



Atlantic Canadian Startup Data

2016

By Peter Moreira
Principal
Entrevestor
www.entrevestor.com
P: 902 401 2048
@entrevestor

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EXECUTIVE SUMMARY

Exits are an often misunderstood component of the startup story, frequently condemned as a reward for a privileged few with little overall economic benefit. For the first time in Atlantic Canada, we have conducted an in-depth study of the economic impact of exits, or the sale of startups to larger startups. What we found was that the region benefits from the sale of successful Atlantic Canadian companies.

In a segment of the report titled “The Exit Economy”, we have tracked 27 innovation-based companies that were sold since 2011. We found these sales raised a total capital of \$1.8 billion, much of which remained in Atlantic Canada. Most of these operations continued to grow after the sale, and we estimate there are now 2,200 Atlantic Canadians working for companies that bought startups in the region. These deals have helped to shape economic development, improve mentorship and philanthropy, and developed serial entrepreneurs.

Our report this year was conducted in collaboration with the Atlantic Canadian team going through the MIT Regional Entrepreneurship Acceleration Program, or REAP program. We surveyed community members together, bringing in 190 responses. This year, we do not have data on job and revenue growth, but we do have qualitative data for the first time in our reports. Overall, community members showed little worry over the ecosystem, though some voiced concern about access to capital and physical space. What we are finding is a greater internationalization of the community. Our startups are participating more frequently in national and international events, often winning or placing. Several have foreign offices.

As in previous years, we are telling a story of growth in this report. As of the end of 2016, we were tracking 414 companies – up 58 percent over three years. Company formation remains strong, especially in Fredericton and Moncton. Meanwhile, there were fewer failures in 2016 than the year before. Though founders complain about access to capital, CVCA Data indicates there is more pre-seed funding in Atlantic Canada than in the rest of Canada.

We found that 2016 was an excellent year for funding, with \$71.8 million being invested in East Coast startups. Highlights were funding rounds of more than \$8 million each by Resson, Kinduct and TruLeaf. These multi-million-dollar deals are notable because they are led by investors from outside the region, and they are coming with more frequency than before. Atlantic Canada has become a hotbed of pre-seed funding, accounting for 11 percent of the VC deals in Canada even though it has about 6 percent of the country's population.

The REAP survey suggests 46 percent of the startups in the region have revenues of more than \$100,000. That's meaningful data because it means about 190 companies are drawing in significant sales. That will help them to find funding and finance sales teams to help increase their sales.

We have revised upward our previous estimate on the number of jobs created by the startup movement. Last year, we estimated there were about 4,000 Atlantic Canadians working for startups (including exited companies). However, our examination of exited companies showed that we grossly underestimated the number of people working in such operations. We now believe more than 5,000 people work for startups and exited companies in the region.

The ecosystem continued to add accelerators and incubators, with more expected to open in the next year or two. In Halifax, the largest startup base in Atlantic Canada, the ecosystem is evolving with the formation of an Innovation Zone. The University of New Brunswick has become the dominant force in developing new startups in Fredericton. It now oversees the city's newest accelerator, Energia, and its alumni dominated the recent Breakthru competition.

No part of the ecosystem has evolved more in the past two years than Charlottetown. The city has always shown strength in life sciences, and it continues to gain critical mass in that sector. It has also diversified with the opening of the Startup Zone and many of its IT startups are competing and succeeding on a national level.

Entrevestor was founded in 2011 by writers Peter and Carol Moreira as a portal to unite and inform the startup community in Atlantic Canada. It posts daily news on Atlantic Canadian startups on its website, www.entrevestor.com, and its articles appear thrice weekly in the *Chronicle-Herald*.

SECTION 1 - OVERVIEW

1.1 Macro-Economic Background

The Atlantic Provinces, for the most part, have settled into a pattern of underperforming the country's overall growth rate – even though they comprise the four poorest provinces in Confederation. The province now going through the harshest pain is Newfoundland and Labrador, which has been wrestling with a dire fiscal situation and low energy prices. Prince Edward Island has probably been performing the best. What none of the East Coast provinces has succeeded in doing in this century is to sustain an outperformance of the Canadian economy. The region needs to do so in order to reverse the emigration of young people, provide for its aging population and increase tax revenues.

In broad terms, the economies of New Brunswick and Newfoundland and Labrador were stagnant in 2016, while those of P.E.I. and Nova Scotia grew by about 1 to 1.2 percent. The Canadian growth rate was 1.3 percent.¹

Peter Nicholson and Jeff Larsen highlighted the weak growth in Nova Scotia in their recent report, *New and Better Ways: Field Guide for Nova Scotia's Innovation*

Ecosystem. They noted that from the post-recession period 2009 to 2014, the average annual growth of Nova Scotia's GDP was only 0.6 percent, the second-slowest among the provinces (New Brunswick trailed) and far below the Canadian average of 2.5 percent. They write: "Nova Scotia's GDP per person in 2014 (\$37,900) ranked 8th among the provinces; was \$11,800 or nearly 24% below the national average; and was not trending favourably."²

The mediocre economic growth is complemented by mixed news in demographics. The census of 2016 showed that Atlantic Canada recorded the weakest population growth in the country in 2011-2016. While Canada's population increased 5 percent, P.E.I. reported an increase of 1.9 percent, Newfoundland and Labrador 1.0 percent, Nova Scotia 0.2 percent and New Brunswick's population fell 0.5 percent.³ However, the region is showing better trends in attracting immigrants. Though retention rates are still a concern, the region attracted 11,600 immigrants in the first nine months of 2016 and could draw 19,000 immigrants in 2017.⁴

The economic characteristics that are common to all four provinces are weak labour markets (despite high levels of education) and an aging workforce. The unemployment rate in the region is persistently higher than that of the

¹ RBC Provincial Outlook, Dec. 2016, found at <http://www.rbc.com/economics/economic-reports/pdf/provincial-forecasts/provcst-dec2016.pdf>.

² Statistics Canada, Cansim tables 384-0038 and 051-0001, found in *New and Better Ways: Field Guide for Nova Scotia's Innovation Ecosystem*, by Peter Nicholson and Jeff Larsen.

³ Data found at <http://www.cbc.ca/news/politics/grenier-2016-census-population-1.3970314>.

⁴ Data found at <http://www.cbc.ca/news/canada/nova-scotia/atlantic-canada-immigration-report-1.3933947>.

⁵ Data found at <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/lfs01a-eng.htm>.

rest of the country. Canada's unemployment rate as of December 2016 was 6.9 percent while those in Atlantic Canada ranged from 8.3 percent in Nova Scotia to 15.1 percent in Newfoundland and Labrador.⁵

The economic challenges of the region were highlighted in February 2014 when the Nova Scotia government released *Now or Never: An Urgent Call to Action for Nova Scotians*, better known as the Ivany Report. It noted the persistent economic weakness and need for private sector growth in Nova Scotia, though its analysis could apply to the region overall. Though difficult to quantify, there is often skepticism about the follow-up to the report – some claim there has been insufficient reform to generate the type of economic growth Ivany called for.

One of the bright spots in the Atlantic Canadian economy in the past few years has been the innovation segment. The New Brunswick government has placed special emphasis on this sector, with Premier Brian Gallant personally taking over the immigration portfolio in cabinet. Nova Scotia has been focusing on ocean technologies, while Prince Edward Island is expanding its biotech complex and making headway in IT. Newfoundland and Labrador has radically improved its funding regime for startups. The improving innovation ecosystem is aiding the profound growth in the startup community.

1.2 Methodology

Over the past three years, we've established our annual startup analysis as the most comprehensive study of a regional startup segment available in Canada. The data until now has come from two main sources: our survey of startups, and Entrevestor's daily reporting on the community.

Our goal has always been to bring out the metrics on the region's startups, which we define as:

1. A company headquartered in Atlantic Canada, or with dual headquarters that include an Atlantic Canadian head office;
2. A company commercializing innovation;
3. A company producing a product for the global market.

There are huge grey areas with these definitions, but we have tried to be uniform in applying the same standards across the region, year after year.

This year, we have changed things somewhat. We had already begun to survey community members when we learned that the Atlantic Canadian team going through the MIT Regional Entrepreneurship Acceleration Program, or REAP, was carrying out its own survey. A constant problem with surveying startup founders is that they are inundated with requests for surveys. Entrevestor and the REAP team therefore combined their efforts and collaborated on the REAP survey.

REAP is a program offered at the Massachusetts Institute of Technology that helps regions foster economic growth and social progress. The program matches MIT experts with regional representatives to develop strategies in addressing specific economic challenges. This year, it accepted a group from Nova Scotia comprising business people, academics and officials from federal and provincial governments. The goal is to bring leaders from the region to one of the world's greatest academic institutes and develop plans to improve the economic environment in Nova Scotia and Atlantic Canada.

We received 190 responses to the survey – representing almost half the startups in the region. For the first time, we have received qualitative data, especially on what startup founders would like to see in reforming the ecosystem. However, we do not have as accurate numbers as in previous years on revenues or funding. The written portions of the survey also indicate that not all the respondents meet Entrevestor's criteria for a startup. (For example, when asked what improvements are needed in the infrastructure, one respondent said “a slaughterhouse”.)

The REAP survey is not the only source of data for us. Entrevestor has collected its own data on what startups were active in the region as of Dec. 31, 2016. We also kept track of the location, sector, age and employment levels of these startups.

We're able to supplement this survey with our deep knowledge of the startup community. Entrevestor has posted about 2,500 articles on the community since September 2011 and has an intimate knowledge of the startup community. We pride ourselves on reporting on all four Atlantic Provinces and have used this broad and deep understanding to complement the results of the survey.

Wherever possible, we've used the largest sample size available. Preferably, we use the 414 startups we've identified. However, for some data we can only get

information from the 190 companies that responded to the survey, or those that responded to the survey supplemented by other information. In each case, we have tried to be as clear as possible about the number of companies we've counted and how we arrived at the details.

Unless we state otherwise, all the data is as of Dec. 31, 2016. In most cases, we have rounded percentages off at the decimal point – we're collecting data that can best be described as messy, and it's a fool's game to be too precise in reporting growth. The important thing is the broad trends.

We would like to sincerely thank the Atlantic Canadian startups that trusted us with confidential information.

1.3 2015 Recap

A year ago, we reported that the Atlantic Canadian startup community was in a transformative phase. It was evolving from a group of largely experimental companies to an integrated network of high-growth corporations. Our research led us to conclude there were about 30 members of the community with annual sales above \$2 million, and about 130 with sales above \$100,000. At least three of these companies had offices in California. We estimated that the community (including companies that have exited) now directly provides about 3,400 full-time equivalent jobs in Atlantic Canada. Most important, this community of companies accelerated its sales growth for the second year in a row to about 66 percent.

We placed 368 startups in the Entrevestor Databank last year. The number of companies rose 29 percent over the previous year, with 104 companies formed in 2015 – almost 30 percent of the entire community.

The growth was concentrated in the information technology space. IT accounted for almost four-fifths of the new companies launched in 2015. The IT companies that shared revenue data with Entrevestor increased revenue by 65 percent. And nine-tenths of the new jobs created in the startup community occurred in the IT segment.

Overall, Atlantic Canadian startup revenues rose 66 percent in 2015 – up from about 37 percent a year earlier and 30 percent in 2013. Again, this is important

because the community is accelerating sales as it bulks up. Roughly four-fifths of the sales are outside the Atlantic Region. If there is one area of concern about the community's revenues, it is that almost all the companies we surveyed identified Canada and the U.S. as their dominant markets. There is very little penetration in Europe, Asia or other markets.

Companies providing jobs data to us reported 25 percent growth in staff based in Atlantic Canada – an improvement from about 14 percent a year earlier. The companies most responsible for the strong hiring were the growth-stage companies. We also found evidence that the hirings were being financed not just by investment or government programs but by revenue – companies reporting revenues of \$50,000 or more increased their staffing by 41 percent in 2015.

Once again, we found that companies affiliated with universities (those that grew from university research or entrepreneurship programs, or those working with university researchers) grew at a stronger rate than the overall community. These companies reported revenue growth of 110 percent – 40 percentage points more than the overall community.

Funding by startups was mediocre in 2015. East coast startups raised about \$76.5 million – a drop of 39 percent from an exceptionally strong year in 2014. If we strip out private equity, the total was \$58.8 million, down 12 percent from the previous year and in the middle of the \$46 million to \$67 million range we've seen in the past five years.

PART 1 – THE STATE OF #STARTUPEAST

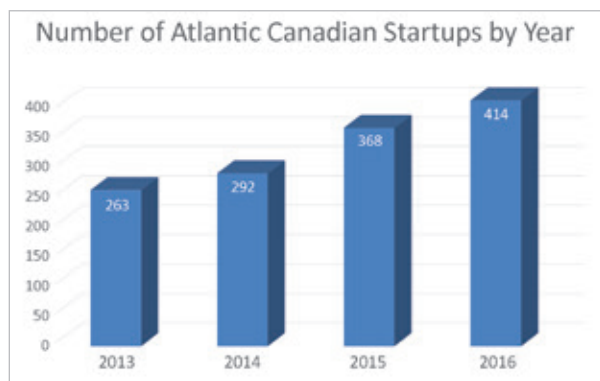
SECTION 2 - THE ATLANTIC CANADIAN STARTUP COMMUNITY

2.1 Introduction

The Atlantic Canadian startup community has increased by more than 50 percent (in terms of number of companies) since Entrevestor published its first data report three years ago. We tracked 414 companies as of the end of 2016, a 58

percent increase from 263 in our 2013 report. This growth in number of companies is mirrored in a strong showing of growth in other metrics, such as employment, revenue and funding. The most important result of this growth is that we now have a solid nucleus of large companies that are making meaningful sales in international markets. As the number of companies has broadened the community, the success of these core companies has elevated the performance of the sector overall.

Chart 2.1



Dataset: Companies tracked by Entrevestor in the last four years.

Atlantic Canada is adding startups at about 15 percent per year compounded, and there are two main reasons for this strong growth rate (which has taken place in an economy, in the case of the Maritimes, that has been essentially stagnant in this century). The first is the strong growth of information technology companies. In 2013, we were tracking 166 IT companies, and that number had risen to 288 by the end of 2016 – an increase of 73 percent, or about 20 percent per year. The second reason is the low failure rate of startups in Atlantic Canada. Given the amounts of non-dilutive capital available in the region, companies here tend to die slowly. We counted 32 companies that had failed in 2016 – less than 10 percent of the companies in the community at the beginning of the year. We could have added a few more, given that several prominent companies went out of business in the first quarter of 2017. In any case, a 10 percent failure rate is unusually low, and is one reason the number of companies in the community continues to grow.

Any startup community is a pyramid, with a few large companies at the top and the scores or hundreds of young two- or three-person outfits at the bottom. As the base of the pyramid has broadened with more young companies, the peak has grown higher. As we will see in the ensuing

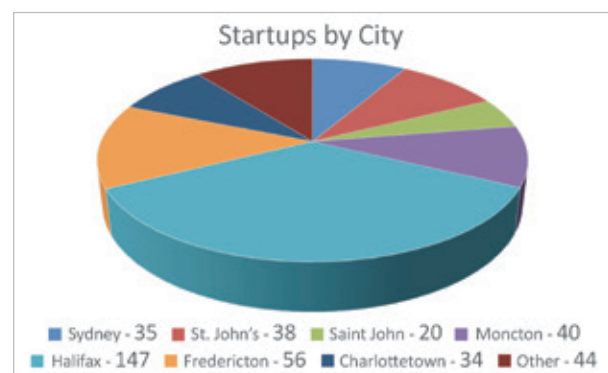
sections, we have more big companies, and they are increasing their firepower.

2.2 Geographic Locations

Halifax is still the dominant startup hub in the region, though it is far from the fastest-growing startup centre in Atlantic Canada.

In 2016, Entrevestor tracked 147 startups in the Nova Scotian capital, comprising 36 percent of the startups in the region. The number of startups based in the Halifax area (including Bedford and Dartmouth) increased at about 35 percent since 2014 (the year we began tracking startups based on city.) The increases in Halifax are basically keeping pace with the overall growth rate in the region.

