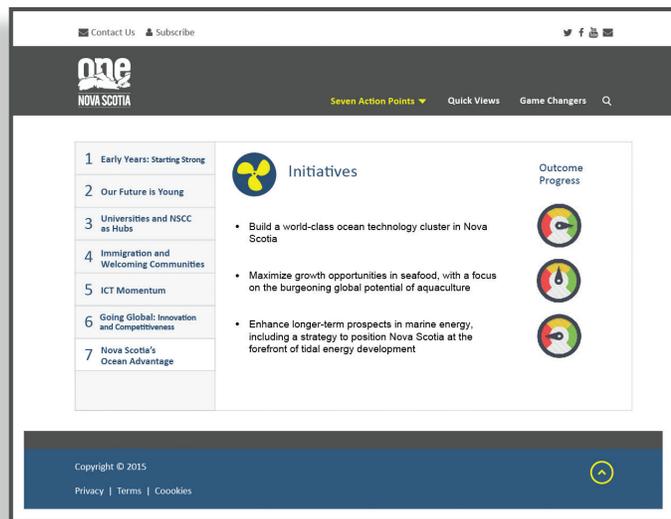
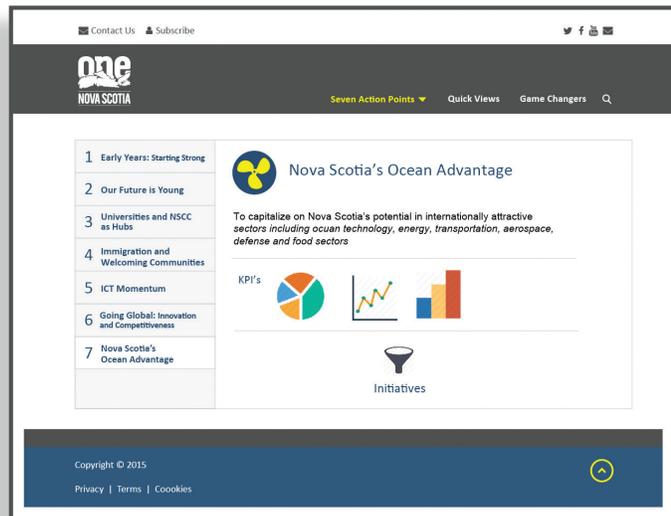
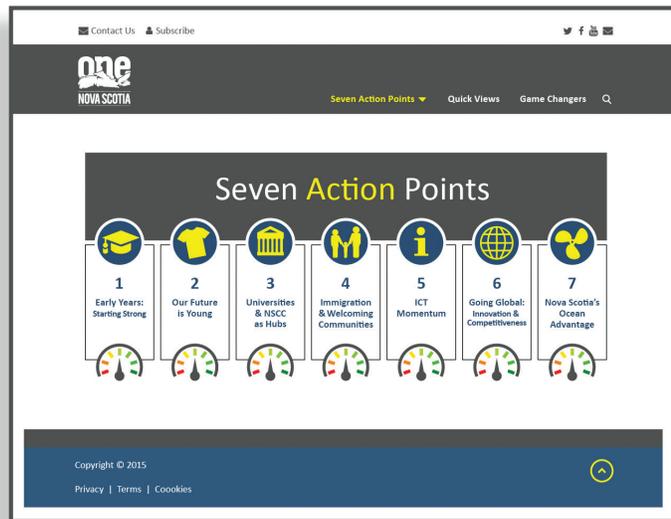


fig 3: Examples of dashboard pages.

Engaging Nova Scotians in the Collaborative Action Plan

The Collaborative Action Plan recommended by the coalition will not be accomplished on its own. Without a focus that constantly encourages change through collaborative action, the gravitational pull of business-as-usual will inevitably drag the best of intentions back to the more comfortable status quo.

The measurement and accountability framework described above will make Nova Scotians regularly aware of progress toward achievement of the Collaborative Action Plan and of the goals set out in the Ivany Report. This periodic performance audit will certainly help to sustain momentum in light of the old adage that “what gets measured gets done.”

But measurement alone will not facilitate the collaborative approach on which many of the coalition’s recommendations depend. What is needed is a forward-looking way to galvanize the creative energies of Nova Scotians and to enable more broadly based engagement to create the kind of future for Nova Scotia recommended in this document.

Many of the coalition’s recommendations are addressed to government and will need to be implemented by departments and agencies in the normal course. But this report, through its emphasis on collaboration and the engagement of all Nova Scotians, is calling for something more and something new. The primary objectives are to:

- provide a tangible incentive for Nova Scotians to come together to contribute to the achievement of the Collaborative Action Plan
- harness the creativity, entrepreneurship, and local knowledge and commitment of Nova Scotians—characteristics that have been emphasized throughout the report
- complement the initiatives to be taken by the government to implement the action plan
- ensure that the Collaborative Action Plan has strong continuing momentum

The coalition was created to remain apart from political partisanship and thus, the foregoing objectives need to be accomplished through mechanisms that preserve non-partisanship. This can be accomplished by means of a funded competition in which Nova Scotians are invited to collaboratively develop proposals that would be judged according

to transparent criteria and through an objective procedure at arm’s length from government. The competitions should take place in successive rounds over roughly the next ten years. Funding provided by the provincial government would evolve in light of the success of the competitions in bringing forward high quality proposals for practical and effective ways to advance the Collaborative Action Plan.

The coalition is not proposing a definitive set of selection criteria, but would put forward the following as a basis for discussion and refinement. For example, proposals might be judged according to the extent they embody:

- ✓ Excellence—Extent and quality of contribution to the Collaborative Action Plan
- ✓ Leverage—Contribution of resources (cash and in-kind) from partners
- ✓ Collaboration—Breadth and depth of the group of stakeholders making the proposal
- ✓ Sustainability—Prospect of continuing after support from the competition award ends
- ✓ Diversity—Involvement in the proposal of disadvantaged groups and areas
- ✓ Additionality—Proposed actions would be unlikely to happen without the competitive award

Not all of these criteria need be of equal weight.

The proposals in any given round would be adjudicated by an impartial panel of individuals of broadly recognized integrity as well as experience regarding the kinds of issues involved in the Collaborative Action Plan. There is considerable experience both in Canada and abroad that should be drawn upon in developing the detailed design of the proposed competition. For example, research granting agencies routinely employ juried competitions. In a different context, the Regional Growth Fund, established in 2010 by the British government, conducts competitions to award very significant funding amounts in support of a broad range of economic development activities. These competitions are judged by a panel of individuals outside of government.

It is beyond the scope of this report to make detailed recommendations as to the design and governance of the proposed competitions. There are

obviously important considerations regarding funding and accountability as well as the appropriate scope of qualifying proposals. For example, care will be needed to ensure that the competitions are not seen as an alternative to existing government programs and funding sources. It should also be emphasized in this regard that the competitions would not be substitutes for university research funding.

The clear purpose is to support innovative, collaborative ways for Nova Scotians to be directly and tangibly involved in implementing the coalition's Action Plan. The mechanism proposed to accomplish this—a series of funded competitions—has a number of significant advantages:

- The competitive feature will stimulate innovation and team spirit and is the way to bring out the best—it would be a “creativity amplifier.”
- Proposals can be expected to attract commitments of financial and in-kind support from collaborative partners and thus will multiply the contribution by government.
- The selection of awardees by independent panels, according to transparent criteria and procedures, will insulate the process from political partisanship.
- Political accountability will nevertheless be involved regarding the amounts provided from time to time by the government of the day to support the competitive awards, as well as regarding the specific design of the procedures by which the competitions are conducted and governed.
- The competitions can be conducted with very modest administrative overhead—essentially a small group to manage the calls for proposals and to support the adjudication panels.

In conclusion, the coalition recommends that the Government of Nova Scotia initiate a process that will sustain momentum toward implementation of the Collaborative Action Plan. That process should have the following key features:

1. There will be funded competitions in which Nova Scotians are invited to collaborate to bring forward their best ideas for achieving those aspects of the action plan that do not fall within the scope of existing government initiatives.
2. The competitions will be conducted and adjudicated at arm's length from government.
3. The competitions will receive funding support from government from time to time. The amounts will evolve to reflect the success of the competitions in furthering the Collaborative Action Plan.
4. To initiate the process, the government should consult as to the best design and governance of the competitions—including, for example, the scope of eligible proposals, selection criteria, eligible participants, and method of selection of adjudication panel(s).

TAKING ACTION, TOGETHER

The ONE Nova Scotia Coalition has provided a plan focused on this province's abundance of assets and opportunities. We have attempted to create a balance between optimal near-term opportunities for success and longer-term investments we believe will pay huge dividends for all Nova Scotians.

There is no magic solution, no alternative to the difficult work that still lies ahead. We cannot simply cross our fingers and hope for a different outcome or assume others will come to our rescue.

The foundation of our plan is based on building a ONE Nova Scotia movement in which we work together to achieve economic growth and demographic stability. Our plan requires new ways of thinking, confidence in ourselves and others, support for economic and social change, embracing risk, encouraging bold endeavours, and celebrating every success that is achieved along the way.

After 18 months of hard work, members of the ONE Nova Scotia Coalition have come to a better understanding of the complexities involved in achieving transformational change. We come from different backgrounds and bring different perspectives and priorities. We share a sincere concern, and care deeply about the future of our province. Like you, we have a personal stake in our common future.

Without the groundwork undertaken by the Ivany commissioners, the powerful discussion and shift that followed the release of their report would not have occurred. The tremendous impact of that work has prepared Nova Scotians for the next step in our journey.

Like the Ivany Commission, we urge all Nova Scotians to consider how each of us can help to revitalize our province. We need a shared vision of tomorrow to focus our efforts and move beyond traditional sector, political, community, and regional boundaries.

Many Nova Scotians have already answered the Ivany Report's call to action. Individuals, business leaders, and community organizations across our province are modelling the kind of collaborative efforts we need to create positive, sustainable progress. But they cannot do it alone.

The people who take up our challenge are the leaders who will create new paths toward prosperity and demonstrate that success demands more than wishful thinking. Nova Scotians will know this leadership when they see it, because it will be accompanied by actions that speak volumes.

Those actions cannot happen without our support. The ONE Nova Scotia movement will shore up our collective resolve and create an atmosphere where change can and does happen. A broader push involving more people will be essential to achieving success.

Every Nova Scotian has a role to play.

SUMMARY OF ACTIONS

Following is the text of the 60 recommendations in the Collaborative Action Plan, prepared to facilitate easy reference. The recommendations are consecutively numbered within each of the eight chapters. In some cases the wording of the recommendations, as presented below, has been altered slightly from the wording in the main text to permit a uniform format.

1. THE EARLY YEARS: STARTING STRONG

1.1 PRINCIPLES OF A MADE-IN-NOVA SCOTIA EARLY YEARS PROGRAM

The coalition recommends development of a “made-in-Nova-Scotia” early years education and development program that builds on work currently in progress and is based on best practices adapted to our particular circumstances. The overarching goal is to ensure that every infant, child, and family is supported in our communities. Nova Scotia’s early years program should be based on the following broad principles:

- Universal access to early years’ education and development programs where children engage in meaningful play- and inquiry-based learning.
- Provision of additional supports for families that are subject to greater stress and vulnerability.
- Increased work force participation by parents, contributing to economic growth.
- Continuous improvement based on learning from measures of success in terms of social and economic outcomes.
- Staffing by persons trained in early childhood education.
- Public funding sufficient to support a program that embodies these principles.

1.2 FEATURES OF NOVA SCOTIA’S APPROACH

Further to the foregoing principles, the coalition recommends as follows:

- a) Consider including universal early learning programs for three- and four-year-olds delivered by early childhood educators.
- b) Identify culturally appropriate forms of early education programs in consultation with various communities that experience socio-economic

disadvantages, notably First Nations communities.

- c) Establish additional Early Years Centres, beyond the eight already in place, to provide broader access to service for communities throughout the province.
- d) Create a multi-sectoral research partnership, involving post-secondary institutions and practitioners, to improve the scope and reliability of findings. This could be linked to the four Early Childhood Development Support Centres located at Nova Scotia Community College campuses.
- e) Include innovative ways—e.g., Social Impact Bonds—to complement government financing.

1.3 WELCOMING OUR YOUNGEST CHILDREN

The coalition recommends that communities, businesses, not-for-profits and philanthropists, with support from government and others, including the research community where appropriate, create Collective Impact projects designed to support and encourage the welcoming of Nova Scotia’s children by:

- engaging parents and families to develop notions of what “welcome” is and what is most important about it,
- supporting interested citizens in building pilots, and
- drawing on examples set by other Collective Impact projects regarding the early years in other jurisdictions. This should specifically include examples set by and in First Nations, Inuit and Metis communities.

1.4 CO-ORDINATED GOVERNMENT ACTION TO SUSTAIN EARLY YEARS BENEFITS

The coalition recommends that the provincial government sustain efforts made in early childhood education and development throughout the period from cradle to career by:

- providing high-quality support for at-risk students in the P-12 school system,
- ensuring collaboration among all government departments that provide programming for at-risk children and youth--Education and Early Childhood Development (EECD), Labour and Advanced Education, Community Services, Justice, Health and Wellness, and

- developing metrics to evaluate the success of programs and reporting publicly on results.

1.5 COMMUNITY COLLECTIVE IMPACT AND TARGET ZONES

The coalition recommends that businesses, civil society organizations and engaged citizens come together to create Collective Impact initiatives supported by sustainable and long-term funding. Particular areas of the province with high-density populations and large numbers of children and families that are disadvantaged could be identified as “target zones” and provided with resources to mobilize community partners and businesses to build new approaches to young Nova Scotians.

2. OUR FUTURE IS YOUNG

2.1 FOCUS ON HIGH SCHOOL STUDENTS

The coalition recommends that the provincial Department of EECD and school boards enhance guidance counseling services. Regional Business Education Councils, as proposed by EECD, should be developed to support school boards in this role.

2.2 EXPAND YOUTH CONNECT/MENTOR PROGRAMS

The coalition recommends that “Connector” and “Mentor” programs be expanded as an important component of a youth retention strategy. Regional groups such as the Halifax Partnership, Cape Breton Partnership, Regional Enterprise Networks (RENs), and/or chambers of commerce should lead the expansion of connector and mentor programs in partnership with local businesses, not-for-profits, post-secondary education (PSE) institutions and other organizations.

2.3 MAKE NOVA SCOTIA THE CO-OP LEADER IN CANADA

The coalition recommends substantially expanding co-op opportunities to make Nova Scotia the co-op education leader in Canada by focusing on the following strategic components:

- Strengthen high school co-op programs, initially by expanding apprenticeship and co-op options to more trade sectors.
- Ensure there are sufficient co-op programs, apprenticeship programs, and experiential learning opportunities provided by PSE institutions. Our goal should be to become the first province where all post-secondary students can participate in such programs. To this end, universities and NSCC should consolidate and coordinate co-op and other experiential learning programs through a single window. The provincial Department of Labour and Advanced Education should be prepared to use its funding relationship with PSE institutions to foster these outcomes. Enhanced funding for the Strategic Co-operative Education Incentive program (SCEI) would be an effective investment for youth employment and retention.
- Maximize participation in Mitacs programs (which link business and academia through research and training internships) thus ensuring that Nova Scotia captures the greatest possible benefit from the 75 per cent share of funding that is not provided by the provincial government.
- The One NS Desk pilot program, which matches candidates with employers in their field, should be monitored and evaluated for consideration of support and expansion.

2.4 YOUTH ENTREPRENEURSHIP

The coalition recommends that the provincial government and the private sector ensure that there are sufficient resources for entrepreneur-led organizations—e.g., YES NS, Junior Achievement, CEED, Brilliant Labs—to achieve outcomes related to youth entrepreneurship.

2.5 YOUTH AND SOCIAL ENTREPRENEURSHIP

The coalition recommends that the Government of Nova Scotia:

- Make comparable supports available for social enterprises as for other businesses, including those related to capacity building and access to finance.
- Create a mentoring network for social entrepreneurs, drawing upon existing business networks as well as successful social entrepreneurs; encourage more retirees to become mentors; and leverage Innovacorp’s approach to supporting young start-ups (including competitions, incubation and

acceleration capabilities) to create a program for social enterprises.

- c) Enhance capacity building and training for social entrepreneurs.

2.6 GOVERNMENT LEADERSHIP IN YOUTH HIRING

The coalition recommends that all levels of government lead by example as youth-friendly employers—for example, by relaxing experience requirements in selected categories and providing promising young employees with training to close the experience gap.

2.7 GRADUATE TO OPPORTUNITY

The coalition recommends that the provincial government’s Graduate to Opportunity program (which provides salary contributions to employers who have hired recent PSE graduates) be scaled up with a target of 500 students within two years.

2.8 ENHANCING SKILLS AND OPPORTUNITIES FOR UNDER-REPRESENTED YOUTH

The coalition recommends that the Minister responsible for youth lead a sustained initiative to close the skills gap for youth who are from under-represented communities, a disproportionate number of whom are from our Mi’kmaw, African Nova Scotian, and persons with disabilities communities. More specifically:

- a) The provincial government should work with the private sector and PSE institutions to develop a program to enhance employment of under-represented groups in the ICT workforce.
- b) Implement a program of “Diversity Reporting” where employers would post data on their website data regarding the diversity of their workforce.

2.9 EXPANDING COMMUNITY-LED INITIATIVES

The coalition recommends that initiatives such as, for example, “Pathways” in Spryfield, be expanded using the Collective Impact approach where a diversity of stakeholders come together with youth to collaboratively identify and solve a complex social problem. (Michelin Tire’s Aboriginal Workforce Partnership provides an example of how business can play a leadership role in supporting under-represented youth. The private sector should undertake similar initiatives.)