Chart 2.2



Dataset: 414 startups tracked by Entrevestor.

Halifax, of course, has the largest population base in the region and also offers the most diversified ecosystem in terms of technical expertise. Volta Labs anchors the IT hub, and has established itself as the largest startup house in the region focused almost exclusively on information technology. That IT hub is complemented by resources in other sectors, such as the life sciences and medical research at Dalhousie University and the cleantech initiatives overseen by Innovacorp. The strength in life sciences is especially noteworthy given that the greatest advances seen in the startup community now are at the intersection of life sciences and IT. There's also a strong push, led by the government, to create an ecosystem for ocean-based startups, which are to be housed at the new Centre for Ocean Ventures and Entrepreneurship, or COVE, which is due to open in the spring of 2018 in Dartmouth.

There is now a movement, driven largely by Volta CEO Jesse Rodgers and Jeff Larsen of Dalhousie University, to create an innovation district in Halifax, extending from Dalhousie University to COVE in Dartmouth.

The fastest-growing startup communities in the region in 2016 were Moncton and Fredericton. The number of startups in Moncton increased by 90 percent over two years, from 21 to 40. The Moncton startup grouping had been starting from a low base, and benefited from a concerted effort from local leaders to increase innovation in the city. The development of Venn Innovation and the Vennture Garage was a key component in the effort. And local leaders like Susan Hicks, Jon Manship, Dan Martell, Trevor MacAusland, Doug Richardson and Yves Boudreau provided mentorship, capital and worked to attract new talent to the space.

We found 56 startups in Fredericton as of 2016, up 90 percent from two years earlier. Fredericton calls itself “Canada’s Startup Capital”, which is difficult to substantiate with data. But startup formation in the city has been extremely healthy in recent years, buoyed by a strong local ecosystem. The growth is largely happening in the IT space, as IT companies now account for four-fifths of the startups in the city. The foundation of the local ecosystem is the University of New Brunswick, which continues to turn out fascinating startups in a range of fields. The university’s Technology Management & Entrepreneurship program, which expanded to include a master’s program in recent years, is the cornerstone of the UNB startup edifice. Some of the most exciting startups in the city, including the past three winners of the Breakthru competition, have emerged from TME. But it has been strengthened in the past year with additional components. In the autumn of 2016, Royal Bank of Canada announced a \$1 million donation to the TME program. Then in December, the university launched Energia Ventures, a new accelerator designed to help develop companies in the energy, cleantech and cyber security fields. In January 2017, UNB opened the Canadian Institute for Cybersecurity, a hub for research, training and industry collaboration backed by more than \$4.5 million in funding.

The third fastest-growing group in our breakdown of cities is “other”, which is an important development. We found 45 startups outside the metropolitan areas in 2016 – 55 percent more than in 2014. Most of these are young outfits that have seed funding from government programs. Innovacorp, through its I-3 and Spark

competitions, has been actively seeking and supporting rural ventures. And Andrew Button’s Mashup Labs has launched his Spark and Ignite accelerators, which work with companies based in outlying areas. Lately, there has been an effort to increase entrepreneurship in Western Newfoundland with the development of Humber Valley Entrepreneurs. Startups tend to be urban phenomena, but these programs are finding and seeding ventures in outlying areas. What has yet to be seen is whether they will survive and grow into bona fide corporations.

Entrevestor, which is based just south-west of Halifax, has received criticism for focusing too much on Nova Scotia. Some people claim we have missed startups in other provinces. We accept that in the startup world some companies get overlooked, or are just beginning and not yet counted. Being Nova Scotians, we tend to run into more Nova Scotian companies. However, the evidence shows there are simply more startups in Nova Scotia than in the other provinces. For example, Nova Scotia and New Brunswick have until now hosted biennial startup competitions in alternating years, and the I-3 Technology Startup competition in Nova Scotia typically receives twice the entries that New Brunswick’s Breakthru competition receives. But it is hard to track the growth of startups, especially in cities farther from our own location. In particular, we are probably missing some young startups in Newfoundland and Labrador, though we do try to track developments in the province.

2.3 Company Formation

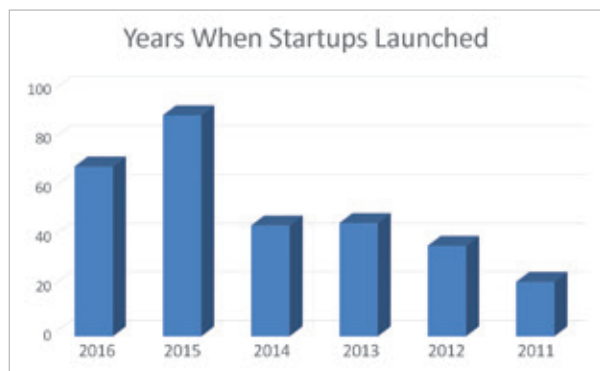
There were fewer companies launched in 2016 than the year before, but there was nevertheless strong company formation. What was notable about the new companies was how many were formed by veteran entrepreneurs, many of whom had exited earlier companies.

Entrevestor identified 70 companies that launched in 2016. That’s roughly two-thirds as many as the 104 startups that came into being in 2015. It wasn’t that 2016 was a bad year for company formation; rather it was a normal year after an especially strong showing in 2015. We previously reported 63 startups formed in 2014 and 67 in 2013. (The REAP survey also found a similar spike in company formation in 2015 – 37 of the companies responding to its survey launched in 2015, compared with 24 in 2016.) It’s difficult to say why there were so many new companies in 2015. The

I-3 Competition was held that year, which tends to draw out dozens of new companies. But otherwise, it was simply a strong year.

Most of the growth in new companies in 2016 took place in Nova Scotia, which accounted for more than half of the new ventures in the region. Some 51 of the new companies, or almost 80 percent, were IT startups, while 10 were in life sciences.

Chart 2.3



Dataset: The companies in the 2016 Entrevestor Databank that were formed after 2010.

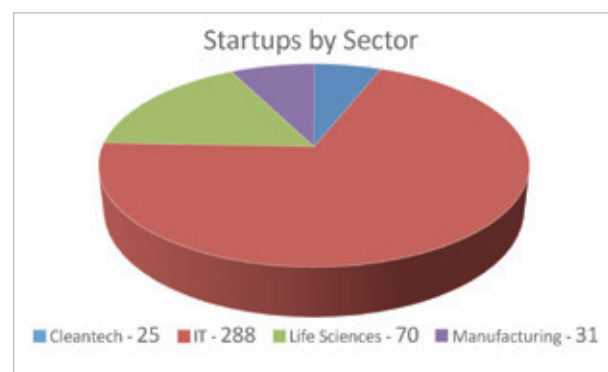
The most interesting feature of the new companies is that serial entrepreneurs are coming back into the system with new projects. The co-founders of Golnstant, a co-browsing startup that sold out to Salesforce.com for more than US\$70 million in 2012, all launched new companies in 2016. CEO Jevon MacDonald launched Manifold.co, whose technology helps developers bring existing software into their products. CTO Gavin Uhma is working on Sidestory, a social network that lets users tell a story through a series of posts; and Co-Founder David Kim has set up Harbr, which provides data on sub-contractors for the construction industry. Other experienced entrepreneurs launched new companies, like Alastair Jarvis' Woodscamp Technologies, Darren Gallop Security Data Solutions, and Scott Gallant's Forestry.io.

2.4 Sectors

One of the strengths of the Atlantic Canadian startup community is its diversity – it boasts an astonishing range of expertise for such a small group. Certainly,

IT is the largest sector, accounting for 69 percent of the startups in the community. But even within IT there are various areas of strength. Consider the largest companies in the space: Verafin, the St. John's-based anti-fraud company that received \$60 million in 2014, is a FinTech company. Mariner Partners, the multi-faceted Saint John company, is mainly in online video. Radian6, whose 2011 exit effectively launched startup growth in the region, specialized in social media analytics, while Q1 Labs, the second New Brunswick exit of that year, was in cybersecurity. SimplyCast, the leading IT company in Nova Scotia, is a leader in multi-channel marketing. Many startup locations specialize in specific subsectors (automotive IT products in Detroit; literature and music startups in Nashville) but Atlantic Canada is overall a balanced community.

Chart 2.4



Dataset: 414 startups tracked by Entrevestor.

This diversity paid huge dividends in 2016 and early 2017. The hottest startup news in the region lately has been generated by companies that operate at the intersection of IT and Life Sciences. For lack of a better name, let's call them digital life sciences. By this we mean companies that have developed a digital product that has some bearing on life sciences, whether it's medicine, agriculture or environmental sciences, to name a few.

Consider what a few exemplars have been up to in the 15 months to March 31, 2017:

- STI Technologies of Halifax announced in February, 2017, that it had sold out to the American multinational QuintilesIMS. The price was reportedly more than \$200 million.

- Resson, the Fredericton company that analyzes data from farms, raised US\$11 million in a funding round led by Monsanto Growth Ventures and other investors to expand its team and open a Silicon Valley office.
- Kinduct Technologies of Halifax, whose platform accesses 500 sources of data on the human body to aid sports medicine practitioners, raised US\$9 million in a round led by Intel Capital.
- St. John's-based Sequence Bio, which is building a databank on the genetic data of 100,000 Newfoundlanders, received a US\$3 million funding round led by the Silicon Valley venture capital firm Data Collective.
- And Halifax-based sports genetics company Athletigen Technologies raised US\$1.55 million in a round led by Exponential Partners, a Newport Beach, Calif.-based venture capital fund that specializes in health and human performance innovations.

These companies could not have had so much success if not for the pockets of expertise in biology and medicine prevalent in the region. The strengths in life sciences and medicine in Halifax have abetted the growth of some of these companies and accelerated their march to customers, capital and one exit.

One of the sectors that we have never before highlighted in these reports is ocean technology. As we mentioned above, Nova Scotia plans to open COVE, or the Centre for Oceans Ventures and Entrepreneurship in 2018. This will include a Startup Yard, which will be an incubator for oceans-related startups. Nova Scotia, in collaboration with the other Atlantic provinces, also plans to apply for federal funding through the "Supercluster" program announced in the 2017-18 budget. One challenge facing this initiative is that there are few oceans-related startups in the region. Innovacorp announced six Halifax-area companies for its Oceans Adopter program in October 2016 – Xeos Technologies Inc., Turbulent Research Inc., Swell Advantage Ltd., Blue C Designs Inc., 4Deep Inwater Imaging, and Maritime bioLoggers Inc. There are others in the region such as Ocean Executive of Halifax, Ocean Sonics of Great Village, NS, Seaformatics Systems of St. John's, and a few others. But this sector has a way to go to produce the number of young companies that the backers of the supercluster envision.

The Atlantic Canada Startup Community continues to be more and more dominated by information technology.

Chart 2.4 above shows the dominance of IT in the startup community in 2016. It's worth noting that only one province in the region stresses any facet of IT as a main pillar of its economic strategy. New Brunswick is focusing hard on cybersecurity (See sections 7.2 and 14.1). That means that official policy of the provincial government is developing the talent pool in the fastest-growing sector, and forming partnerships with global tech companies, like IBM.

Information Technology

We will discuss the funding, job creation and revenues in subsequent sections, as IT dominates all these facets of startup development. We want to focus on two aspects of the IT segment in Atlantic Canada that developed this year – international reach and digital life sciences.

One trend that has become evident in the last year or two is that more and more Atlantic Canadian startups are extending their global reach. This is especially true in information technology. Several IT companies are setting up offices in the U.S. and elsewhere. Some Software-as-a-Service companies, such as Proposify of Halifax and HeyOrca of St. John's are gaining traction through online sales. But others are opening U.S. offices, usually for sales and business development. These include:

- Kinduct Technologies – Travis McDonough, Founder and CEO of Halifax-based Kinduct Technologies, moved to the San Francisco area in the summer of 2016 and is now staffing the medical-tech company's office in Palo Alto. Kinduct is still based in Halifax, where he hopes to employ 100 people by sometime in 2017.
- Resson – After the AgTech company received US\$11-million in investment, Rho Canada Ventures principal Jeff Grammer became the executive chairman of the company and now heads its new office in San Jose, Calif. Co-Founders Rishin Behl and Peter Goggin continue to operate the company headquarters in Fredericton.
- Affinio – The Halifax-based social media analysis company a few years ago assigned its head of business development John Gleeson to head its New York office. The company has continued to staff up in Halifax, with more than 50 hires, as Gleeson works on sales and relationships in the U.S.
- Dash Hudson – Like Affinio, Dash Hudson has been

adding staff in Halifax (23 people and growing) and is placing sales execs in remote offices. It now has offices in New York and Miami.

- SkySquirrel Technologies – The AgTech company has a long-standing partnership with VineView, based in St. Helena, Calif., 100 kilometres north of San Francisco. SkySquirrel uses drones to collect data on vineyards, and the benefits of teaming up with a complementary company in the Napa Valley wine region are obvious.

It's not a coincidence that three of these five companies operate at the intersection of IT and life sciences. There is no clear sub-segment (something akin to fintech or agtech) for IT companies whose products have biological applications. If there were, Atlantic Canada would be really good at it. For lack of another name, we'll call it Digital Life Sciences. Consider what's happened in this space from the beginning of 2016 to early 2017:

- STI Technologies of Halifax sold out to the American multinational QuintilesIMS. The U.S. company, a global leader in services and data for bio-medical research, closed the deal this month. STI, which helps drug companies distribute samples efficiently, will maintain its operations in Halifax under the leadership of CEO Tim Gillis. Allnovascotia.com reported that the price was about \$200 million.
- Resson, the Fredericton company that analyzes data from farms, raised US\$11 million in a funding round led by Monsanto Growth Ventures and other investors to expand its team and open a Silicon Valley office.
- Kinduct Technologies of Halifax, whose platform accesses 500 sources of data on the human body to aid sports medicine practitioners, raised US\$9 million in a round led by Intel Capital. That money will help the company increase its global network and increase its staff in Halifax.
- St. John's-based Sequence Bio, which is building a databank on the genetic data of 100,000 Newfoundlanders, received a US\$3 million funding round led by the Silicon Valley venture capital firm Data Collective. The lead investor called Sequence's work in health data "a globally significant opportunity."
- Halifax-based sports genetics company Athletigen Technologies raised US\$1.55 million in a round led by Exponential Partners, a Newport Beach, Calif.-based venture capital fund that specializes in health and

human performance innovations. The money helped to fund the growth of its flagship product, the Athletigen Performance Platform.

What that means is that more than \$100 million came into the region for the STI deal (some would have gone to its minority investor, Imperial Capital of Toronto), and more than \$32 million was raised in venture capital by the other companies. This money is going into companies that are selling internationally and growing strongly. This segment is easily the most dynamic portion of the innovation community in Atlantic Canada.

Life Sciences

There are two interesting trends to look at in biotech in the region. The first is that there is greater geographic diversity than in previous years. Halifax and Charlottetown have always been strong, and continue to produce exciting companies. With Dalhousie's medical school, Halifax continues to produce interesting young ventures, such as Covina Biomedical, which should close a \$1 million funding round this spring. Charlottetown, meanwhile, has been building its infrastructure for the development of more and bigger life sciences companies. Late in 2016, the PEI BioAlliance, a partnership between the various players in the Island's life sciences industry, proposed the development of a \$30 million to \$35 million BioAccelerator complex. The group hopes to build the 77,000-square-foot facility at Charlottetown's BioCommons Research Park that would include offices, co-working space, wet labs and manufacturing facilities. Meanwhile, it continues to enhance life sciences mentorship with its EmerGence accelerator and the Natural Products Canada network, which is headquartered in Charlottetown.

New Brunswick has in the past lagged behind its neighbours in life sciences but is catching up. The efforts of BioNB, the life sciences organization in the province, are paying off and several exciting companies are growing. Chinova Bioworks, for example, had been accepted in two international accelerators by the spring of 2017. Kavis Environmental, another young company, is beginning to gain attention.