2.10 LOCAL YOUTH PARTNERSHIPS IN EVERY REGION OF NOVA SCOTIA

The coalition recommends creation of “Local Youth Partnerships” to foster collaboration between youth and a broad range of stakeholders. These would be locally designed and youth-partnered for every region of the province. Core funding should come from government, but substantial in-kind support needs to be provided by partner organizations. The Partnerships should be responsible for mobilizing the private sector to attach skilled youth to work opportunities.

2.11 COLLECTIVE IMPACT AND A PROVINCIAL NETWORK

The coalition recommends a Collective Impact approach to Local Youth Partnerships that brings all sectors in a region together, building on the existing collaborative efforts. A provincial network should be created that links the Local Youth Partnerships to share experience and best practices. Specific attention should be given to creating online data, organized by region, about youth who have left and hope to return.

3. UNIVERSITIES AND NSCC AS INNOVATION HUBS

3.1 PSE INSTITUTIONS AS REGIONAL ANCHORS FOR DEVELOPMENT AND INNOVATION

The coalition recommends PSE institutions in a particular region should play a greater role as regional anchors for social and economic development and innovation, and to that end they should:

- a) Integrate the “anchoring” role into the fabric of their institution
- b) Become even more active partners in economic planning and revitalization efforts by helping to mobilize knowledge in communities
- c) Enhance innovation ecosystems generally, with particular focus on key strategic sectors, such as oceans, ICT, biotechnology and life sciences, and sustainable natural resource development
- d) Contribute to community development initiatives where the expertise of PSE institutions can help to enhance outcomes. (Reciprocally, the communities can serve as “living labs” in which to apply research and acquire knowledge.)

- e) Promote entrepreneurship and provide research-based advice in shaping business strategy.
- f) Foster innovation in social enterprise—for example, by offering courses for students who wish to set up companies to deliver services to communities in new ways.
- g) Engage with high school students and teachers to enhance opportunities and outlets for innovation, creativity, and entrepreneurship.
- h) Amplify the effectiveness of early childhood and P-12 education by tutoring and mentoring vulnerable youth or underperforming students to help close the achievement gap.
- i) Support regional business development by increasing opportunities for local suppliers to the institution.
- j) Encourage faculty to be involved in the local business community or social organizations, for example by providing time to undertake these activities, rewarding the efforts, and incorporating it into hiring, review, promotion, tenure and other policies.

3.2 PRINCIPLES FOR R&D COLLABORATION

The coalition advocates increased collaboration among PSE institutions, the private sector, and government to enhance business-led R&D and commercialization, and recommends that initiatives be based on the following principles:

- **Focus:** Focus provincial research funding on areas of greatest strategic impact for the province.
- **Leverage:** Ensure, whenever possible, that provincial research dollars leverage further funding and benefits from non-provincial sources, including the federal government and the private sector.
- **High Quality Talent:** (1) Increase research funding to high quality graduate students who are working in relevant programs that can translate R&D into commercial products; (2) develop opportunities for undergraduate researchers to collaborate with researchers across institutions; and (3) facilitate research placements with industry through Mitacs and similar programs.
- **Global Excellence:** Build on the research excellence of Dalhousie University and on the research excellence in particular areas of strength within the other Nova Scotia universities.

3.3 PROVINCIAL GOVERNMENT SUPPORT FOR R&D

The coalition recommends that the provincial government increase its support of R&D, with funding focused in areas of provincial priorities and designed to provide incentives for business to increase R&D spending relevant to those priorities. The provincial government should, over time, raise its level of direct R&D support to the national per capita average.

3.4 ELEVATING DALHOUSIE TO THE GLOBAL TOP 200 RESEARCH UNIVERSITIES

Dalhousie is the only university in Atlantic Canada in the “U15” group of top research universities in Canada. The coalition recommends Dalhousie be broadly supported in its ambition to become ranked among the Top 200 universities in the world.

3.5 CO-OPS AND EXPERIENTIAL LEARNING

The coalition recommends collaborative efforts among PSE institutions, the private and social enterprise sectors and government to build connections with employers that will maximize work placements, co-ops, and other forms of experiential learning. This initiative would include the following features:

- a) Expand opportunities so that Nova Scotia’s PSE institutions offer the most co-ops and experiential learning programs per student in Canada.
- b) All PSE students should have the opportunity to engage in experiential learning, regardless of their program or institution.
- c) Private sector organizations, such as chambers of commerce and Regional Enterprise Networks, should champion co-ops and experiential learning, and work to maximize participation by businesses.
- d) The Nova Scotia Apprenticeship Agency should work with PSE institutions and the private sector to expand apprenticeship programs into new growth areas (such as ICT) to ensure apprenticeship opportunities remain closely linked to economic growth and job opportunities.
- e) The provincial government, through its funding of PSE institutions, should create incentives and provide support to ensure that the intended outcomes of this initiative are achieved.

3.6 INNOVATION, CREATIVITY AND ENTREPRENEURSHIP

The coalition recommends that the PSE and P-12 systems collaborate with the shared goal to create a Nova Scotia entrepreneurship network, anchored in Halifax and mutually reinforced by regional sub-networks that would place the province in the top-20 global start-up communities. To this end:

- a) PSE institutions should ensure all students are provided an opportunity to pursue a significant experience—a course or an internship—focused on innovation, creativity, and entrepreneurship. These experiences could be related, for example, to business, social enterprise, culture or public service.
- b) PSE institutions, businesses, social-enterprises, and government should ensure there are sufficient platforms for innovation, creativity, and entrepreneurship — for example, “sandboxes,” change labs, science and technology parks, incubators and accelerators. To reduce barriers, these platforms should feature modest rents, infrastructure support and services, with the private sector providing mentoring and in-kind services.

4. IMMIGRATION AND WELCOMING COMMUNITIES

4.1 ENHANCING THE PROVINCIAL NOMINEE PROGRAM

The coalition recognizes that to increase the number of immigrants to Nova Scotia it will take collaboration, clarity about the skills needed, and specific geographic targets, and therefore recommends that the Government of Nova Scotia work with the Government of Canada and the business community to steadily increase the annual number of immigrants allocated to Nova Scotia by the federal government.

4.2 IMPROVING INTERNATIONAL QUALIFICATIONS RECOGNITION (IQR)

The coalition believes that Nova Scotia must make particular efforts to ensure that it is best-in-class in International Qualifications Recognition (IQR) and endorses the collaborative approaches to complex IQR challenges by the existing Multi-stakeholder Work Group and recommends that all new immigrants with professional credentials from their home jurisdiction be provided a fast track to allow recognition of these credentials in Nova Scotia.

4.3 “A WELCOME LIKE NO OTHER”

The coalition recommends a collaborative effort among post-secondary institutions, municipalities, immigrant settlement partners and individuals to provide to out-of-province and international students “A Welcome Like No Other”, including:

- a welcome at the airport;
- an event that celebrates local music, food, and culture;
- opportunities to connect with a Nova Scotia employer in their field of study;
- a personal experience—such as an “at-home” meal with a Nova Scotia family; and/or
- a subsequent mentoring opportunity in which volunteers would share experience, in a structured way, in areas related to the student’s chosen field.

4.4 WELCOMING COMMUNITIES

The coalition believes that to attract and retain immigrants, Nova Scotia must have welcoming communities and recommends the following actions:

- a) Undertake a community- and business-led Collective Impact initiative via federally-supported Local Immigration Partnerships that will develop local settlement strategies to make immigrants feel more welcome both within communities and at work.
- b) Gather evidence (using volunteer agencies and/or Regional Enterprise Networks) to determine how welcoming a community is to newcomers.

4.5 CONNECTING AND MENTORING

The coalition recommends that connector and mentor programs—which promote and facilitate employer engagement in the recruitment and retention of immigrants—be expanded across the province, creating a network of retention specialists.

4.6 IMMIGRANT ENTREPRENEURSHIP

The coalition recommends the provincial government encourage and support immigrant entrepreneurs, whether in founding startups or acquiring Nova Scotia businesses. (Innovacorp has been designated as an organization that can recommend entrepreneurs to receive a work visa from Citizenship and Immigration Canada under the federal government’s new five-year pilot Start-Up Visa Program.)

5. OUR ICT MOMENTUM

5.1 REQUIRE INSTRUCTION IN CODING AND RELATED COMPUTER SKILLS

The coalition is convinced that coding instruction, combined with a deeper understanding of computers and their effective use, should begin in Grade Primary continuing each year through graduation, and therefore recommends that the provincial government require such instruction as a foundational component of the P-12 curriculum. (The U.K. has implemented a similar requirement beginning in 2014.)

5.2 EDUCATION FOR THE NEW ECONOMY

The coalition recommends a significant focus on P-12 math and science skills, with an aim to place in the top quartile in Canada. It is emphasized that these skills and coding instruction must be complemented by wide-ranging skills such as critical thinking, creativity, innovation and entrepreneurship. (The acronym STEM—science, technology, engineering, and math—becomes STEAM by adding “A” for arts to reflect this broader perspective.)

5.3 ICT TALENT DEVELOPMENT

The coalition recommends that post-secondary education institutions support a talent development strategy that encompasses the following features:

- a) Universities and NSCC should expand and enhance ICT programs at the undergraduate and graduate level, although the pace of expansion will be governed by the extent of student preparedness to enroll in degree programs in ICT fields.
- b) Teacher training specialties in the ICT disciplines must be provided in order to implement the universal coding instruction in P-12 and a broader and deeper curriculum of ICT-relevant education in Nova Scotia’s schools.
- c) One or more universities or the NSCC should develop a high-quality, 6-to-12-month program for ICT and computer science. This program would be designed to facilitate career change or to add ICT skills to an existing career. Such programs should be complemented with a range of shorter, less formal training—e.g., coding boot camps; continuing professional development short courses.
- d) Post-secondary education institutions and the private sector should develop co-op programs

for students in ICT-related fields. The Nova Scotia Apprenticeship Agency is well placed to work with NSCC and the private sector to develop an ICT apprenticeship program.

- e) Post-secondary education institutions, incubators, and accelerators should develop diploma programs for sales skills in technology and in the use of technology to increase sales across all industries.

5.4 PROVINCIAL SUPPORT FOR ACCESS TO CAPITAL

The coalition recommends that the provincial government complement and encourage increased private-sector early-stage capital through the following:

- a) Enhance the equity tax credit (ETC) to leverage private-sector seed investment in high-growth, innovative businesses, and expand the range of eligible investors and types of investment, while seeking regional harmonization and reciprocal treatment among other Maritime (or Atlantic) provinces.
- b) Develop a private sector-led early stage venture capital fund to complement the private sector-led venture capital already established through Build Ventures.
- c) Adopt a co-investment approach for seed and venture capital, with approved angel or seed investment groups and venture capital funds.
- d) Require, as a condition of government financing, that there be coordination with mentorship, incubator and/or accelerator support.

5.5 INCUBATORS, ACCELERATORS AND “SANDBOXES”

The coalition recommends that the provincial government support ICT graduates in starting their own businesses through the following mechanisms:

- Locate Volta Labs and related partners at the former Halifax Library on Spring Garden Road which will be a central magnet for entrepreneurs and students as well as for local, national, and global companies seeking the benefits of a dynamic innovation community.
- Expand support for “sandboxes” following evaluation of the six pilots that have already been established at PSE institutions.

- Increase support for incubation/accelerator facilities (e.g., Innovacorp, Volta, Holy Angels) to provide space and mentorship for the anticipated growth in the number of entrepreneurs starting ICT companies.

5.6 ATTRACTING EARLY-STAGE ICT COMPANIES TO NOVA SCOTIA

The coalition recommends that Nova Scotia Business Inc. (NSBI) and Innovacorp collaborate with the Atlantic Canada Opportunities Agency (ACOA) to:

- Develop relationships with out-of-province incubators/accelerators and venture capital firms, particularly in high-cost markets such as Boston, New York, and Toronto, whose start-up clients are experiencing difficulty finding the ICT talent they need to grow. Business development programs need to be designed to make it easy for that specific segment of companies to locate in Nova Scotia; and
- Build on the success of Innovacorp’s Cleantech Open and launch an international “ICT Open” competition to find and fund high-potential, early-stage ICT companies willing to relocate operations in Nova Scotia.

5.7 FACILITATING ACQUISITION OF ICT COMPANIES

The coalition recommends that NSBI create a “growth squad”. The squad would work with companies that might be considering ICT-related acquisitions to identify the companies’ growth targets and needs and support their acquisition objectives.

6. GOING GLOBAL: INNOVATION AND COMPETITIVENESS

6.1 ENCOURAGING BUSINESS-DRIVEN R&D AND COMMERCIALIZATION

The coalition recommends that the Government of Nova Scotia create incentives for more business-led R&D and related commercialization. To that end, the mandate of the provincial Department of Business should include leadership of a multi-sector effort—including businesses, universities, NSCC, research institutions, and governments—with the following key elements:

- Provincial government support of R&D and commercialization should create incentives for greater business innovative activity in areas of provincial priority, with funding eventually coming in line with the national per capita average. This approach depends on an explicit identification of priority areas.
- Government funding should be allocated through a centralized process to which businesses can apply to undertake R&D in collaboration with a PSE or other research institution. An independent, expert-based selection process would be used to ensure sound and objective technical evaluation. (An Innovation Pilot and Commercial Demonstration Program would be one example of this approach.)
- The provincial government should ensure that its research dollars leverage, to the greatest feasible extent, further funding and benefits from non-provincial sources. These include, for example, funding from the Canada Foundation for Innovation, the new Canada First Research Excellence Fund, and “offsets” associated with defence procurement.
- The Department of Business should lead, in partnership with businesses, PSE institutions, and federal and provincial agencies, the development of “clusters” of innovative activities--e.g., focused research, start-ups and larger firms, professional and consulting services--in strategic priority areas for Nova Scotia (and Atlantic Canada, as appropriate). The newly created Invest Nova Scotia, working with the Department of Business, NSBI and Innovacorp, should make coordinated strategic investments that benefit multiple firms in a cluster.
- The federal and provincial governments should maintain the Scientific Research and Experimental Development (SR&ED) tax credit, which has proven to be significant benefit, particularly for smaller innovative companies.

6.2 USING PUBLIC PROCUREMENT TO STIMULATE INNOVATION

The coalition recommends that the Government of Nova Scotia target a limited portion of procurement in health, education and other public services to support commercialization of locally-developed innovation. (For example, the health-care sector is on the cusp of a new wave of ICT adoption. Nova Scotia should exploit its demographics, medical research expertise, and big data and technology assets to be an incubator

for specific aspects of health-care transformation in Canada, which could then be exported globally.)

6.3 A NEW WAY TO SUPPORT TALENT, INNOVATION, AND COMMERCIALIZATION

The coalition recommends that NSBI shift its foreign direct investment incentives toward support of innovation. Companies that currently might have been offered a payroll rebate, for example, could be provided instead with vouchers or credits to be used at Nova Scotia's universities or NSCC to:

- develop education and training programs tailored specifically for the targeted businesses
- attract top students for co-ops, internships, or work placements
- undertake R&D, or develop innovative products or processes, in collaboration with PSE institutions
- build facilities for R&D and other elements of the innovation ecosystem.

6.4 REMOVING TRADE BARRIERS AND IMPROVING THE EASE OF DOING BUSINESS

The coalition recommends that:

- a) The Government of Nova Scotia should seek to harmonize regulations and remove trade barriers among the Atlantic or Maritime Provinces through a "New East Partnership" similar to the New West Partnership among Canada's western provinces.
- b) The new provincial Office of Regulatory Affairs and Service Effectiveness, which operates jointly with New Brunswick, should evaluate the attractiveness of Nova Scotia in comparison to other provinces. The initial focus should be to speed up and simplify the process for incorporation of companies taking a cue from the user-friendly approach in British Columbia. Nova Scotia's approach should feature public accountability based on rigorous metrics and an ambition to be the best place in Canada to start and run a business.

6.5 GROWING "SME" EXPORTS

The coalition recommends that the provincial government:

- a) In collaboration with the business sector, other Atlantic Provinces and federal agencies, develop "reverse-trade missions" focusing on the most promising global opportunities. (A reverse-trade mission brings global opportunities to us, rather than travelling to them.)

- b) Create a tax incentive to facilitate the growth of small business exports. Qualifying companies would receive a tax reduction based on the annual growth of their exports relative to some moving average of previous years' exports. The incentive would thus apply only to the increment of export growth and would be phased out as the size of the company increased.

6.6 ENHANCED TRADE PROGRAMS

The coalition recommends that the trade-enhancement activities of Nova Scotia Business Inc. focus on improving the ability of companies to grow and diversify beyond their existing markets. More specifically NSBI should:

- a) In collaboration with ACOA and the federal department of Foreign Affairs Trade and Development, develop tools to help companies comply with interprovincial and international regulations, customs, tax, and other such requirements. This might be done through a "certification centre" to help companies obtain the certifications and approvals needed to trade globally.
- b) Leverage the ConnectNS network of current and former residents, university alumni networks, and international students to mentor Nova Scotia exporters and to attract international companies to locate here.
- c) Introduce programming that addresses the specific needs of Nova Scotia's "creative industries" to market inter-provincially and internationally.

6.7 AN ACTION PLAN FOR NOVA SCOTIA'S CREATIVE SECTOR

The coalition recommends that the Department of Communities, Culture and Heritage, working with the Creative Nova Scotia Leadership Council, develops an action plan for the creative sector that includes at least the following elements:

- Integrate entrepreneurship training into arts and design programs at high school and post-secondary levels
- Pilot small-business development training courses for entrepreneurial artists
- Use arts and cultural districts to encourage co-location of innovative businesses
- Establish creative public spaces to improve livability and quality of life

- Include arts education along with the STEM disciplines recognizing that the creative arts are core to an innovation culture—e.g., a great deal of software is being created today by those with backgrounds in the arts.