The other trend to watch in the life sciences space is that more life sciences companies should start to bring in meaningful revenue in the next year or two. There have been several companies that have encountered problems through their developmental journey and are now bringing



a product to market. Companies like ABK Biomedical, DMF Medical and Densitas are in or near the marketplace. And in the spring of 2017, ImmunoVaccine became the first Atlantic Canadian drug discovery company to enter Phase II trials with their leading drug candidate.

Cleantech

The Cleantech segment in Atlantic Canada can also be divided into two groups: industrial cleantech and Cleantech Lite. The group overall is getting a new lease on life as cleantech has been featured prominently by the federal government as a cornerstone of its innovation strategy. The Trudeau government is advocating “clean growth”, and has outlined several funding schemes to encourage clean energy or other enterprises that benefit the environment.

There are major industrial projects that are now proceeding, especially in Nova Scotia. Sustane Technologies Inc. struck a partnership with the municipality of Chester in the summer of 2016, which paved the way for the development of its first plant. LED Roadways Lighting has said its revenues continue to grow.

Meanwhile, there are several companies with lower capital requirements that are making waves. Prime among them is CarbonCure Technologies, which is now in pursuit of the US\$20 million NRG COSIA Carbon Xprize. Though cleantech used to be known for demanding high capital expenditures, CEO Robert Niven points out that one of the hottest portions of the segment is “cleantech lite” – companies that make money through licensing agreements or take other steps to avoid developing expensive plant facilities. Other such companies are making headway, like Breakthru runnerup WEnTech and Eosense, which attracted noted businessman Henry Demone to chair its board.

Advanced Manufacturing

It's difficult to draw a theme for manufacturing in the area. There are notable successes, but they're unrelated to one another. Metamaterial Technologies of Halifax and its partner Airbus moved toward commercial production of metaAIR, and plan to manufacture the laser-filtering screens in the Halifax area. The company quietly raised money throughout 2016, and announced an \$8.3 million closing in early 2017.

Dartmouth-based Spring Loaded Technology booked orders for its Leviathan knee brace and raised \$1.8 million from Build Ventures.

In St. John's, several young companies are gaining clients for their hardware products. These include: Agile Sensor Technologies, which makes components for drones; Empowered Homes, which is developing smart thermostats for high-voltage heating systems; and Seaformatics, which pivoted early in 2017 to make small wind or water turbines to generate power outdoors.

Fredericton companies Castaway Golf and Timbre Cases continued to gain traction.

SECTION 3 - GROWTH AND FAILURE

In past years, Entrevestor has surveyed Atlantic Canadian companies on their revenue growth. For 2016, we adopted the survey questions prepared by the REAP team, which asked the participants to roughly outline their revenues. However, it did not raise the matter of revenue growth.

In our 2015 report, we found that Atlantic Canadian startups sharing revenue information with Entrevestor increased revenues by 66 percent. The revenue numbers were up so strongly because the largest companies in the community by and large doubled revenues in 2015. And there were some companies reporting revenue for the first time that had six figures in sales. The 66 percent growth in 2015 compared to 37 percent in 2014 and 30 percent in 2013.

We do not have data for revenue growth in 2016. Attaining such data is becoming more difficult. The community is rapidly approaching 500 companies, and it's becoming harder to get meaningful metrics on revenue. Many companies with institutional backers are forbidden to reveal their data to outsiders, and these are the companies that would “move the numbers”.

What we can say is that the anecdotal evidence from the companies we cover suggest there was no deceleration in revenue growth in 2016.

3.1 Revenue

Atlantic Canada is still the domain of smaller, seed-stage companies, and has not yet produced the large innovation companies that could help transform the country's economy. Our bigger companies are growing strongly, but they still haven't cracked the upper rankings of the national tech community.

In the Branham list of the 250 top ICT companies in Canada in 2016, there was not a single Atlantic Canadian company in the top 100. The largest was Dartmouth-based services provider Mobia Technology Innovations, which placed No. 127. It was followed closely by Saint John-based Mariner Partners, at No. 131. And not a single Atlantic Canadian company was named in the 2016 Deloitte Fast 50, the list of the fastest-growing tech companies in the country. Companies need to have four years of revenue data to enter this list, and we have too few companies that have been generating revenue for four years.

It's understood some companies simply chose not to enter, such as Halifax's STI Technologies, a 2015 member of the Fast 50, which likely chose not to re-apply as it was in talks in 2016 to be taken over.

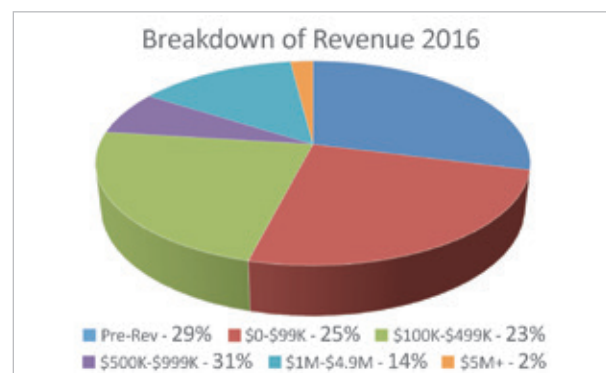
STI Technologies came in at 41st place in 2015 with revenue growth of 204 percent over the previous four years. Deloitte named the company to its North American Fast 500 list, assigning it the 319th spot. Before STI, the last company to make the list was Verafin of St. John's which placed 25th in 2012.

In our report last year, we noted that we were beginning to notice the emergence of larger companies – those with funding of more than \$100,000 in annual revenues and annual sales growth of more than 20 percent. We estimated there were about 130 of these companies in 2015. Of this total, about 30 had revenues of more than \$2 million. The 190 companies that responded to the REAP survey suggest these numbers are continuing to grow.

This survey finds that 46 percent of the companies in the Atlantic Canadian startup community are generating annual revenue of more than \$100,000 each. That would be the equivalent of 190 companies. Nine percent have revenue of more than \$500,000, which would equal 37 companies.

In the simplest of terms, almost half the companies in the community have more than \$100,000 in revenue.

Chart 3.1



Dataset: 190 companies that responded to the REAP survey.

This is worth considering for a moment because it's a sign of permanence for the Atlantic Canadian startup community. The common criticism of the community is that it is too reliant on government support. It's a fair criticism, but there are now about 200 companies that are generating six figures in revenue. And, as we'll show below, many are growing strongly. The fact that so many of these small, innovation-based companies have breached the \$100K sales mark suggests that we have a critical mass of companies that are on a sustainable financial footing. It's only an estimate, but it is an encouraging point to consider.

One other reason that this is important is that the true economic benefits of the startup movement come when startups scale. In 2015, for example, we found that three-quarters of the jobs created in the community were generated by companies with more than 10 employees. The fact that almost half the companies in the community are now recording meaningful revenue suggests that the economic impact of this movement will increase. It means these companies will have an easier time attracting capital, and can afford sales teams to further increase their cashflow.

Meanwhile, we continue to have public statements from major companies that indicate they are still increasing revenue strongly:

- Mariner of Saint John said its main xVu division's revenues have been growing annually at about a 30 percent rate and exceeded that level in 2016.
- Dash Hudson said its monthly recurring revenues are now "well into six figures" and increasing by 20 percent month on month.



- The PEI BioAlliance said its member companies generated about \$218 million of revenue in 2015, up from \$95 million in 2010.
- CarbonCure has indicated it expects revenue to more than triple in the current fiscal year.
- SimplyCast of Dartmouth said in July its revenue increased 37 percent in 2015.
- Resson, when it announced its A round, said it booked revenue of almost US\$1 million in 2015 and hoped to triple that number in 2016.

3.2 Employment

As was the case with revenue, we did not have access to data on employment for 2016. Such questions were not part of the REAP survey. But there is no evidence the job growth in the community has slowed down. In 2015, we found that employment at Atlantic Canadian startups increased by about 25 percent. The main reason was strong growth by companies with more than 10 employees – they accounted for three-quarters of the employment growth we found.

Large companies have continued to grow – Dash Hudson of Halifax has about 25 employees, and Affinio has more than 50. Simplycast has 50 employees and announced plans in February 2017 to hire 15 more. Mariner had 181 employees as of the end of 2016. High-growth companies are becoming major employers.

We estimated at the end of 2015 that there were about 4,000 people employed by Atlantic Canadian companies, including companies that exited but still have operations in Atlantic Canada. We now think we underestimated that figure. As we see in Section 10 of this report, entitled Exits and Job Creation, we estimate that 2,200 Atlantic Canadians work for companies that have exited. We arrived at that figure by consulting companies, and making an educated guess for the few companies that didn't answer. That figure is more than twice what we estimated last year.

So, even if there had been no job growth in the sector, we would revise our 2015 estimate to about 5,000 jobs, almost half of them in exited companies. There has obviously been some job growth, so the startup community is probably responsible for about 5,300 to

5,600 jobs in the region. That is an estimate, but an estimate based on considerable evidence.

3.3 Failures

Once again in 2016, there was relative stability in the Atlantic Canadian startup community. We counted 32 companies that went under in 2016, or less than one-tenth of the community at the beginning of the year. We should note that fewer companies failed in 2016 than in the previous year, when there were 36 failures, or 13 percent of the companies in the databank a year earlier.

The most notable failure of 2016 was Dartmouth-based Unique Solutions, a company that may have raised more equity capital than any company in the region. It's difficult to say how much money Unique Solutions raised in its history. The company raised \$30 million from Northwater Capital Management of Toronto in 2011. In 2015, it announced it had raised a further \$15 million from Northwater and investor Skip Battle. Before these investors came in, the company had raised money in Nova Scotia, including funding from Nova Scotia Business Inc., with an exposure of \$5.6 million. It also raised money from the First Angel Network, or FAN.

There have been some high-profile failures in 2017, including Halifax-based Vendeve and St. John's-based Sentinel Alert. More will come, as it's known that there are some respected companies that have run into trouble. We are seeing celebrated companies hit the wall and fail. Several that have received institutional funding are going under. It was bound to happen. And what's encouraging is that government agencies are not riding to their rescue. That's a positive development, because it means limited resources are being channeled into more productive companies.

SECTION 4 - FUNDING

4.1 Revenue overview

The year 2016 was a tremendous year for venture funding in Atlantic Canada – maybe the best ever. The year was marked by a nucleus of companies that raised multi-

million-dollar amounts, much of it from major institutions in the U.S. In some previous years, a single eight-figure funding has dominated the funding charts. There has never been a year like 2016 in which there has been a range of companies bringing in \$4 million or more from outside the region. And the scuttlebutt in the community suggests more deals like this will take place in the future.

However, the big deals were not the whole story. The government-backed funds – Innovacorp, New Brunswick Innovation Foundation, and Venture NL (managed by Pelorus Venture Capital) were also active. And companies continued to raise money from angels, both in Atlantic Canada and outside the region.

Our data omits the major funding for the Sustane Technologies plant in Chester, NS. This company won the 2016 1-3 Technology Startup Competition for its plan to build a plant that could convert household garbage into biomass pellets and synthetic fuel. The plant is costing \$16 million to \$17 million, and the company has said it will be financed evenly between equity and debt. That suggests about \$8 million in equity financing. However, this falls more into the category of project financing than startup fundraising, so we have ignored it in our calculations.

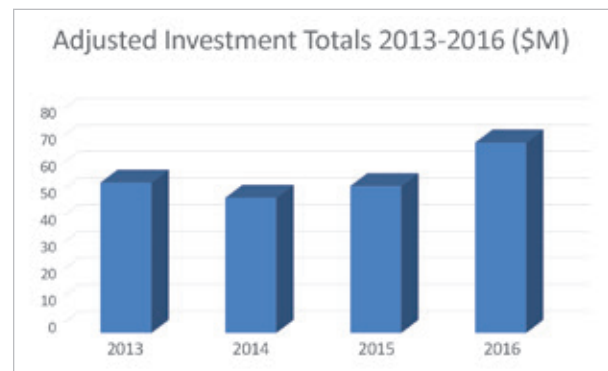
According to data collected by Entrevestor, Atlantic Canadian startups raised \$71.8 million in 2016 from institutions, strategic investors and angels. That compares with \$73.2 million in 2015, \$110.9 million in 2014 and \$56.6 million in 2013. But we need to add a few qualifications to place those numbers in context.

In previous years, Entrevestor conducted its own survey and received a lot of details about funding. The REAP-Entrevestor survey did not ask about funding, which means our 2016 data came from our reporting and conversations with founders. That means we likely missed some angel deals and as-yet-unannounced deals from the provincial-backed funding bodies. What's more, in previous years we drew data on investments by founders and friends and family. We did not collect such data this year and stripped it out in our tabulations of funding in 2013-2015.

We should also consider that there were two extraordinary deals that skewed the figures in 2014 and 2015. In 2014, Verafin of St. John's received a \$60 million private equity investment from Spectrum Equity – more than twice as big as any previous investment in an Atlantic Canadian startup. And in 2015, Unique Solutions of Dartmouth received a private equity investment of almost \$18 million.

A year later, Unique was out of business. If we strip out those two outliers, here is how the funding picture looks for the past four years:

Chart 4.1



If we strip out small funding and outlying transactions, the 2016 total funding of \$72.8 million is actually 34 percent above the average level of \$54.3 million in the previous three years. The average funding is important because 2015 was a mediocre year in funding for Atlantic Canadian startups (even though it was a remarkable year in other metrics.) Averaging the tally over three years gives a better comparison for the strong funding in 2016.

This finding is supported by the research carried out by the Canadian Venture Capital and Private Equity Association, or CVCA, which found an even greater increase in funding in 2016. The CVCA data comprise only venture capital funding and show that in the last three years, the value of deals has more than tripled and the average size of deals has almost tripled.

Chart 4.2

Data on Atlantic Canadian VC deals 2014-2016			
	2014	2015	2016
No. of Deals	44	52	56
Value	\$30M	\$66M	\$103M
Average	\$680,000	\$1.27M	\$1.84M
Source: Canadian Venture Capital and Private Equity Association, Venture Capital Industry Statistics, 2014, 2015 and 2016.			

It should be noted that there is a discrepancy between the CVCA data and that collected by Entrevestor. In round numbers, the CVCA found \$100 million in Atlantic Canadian funding whereas Entrevestor found \$70 million. We believe the CVCA included the US\$14.5 million (about C\$19 million) investment in Reno Sub-Systems, led by Intel, as Reno had previously named its headquarters as Bedford. We did not include this funding because Reno no longer has any operations in Atlantic Canada. There was also a US\$2.5 million round announced by Portal.io (formerly SupplySystem) that we did not include as the company is now based in Chicago. There may have also been unannounced financing we were not aware of.

The most interesting facet of the CVCA data is the average deal size. Certainly, it's a healthy sign that the number of

deals rose 27 percent in two years. But the average size of the deals is important because it shows that the Atlantic Canadian ecosystem is no longer geared only to seeding new ideas. There are a range of bona fide growth-stage companies that are getting at least some of the money they need to grow. In just two years we've gone from an average deal size of \$680,000 to \$1.84 million – an astonishing maturity in the ecosystem. Even if we strip out the Reno funding, the average deal size for 2016 is \$1.5 million – a 121 percent gain in two years.