6.8 UPGRADING NOVA SCOTIA'S TOURISM EXPERIENCES

The coalition recommends that Tourism Nova Scotia, the Tourism Industry Association of Nova Scotia, tourism businesses, and the creative and cultural sectors, collaborate in a strategy that includes the following actions:

- Significantly expand Nova Scotia's calendar of festivals and events, with the goal of eventually having at least two signature events--of the calibre of Celtic Colours, the Royal Nova Scotia International Tattoo, or the Halifax Jazz Festival--each month from May through October. These anchor events would be complemented by a great many more in communities throughout the province. A collaborative marketing strategy will be needed.
- Invest to create a select number of signature destinations—e.g., of the calibre of the new world-ranked Cabot Links and Cabot Cliffs golf courses. There is a need as well for more year-round and off-season attractions to support greater investment in Nova Scotia's tourism assets.
- Bring the province's wine, craft beer and spirits, and culinary experiences--which have improved dramatically in recent years--to an even higher level that is unequivocally world-class.
- Improve air access with convenient and affordable air routes to larger urban centres as well as expanded cruise opportunities.
- Develop research-driven marketing strategies for Nova Scotia to get more visitors to come, stay longer, and spend more.

6.9 LOCAL FOODS AND BEVERAGES

The coalition recognizes that Nova Scotia's farmers, fishermen, vintners, processors and merchants stimulate local economies, primarily in rural areas, and their products typically have a lower environmental footprint than similar imported products and therefore recommends that Nova Scotians purchase local food and beverages whenever possible.

6.10 ENCOURAGING RURAL INNOVATION

The coalition recommends that the Government of Nova Scotia and ACOA, in partnership with the new Regional Enterprise Networks (RENs), develop a rural innovation and entrepreneurship strategy with objectives to:

- Create enterprise hubs focused on sectors—e.g., local food, tourism, bio-energy, ICT, creative industries
- Maximize the impact of Nova Scotia's universities and NSCC campuses as regional hubs for innovation
- Focus economic development initiatives in the resource-based industries on R&D, innovation and the ability to compete globally—e.g., as was done by New Zealand in its agricultural sector
- Facilitate access to advanced business support services enabled by very high-speed Internet.
- Employ the RENs to bring together the local business communities, all three levels of government, and other groups involved in economic development, to ensure a collaborative effort.

6.11 UPFRONT PLANNING FOR RESOURCE DEVELOPMENT

The coalition recommends that the provincial government:

- Implement comprehensive land-use and ocean-use planning informed by public engagement and First Nations consultation processes. This could include legislation to establish "resource development zones" and to provide guidelines for the "social license"
- Review (via the Office of Regulatory Affairs and Service Effectiveness) all legislation, regulations, policies and processes affecting resource industries to ensure that they are fair, effective, transparent, timely and predictable, while delivering on the environmental, health and safety protections expected by Nova Scotians.
- Establish an independent regulatory approach, similar to that of the Utility and Review Board, for approvals and enforcement in order to create a fair and transparent environment.
- Consider developing a royalty-sharing arrangement that includes First Nations, local communities, and municipalities.

6.12 FACILITATING THE TRANSITION OF SMALL-BUSINESS OWNERSHIP

The coalition recommends that the Department of Business create, maintain and promote an on-line database as a definitive, up-to-date source of information describing small businesses for sale in Nova Scotia. Additionally, the provincial government should review the Credit Union Small Business Loan Guarantee Program to determine whether it is effective in addressing market gaps in financing the purchase of small businesses in rural areas and small communities.

7. NOVA SCOTIA'S OCEAN ADVANTAGE

7.1 BUILD A LEADING-EDGE OCEAN INDUSTRIES CLUSTER

The coalition recommends that Nova Scotia collectively should set a goal to be home to one of the world's top five ocean industry clusters encompassing the following key elements:

- An anchor facility for ocean industries innovation
- World-class research strength and facilities to support ocean industry R&D
- A source of powerful “demand-pull” to drive the growth of ocean industry firms—in this case, the long-term contracts under the National Shipbuilding Procurement Strategy
- A coordinating body to facilitate private-sector leadership

7.2 COVE: ANCHOR FACILITY FOR OCEAN INDUSTRIES INNOVATION

The coalition recommends that the site of the former Coast Guard base in Dartmouth (which has been purchased by the provincial government) be made available for a Centre for Ocean Ventures & Entrepreneurship (COVE) to be developed as follows:

- a) The private sector, with support from the provincial and federal governments, should establish and support COVE. It will be essential to attract some multinational companies as anchor tenants and to provide linkage to their global pipelines. These would be complemented by local small and medium enterprises (SMEs) and start-ups including a student-innovator “sandbox” and an ocean incubator/accelerator capacity.
- b) Innovacorp should create an “Oceantech

Fund,” similar to the Nova Scotia Cleantech fund, to provide support to start-ups and SMEs including an “Oceantech Open” challenge that would award, on a competitive basis, space and mentoring to selected start-ups.

- c) Invest Nova Scotia should support development of the ocean science and technology sector, including a program to assist start-ups in building a customer base.
- d) Nova Scotia Business Inc. should work with the Institute for Ocean Research Enterprise (IORE), universities and other research institutions to attract multinationals and SMEs to the site.

7.3 OCEAN FRONTIER INSTITUTE: WORLD-CLASS RESEARCH STRENGTH

The coalition recommends that:

- a) Dalhousie University's newly formed Ocean Frontier Institute (OFI) receive the support needed to become an R&D powerhouse at the centre of an oceans cluster in Nova Scotia. This should include support of OFI's imminent bid for a federal Canada First Research Excellence Fund award.
- b) Nova Scotia's PSE institutions should work with industry to develop research internships and co-op experiences for students in ocean-related studies, and seek leveraged funding through organizations such as Mitacs, the Natural Sciences and Engineering Research Council, and the National Research Council.

7.4 DRIVING THE GROWTH OF THE OCEANS INDUSTRY IN NOVA SCOTIA

The coalition believes that the Irving naval shipbuilding contract provides Nova Scotia's technology sector a once-in-a-generation opportunity to qualify for subcontracts that will be lucrative in their own right, but will also position the successful companies for ongoing inclusion in the global supply chains of the prime contractors. The Coalition therefore recommends that the provincial government, in collaboration with the relevant industry participants and post-secondary institutions, take all steps necessary to maximize the value of the contract for companies and research institutions in the province.

7.5 INSTITUTE FOR OCEAN RESEARCH ENTERPRISE: A CO-ORDINATING BODY

The coalition recognizes that the proposed ocean industries cluster needs a coordinating body to

address the collective interests of the participants and recommends that the Institute for Ocean Research Enterprise (IORE), with an expanded scope and board, become the coordinating body for the ocean-tech cluster.

7.6 EDUCATION THROUGH AN OCEANS LENS

To lay a strong foundation for the locally-developed human talent that must be part of an ocean industries cluster strategy, the coalition recommends:

- a) Development of the “Ocean School” initiative should be supported by governments and that the material that is created be introduced in Nova Scotia’s junior high school curriculum over the next few years. (Ocean School is based on educational material being developed by Professor Boris Worm and other researchers at Dalhousie to bring ocean education to P-12 schools across the country and even globally.)
- b) Nova Scotia’s universities and NSCC, with the support of government, should devote increased focus on education and training programs tailored to the ocean industry, including co-op, apprenticeship and internship placements.

7.7 NOVA SCOTIA’S AQUACULTURE OPPORTUNITY

The coalition recommends a strategy for aquaculture development built around the following elements:

- a) The provincial government should implement a regulatory regime for aquaculture--based on recommendations from the Doelle-Lahey report--that is fair, effective, predictable, and transparent with an independent regulatory approach.
- b) The government should work with existing industry players to maximize business opportunities while also seeking to attract sustainable, growth-oriented aquaculture operators to Nova Scotia.
- c) Universities and the private sector should collaborate to establish an R&D and commercialization agenda including, for example, methods to increase production potential of leading aquaculture species, assessment of market potential of new production species, and development of the most environmentally appropriate practices.
- d) The private sector and the provincial government should continue to partner in fostering trade opportunities in traditional (U.S., European) and new (Asian) markets for aquaculture products.

- e) The provincial government, with support from communities, should identify areas of the coastline suitable for aquaculture development, including the evaluation of biological, physical, and economic development potential.

7.8 ADDING GREATER VALUE TO OCEAN FISHERIES

The coalition recommends that the industry, post-secondary institutions, and government collaborate in a strategy to maximize the marketed value of Nova Scotia’s exceptional fisheries resource. This would include the following actions:

- a) The industry, in collaboration with academic institutions and with support from the provincial government, should develop, for the various fisheries sub-sectors, innovation agendas focused on improving product quality throughout the catch-to-plate value chain.
- b) In parallel, and contingent on achieving the highest standards of quality, the provincial Department of Fisheries and Aquaculture and NSBI should collaborate with federal partners and other Atlantic provinces and industry associations to develop strategies for priority markets in the European Union, Asia, and the U.S., positioning Atlantic Canada as a supplier of premium and sustainable products.
- c) The participants in the fishery, with enabling support from government, should implement a value-chain approach to maximize the value of the resource through, for example, generic marketing, quality programs, product development and branding.
- d) Several government departments should work collaboratively with the industry to assist in addressing the suite of factors responsible for the significant difficulty experienced by the seafood industry in finding and retaining workers.