See Also Chart 6.1 for Capital Raised from Exits

The main reason for the higher funding levels is a handful of large deals, led by three deals worth more than \$8

Chart 4.3

Major Atlantic Canadian Equity Financings 2016		
Company	Raised (C\$M)	Investors
Resson	14	Monsanto Growth Ventures, McCain Foods, Build Ventures, Rho Canada Ventures, New Brunswick Innovation Foundation, BDC Capital, East Valley Ventures.
Kinduct Technologies	11	Intel Capital, CFFI Ventures (John Risley), Elysian Park Ventures.
TruLeaf Sustainable Agriculture	8.5	Mike Durland, angels.
Sequence Bio	3.9	Data Collective, Killick Capital, Venture NL (managed by Pelorus Venture Capital), Klister Credit Corp.; John H. Philips.
Icejam	3	Build Ventures.
Appili Therapeutics	2.2	Innovacorp, angels
Dash Hudson	2+	Build Ventures, Innovacorp
Liferaft	2	Strategic and angels
Spring Loaded Technology	1.9	Build Ventures.
Fiddlehead Technology	1.8	Build Ventures, NBIF
CarbonCure Technologies	1.75	Pangaea Ventures
Eigen Innovations	1.4	NBIF, BDC Capital, East Valley Ventures, angels.
Alongside	1.1	NBIF, Green Century Investment,
Ubique Networks	1	Extreme Ventures, Innovacorp
SkySquirrel	1	Innovacorp, angels

million each. Halifax's TruLeaf Sustainable Agriculture Ltd. announced an \$8.5 million equity financing from a group of angels. Kinduct Technologies of Halifax raised US\$9 million, led by Intel Capital. And Fredericton-based Resson raised US\$11 million in a funding round led by Monsanto Growth Ventures. They headed a list of 15 companies that announced they raised C\$1 million or more in 2016.

As we mentioned above, those are just the large, announced deals. Entrevestor counted a total of 46 equity funding deals in 2016, of which 29 were worth less than \$1 million. (There were also at least two deals worth \$1 million or more that have not yet been announced.) These smaller deals are vitally important. While founders in the rest of the country complain about a lack of seed funding, the Atlantic region is a hotbed of seed funding. Though it has just 6 percent of the country's population, according to the CVCA data, Atlantic Canada accounts for 10 percent of the VC deals in the country, giving evidence of the number of deals in the region.

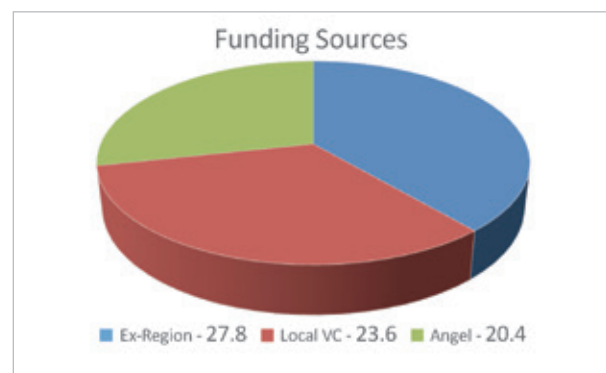
Patrick Keefe of Build Ventures also explains that seed rounds are essential to the ecosystem because the follow-on funding rounds are impossible without the small rounds. He said that there tends to be a 30 percent attrition rate between rounds of funding. So, if 10 companies raise a seed round, only seven will survive to raise an A round. And of those, only about five will be able to raise a B round, and so on. The A rounds financed by Build and the groups from outside the region can only happen if there is a broad range of seed rounds.

In all, Entrevestor counted 55 companies that received funding in 2016. That means more than 13 percent of the startups in the region received some funding last year. The main reason for the number of deals is the continued activity of the government-backed funds. In all, 35 companies in 2016 received money from these organizations (including Build Ventures). What is interesting about the funding was how evenly it was distributed among the sources of funding

Some \$27.8 million of the funding came from investors (mainly venture capital funds) based outside Atlantic Canada. That group is now the largest single source for Atlantic Canadian funds, accounting for almost 39 percent of the total. Obviously, the mammoth rounds reported by Resson and Kinduct accounted for a good deal of this funding.

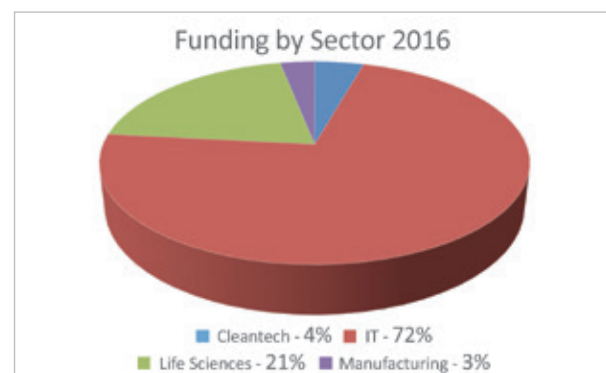
The local VC funds accounted for \$23.6 million, or one-third of the total. In their annual report, New Brunswick

Chart 4.4



Source: Entrevestor data on 55 companies that raised capital in 2016.

Chart 4.5



Source: Entrevestor data on 55 companies that raised capital in 2016.

Innovation Fund revealed that it invested \$3.8 million in 2015-16, while Innovacorp said its VC funding amounted to \$6.3 million in an active year. (Note that these fiscal years ended March 31, 2016 and do not align with our data, which covers the calendar year; we mention these totals only to illustrate NBIF's and Innovacorp's funding levels.) Build Ventures, the regional VC fund, was active in 2016, investing in six different companies.

The angel funding of \$20.4 million was dominated by the \$8.3 million TruLeaf financing. Even though Entrevestor did not survey startups, and therefore missed some funding deals, there was still ample activity in angel financing.

In terms of sectors, IT was once again the leader of the pack, accounting for almost three-quarters of the funding, in dollar terms.

But there is one proviso we should add to this observation.

If we characterize the intersection of IT and life sciences as its own category, we get a far different result. To clarify that statement, Atlantic Canada has shown great strength in the past year or two in developing IT products that have applications for human health, agriculture or other biological fields. Kinduct (whose platform provides sports teams with data on their athletes) and Resson (which analyzes agricultural data) are perfect examples. It's akin to the segment that Scott Moffitt, Executive Director of BioNova, refers to as “digital health”. We should call it “digital life sciences” to ensure that it includes such fields as agritech.

Chart 4.6

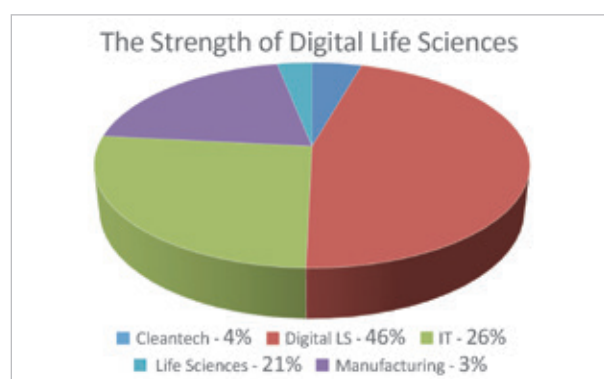


Chart 4.6 illustrates that digital life sciences is the strongest segment of the Atlantic Canadian startup community, accounting for almost half of equity capital raised in 2016. As we mentioned in Section 2.4, Digital Life Sciences could comprise its own segment, and it is a segment in which Atlantic Canada excels.

One final point: we only track equity funding at Entrevestor, but the REAP survey makes it clear that the Atlantic Canada Opportunities Agency and National Research Council benefit well over half the companies in the region. It found that 64 percent of respondents tap ACOA for funding, while 59 percent receive money from NRC. By comparison, 30 percent of respondents received angel financing and 23 percent venture capital. The Atlantic Canadian startup community is lucky to have ACOA's Business Development Program and other initiatives, which have helped almost two-thirds of the startups in the region.

4.2 The Changing Face of Funding

The funding environment in 2016 confirms a trend

we noticed two years earlier – funding from private institutions started to exceed investment by government-backed groups like Innovacorp, NBIF and, more recently, Venture NL. We group Build Ventures among the private institutions as it has private backers, so the government-backed institutions now account for about one-sixth of the total funding.

What is becoming part of the landscape is “A Rounds” led by institutions from outside the region. Just to be clear, these are not private equity deals. (Private equity funds take substantial positions in mature companies with strong cash flow, usually making leveraged investments. Venture capital funds, by contrast, make a series of small investments in young, growing companies, ideally increasing the company's value with each round of funding.) The investments in Resson and Kinduct (and Metamaterial Technologies' \$8.3 million round in April 2017 led by Radar Capital of Toronto) are bona fide VC financings. We're now seeing a few of these deals each year, and we should expect more.

What we should also be looking for in the coming years is a few “B Rounds”. In contemporary parlance, this is a round worth more than, say \$15 million. Again, this would be a venture capital deal, not a PE funding like Spectrum's funding of Verafin in 2014. These would be large venture capital deals, with investors probably taking less than 20 percent of each company. They are becoming more and more common in Canada, but have yet to come to the East Coast. The CVCA reported 26 Canadian deals in the \$20 million-to-\$50 million bracket last year, worth a total of \$781 million, and 11 deals worth more than \$50 million, accounting for \$1 billion in investment. We're probably going to creep into the league tables of these deals in the next year or two.

Meanwhile, Atlantic Canada leads the nation in pre-seed funding. The region accounted for 56 VC transactions last year, according to the CVCA data. That amounts to almost 11 percent of the VC deals in the country, even though we account for about 6 percent of the country's population. Even though the CVCA says the average round of funding in Atlantic Canada has risen to \$1.5 million (excluding the Reno Sub Systems and Portal deals), it's still only one-quarter of the \$6 million average size of a VC deal in Canada. Proportionally, Atlantic Canada has more seed funding than anywhere else in the country. Seed funding will continue to be a feature of the ecosystem. The Nova Scotia government in October 2016 announced that Innovacorp would have \$40 million to invest in the next five

years. And in May 2017, the New Brunswick government announced \$45.6 million in new funding for NBIF – though that money would go toward other programs as well as VC funding. (Those totals could grow as it would be astonishing to think Innovacorp’s and NBIF’s portfolios won’t have a few exits in the next five years. Proceeds from exits will likely be fed back into the investment funds.) The Venture NL fund is beginning to build its portfolio, and P.E.I. will likely have a provincial fund before long.

Meanwhile, there will be more strength in the \$1 million to \$3 million rounds of funding. About seven firms have applied to manage a Halifax-based venture capital fund to invest in tech companies in the region. The Nova Scotia government first mooted the possibility of a new fund about three years ago. Then it earmarked \$25 million for a new VC fund in the 2016-17 budget. The RFP said the winning applicant will have to come up with at least \$3 million in private contributions, bringing the minimum size of the fund to \$28 million. However, given the competitive nature of the bidding, it would be logical to assume the fund will end up being a good deal larger than that.

Meanwhile, Build Ventures, which has been the main player in the growth-stage VC realm in Atlantic Canada, has almost completed its initial investments for its first fund. The partnership of Rob Barbara and Patrick Keefe is now raising its second fund. It has bolstered its team by adding Patrick Hankinson, a twentysomething entrepreneur-cum-investor who sold his company Compilr for more than \$20 million two years ago. What Build – which is a client of Entrevestor -- has done is provide financing in the \$1 million to \$3 million bracket. It’s an utterly crucial part of the ecosystem given the prevalence of Atlantic Canadian companies in their growth stages.

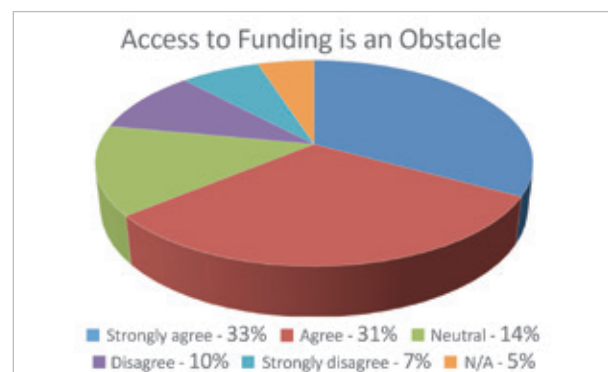
The final component of the evolving funding ecosystem is the advent of the “super angels”. These are individuals that invest in amounts similar to venture capitalists. Gerry Pond could be considered a super angel, though his role in the Atlantic Canadian ecosystem goes far beyond the amounts of money he invests. The super angels were certainly present in TruLeaf’s \$8.5 million raise, led by SMU graduate and former ScotiaBank investment banker Mike Durland. John Risley, the founder of Clearwater Fine Foods, has become more active as an angel investor. His investment and leadership helped Kinduct to raise US\$9 million. And he has also backed SkinFix, Mara Renewable, and Velo Industries (formerly Eyeball). Patrick Hankinson, Gavin Uhma and Jevon MacDonald, all the beneficiaries of exits, may not be super angels, but they have

become serial investors as well as serial entrepreneurs. Appili Therapeutics and Metamaterial Technologies have recently raised seven-figure rounds with strong participation by angels. “The recent participation of ‘super angels’ like John Risley in the local start-up scene, along with deeper funding commitments by well-capitalized VCs like Build Ventures, have contributed to the increasing average deal size,” said Gregg Phipps, Managing Director of Investment, Innovacorp. “It’s a positive development, for certain.”

4.3 Why Funding is Important

The REAP Survey showed that Atlantic Canadian founders are dissatisfied with the funding regime in the region. The survey asked for a response to the comment, “Access to capital has been an obstacle to building my company.” Here are the responses:

Chart 4.7



Dataset: 178 respondents to the REAP survey

Almost two-thirds of respondents believe the lack of funding in the region is an impediment to growing a startup in Atlantic Canada. In a related question, more than 67 percent disagreed or strongly disagreed with the statement that the financing process is quick and easy. (It’s an unfair complaint, as the CVCA data discussed above shows there is more pre-seed funding in Atlantic Canada than in the rest of Canada.)

This is important because funding for companies is critical to performance. Early in 2017, Propel ICT asked Entrevestor to conduct an exercise: could we use the Entrevestor databank to show that raising capital actually improves the performance of companies? We took up the challenge. What we found was that over four years,

companies that have raised capital are more likely to exit, are less likely to fail and are more likely to grow larger if they have brought on equity capital. Let us explain how we conducted the analysis and what it showed.

We looked at all the startups in the Entrevestor Databank as of Dec. 31, 2012. These excluded companies that had already exited, such as Radian6, IMV, GoInstant and Bluedrop. We also omitted Kivuto, an Innovacorp-backed company that had moved to Ottawa. We then identified those in the group that had raised capital before Dec. 31, 2012.

To find the desired metrics of these two groups, the total community, and those that raised capital over the period from Jan. 1, 2013 to Dec. 31, 2016, we counted the number of:

Chart 4.8

Performance of Companies with Funding		
As of Dec. 12, 2012		
Total number of companies	312	
Companies with funding	86	
<i>(Of that total, 53 had VC funding, including 46 backed by the public VC groups Innovacorp, NSBI, and NBIF.)</i>		
Performance in 2013-2016		
Total Group	Number	%age of This Group
Companies	312	
Exits	17	5.4%
Failures/Zombies/Left Region	134	43.0%
Raised Capital	63	20.2%
Gazelles	46	14.7%
Group that Raised Capital Before Dec. 31, 2012		
Companies	86	
Exits	7	8.1%
Failures/ Zombies/Left Region	24	27.9%
Raised Capital	34	39.5%
Gazelles	24	27.9%

- exits;
- failures (including zombie companies and those that left the region);
- companies that raised (more) capital;
- gazelles (companies we believe have \$1 million or more in revenue and are growing revenue at more than 30 percent annually. These are our best estimates of companies that reached this level by late 2016. Cases can be somewhat subjective.)

Chart 4.8 shows our findings.

One thing to note: The quality of companies we were tracking in December 2012 was a lot weaker than it is today. There were some borderline companies, which accounts in part for the high number of failures in the total group.

Conclusions:

Companies backed by external capital proved far less likely to fail, and more likely to exit, raise follow-on capital or hit a dynamic growth trajectory.

In fact, more than half the companies from 2012 that have become gazelles in the past four years were backed by outside capital in 2012 or earlier.

Similarly, about 40 percent of the companies backed by external investors as of 2012 have gone on to raise more capital, whereas 20 percent of the total population of companies have raised in that time.

SECTION 5 – PROVINCIAL BREAKDOWN

5.1 Nova Scotia

The evolution of the Nova Scotia startup community in the past year has really mirrored that of Atlantic Canada overall. Important companies like Kinduct and TruLeaf are making headlines with large funding rounds. They are part of a group of companies that are gaining traction rapidly with clients, as we showed in Section 3. The

Chart 5.1

Provincial Data

The following is a summary of the data Entrevestor collected broken down by province.