7.9 TIDAL ENERGY

In view of the very significant long-term potential of tidal energy for Nova Scotia, while recognizing the extensive research and development required to achieve economically viable generation, the coalition recommends that the private sector, with support from post-secondary institutions and the federal and provincial governments, should collaborate on R&D as well as on manufacturing and operational service infrastructure that can lead to common benefits--e.g.,

deployment, mooring, and operating tidal energy devices.

7.10 OFFSHORE OIL AND GAS

The coalition recommends that the provincial government continue to invest in offshore geoscience research as a cost-effective way to attract investment by the oil and gas sector.

7.11 LIQUEFIED NATURAL GAS (LNG)

The coalition believes that in light of the significance of the potential opportunity to site LNG terminals:

- Nova Scotia should continue to work with the current offshore licence holders, LNG export companies, and other interested parties to encourage further development of our offshore gas resources as part of the supply for LNG export.
- In addition, the provincial government should develop a coordinated regulatory response to these projects to ensure safety and sustainability, while allowing the projects to be economically developed.

8. IMPLEMENTATION: ENSURING ACCOUNTABILITY & SUSTAINING MOMENTUM

8.1 MEASUREMENT, REPORTING AND ACCOUNTABILITY

To create a transparent and objective basis on which to assess progress toward both the Ivany goals and the Collaborative Action Plan, the coalition recommends as follows:

- a) An independent organization should be tasked to measure on a periodic basis: (i) the indicators specified in the 16 goals set out in the Ivany Report, and (ii) appropriate input, output, and outcome indicators in respect of the recommendations in the Collaborative Action Plan. The organization should have deep experience in the collection, quality control, and presentation of the relevant types of statistical data. (The coalition does not recommend a specific organization but examples would include an accounting firm or a non-governmental organization such as the Atlantic Provinces Economic Council or the Centre for the Study of Living Standards.)

- b) A website containing a “dashboard” summary of the foregoing data should be established and maintained.
- c) A full report of the progress data, presented so as to facilitate interpretation by the public, should be prepared and published annually.
- d) It would be the responsibility of the provincial government to ensure that the foregoing elements are put in place in a way that preserves objectivity and transparency.

8.2 ENGAGING NOVA SCOTIANS IN THE COLLABORATIVE ACTION PLAN

The coalition recommends that the Government of Nova Scotia initiate a process that will sustain momentum toward implementation of the Collaborative Action Plan. That process should have the following key features:

- a) There will be funded competitions in which Nova Scotians are invited to collaborate to bring forward their best ideas for achieving those aspects of the Action Plan that do not fall within the scope of existing government initiatives.
- b) The competitions will be conducted and adjudicated at arm’s length from government.
- c) The competitions will receive funding support from government from time to time. The amounts will evolve to reflect the success of the competitions in furthering the Collaborative Action Plan.
- d) To initiate the process, the government should consult as to the best design and governance of the competitions—including for example, the scope of eligible proposals, selection criteria, eligible participants, and method of selection of adjudication panel(s).

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ONLINE APPENDICES AND RESEARCH DOCUMENTS

Please see the We Choose Now website (wechoosenow.ca) to access the following online appendices:

1. Snap Shots: Recent economic recovery efforts in other jurisdictions
wechoosenow.ca/Background/Snapshots
2. Collaboration reference documents
wechoosenow.ca/Background/Collaboration
3. General reference documents
wechoosenow.ca/Background/General
4. Bibliography List: Seven Action Points
wechoosenow.ca/Background/Bibliography
5. Alphabetical appendix : Individuals, Organizations and Groups that Informed the Work of the ONE Nova Scotia Coalition
wechoosenow.ca/Background/Alphabetical

APPENDIX 1

IVANY GOALS AND GAME CHANGERS, QUICK REFERENCE GUIDE

GOALS

DEMOGRAPHIC GOALS

1. Inter-provincial Migration: a net gain of 1,000 working age persons per year (reversing a trend that sees an average of 800 people leave annually).
2. International Immigration: triple the average number of new international immigrants annually to 7,000.
3. Retention of International Students: retain 10 per cent of foreign students who complete studies in Nova Scotia annually (double current rate).

ECONOMIC GROWTH GOALS

4. Business Start-ups: increase the number of new business starts to 4,200 annually (50 per cent more than current).
5. Value of Exports: increase value of international and inter-provincial to \$20 billion (50 per cent more than current).
6. Export Trade: increase the number of Nova Scotia firms participating in export trade by 50% over the current level of 850.
7. Labour Force: raise participation to Canadian rate or higher (bringing more than 25,000 Nova Scotians into permanent attachment to the labour market).
8. First Nations and African Nova Scotians Employment Rates: raise to parity with provincial average.
9. Youth Unemployment: lower rate to national average.
10. Post-Secondary Education and Training: increase population of adults who complete a certificate, diploma, degree, and/or apprenticeship completion from 55 to 65 per cent.
11. Universities R&D: double research funding to \$360M annually.
12. R&D Partnerships: double number of R&D partnerships between industry and post-secondary institutions to 2,000 per year.
13. Venture Capital: increase per capita investment to national average (up at least 60 per cent).
14. Tourism Expansion: revenues from Nova Scotia's leading service sector export will reach \$4 billion

(nearly double current).

15. Fisheries and Agriculture Exports: double export value of both on a sustainable basis.
16. Domestic Markets for Agricultural Products: double the value of products produced and consumed in Nova Scotia.

UNDER GOVERNMENT PURVIEW

17. Lead Long-Term Planning Process: the province, in collaboration with municipalities, will create a plan by the end of 2015 to meet these goals.
18. Administration: provincial review of municipal government and regional service structures.
19. Fiscal Health: decrease Nova Scotia's net debt to GDP ratio will drop by nearly 7 points to 30 per cent or less.

GAME CHANGERS

ATTITUDE GAME CHANGERS

1. A new politics
2. Attitude shift: a shared commitment to growing Nova Scotia's one economy

DEMOGRAPHIC GAME CHANGERS

3. Become a more inclusive and welcoming province

ECONOMIC GROWTH GAME CHANGERS

4. Place strategic priority on business start-ups and growth-oriented enterprises
5. Renew rural industries
6. A shared commitment to sustainable development and regulatory excellence
7. Rebuild our trade economy
8. Excellence in education and training
9. Promote entrepreneurship

UNDER GOVERNMENT PURVIEW

10. Integrate economic development services
11. Better management of economic development investment funds
12. Find a committed federal partner

APPENDIX 2

ONE NOVA SCOTIA COALITION MEMBERS

For full biographies, wechoosenow.ca/background/biographies



Hon. Stephen McNeil,
Premier



Hon. Jamie Baillie,
Leader of the Opposition



Hon. Maureen MacDonald,
Leader of the NDP



Rick Clarke, President,
Nova Scotia Federation
of Labour



Mayor David Corkum, Town
of Kentville; UNSM Past
President



Dr. Martha Crago,
Vice-President, Research,
Dalhousie University



Henry Demone,
Chairman of the Board,
High Liner Foods



Jean-Paul Deveau,
President, Acadian
Seaplants Limited



Saeed El-Darahali, President
and CEO, SimplyCast



Joella Foulds, Executive
Director, Celtic Colours
International Festival



Danny Graham,
Chief Engagement Officer,
Engage Nova Scotia



Jevon MacDonald,
CEO, Golnstant Inc.;
Co-founder, StartupIndex.ca



Rankin MacSween, President
& CEO, New Dawn Enterprises



Chief Sidney Peters,
Glooscap First Nation;
Co-Chair, Assembly of
Nova Scotia Chiefs



Dr. Gaynor Watson-Creed,
Medical Officer of Health,
Nova Scotia Health Authority
(Central Zone)

SPECIAL ADVISORS



Dr. Kent MacDonald,
President & Vice-Chancellor,
St. Francis Xavier University



Richard Harrison,
Senior Manager, Advisory
Services, Ernst and Young LLP



Dr. Peter Nicholson,
Founding president, Council
of Canadian Academies

APPENDIX 3

MEETINGS AND EVENTS—THEMES AND PRESENTERS

1. May 15, 2014, Inaugural Meeting
One Government Place, Halifax, NS

Presenters: Organization/s (or Individual):
Ray Ivany, Chair, oneNS Commission

2. June 2, 2014, Organizational Meeting
One Government Place, Halifax, NS

Presenters: Organization/s (or Individual):
4Front Atlantic, Kim West, Communications Partner

3. July 2, 2014, Special Event
Presentation by Don Mills, Chairman and CEO,
Corporate Research Associates (CRA): Now or Never:
Province at a Crossroad

This presentation to the ONE NS Coalition was based on CRA research conducted for the oneNS Commission and for the Georgetown, PEI 2013 Conference: Redefining Rural. The focus was economic and social trends including secondary data on demographics and immigration.