	NS	NB	NL	PEI	Total
No. of Startups					
IT	133	103	30	22	288
Life Sciences	51	10	1	8	70
Cleantech	16	5	2	2	25
Manufacturing	17	5	5	4	31
Total	217	123	38	36	414
Equity Funding (\$,000)					
2016	41,480	23,075	4,000	3,200	71,755
2015	54,769	15,869	3,779	2,069	76,486
2014	40,395	14,983	63,984	7,327	126,689
2013	30,064	17,522	1,526	2,206	51,318
2012	34,324	22,405	723	3,190	60,642
2011	56,415	13,730	1,698	8,921	80,764

startup community, especially in Halifax, is progressing on a broad front, in all sectors.

This community embodies the principles of the Ivany Commission, whose 2014 report *Now or Never: An Urgent Call to Action for Nova Scotians* laid out the framework for economic development in the province. The central tenets of the document called for changing attitudes and expanding the private sector. The startup community is doing these things in Nova Scotia and Atlantic Canada. Culturally, the startup community is an inclusive, welcoming society of risk-takers and creative thinkers.

In terms of the ecosystem, the major development is the planned Innovation District in Halifax, which will stretch from Dalhousie University to the Centre for Ocean Ventures and Entrepreneurship. This district, which has been championed by Jesse Rodgers of Volta Labs and Jeff Larsen of Dalhousie, should increase the profile of high-growth companies in the city. With luck, it will help to break down the persistent barriers between IT and the other segments of the startup community.

Changes at Innovacorp are impacting the development of new companies in the province. The innovation agency is ending its I-3 Technology Startup Competition, which has been one of its trademark events. Instead, it will focus on a rotating schedule of Spark competitions around the province. The Spark competitions, which have been held several times in Cape Breton and once in western Nova Scotia, award \$10,000 to \$50,000 to early-stage companies. Innovacorp is considering adding Spark events in the northern mainland and Halifax Regional Municipality so that each year there could be a Spark competition in four different regions. That would allow small, non-dilutive investments in a range of companies, after which Innovacorp could offer support to prepare the companies for investment. It could then use its venture capital fund to finance the best companies.

In the next two years, the startup scene in Halifax could change dramatically with the advent of the oceans sector support. This will no doubt be a bit of a watershed moment, as there is now a shortage of ocean-related startups in the city. Halifax has many components of an oceans cluster, such as academic expertise, facilities,



major industries and government support. But it has a long way to go in developing oceans-related startups. Cove is due to open next year. The Creative Destruction Lab's Halifax outpost will focus on ocean technology. And the provincial government is pushing to gain funding from the federal government's new Super Cluster program to establish a cluster of ocean tech in the city.

Cape Breton continues to grow its community, largely through the tenacity of its entrepreneurs. The island community got a shot in the arm in early 2017 when it featured prominently in the Propel ICT spring cohort – Sydney-based Mimir was one of five companies in the Build Cohort, and Sydney hosted its first cohort of the Launch program. In 2016, Sydney- and Toronto-based Ubique landed a \$1 million round of funding, which has been used to grow the company's development team. That funding, which included investment from Innovacorp and Toronto-based Extreme Venture Partners, is important because Cape Breton startups need more funding. The Ubique deal comprised the lion's share of the funding deals we found in Cape Breton in 2016. The community needs to land more funding.

5.2 New Brunswick

The gains in the New Brunswick startup community were manifested in the 2016-17 Breakthru competition. The organizers raved about the quality of teams in the event this year, and NBIF said it will likely develop relationships with more than just the four winners. Those missing the cut included EhEye, which has been gaining interest in its platform and AI system for analyzing security video, and Kasis Environmental, which has discovered an organic means of separating gold from ore. The fact is there are some intriguing companies launching in New Brunswick, and their development will be fascinating to watch.

What is unique in the region is the University of New Brunswick's position within the startup community in the Fredericton area. No organization is as crucial to a local ecosystem as UNB is to the New Brunswick capital. Many of the companies with the most buzz in the Fredericton area can trace their roots to UNB and its Masters of Technology, Management and Entrepreneurship program. Resson, which raised more capital than any other company in the region last year, was founded by two young men who met at UNB. WellTrack, which was accepted into the 500 Startups accelerator in Silicon Valley, was founded

by UNB Prof Darren Piercey. As we show in our report on Exits, UNB is a key partner in the development of cybersecurity as a pillar for economic development in the province. The Canadian Institute for Cybersecurity is at the university, and is working closely with the community to develop skillsets for the segment. UNB has also launched its Energia accelerator, which is focusing on revolutions in energy – including the interaction between energy and cybersecurity. The accelerator already has five companies going through its programs.

In the southeast corner of the province, the growth of Venn Innovation has helped spur on the development of companies in the Moncton area. The larger companies in the city – like Masitek, Alongside, and RtTech are growing strongly, but there is an interesting group of younger companies like Quber and Porpoise coming along behind them.

5.3 Newfoundland and Labrador

The changes in the ecosystem in St. John's are leading to a surge in mid-level companies in the past years. The city's strong companies, like Celtx and ClearRisk, are continuing to grow their businesses, and there are new companies coming into the community. But what's changed in St. John's in the past year is the number and strength of the companies that are entering their growth stages.

Since their inception, many of these companies have tapped two or three legs of the tripod of support in the St. John's ecosystem – residence at the Genesis Centre; participation in a Propel ICT cohort; and funding by the combination of Venture NL and Killick Capital. These intermediate-level companies are stealing headlines in the local community. Sequence Bio was one of the companies in 2016 that attracted funding from a Silicon Valley VC fund. HeyOrca continually received attention for its rapidly increasing monthly recurring revenue. Empowered Homes, Seaformatics, and Agile Sensor are all gaining clients in the challenging market for hardware. And Vish Solutions was accepted into the FounderFuel accelerator in Montreal.

One final element to note about the Newfoundland startup community is that it is expanding beyond the Avalon Peninsula. The seeds are being planted for a startup community in Corner Brook and the West Coast

of Newfoundland. In May 2016, the first Startup Weekend was held in Corner Brook, jointly by the Memorial University Grenfell Campus and the College of the North Atlantic. More recently, Humber Valley Entrepreneurs has been formed as a group of entrepreneurs and enthusiasts in the area around Corner Brook. The group in the spring of 2017 had 116 members in its Facebook group, and the number is growing. Organizer Jason Janes had been one of the pillars of Startup NL, and moved back to his original home in Greater Corner Brook about a year ago. Now he is joining the movement to grow the community on Newfoundland's West Coast.

5.4 Prince Edward Island

Prince Edward Island has always been strong in life sciences. Its startup community is now notable for two things: the diversity of its companies, and the strength of companies in all segments. It's remarkable, actually, that a jurisdiction with a population of 146,000 can produce so many good companies in a range of sectors.

The life sciences community is not resting on its laurels. The EmerGence Bioscience Business Incubator, founded in 2014, has gained momentum. As well as advising a host of clients in P.E.I., it is also serving companies outside the province, like New Brunswick startups Chinova Bioworks and SomaDetect. The PEI BioAlliance improved the ecosystem in 2016 by adding the national headquarters of Natural Products Canada, which BioAlliance CEO Rory Francis described as "EmerGence on steroids". Funded in part by the federal government's Centres of Excellence for Commercialization and Research, NPC is headquartered in Charlottetown and helps companies across Canada that are developing products from natural materials. The partnership includes AgWest Bio in Saskatchewan, the Ontario Bioscience Innovation Organization and the Institute for Nutrition and Functional Foods in Quebec. The federal contribution will be matched by over \$10 million from industry and other sources, for total funding of more than \$24 million over five years.

The BioAlliance, a partnership between the various players in the Island's life sciences industry, has revealed a proposal to develop a \$30 million to \$35 million BioAccelerator complex. The group hopes to build the 77,000-square-foot facility at the BioCommons Research Park in the Charlottetown area. It envisions a multi-

faceted space that would include offices, co-working space, wet labs and manufacturing facilities. Such a facility is needed, say its proponents, to accommodate the galloping growth of the biotech sector, which comprises 46 companies and seven research institutions, employing more than 1,400 people.

In the IT space, P.E.I. has produced some astonishing companies in the past few years. Companies like ScreenScape and discoverygarden have already established themselves as seasoned veterans of the industry. Lately, other companies have come along. Spotful has been gaining traction rapidly, and was accepted in 2016 into the FounderFuel accelerator. Retrievim is graduating in the spring of 2017 from the demanding Creative Destruction Lab, and its founder Jason Pearson has been accepted into the Next Founder program. And Forestry.io, which went through the TechStars accelerator in New York, received national attention when it was the first Canadian company to be funded by an AngelList syndicate.

In clean technology, Island Water Technology has had great success selling into the Middle East and North Africa region, improving sanitation in an area challenged by water shortages. In advanced manufacturing, Airbly is finding buyers for its black box for recreational aircraft. The ecosystem is supporting a broader range of company. Propel ICT has held two Launch cohorts on the Island, and the Startup Zone has opened in central Charlottetown.

No portion of the regional ecosystem has changed more in the past two years than Prince Edward Island.

PART 2 – THE EXIT ECONOMY

SECTION 6 - OVERVIEW

Each spring, the Nova Scotia biotech community hosts a get-together called Good News and Blues, in which musicians in the group play music and everyone celebrates a good news story from the past year. In the past two years, these good news stories have involved companies that have grown after exits. In 2015, the headline story was DSM Canada investing heavily in



its Mulgrave production facility following its \$540 million purchase of Dartmouth-based Ocean Nutrition Canada in 2012. A year later, the group celebrated the progress Nature's Way had made in expanding its Dartmouth operations after the purchase of Ascenta Health in 2015.

The important aspect of these celebrations is that they did not rejoice in the sale of the Atlantic Canadian company. They showed what had happened after the company had been sold. It's a story that could be repeated throughout Atlantic Canada, because exits of innovation-based companies in recent years have helped reshape the region's economy.

There are still too many people who believe exits only reward those with equity stakes in the companies, while jobs and technology leave the region. Entrevestor has tracked 27 exits in the technology or innovation space in the last six years, and we've concluded that exits have led to increased employment, higher salaries, greater levels of expertise, mentorship and philanthropy. The greatest effect is probably on the overall talent pool in the region, and the second is on the capital that has been rechanneled into other companies. It has impacted each of the four provinces. We have interviewed, on and off the record, several founders who sold their companies, and we've spoken to a range of professionals on the matter.

We should note that these 27 exits only take into account the companies that were acquired by larger interests. They do not include companies that managed to list on public markets -- companies like Bluedrop Performance Learning of St. John's or Immunovaccine Technologies of Halifax. These companies have double benefits of letting investors sell their shares, and maintaining headquarters in the region.

We should also make clear that Atlantic Canada has not been a hotbed of exits in the past few years. Twenty-seven exits over six years works out to about one exit each quarter. Some 20 of these deals are probably worth less than \$20 million each and the majority are worth less than \$10 million. They include purchases like Venor's buy of Equals6's assets, which took place because the Equals6 founders had exited with another venture, and Endurance Wind Power's purchase of Seaforth Energy, which was in bankruptcy protection. A few can barely be called exits at all -- just a convenient way of offloading operations that had encountered problems. But taken as a whole, exits have helped to change the East Coast economy for the better.

Second, we should highlight that exits are more prevalent in IT than in other sectors. Of the 27 exits we're considering in this study, all but two are in the IT segment. (The exceptions are Ocean Nutrition and BioVectra, two life sciences companies that together accounted for \$640 million in proceeds, or more than one-third of the capital raised by these 27 exits.) In terms of number of exiting companies, 93 percent have taken place in the IT segment, whereas IT accounts generally for about 70 percent of the overall startup community. Even though a few of the IT exits are really the disposal of troubled assets, IT companies are more likely to be bought out than those in other sectors.

Gaining information on exits is hard because little useful information is released at the time of the sale. Once the Atlantic Canadian company becomes part of a larger enterprise, all communications are controlled by head office, and head offices often fail to respond to questions from news sites. But we do have evidence that the Atlantic Canadian operations continue to grow after a sale.

Consider a couple of Fredericton companies that sold out under different circumstances in 2014. UserEvents, which had eight employees, was bought by LiveOps of California in January of that year (LiveOps in turn was later purchased by Serenova). UserEvents' only external investor was the New Brunswick Innovation Foundation, which received a \$1.75 million payout on its \$250,000 investment of a year earlier. The company's CTO Trevor Bernard is a key mentor at the JEDI accelerator for aboriginal businesses, and is a co-founder in the global blockchain-based exchange Braveno. Most important, CEO Jeff Thompson continued to build up LiveOps' and later Serenova's R&D team in the Fredericton area. "Since the UserEvents acquisition, the team has grown from eight to 40 employees today," said Thompson. "Serenova continues to grow its R&D operations that will see the company at 50 by end of the year (2017). Our growth has been a nice combination of candidates from outside Atlantic Canada with employees hailing from Israel, China and Korea plus countless recent graduates from NBCC and UNB."

Five months after the UserEvents-LiveOps deal, Fredericton-based event software specialist OneLobby sold out to its larger competitor Cvent. The deal wasn't reported at the time, largely because OneLobby had fallen on hard times. The sale was widely considered the best outcome in a bad situation. Cvent kept on

Chart 6.1

Atlantic Canadian Exits since 2011			
Target	Buyer	Date	Price
Radian6	Salesforce	Mar. '11	\$326M
Q1 Labs	IBM	Oct. '11	>\$600M*
Ocean Nutrition Canada	Royal DSM	May '12	\$540M
Golnstant	Salesforce	July '12	>US\$70M*
BioVectra	Questor Pharmaceuticals	Jan. '13	\$100M
UserEvents	LiveOps	Jan. '14	
Compilr	Linda	April '14	>\$20M
Ambir Solutions	EY Canada	May '14	
NewPace	NewNet	June '14	
OneLobby	cVent	June '14	
Seaforth Energy	Endurance	Oct. '14	
SwiftRadius	Deloitte	Dec. '14	
G2 Research	Track Group	Dec. '14	
Clarity	Fundable	Feb. '15	
Ascenta Health	Nature's Way	May '15	
Brovada	Towers Watson	Sept. '15	US\$15.4M
SecureReset	Curion	Nov. '15	
Internetworking Atlantic	Rogers	Dec. '15	
Twisted Oak Studios	River Studios	Jan. '16	>\$2M
InNetwork	gShift	Mar.'16	
Equals6	Venor	April '16	
Maritime Rideshare	HitchPlanet	April '16	
Caris	Teledyne	April '16	
Livelenz Inc.	Mobivity	April '16	<\$1M
Goalline	Blue Star Sports	May '16	
Bulletproof	GLI	May '16	
Analyze Re	Verisk	Oct. '16	\$15M-\$20M*
STI Technologies	QuentilesIMS	Feb. '17	>\$200M*
*Reported			

CEO Brian Dunphy (the former CTO of Radian6) and invested in the development team in Fredericton. Dunphy, as a member of a large corporation, declined to comment for this study, but the anecdotal evidence suggests the company's New Brunswick team has

grown strongly and continues to do so. At the time of writing this report, Cvent had four job openings posted in Fredericton – a quality engineer, senior content specialist, senior software engineer and an entry level position in software support.

It would be wrong to say all exits have such success. Most notably, critics of the exit strategy point to the experience of Cobham Tracking and Tracing, formed when the British defence contractor Cobham plc purchased the merged operations of Nova Scotia companies Orion Electronics Ltd. and Seimac Ltd. for \$14 million in 2007. Cobham had closed the Nova Scotia entity by 2013, laying off at least 55 people.

This report argues that the Cobham experience is the exception rather than the rule. Overall, exits have benefited the region in six categories – capital, employment, philanthropy, mentorship, economic development and serial entrepreneurs. We'll look at these in order.

SECTION 7 - CAPITAL FROM EXITS

We estimate that the acquisition of high-growth companies based in Atlantic Canada since 2011 has raised a total of \$1.8 billion. Most of the money remained in Atlantic Canada. Eight of the 27 companies had investors from outside the region. As expected, these sales included many of the largest exits, such as Q1 Labs, Radian6 and Ocean Nutrition Canada. But all 27 companies were majority owned by Atlantic Canadian individuals or entities.

If we momentarily broaden the focus of what we mean by exits, it's easy to see that even more capital came into the region through this process. Companies that have listed on the stock exchange are able to raise funds through share sales. Immunovaccine Technologies, for example, raised \$8 million through a private placement on the Toronto Stock Exchange in December 2016, shortly before it launched the Phase 2 trials of its drug candidate DPX-Survivac. And, as shown in Section 5.3, Killick Capital of St. John's has been channeling money into several startups following two exits – the sale of its stake in Verafin and the US\$229 million sale of six divisions of its Killick Aerospace unit.

The capital coming into the region from these exits has benefited individuals, institutions and government, and some has been rechanneled into new companies. The venture capital groups backed by provincial government have made a total profit of about \$12 million on their investments. NBIF famously made 28 times its money by investing in Radian6, and also backed UserEvents, for a

return of seven times in one year. And Innovacorp had winners with Golnstant and Analyze Re. These proceeds went into the general fund of these institutions, meaning they were to be reinvested.

Other institutional investors have also reinvested some of the proceeds of their exits. GrowthWorks Atlantic in 2013 rechanneled \$2.5 million in proceeds from its sale of shares in DHX Media and STI Technologies into seven companies, including Azorus, ClearRisk and Virtual Marine Technologies.

In New Brunswick, Gerry Pond and other investors in Radian6 and Q1 Labs formed the East Valley Ventures group in a range of investments – the portfolio now amounts to 24 companies. Technology Venture Corp. of Moncton was formed after Jon Manship sold Spielo Manufacturing for US\$185 million in 2004, and TVC has since backed a range of companies and is a limited partner in Build Ventures. During the writing of this report, I noticed that four investors have formed Island Capital Partners to invest in P.E.I. startups. Two partners have gone through exits -- Ron Keefe at BioVectra, and Steve Nicolle, who was able to cash in when Imperial Capital of Toronto invested \$17 million in STI Technologies.

The founders who have sold their companies have similarly been active in reinvesting. John Risley, best known as the founder of Clearwater Fine Foods, exited Ocean Nutrition Canada, launched Mara Renewables and invested in several other companies, including Kinduct, SkinFix and Vero Industries (formerly Eyeball). Patrick Hankinson, who sold Compilr for more than \$20 million while still in his twenties, has invested in about 10 Atlantic Canadian companies. Jevon MacDonald, Dan Martel, Gavin Uhma – all have backed other companies.

The greatest evidence that exit proceeds are rechanneled into other startups is found in the work of East Valley Ventures of Saint John. This unit of Mariner Partners is a loose organization of investors, led by Gerry Pond, many of whom cashed in on the exits of Q1 Labs, Radian6 and iMagicTV. These angels have backed dozens of companies and now boast 24 companies in their portfolio, including such highfliers as Resson, Forestry.io and Mariner itself.

It's difficult to overstate the importance of the capital flow created by exits. The No. 1 complaint of startup founders is their perception of a lack of capital in the region, and the proceeds from exits mitigate that problem.

SECTION 8 – EXITS AND JOB CREATION

We estimate that more than 2,200 Atlantic Canadians now work in operations that grew out of exited companies. This includes an estimated 500 jobs at Spielo/Gtech, the operation that thrived after Spielo Manufacturing sold out in 2004. The total number seems high but consider some of the things that are known about the exited companies:

- Q1 Labs had about 200 employees when it exited, and the current organization has doubled that number.
- BioVectra of Charlottetown said in a government filing it has 228 employees.
- Spielo/Gtech is known to employ about 500 people in Fredericton.
- DSM Canada says it employs 204 people in Nova Scotia
- Bulletproof employs 130 people, up from 85 when it was purchased.

Finding exact numbers can be difficult because most of the exited companies are now parts of publicly listed multinationals, which don't discuss employment in individual offices. But there is evidence that some of these companies are growing and hiring. Bedford-based Newpace – which was bought by NewNet Communications, which in turn sold it to Samsung Electronics – said publicly it is on a strong growth trajectory and hiring all types, from college grads to people with 15 to 20 years of experience. Mobivity, a year after it bought Livelenz, is advertising four openings in Halifax. Goalline, recently purchased by Blue Star Sports, is advertising four positions.

Even Mariner Partners, one of the largest tech companies in the region with revenues in 2015 of more than \$25 million, is in part the product of an exit. The company was formed around people who previously had worked for iMagicTV, which was purchased by Alcatel for about \$30 million in 2003. Some former iMagicTV staff went on to found Radian6, and others wanted to focus on their specialty of online video. “We realized we had one of the

world's best talent pools in internet video,” said Mariner CEO Curtis Howe in a 2016 interview. “We are now the world's leaders in what we do.” The company, whose main business is providing technology that allows online video at high speeds, employed about 130 people two years ago and now says it has 189 people.

The Mariner experience exposes one of the fallacies about exits in tech companies – the perception that jobs disappear from the region. The truth is that IT workers – namely programmers – can work wherever they want. There's a shortage of developers in Atlantic Canada, and we have a looser IT labour market than many larger markets. Even if IT positions vanish with an exit, the pool of talent that remains behind feeds into other growing companies. Overall, one of the missions in economic development has to be the nurturing of technical talent. Once a company exits, the people who remain to grow the company are exposed to the practices and technologies of far larger companies. And that in itself enriches the talent pool in Atlantic Canada.

SECTION 9 – EXITS AND SERIAL ENTREPRENEURS

Exits help to nurture repeat entrepreneurs in three ways:

1. Investors are impressed by entrepreneurs that have had past exits, so founders that have exits on their resume have an easier time financing subsequent projects;
2. Exiting entrepreneurs usually have to spend an earn-out period with the acquiring company, and they inevitably enhance their entrepreneurial skillset by working with a larger enterprise;
3. Just having gone through an exit teaches the entrepreneur the vast complexities of exiting a business, which again gives investors assurance that the entrepreneur knows what to expect.

“Acquisition due diligence is one of the most important experiences of my life,” said one serial entrepreneur, who asked to remain anonymous. “It's very different to fundraising and requires an intense level of clarity of the entire company, business, resources, market, and integration strategy.”



He added that simply working for a blue-chip company shows the practical outcomes of thoughtful policy. These entrepreneurs take on board the critical structure and planning of an established company, which they can bring to their own next venture.

“It seems that startups often want to prove that their culture is to have no policy or structured process – just do what you do,” the entrepreneur said. “This works getting off the ground, hustling and bootstrapping resources, but once you commit to taking investment money you’ve got to smarten up.”

Some of the leading tech entrepreneurs in the region have gone through exits before and returned to start second or third ventures:

- Jeff Thompson had two exits before he started UserEvents, which also exited;
- Brent Newsome, whose NewPace has been sold twice in the past two years, previously exited with InfoInterActive Inc. in 2007;
- The founders of Golnstant – Jevon MacDonald, Gavin Uhma and Dave Kim – have gone on to respectively launch Manifold, Side Story and Harbr;
- Keith Bates, Jay Steele and Shaun Johansen previously sold two companies to Research in Motion, and have since founded Eyeball, which is now called Velo Industries.
- Trevor Bernard, former CTO of UserEvents and an employee of two other exiting companies, is now CTO and Co-Founder of Braveno

SECTION 10 – EXITS AND MENTORSHIP

Atlantic Canada, like many promising startup communities, is rich in mentorship, attributable in equal measures to the levels of expertise in the region and the generosity of industry leaders in working with young companies. Many of the best mentors in the region have gone through exits – they have the experience that others crave, and the fact that they have exited gives them credibility with other entrepreneurs. And it doesn’t hurt that many of them are

independently wealthy as a result of their exit and can focus on mentorship rather than day jobs.

These mentors include: Volta Labs CEO Jesse Rodgers, who has had two exits in Ontario; Dan Martell, a Moncton native with three exits under his belt and an international following for his opinions; David Alston, Chris Ramsey and Marcel LeBrun from Radian6; Jevon MacDonald and Gavin Uhma from Golnstant; Patrick Hankinson from Compilr; Jeff Thompson from UserEvents; Steve Nicolle, who received the equivalent of an exit payout when Imperial Capital invested in STI Technologies; Andy Osburn from SecureReset; Colin Deacon, the entrepreneur-in-residence at Charlottetown’s Startup Zone, previously worked at SpellRead, which sold for over \$20 million in 2006; and Ron Keefe, who has become a pillar of the P.E.I. biotech segment following the exit of BioVectra.

SECTION 11 – EXITS AND PHILANTHROPY

There are plenty of examples of charitable giving that occurs because of exits – sometimes from the sellers who want to share their good fortune; sometimes from the buyers who want to give back to their new community. The University of New Brunswick, benefited when Gerry Pond, mentioned previously in several deals, teamed up with Desh Deshpande, who sold two American tech companies, to form the Pond-Deshpande Centre for Entrepreneurship. The university has also gained from IBM, which bought Q1 Labs, becoming a founding partner of the Canadian Institute of Cybersecurity. Big Blue also named UNB as one of eight universities in North America to help adapt its iconic Watson cognitive technology for use in cybersecurity.

UNB is just one example. St. Mary’s University, Dalhousie University, and Cape Breton University have all received support from entrepreneurs that have exited.

SECTION 12 – THE ROLE OF EXITS IN ECONOMIC DEVELOPMENT

The sale of startups has affected economic policy in each province in the region. It's true that they have had the greatest impact in Nova Scotia and New Brunswick as 17 of the 28 exits since 2011 have happened in Nova Scotia, and New Brunswick has received the most capital, with more than \$1 billion of the estimated \$1.8 billion going to that province.

What is of concern is that exits are still viewed with suspicion by so many policy makers. The thinking is that an exit rewards the founders and investors while the buyer ships jobs and technology out of the region. The greatest problem is that no government has a policy for using exits as a means of increasing direct foreign investment. Economic development agencies act quickly when an exit takes place, working with the buyer to find ways to enhance the economic impact. But governments should be more proactive, working discreetly with companies that are willing to exit to help attract the best buyers.

Exits have influenced economic policy in each province (even Newfoundland and Labrador, which didn't have an exiting company in the time period we're considering). By looking at each province, we can see how all parts of the region have benefited.

12.1 New Brunswick

Though the Radian6 exit captured the imagination of entrepreneurs across the region, the sale of Q1 Labs to IBM may have had the greater impact in terms of economic policy. Premier Brian Gallant has named cybersecurity as a cornerstone of the province's economic development strategy, something that probably would not have happened without the IBM-Q1 Labs marriage.

IBM's growth in the Fredericton area has underpinned the effort to make New Brunswick a centre of excellence in cybersecurity. Big Blue became the first research partner at the Canadian Institute for Cybersecurity, which opened early in 2017 at University of New Brunswick with more than \$4.5 million in funding. UNB is also one of eight North American universities to apply to use IBM Watson in cybersecurity research.

IBM and other companies have grown the cybersecurity community in the province. Most notably, former Q1 Labs CTO Sandy Bird is now the CTO for all IBM's research and development in cybersecurity. From his base in Fredericton, he oversees 20 major labs around the world, all delving into the super-hot segment of cybersecurity. "There's a huge, massive shortfall in cybersecurity skills in the workforce today," he said. "We just need to grow more cybersecurity skill. We should be driving our world-class leadership and doing research that is relevant in the rest of the world."

Fredericton-based Bulletproof opened a Security Operation Centre in February, immediately leading to the creation of 15 jobs. Other New Brunswick startups specializing in cybersecurity are coming along, such as Fredericton-based Sentrant Security Inc. and Saint John-based EhEye.

12.2 Newfoundland and Labrador

None of the Rock's startups has exited in the time that Entrevestor has been reporting on the community. But that is not to say that the St. John's companies have not benefited from investors cashing out of their investments. Killick Capital, the fund management firm for the Dobbin family's capital, has recorded two big deals in the last three years and is channeling the money back into startups. In 2014, California private equity company Spectrum Equity invested \$60 million in St. John's-based fintech company Verafin, buying out several early investors, including Killick. A year later, Killick's Texas-based aerospace business sold four of its six divisions to Alexandria, Va.-based transport support company VSE Corp. The sale grossed the Newfoundland investment firm about US\$229 million (C\$286 million at the time).

These exits took place as the Newfoundland government was forming Venture NL, a new early-stage venture company managed by Pelorus Capital. The simultaneous creation of this new fund and Killick's liquidity events meant that the Newfoundland government and business community suddenly had achieved their longstanding goal of being able to fund companies. So far, Venture NL and Killick have co-invested in five companies – Sequence Bio, HeyOrca, Clockwork Fox, Sentinel Alert (which has since shut down) and recently, Empowered Homes.



What's interesting about this is that Newfoundland and Labrador is gaining capital for startups even though there have been no recent exits in the province.

12.3 Nova Scotia

Golnstant's exit was somewhat modest, reportedly being worth more than \$70 million. The payout fell well short of the large New Brunswick deals, the sale of Ocean Nutrition Canada or even the more recent STI Technologies sale. And yet this deal transformed support for startups in the IT space in Nova Scotia – and not just in Halifax.

In the summer of 2011, when the company launched with \$1.7 million in funding largely from Silicon Valley investors, Co-Founder and CEO Jevon MacDonald let it be known he wanted to establish a co-working space in Halifax. He envisioned an enlarged space for his team at Golnstant, so that it could mentor less experienced tech entrepreneurs. That plan fell to one side as MacDonald and his co-founders proceeded with and then sold their company. After that, MacDonald turned his attention to his co-working space, which he called Volta Labs.

Backed by funding from MacDonald, the Atlantic Provinces Opportunities Agency and corporate donors, they opened a “startup house” in Halifax. Volta now occupies two floors of the Maritime Centre in downtown Halifax and has become the centre for tech startups in the city. Its website features 11 current residents and 35 alumni (though a few of them have closed). The organization, now headed by veteran serial entrepreneur and mentor Jesse Rodgers, has expansion plans, which may include taking more space in downtown Halifax. Rodgers and Volta are driving forces behind creating an innovation region in Halifax, and MacDonald is one of the Nova Scotians going through the REAP program at MIT.

Meanwhile, MacDonald's CTO Gavin Uhma wanted to make a similar contribution in his hometown of Sydney. He started an educational program for technology and entrepreneurship at Cape Breton University called UIT, which stands for the Uhma Institute of Technology. The effect was transformational in Sydney. Tech communities occur organically in population centres, and the Cape Breton Regional Municipality is one of the larger municipalities in the region with 94,000 people.

UIT (joined by the Navigate Startup House) gave the tech community a hub and allowed it to flourish. When Propel ICT held its first cohort in Sydney in the spring of 2017, most of the participants were from the UIT program.

12.4 Prince Edward Island

In January of 2013, drug manufacturer BioVectra sold out to Questcor Pharmaceuticals of Anaheim, Calif., for up to \$100 million in cash and deferred payments. The deal financed the further growth of BioVectra, improved financing for other ventures on P.E.I. and contributed to the overall growth of the Island's dynamic life sciences cluster.

BioVectra itself got a jolt from the new parent's balance sheet and access to public support. Four months after the deal was announced, it said that it had received a \$3 million loan from the Atlantic Canada Opportunities Agency's Atlantic Innovation Fund. A year later, it said it would add 13,000 square feet of space to its factory at a cost of \$3.8 million. The company that employed 140 people increased its staff to 228 a few years later, according to a filing with the federal government.

Founders Regis Duffy and Ron Keefe were soon providing funding to the community. The Regis Duffy BioScience Fund has provided millions of dollars of funding to such startups as Neurodyn and ViTRAK. Then in the spring of 2017, Keefe joined other entrepreneurs to form the Island Venture group.