4. Sept 16, 2014, Start-up Ecosystems and Driving Youth Entrepreneurship
One Government Place, Halifax, NS

Presenters: Organization/s (or Individual):
Brilliant Labs, David Alston, Founder; Jeff Willson, Executive Director
Communitech, Iain Klugman, President and CEO
Department of Finance and Treasury Board, Thomas Storing, Director
UIT Cape Breton Startup Immersion Program, Gavin Uhma, Co-Founder and Lead Mentor

Guests:
Atlantic Canada Opportunities Agency, Peter Hogan, Vice President Nova Scotia
Halifax Regional Municipality, Mayor Mike Savage

Observers:

Department of Economic and Rural Development and Tourism, Simon d'Entremont, Deputy Minister

5. Oct 2, 2014, Special Event
Prince George Hotel, Halifax, NS

A Breakfast Conversation with Frank McKenna, Deputy Chairman of the Toronto-Dominion Bank, former Canadian Ambassador to the United States and former Premier of New Brunswick

The discussion with Mr. McKenna focused on the link between economic growth and attitude, as well as its importance. Mr. McKenna shared his experiences, successes, and learnings in shifting attitudes in British Columbia and New Brunswick.

6. Oct 2, 2014, Global Competitiveness and Trade
Deloitte Boardroom, Purdy's Wharf, Halifax, NS

Presenters: Organization/s (or Individual):
Hon. Kevin Lynch, Vice-Chair BMO Financial Group, former Clerk of the Privy Council, Secretary to the Cabinet and Head of the Public Service of Canada
Clearwater, Ian Smith, CEO
Department of Finance and Treasury Board, Thomas Storing, Director

Guests:
Deloitte, Paula Gallagher, Atlantic Public Sector Leader
Nova Scotia Business Inc., Ron Smith, Interim CEO

Observers:
Department of Economic and Rural Development and Tourism, Simon d'Entremont, Deputy Minister
Department of Education, Sandra McKenzie, Deputy Minister
Department of Labour and Advanced Education, Duff Montgomerie, Deputy Minister
Nova Scotia Office of Immigration and Executive Council Office, Catherine Blewett, CEO/Deputy Minister

7. Nov 14, 2014, Youth and International Student Retention
Clark Commons, Acadia University, Wolfville, NS

Presenters: Organization/s (or Individual):
Department of Economic and Rural Development and Tourism, Simon d'Entremont, Deputy Minister
Halifax Partnership Connector Program: Fred Morley, Executive V.P. and Chief Economist; Pat d'Entremont, Connector Representative; Mufadzi Nyamarebvu, Connectee Representative

Guests:
Atlantic Canada Opportunities Agency, Peter Hogan, Vice President Nova Scotia
Canadian Federation of Students-NS, David Etherington, Maritimes Organiser
Canadian Federation of Students-Nova Scotia, Michaela Sam, Chair
Cape Breton Partnership, Keith MacDonald, President and CEO
Cox & Palmer, Emily Racine, Associate
Cox & Palmer, Farhan Raouf, International Student Intern
Fusion Halifax, Adam Hayter, Chair
Fusion Halifax, Sasha Sears, Director, Marketing & Communications
Nova Scotia Community College, Cathy MacLean, Vice President, Learner and College Development
Premier's Immigration Advisory Council, Dr. Colin Dodds, Co-Chair
StudentsNS, Jonathan Williams, Executive Director
See also student guests/presenters below: Nov 14 Special Event

Observers:
Department of Economic and Rural Development and Tourism, Michael Johnson, Executive Director, Regional Planning and Development
Department of Labour and Advanced Education, Duff Montgomerie, Deputy Minister
Nova Scotia Office of Immigration and Executive Council Office, Catherine Blewett, CEO/ Deputy Minister

8. Nov 14, 2014, Special Event
Clark Commons, Acadia University, Wolfville, NS

International and Out-of-Province Student Presentations
Inter-provincial and international students met with ONE Nova Scotia Coalition members to share their thoughts on the opportunities and challenges related to keeping Nova Scotia youth and international students in Nova Scotia.

Student Guests/Presenters:
Kanika Anand, Acadia
Thomas Battle, Dalhousie
Zain Cheema, Dalhousie
Megan Elliot, MSVU
Sergio Garrido, Acadia
Shuang Li, Dalhousie
Taylor Quinn, Dalhousie
Johnny Song, Dalhousie
Jessica Tinawi, Acadia
Jack Wang, Acadia
Lokiy Wang, Dalhousie
Hao Yiwei, Acadia

9. Nov 27, 2014, Special Event
Deloitte, Purdy's Wharf, Halifax, NS

Social Enterprise Forum, Halifax, NS
Hosted by Deloitte, the forum brought together individuals from social enterprise organizations, the ONE Nova Scotia Coalition and government departments to discuss potential alignments between the 'Ivany' Report (Now or Never - An Urgent Call to Action for Nova Scotians) and the social enterprise sector.

Social Enterprise Organizations:
Acadia Entrepreneurship Centre, Lisa Lowthers, Senior Counsellor & Trainer
Black Business Initiative, Shakara Joseph, Director, Client Development and Youth Entrepreneurship
Changing the Narrative, Taylor Quinn, Founder
Community Carrot/Deloitte, Brian Black, Carrot Board

of Directors/Deloitte Senior Manager
 Common Good Solutions, Rodney Small, Business Development Officer
 Common Good Solutions, David Upton, Co-Founder
 Community Sector Council of NS, Dr. Kathleen-Flanagan, Executive Director
 Community Sector Council of NS, Veronica McNeil, Coordinator of Regional Outreach
 Dartmouth Adult Services Centre, Cathy Deagle-Gammon, Executive Director
 Deloitte, Rolene Pryor, Senior Consultant, Strategy & Operations
 Free the Children, Alyssa Chan, Director of Business Development
 The Hub Halifax, Tracy Boyer, Co-Founder
 The Hub Halifax, Joanne Macrae, Co-Founder
 New Dawn Enterprises, Rankin MacSween, President/Member One NS Coalition
 Nova Scotia Community College, Dr. Wayne St-Amour, Executive Director, Innovation and Entrepreneurship
 Prior Learning Centre, Nancy Anningson, Managing Director
 Prior Learning Centre, Teresa Francis, Executive Director
 Prosperity Framework, Ian McNeil, Manager
 Ulnooweg Development Group, Chris GooGoo, General Manager
 Youth Art Connection, Ryan Veltmeyer, Co-Founder/Executive Director

Observers:
 Department of Economic and Rural Development and Tourism, Jeannie Chow, Director, Regional Development
 Department of Internal Services, Krista Spurr, Senior Policy Advisor
 Department of Labour and Advanced Education, Anne Perigo, Director, Volunteerism and the Non-profit Sector

10. Nov 27, 2014, Special Event
 Maritime Museum of the Atlantic, Halifax, NS
 Winter Warm-up

The ONE Nova Scotia Coalition met with almost 200 organizations with a stake in our province and in making substantive progress on the 'Ivany' Goals. The Coalition shared its work and stakeholders were encouraged to play leadership roles and become

actively involved in the process of moving Nova Scotia forward.

11. Nov 27, 2014, Youth and Social Entrepreneurship
 One Government Place, Halifax, NS

Presenters: Organization/s (or Individual):
 Common Good Solutions, David Upton, Co-founder
 Me to We, Marc Kielburger, Co-founder

Observers:
 Free the Children, Alyssa Chan, Director of Business Development

12. Jan 12, 2015, Special Event
 New Dawn Enterprises, Sydney, NS
 Cape Breton University UIT Program Presentations

UIT is a one year start up immersion program that teaches the innovative business methods behind the world's most successful start-ups. Twelve students practiced three-minute pitches with the ONE Nova Scotia Coalition and other invited guests. Hosted by New Dawn Enterprises, a town hall discussion followed and focused on encouraging and supporting tech start-ups and providing constructive, early feedback on projects.

UIT Students:
 Brian Best
 Jake Florian
 A.J. Fraser
 Matt Johnston
 Seonaid Lee
 Carol Louie
 Darian MacDonald
 Darren MacDonald
 Colin MacInnis
 Emily MacLeod
 Faye McDonald
 Heather Voyles

13. Jan 13, 2015, Special Event
 Membertou Trade and Convention Centre,
 Membertou, NS
 Cape Breton University In.Business: A Network Program for Indigenous Youth

While in Membertou the ONE Nova Scotia Coalition

had an opportunity to learn about the Purdy Crawford Chair in Aboriginal Business Studies at Cape Breton University's In.Business program for Indigenous Youth. Also, present during subsequent discussion were students who had first-hand experience of the program.

Cape Breton University:

Stephen Augustine, Dean, Unama'ki College and Aboriginal Learning

Dr. Keith Brown, VP of International and Aboriginal Affairs and Purdy Crawford Chair in Aboriginal Business Studies

Allan MacKenzie, Eastern Regional Manager, In.Business Program

Brian Smith, National General Manager, In.Business Program

Dr. David Rae, Dean, Shannon School of Business

Dr. David Wheeler, President

In. Business Program Students:

Lateesha Denny, Wagmatcook First Nation, Student, Cape Breton University

Andrew Marshall, Membertou First Nation, Student, Sydney Academy

Kyle Simon, Wagmatcook First Nation, Student, Cape Breton University

14. Jan 13, 2015, Special Event

Membertou Trade and Convention Centre, Membertou, NS

Cape Breton Winter Warm-up

The Cape Breton Partnership and Membertou First Nation hosted the ONE Nova Scotia Coalition and over 150 invited leaders from a variety of sectors to share its work, seek help, and begin to identify, align and encourage broad-based action.