The success of BioVectra has been one of the cornerstones of the province's successful life sciences strategy. Keefe has been a key mentor and organizer, and the PEI BioAlliance ranked BioVectra as one of its three premiere businesses. One reason the BioAlliance has been able to attract private and public funding for its infrastructure expansion is that it has the metrics to show bona fide growth in the sector. The group's private sector companies generated about \$218 million of revenue in 2015, up from \$95 million in 2010. BioVectra contributed to that growth metric.

PART 3 – THE ATLANTIC CANADIAN ECOSYSTEM

SECTION 13 – OVERVIEW

The Atlantic Canadian startup ecosystem is unique. In half a decade, it has evolved into a loosely structured group of organizations, educational institutions, governments and individuals that somehow work together. It has problems. There are too few established corporations. It spans four provinces whose governments have a history of bickering with one another. There are, some say, too many accelerators. There are too few people (maybe none) who have experience in developing global tech companies.

But it appears to be working. Each year, *Entrevestor* reports on more startups, and each year the best of these reach new heights. In 2016, the ecosystem evolved by: adding more accelerators at the seed level; increasing cooperation between the provinces; improving the supply of early adopters; and blending our ecosystem with the national and global ecosystems.

13.1 Accelerators

The proliferation of accelerators is a good-news-bad-news story. (For a list of the accelerators, see Section 15.) The good news is that mentorship and support is available for companies in virtually all sectors and places. There is now some form of education program in seven cities, and through Mashup Labs in rural regions. There are several IT-related programs, and programs available for life sciences, cleantech, food-related businesses, energy, and ocean industries. Dalhousie University is developing its Creator program, which teaches participants to build hardware. Among post-secondary institutions, there are programs at University of New Brunswick, Dalhousie, Memorial University of Newfoundland and the seven “sandboxes” operating in Nova Scotia. Most of the programs are for entry-level companies, but Propel ICT has its Build and Growth programs for advanced companies, and Volta Labs’ Bureau program coaches companies regardless of the phase. The establishment of the Creative Destruction Lab in Halifax (expected in 2017) will add another layer of mentorship to the region, as its demands and network are known to be peerless. Some of these programs

come with financial support. Just as a proper startup portfolio needs a range of companies with the hopes a few prosper, scores of Atlantic Canadian startups are “accelerated” each year, increasing the odds that some will move forward.

The problem seems obvious. It’s overkill. As a region, we’re devoting substantial resources to the nurturing of too many companies rather than identifying the best and pushing them forward. It means we’re devoting too many resources to the development of some companies that won’t survive.

The other problem is that Atlantic Canada is focusing too much attention on commercializing innovation and too little on traditional entrepreneurship. The makeup of the region’s economy shows the need to encourage more young people to consider careers as entrepreneurs – not just in tech companies, but in trades and other traditional businesses. Business owners are nearing retirement but have trouble finding candidates to take over their businesses. This is happening while young people leave the province for the lack of opportunity. Craig MacMullin, the President and CEO of the Centre for Entrepreneurship Education and Development in Nova Scotia, says this disconnect shows we need to do a better job of educating young people in entrepreneurship rather than focusing just on innovation. “The important thing is not to focus on a single sector, but to focus on entrepreneurship itself,” said MacMullin. “Let’s harness the natural entrepreneurial talents of all people and develop a culture that teaches Nova Scotians to launch businesses.”

13.2 Cooperation Between the Provinces

The Atlantic Canadian Growth Strategy has brought together representatives from the four provinces and the federal government to collaborate on region-wide economic development. It helps that all five governments currently come from the same party. It also helps that there are common goals, or at least overlapping interests, between the provinces. There is speculation that this could lead to a pan-regional investment tax credit, improving the funding regime in all provinces. There is also some expectation that the provinces will work together to lobby the federal government to use funding for “superclusters” to establish a centre for excellence in oceans technology in the region.



13.3 Early Adopters

One weakness in Atlantic Canada's ecosystem is the lack of "tentpole industries" – large companies that can spin off startups and serve as early adopters for new products. The situation is improving as established companies and some governments are becoming more active. McCain Foods, the multinational based in Florenceville, N.B., has become an early adopter of the tech produced by Resson, Fiddlehead Technology and Eigen Innovations. The Atlantic Lottery Corp. has set up an innovation outpost in Volta Labs.

In the public sector, governments in New Brunswick are leading the way in working with tech companies to bring on board products. The cities of Fredericton, Moncton and Saint John have used the Hotspot Parking service, and Moncton in early 2017 was the first to use the company's system for its transit service. Fredericton has also worked with other companies, including those in the Joint Economic Development Initiative, an accelerator for Aboriginal entrepreneurs.

13.4 The Internationalization of the Ecosystem

It's difficult to detail how this has developed, or point to a single event as a breakthrough. But over the past few years, the ecosystem in Atlantic Canada has blended in with that of Canada and the wider world.

The most important manifestation of this movement is Atlantic Canadian startups forming partnerships with blue chip companies. These would include such pairings as: Solace Power of Mount Pearl, NL and Boeing; Resson of Fredericton and Monsanto; Metamaterial Technologies of Halifax and Airbus; and QRA Corp. of Halifax and Lockheed Martin. Working with these global enterprises, the smaller company gains an immediate client and a global network.

As we mentioned in Section 2.4, several companies are establishing overseas offices, expanding their sales efforts. As well as the IT companies Affinio, Resson, Kinduct, Dash Hudson and SkySquirrel, the companies with overseas outposts include MetaMaterial Technologies and 4Deep Inwater Imaging. Metamaterial Technologies, the Halifax developer of special materials that alter light, announced in May 2016 it had bought the business of Silicon Valley peer Rolith, giving it a research and development base in Silicon Valley. MTI set up an

office in Rolith's home town of Pleasanton, Calif., and brought on board the target company's state-of-the-art R&D facilities and key employees. 4Deep Inwater Imaging of Halifax gained entry to an R&D facility in Silicon Valley when it struck a partnership in 2015 with China's Guangzhou Bosma.

Government agencies like Innovacorp and NBIF have been working on attracting companies from elsewhere to set up in Atlantic Canada. They both have used the federal government's Startup Visa program to attract companies – Innovacorp has lured MouseStats from Iran and Skyline from China, while NBIF made sure founders of cybersecurity company Sentrant could remain in Canada. NBIF also adopted a national category for its biennial Breakthru competition, encouraging companies from other parts of Canada to set up in the province.

It's in the realm of competitions and accelerators that the East Coast startup community is gaining an equal footing with the rest of the country. The region received a boost when Volta Labs recruited Jesse Rodgers as its CEO as he had headed both the Velocity incubator in Kitchener and the Creative Destruction Lab at University of Toronto. His background and connections have helped improve mentorship, grow connections and amplify the presence of Volta. He also helped in the discussions to bring the Creative Destruction Lab to the region, raising the levels of mentorship and improving connections with other startup communities.

In our previous reports, we've highlighted how well individual Atlantic Canadian companies have done in national and international competitions. The honour roll has grown too long over the past few years so let me highlight just two notable achievements. First, is the Creative Destruction Labs, which roots out most of its participants through the process of any given cohort. The Atlantic Canadian companies – at least the ones that Entrevestor is aware of -- that entered have graduated. Fredericton-based Eigen Innvoations, which creates Internet of Things solutions for manufacturers, graduated last year. Charlottetown-based Retrieivium, which has devised a predictive analytics system for chemists, and Halifax-based FundMetric, which produces software for charities, are in the program in Toronto. WoodsCamp, a Mahone Bay company whose digital platform can be used for woodlot management, is going through the CDL West program, the first cohort offered outside Toronto.

The second item is the performance of three East Coast

startups at the Aerospace Innovation Hub, a pitching event for startups in front of more than 100 international aerospace executives at Montreal's International Aerospace Week in April 2017. There were 11 startups, including six from Canada. And three were Atlantic Canadian: Agile Sensor Technologies of St. John's, Envenio of Fredericton and QRA Corp. of Halifax. It's astonishing when you consider that Atlantic Canada doesn't have a wealth of aerospace expertise.

One final organization that has worked tirelessly to develop links between the region and the rest of the world is Springboard Atlantic. The organization, which promotes the commercialization of innovation at 19 post-secondary institutions, has developed a coherent network of academic research in the region, overcoming the natural competitiveness between these institutions. It also links these institutions with businesses from around the world, helping researchers in the region gain experience with global businesses.

13.5 Opinions on the Ecosystem

The REAP survey gave participants two chances to sound off about the shortcomings of the Atlantic Canadian ecosystem. It asked respondents, "Please list any infrastructure which you feel is missing in our region," and "What changes would you make to the regulatory environment?"

The most important takeaway from the survey is that most respondents declined to answer one or both of the questions. Of the 190 people who took the survey, 61 people or 32 percent of the respondents answered the first question. And some of those simply replied with something tantamount to "Not applicable." A total of 43 people, or 23 percent, responded to the question about the regulatory environment. It's worth noting that the fact that most did NOT respond can only mean that most founders are either satisfied with the ecosystem, or could think of nothing to suggest. In fact, as far as regulation is concerned, almost 85 percent of respondents said they had no significant regulatory issues with starting their companies.

It was impossible to find a recurring theme in the question about the regulatory environment, though three of the respondents mentioned matters related to raising capital.

In the question about infrastructure, there were a

few answers that came up repeatedly. Some of the respondents had local concerns, like the quality of roads or the cost of flights. But there were four matters that several respondents mentioned:

1. Physical space. Of the 61 people that answered the question about infrastructure, 16 (or more than one quarter) cited the need for space. Seven of these people mentioned the lack of lab space, with a few referring to the need for wet labs. "Lab space for growth-phase companies does not exist," said one respondent. "Companies should build their own, which is too much cost for a young life science company." The other concern of the founders was affordable office space in a good location and with flexible leases. In a related question, almost one-fifth of the founders said they have had trouble finding appropriate physical space for their businesses.
2. Funding. Ten respondents cited the need for better funding (and three others cited funding in the question about the regulatory environment). "More VC would be nice, but most of us are still going to leave the region for capital (not a bad thing as long as we stay here)," said one person, who also asked for "recruiting grants for bringing talent in ... senior talent, not just grants to hire juniors."
3. Mentorship programs. Nine people mentioned mentorship and many of these concerns seemed to be local. Some people complained that there were no programs in their areas, or found problems with their local mentorship group. One respondent called for "ready access to mentors – mentorship and advice that does not come with a price tag."
4. Fast Internet. We assume these were rural respondents, but it could just be the speed of the internet in all areas. In any case, six people cited the need for faster internet speeds.

SECTION 14 – EDUCATIONAL INSTITUTIONS

The post-secondary institutions in the region play a key role in the formation and success of Atlantic Canadian startups. Almost 27 percent of the respondents of the



REAP survey said they are now collaborating with a university in the region. That doesn't just mean they grew out of university research or programs – it means more than one in four startups are working with universities to improve their technology or processes. And more than 15 percent said their core IP came from work carried out at a university in the region, while almost 10 percent said they had transferred IP from a university. And 42 percent agreed or strongly agreed that they would like closer collaboration with a post-secondary institution. It's an impressive contribution, though there is also room for improvement.

The survey asked if the university's technical transfer office was helpful when the companies took over IP from an institution. Some 80 percent of the respondents said the question didn't apply to them. Of those it did apply to, about one-fifth strongly disagreed with the statement that the transfer office was helpful, and a further 5 percent disagreed. About 5 percent strongly agreed that they were helpful, and 18 percent agreed they were helpful. More than half were neutral.

Universities are going to become more active in the innovation space in coming years. In January 2017, the federal government announced it will contribute \$9.2 million to Springboard Atlantic, the organization that supports the commercialization of research at Atlantic Canadian universities and colleges. Navdeep Bains, the Minister of Innovation, Science and Economic Development and the minister responsible for the Atlantic Canada Opportunities Agency, said ACOA will make the contribution to promote innovation and high-growth industries. Over the next three years, the Springboard funding will support 30 commercialization officers throughout the Atlantic region. These officers will connect entrepreneurs with researchers so ideas can be transformed into products and services that can be brought to market.

Springboard's 19 member institutions play a significant role in corporate research and development. More than twenty percent of all private sector R&D in Atlantic Canada is conducted in partnership with post-secondary institutions compared with just five percent in the rest of Canada. Over the past 10 years, Springboard has helped create 126 new companies and generated more than \$12 million in licensing and royalty income. It is estimated that the associated company sales revenue is \$240 million.

Here are the entrepreneurship centres and programs located at universities in the region:

Acadia University

Acadia Entrepreneurship Centre
www.acadiaentrepreneurshipcentre.com
Findlay MacRae

The AEC predates the startup boom. The centre's tagline is "Supporting the Rural Economy," which gives an indication of its specialty. Within the startup efforts in the region it takes a unique focus, striving to apply cutting edge technology to agricultural and rural initiatives. It works closely with the Acadia Institute for Big Data, which has launched several projects involving the wine and agricultural industries. The Centre has bases in Wolfville and Bridgewater.

Memorial University of Newfoundland

Genesis Centre
www.genesis.mun.ca/GenesisCentre
Michelle Simms

What started off as the commercialization centre of Memorial University has now become a hub of entrepreneurship in the city. Under the leadership of CEO Michelle Simms, the centre is nurturing companies from inside and outside the university. The centre's programs include the Evolution program for new companies, the Enterprise program for scaling companies, and MOTR, offered in collaboration with the MaRS Innovation District. Genesis Centre will move to new headquarters on the edge of Signal Hill in 2018.

St. Mary's University

Masters of Technology, Entrepreneurship and Innovation
www.smu.ca/academic/sobey/mtei
Dawn Jutla (on sabbatical in 2017-18)

Launched in 2013, the program is an accelerated graduate program aimed specifically at people who want to develop their own company or lead innovative divisions of existing corporations. The MTEI takes only 16 months to complete and focuses on lean methodology. The intake has increased strongly in each year of its existence. SMU is also home to the David Sobey Centre for Innovation in Retail and Services.

Dalhousie University

www.Dal.ca
Jeff Larsen

Dalhousie's innovation programs have been going through a transformation in 2017 that will likely result in a range of programs related to innovation and entrepreneurship. The point man for the project is Jeff Larsen, head of

innovation, creativity and entrepreneurship, a lawyer who came to the university from a range of roles in the private and public sectors. Until recently, the focus for innovation has been the Launch Dal program, a pioneering project launched in 2012 by professors Mary Kilfoil and Ed Leach. The university decided not to renew Leach's contract, yet Launch Dal and its associated programs like Starting Lean and its summer accelerator are due to continue. The group this year also launched the region's first accelerator for hardware, the Creator Program. Dal is active in the growth of several sandbox programs (see below) and is in talks with the Creative Destruction Lab to set up an outpost in Halifax.

University of New Brunswick

Technology, Management and Entrepreneurship
www.unb.ca/fredericton/engineering/tme
Dhirendra Shukla

Housed within the Faculty of Engineering, the Dr. J. Herbert Smith Centre for Technology, Management and Entrepreneurship emphasizes the role of engineering and design within the development of a product. The university's research has been vital to many of the leading companies in the Fredericton area, one of the hubs of entrepreneurship in the region. The program now includes a Masters of Technology, Management and Entrepreneurship. As we described in Section 5.2, UNB can be linked to much of the startup activity in the Fredericton area. It's the home of the Canadian Institute for Cybersecurity and recently opened the Energia accelerator.

Cape Breton University

UIT Program
uitstartup.org
Mike Targett

The UIT program was established in 2014 by tech entrepreneur Gavin Uhma (UIT actually stands for Uhma Institute of Technology) to help develop the tech and entrepreneurship capabilities of CBU students. The program does not offer a degree, but works with young people to launch their businesses.

One final note about startups and universities is several startups in the region are developing ties with institutions around the world. Fiddlehead Technology, a Moncton company that uses data analytics to predict food demand, has built a relationship with Cardiff University. Athletigen, a Halifax company that uses genetic data to improve athletic performance, is working with Baylor University.

The Nova Scotia Sandboxes

Nova Scotia also has a "sandbox" program, which is a series of groups within universities that encourage entrepreneurship. The sandboxes have in most cases been effective in sparking interest in entrepreneurship. These programs are starting to come into their own and can point to several companies growing under their stewardship.