15. Jan 13, 2015, Immigration, Welcoming Communities and Tourism

Membertou Trade and Convention Centre, Membertou, NS

Presenters: Organization/s (or Individual):

Membertou First Nation, Chief Terrance Paul
Coalition Action Team Sub-Committee on Inter-provincial Migration Members:

David Alderson, Project Manager, Verschuren Centre, Cape Breton University

Lori Burke, Executive Director, Cape Breton Centre for Craft and Design

Immigrant Services Association of Nova Scotia, Gerry Mills, Director of Operations

Michele McKenzie, former President & CEO, Canadian Tourism Commission

Nova Scotia Tourism Agency, Ben Cowan-Dewar, Chair; Patrick Sullivan, CEO

Guests:

Cape Breton Partnership, Keith MacDonald, President and CEO

Cape Breton Regional Municipality, Mayor Cecil Clarke

Cape Breton University, Dr. David Wheeler, President

Nova Scotia Community College, Don Bureaux,

President

Observers:

Nova Scotia Office of Immigration and Executive

Council Office, Catherine Blewett, CEO/ Deputy Minister

16. Feb 10, 2015, Workforce Participation

Glooscap Annex, Millbrook, NS

Presenters: Organization/s (or Individual):

Millbrook First Nation, Chief Robert Gloade

Black Business Initiative, Michael Wyse, CEO

KMK Negotiation Office - Mi'kmaq Rights Initiative,

Twila Gaudet, Consultation Liaison Officer; Jennifer

MacGillivray, Benefits Officer Summer Street

Industries, Bob Bennett, Executive Director

Ulnooweg Development Group, Chris Googoo,

General Manager

Guests:

Mainland Nova Scotia Building and Construction

Trades Council, Brad Smith, Executive Director

Nova Scotia Community College, Don Bureaux,

President

Observers:

Department of Community Services, Lynn Hartwell,

Deputy Minister

Department of Labour and Advanced Education, Duff

Montgomerie, Deputy Minister
Human Rights Commission, Tracey Williams, CEO
Office of Aboriginal Affairs, Julie Towers, CEO |
Public Service Commission, Laura Lee Langley,
Commissioner

17. March 10, 2015, Special Event
One Government Place, Halifax, NS
Startup Showcase

Four local startups that have launched since the ONE
Nova Scotia Coalition began its work, showcased their
products.

Showcase Presenters

Jeremy Koenig, Founder, Athletigen
Ben Boudreau, Director of Community, GoFullSteam
Emily Richardson, Founder, GoFullSteam
Iaian Archibald, Co-Founder, Swell Advantage
Craig Sheppard, Co-Founder, Swell Advantage
Calee Blanchard, Co-Founder, Vendeve
Katelyn Bourgoin, Co-Founder, Vendeve

18. March 10, 2015, Energizing Entrepreneurship
One Government Place, Halifax, NS

Presenters: Organization/s (or Individual):
Youth and Entrepreneurship Skills (YES) Nova Scotia,
Bill MacAvoy and Daniel Holland

Guests:
Atlantic Canada Opportunities Agency, Peter Hogan,
Vice President Nova Scotia

Observers:
Department of Economic and Rural Development and
Tourism, Simon d'Entremont, Deputy Minister
Department of Education and Early Childhood
Development, Sandra McKenzie, Deputy Minister
Department of Labour and Advanced Education, Duff
Montgomerie, Deputy Minister

19. April 21, 2015, Cradle to Career
One Government Place, Halifax, NS

Presenters: Organization/s (or Individual):
Department of Education and Early Childhood
Development, Sandra McKenzie, Deputy Minister

Guests:
Nova Scotia Community College, Don Bureaux,
President

Observers:
Department of Education and Early Childhood
Development, Monica Williams, Executive Director,
Centre for Learning Excellence
Department of Labour and Advanced Education, Duff
Montgomerie, Deputy Minister

20. May 19, 2015, Getting More out of Our
Universities and Colleges
StFX University, Antigonish, NS

Presenters: Organization/s (or Individual):
Dr. Eric Grimson, Chancellor for Academic
Advancement, Massachusetts Institute of Technology
Dr. Peter Nicholson, Founding President of the Council
of Canadian Academies, former Deputy Chief of Staff
for Policy in the Office of the Prime Minister of Canada
Department of Labour and Advanced Education, Duff
Montgomerie, Deputy Minister
Nova Scotia Community College, Dr. Wayne St-Amour,
Executive Director, Innovation and Entrepreneurship
StFX University, Dr. Richard Isnor, Associate Vice-
President, Research and Graduate Studies

Guests:
Atlantic Canada Opportunities Agency, Peter Hogan,
Vice President Nova Scotia
Innovacorp, Stephen Duff, President and CEO
Nova Scotia Community College, Don Bureaux,
President

21. June 23, 2015, Sustainable Natural Resource
Development
One Government Place, Halifax, NS

Guests:
Nova Scotia Community College, Don Bureaux,
President

Observers:
Department of Agriculture and Department of
Fisheries & Aquaculture, Kim MacNeil, Deputy
Minister
Department of Energy, Murray Coolican, Deputy
Minister

Department of Natural Resources, Frank Dunn,
Deputy Minister
Office of Aboriginal Affairs, Julie Towers, CEO

22. July 21, 2015, Growth Clusters and the ONE Nova
Scotia Economy
NSCC Waterfront Campus, Dartmouth, NS

Presenters: Organization/s (or Individual):
Creative Nova Scotia Leadership Council, Pamela
Scott-Crace, Chair
Rural Communities Foundation of Nova Scotia, Dr.
Teresa MacNeil, Chair
Tourism Industry Association of Nova Scotia, Glenn
Squires, Chair

Guests:
Nova Scotia Community College, Don Bureaux,
President
Tourism Industry Association of Nova Scotia, Darlene
Grant-Fiander, President

Observers:
Department of Business, Greg Landry, Director,
Sector Development
Department of Communities, Culture and Heritage,
Kelliann Dean, Deputy Minister
Department of Communities, Culture and Heritage,
Marcel McKeough, Executive Director - Culture and
Heritage Development
Department of Communities, Culture and Heritage,
Andrew Sare, Policy Analyst
Department of Municipal Affairs, Dan McDougall,
Deputy Minister

23. August 12, 2015, Youth Retention Workshop,
Halifax, NS
ONE Nova Scotia workshop to discuss retention
of Nova Scotia's young people particularly those
between the ages of 18 and 29. More than 50
stakeholders explored key questions.

24. September 3, 2015, Special Event
NSCC Waterfront Campus, Dartmouth, NS

Stakeholder Update
ONE Nova Scotia invited over 300 subject matter
participants and organizations to provide feedback

on draft aspects of the ONE Nova Scotia Collaborative
Development Plan. Approximately 70 participants
attended. Those unable to attend were able to provide
feedback electronically.

Presenters:
Members of the ONE Nova Scotia Coalition and
subject matter experts including Brad Smith, Executive
Director of the Mainland NS Building and Construction
Trades Council; Jim Hanlon, Chief Executive Officer,
Institute for Ocean Research Enterprise; and Don
Bureaux, President of Nova Scotia Community College

25. Other Special Events
Organizations across the province should be
commended for their work in moving our province
forward in the spirit of ONE Nova Scotia. Some took
action in specific areas such as the promotion of
entrepreneurialism or the support and funding of local
startups. Others launched programs to help increase
exports, match new graduates to their first job
opportunity, help children learn science and math, or
warmly embrace new immigrants. Many also held their
own ONE Nova Scotia inspired special events to plan
their response and take collaborative action. A small
sample of those organizations include:

- 21 Inc.
- Awesome Foundation Annapolis Valley
- Awesome Foundation Antigonish
- Brilliant Labs
- Cape Breton Partnership
- Catapult Camp
- Various Chambers of Commerce
- Cumberland County Life
- Employer participants of the Ingredients for
Success in Diverse and Inclusive Employment event
- Engage Inverness County
- Engage Nova Scotia and the over 1,600
participants of the Stepping Up: Let's Take Charge
of Our Future event
- Engage Colchester-Truro
- Ernst and Young
- Fusion Halifax
- GoFullSteam
- Grant Thornton
- Halifax Partnership
- Immigrant Services Association of Nova Scotia
- Island Sandbox

- Lunenburg Community Investment Fund
- Multicultural Association of Nova Scotia
- Various municipalities
- New Ross Regional Development Society
- Next Generation Leadership Society
- Nova Scotia Community College
- Pictou County 2020
- Pulse Pictou County
- Various Regional Enterprise Networks
- Sobey School of Business
- Startup Cape Breton
- The Strategic Urban Partnership
- Universities
- Valley African Nova Scotia Development Association
- Venor Search Group
- Verschuren Centre