The Island Sandbox

islandsandbox.ca
Cape Breton University, NSCC
D. Darren MacDonald, Manager

The Island Sandbox is a collaboration between Cape Breton University and the Nova Scotia Community College. Its primary focus is to help students launch businesses in three key areas – cleantech, social entrepreneurship and entrepreneurship for New Canadians.

Shiftkey Labs

shiftkeylabs.ca
Dalhousie, NSCAD, SMU, Volta, NSCC
Grant Wells, Manager

Shiftkey's specialty is software-based innovations. The organizers believe it can be challenging to navigate the wealth of resources and supports available to bring your ideas to fruition. ShiftKey Labs aims to lead the entrepreneur through the development process. It lets entrepreneurs work out of the free collaboration space where they can meet with current students, post-secondary alumni, mentors, and industry partners.

Cultiv8

www.dal.ca/faculty/agriculture/cultiv8
Dalhousie's Agricultural School, Acadia
Jolene MacEachern, Coordinator

Located in the campus of the former Agricultural College, Cultiv8 aims to bring about innovation in agriculture. The services range from testing ideas to teaching business principles, and the group hosts a range of events.

The Spark Zone

thesparkzone.ca
SMU, NSCC, NSCAD, MSVU, Atlantic School of Theology
Jason Turner, Manager

The Spark Zone brings together students and community members to create, develop and ultimately launch business

ideas and social innovations. The Spark Zone provides students access to a variety of services and supports at each partner institution, striving to provide opportunities for both students and community members interested in developing an entrepreneurial mindset. The group has been working with the David Sobey Centre for Innovation in Retail and Services to generate retail-related startups.

Launchbox

aec-wordpress.colibri-software.com/launchbox/about-launchbox
Acadia University

Launchbox is the centre for student entrepreneurs, located on the fourth floor of Patterson Hall at Acadia University. It supports students in their entrepreneurial pursuits by providing free programming, networking, access to mentors, and other entrepreneurs, working space and competitions.

IDEA

www.ideaproductdesign.org
Dalhousie, NSCAD
Clifton Johnston, Associate Professor

IDEA is a multidisciplinary collaborative initiative that integrates NSCAD Design with Dalhousie's Faculty of Engineering and the Rowe School of Management. The IDEA Sandbox is built around new product development. Currently located in the Waterfront Design Studio, IDEA provides professional mentoring, seminars, programming and space for students, faculty and businesses in support of product development.

Innovation and Enterprise Centre

www.innovatenortheast.ca
St. Francis Xavier University

The StFX Extension Innovation and Enterprise Centre believes that rural communities have the assets and strengths to face current economic, environmental, social, and cultural challenges. Programs and services available at the centre focus on actively tapping into existing assets in order to develop new enterprise opportunities.

SECTION 15 – ACCELERATORS, INCUBATORS AND MENTORING PROGRAMS

Some 51 percent of the respondents to the REAP survey said that entrepreneurial programs have helped move their companies forward. There are now structured programs in at least seven Atlantic Canadian cities, and there are remote programs that can mentor rural entrepreneurs online. In addition, there are sandboxes in at least three Nova Scotian towns with universities. There is some justification to the complaint that we have too many programs for entrepreneurs, but there are not a lot of empty chairs at these facilities. The demand is certainly there.

Many of the programs are offered through academic institutions, described above in Section 14. Some of the programs are offered at the startup work spaces – like The Bureau at Volta and Venn Garage at Venn Innovation. There are sectoral programs – Propel ICT for IT, EmerGence for life sciences, to name just two. More are on the way as Innovacorp's Startup Yard and CDL Atlantic are expected to open in the coming year.

Here is a list of the programs on offer:

15.1 Mentoring Groups

The NextPhase
Pan-Regional
thenextphase.ca
Toon Nagtegaal

The NextPhase is a four-day workshop that uses proprietary software to force entrepreneurs to assess their clients' pain and plot how to make money by solving it. The workshops have been held for several years and are now led by Toon Nagtegaal, a former VC executive from the Netherlands, and David Crow, former Evangelist-in-Residence at OMERS Ventures. The sessions are known for their blunt assessment of the candidates' business prospects and for providing a roadmap for each company to reach the market. This is the only program that accommodates companies in all sectors and all four provinces. The program has graduated more than 200 companies, including Entrevestor.

PropellCT
Pan-regional
Propelict.com
Anita Punamiya

The regional accelerator has evolved dramatically in the past two years. Under its Launch36 model, it accommodated six to 12 companies at a time in Moncton. In the autumn of 2016, it will probably hold a Build cohort for growth-stage companies in Moncton and Launch cohorts for seed-stage companies in Fredericton, Halifax, Charlottetown and St. John's. It has also launched its Growth program, designed to help growth-stage companies accelerate sales. Roughly 70 companies a year pass through Propel programs. With full-time personnel in Saint John, Fredericton, Halifax and St. John's, it now has a budget of several million dollars. Its ambitions keep growing. The organization used to say its goal was to develop Atlantic Canada's first tech company with a billion-dollar valuation, then co-founder Gerry Pond in 2015 began talking about building "billion-dollar companies" – plural. The organization now has three tiers of mentorship – the Launch program for beginners, the Build program for scaling companies, and the Growth program for more mature ventures.

The Aboriginal Business Accelerator
(Affiliated with The Joint Economic Development Initiative, or JEDI)
Fredericton
www.jedinb.ca
Mark Taylor

The country's first tech accelerator for Aboriginal entrepreneurs was launched in New Brunswick in 2016, and it immediately witnessed great progress from the five teams enrolled. The inaugural Aboriginal Business Accelerator is operated by the Joint Economic Development Initiative, or JEDI, a not-for-profit that supports Aboriginal participation in the New Brunswick economy. It works closely with the federal and New Brunswick governments. The four tribal councils of New Brunswick and the New Brunswick Business Council govern JEDI. JEDI started its 10-week accelerator in 2016 to get more Aboriginal entrepreneurs into major industry supply chains and help them with fundraising for their businesses. With JEDI's vast network in New Brunswick, it can connect Aboriginal entrepreneurs with angel investors and venture capitalists.

Spark and Ignite
(Affiliated with Mashup Lab)

1

Rural Nova Scotia
www.mashuplab.ca
Andrew Button

Following the successful launch of his virtual Spark accelerator for fledgling rural entrepreneurs, Andrew Button, CEO and Founder of Mashup Lab, announced in Spring 2016 that he would launch Ignite, a virtual program for more advanced rural startups. Button, who is based in Wileville on Nova Scotia's South Shore, began Spark in September 2015 to assist entrepreneurs who don't have easy physical access to programs and mentors. Ignite is for people who have validated their ideas and are in the early stages of launching and looking for their first clients. Both programs feature two three-hour online seminars per week for six weeks.

B4 Change
www.pondeshpande.ca/social-enterprise-accelerator
The Pond Deshpande Centre
Fredericton
Karina LeBlanc

The accelerator at UNB's Pond-Deshpande Centre focuses on social entrepreneurship, or companies with a social mission. The accelerator is now two years old with 30 graduates to date.

Innovacorp's Accelerators
Innovacorp.ca
Nova Scotia
Shelley Hessian

The innovation agency launched programs for companies in specific sectors in 2016. The CleanTech Accelerate Program for green companies has five companies enrolled. And it is offering three programs for marine-related companies -- the Demo at Sea Program, the Early Adopter Program and the OceanTech Development Program. Six companies were enrolled in the Early Adopter Program last year.

15.2 Local Incubators or Co-Working Spaces

Planet Hatch
Fredericton
Planethatch.com
Lisa Kinney



Planet Hatch is a co-working space in Fredericton's Knowledge Park, and has established itself as the hub for startups in the New Brunswick capital. It is the base for PropelCT sessions in the city and also features a range of services and events. The organization changed direction in 2015 and decided to focus less on tech startups and more on a broad-based support model for all kinds of entrepreneurship.

Venn Innovation
Moncton
Venncentre.ca
Doug Robertson

Formerly Tech SouthEast, Venn has established its Main Street office as the hub for innovation in the greater Moncton area. Its Vennture Garage has begun to turn out some interesting companies, such as Ongozah, which made it into the Propel Build program in the summer of 2015. There are now about 15 companies working out of Venn at any given time, and it hosts the Propel Launch program. The Vennture Garage program is also offered at Connexion Works in Saint John.

Volta
Halifax
www.voltaeffect.com
Jesse Rodgers

The startup house in Halifax opened in May 2013 on Spring Garden Road, and moved into two floors in the Maritime Centre on Barrington Street in 2015. It is interested in moving into the former Central Library at Spring Garden and Grafton, though press reports recently said the province may sell the lot to a private developer. Volta has a stable of 10 to 12 startups working in its facilities at any given time. It is also the home of Build Ventures, the region's venture capital fund. The facility is the Halifax base for PropelCT. In the spring of 2016, Volta announced it had hired Jesse Rodgers, an entrepreneur and tech evangelist from Kitchener, Ont., to be the group's CEO. Volta offers intense mentorship through The Bureau, in which companies hold regular meetings with a range of mentors to provide guidance.

Navigate Startup House
Sydney
navigatestartup.com
Ardelle Reynolds

Tech enthusiasts Ardelle Reynolds and co-founder Lindsay Uhma set up Navigate in late 2015 as a base for

the growing tech community in the second-largest metro area in Nova Scotia. It offers co-working space, subsidized offices for as many as four startups and a range of mentoring sessions. The outfit has now outgrown its space and is in the process of raising \$1.19 million to expand. It received about \$325,000 each from Invest Nova Scotia and the Atlantic Canada Opportunities Agency. The organization has tapped Arkansas mentor Jeff Amerine to provide mentorship for the next year. It hosted its first Propel Launch cohort in 2017.

Startup Zone
Charlottetown
www.startupzone.ca
Doug Keefe (Filling in during CEO Christina MacLeod's maternity leave.)

Supported by Innovation PEI and various community groups, the Startup Zone is a 3,600-square-foot facility at Water and Queen streets that opened in July 2016. It has enough space for about 16 companies and will be a work zone for tech and innovation startups as well as other entrepreneurial pursuits. It will also be the P.E.I. base for Propel ICT, the regional tech accelerator. The organization in the spring of 2017 named serial entrepreneur Colin Deacon as its Entrepreneur-in-Residence.

Common Ground
St. John's
workatcommonground.com
Peter Gifford

Common Ground, the 4,000-square-foot co-working space in St. John's, is now three years old, which makes it one of the oldest community incubators in the region. The facility is the Newfoundland and Labrador base of Propel and the accelerator's Entrepreneur-in-Residence Peter Gifford.

Connexion Works
Saint John
connexionworks.ca

The co-working space on Germain Street opened in 2014. It offers space for small companies and hosts regular events. Joanna Killen offers Vennture Garage programing to startups at the location. The organization behind it works closely with Enterprise Saint John and other community groups.

15.3 Life Sciences Organizations

EmerGence
Charlottetown
emergencebioincubator.com
Rory Francis

Launched in late 2014, EmerGence is a virtual business incubator focused on life sciences businesses in the food, nutraceutical and pharma segments. Companies receive comprehensive support customized to their needs and benefit from experienced mentorship, specialist services and established networks. EmerGence is affiliated with the PEI BioAlliance, which coordinates programing for life sciences companies on the Island.

Natural Products Canada
Charlottetown
www.nce-rce.gc.ca/NetworksCentres-CentresReseaux/
CECR-CECR/NPC-PNC_eng.asp
Shelley R. King

Headquartered in Charlottetown, the NPC helps companies across Canada that are developing products from natural materials. The partnership includes AgWest Bio in Saskatchewan, the Ontario Bioscience Innovation Organization and the Institute for Nutrition and Functional Foods in Quebec. The federal contribution will be matched by over \$10 million from industry and other sources, for total funding of more than \$24 million over five years.

BioNova
Halifax
www.bionova.ca
Scott Moffitt

BioNova is a not-for-profit that represents life sciences companies in Nova Scotia. It has about 60 members, many of which are life sciences startups in the province. The organization's big event each year is BioPort Atlantic, an annual conference held each autumn. And the highlight of BioPort is the BioInnovation Challenge, a pitching event for life sciences companies in the three Maritime provinces. By entering BIC, novice companies receive a range of mentoring sessions that culminate with the pitch at the competition.

BioNB
Fredericton
Bionb.org
Meaghan Seagrave

BioNB is the bioscience authority in New Brunswick for government, industry, and media, translating and communicating the business opportunities behind the science in a highly technical sector. BioNB builds and enhances new and existing businesses, supports technology transfer from public institutions and the private sector, and works to build a community and enhance collaboration among sector stakeholders.

PART 4

THE ENTREVESTOR DATABANK

Company	City	Market Segment
NOVA SCOTIA		
3d Bolus	Halifax	Advanced Glazing Sydney
4Deep Inwater	Halifax	Advocate Cognitive Technologies Sydney
ABK Biomedical	Halifax	Affinio Halifax
Abridean	Halifax	Agada Halifax
Acadian Seaplants	Dartmouth	AgSeed Technologies Bible Hill
AddText.me	Dartmouth	aioTV Halifax



Company	City	Market Segment
Alentic Microscience	Halifax	Sydney
Alpha Dog Games	Bedford	Halifax
Annapolis Orchards	Lawrencetown	Dartmouth
Appili Therapeutics	Halifax	Dartmouth
Aramax IP Services	Halifax	Waverly
Artisync Technologies	Sydney	Halifax
Athletigen Health Solutions	Halifax	Halifax
Atlantic Motor	Halifax	Halifax
Aurea	Halifax	Dartmouth
Avive Naturals	Halifax	Halifax
Axem	Halifax	Milford Station
Azorus	Halifax	Halifax
B4Checkin	Halifax	Halifax
Bend Beauty	Dartmouth	Halifax
Bid Tasker Mobile Applications	Sydney	Sydney
BidSquid	Sydney	Halifax
BioMedica Diagnostics	Windsor	Halifax
Bitness	Halifax	Sydney
B-Line	Halifax	Halifax
Blue C Designs	Halifax	Halifax
BlueLight analytics	Halifax	Dartmouth
BoomersWork	Halifax	Halifax
Breton SmarTek	Sydney	Dartmouth
BuyMyLemonade	Halifax	Sydney
CarbonCure	Halifax	New Glasgow
Cellufuel	Halifax	Bedford
Chatsubo Heavy Industries	Sydney	Halifax
Chelation Partners	Halifax	Lunenburg
Click2Order	Sydney	Halifax
Clinical Logistics	Dartmouth	Halifax
CogPro	Halifax	Halifax
Colibri	Wolfville	Dartmouth
Collegio	Sydney	Sydney
Conceptualiz	Halifax	Antigonish
Covina BioMedical	Halifax	Elmsdale
Crate	Halifax	Halifax
Creative Variant		Sydney
Cribcut		Halifax
Curbza		Dartmouth
Current Studios		Dartmouth
Dadavan		Waverly
Dartmouth Medical Research		Halifax
Dash Hudson		Halifax
Daxonics Ultrasound Inc		Halifax
DC2Go		Dartmouth
DeCell Technologies		Halifax
Delicious Brains		Milford Station
DeNovaMed Inc		Halifax
Densitas		Halifax
DGI Clinical		Halifax
Digital Diesel Solutions		Sydney
Dingbot		Halifax
DMF Medical		Halifax
DocMaster		Sydney
Dystillr		Halifax
Efficiency Properties		Halifax
Email Opened		Dartmouth
Encyt Technologies		Halifax
Eosense		Dartmouth
EspresSos		Sydney
Extrify		New Glasgow
Eyeball		Bedford
FIVAMED		Halifax
Fourth Monkey		Lunenburg
Free2Charge		Halifax
Functional Beverage		Halifax
FundMetric		Halifax
GenCan Bio		Dartmouth
Genus		Sydney
GMS Surface Tech		Antigonish
GoBumpFree		Elmsdale
Graph Reactor		Halifax

Company	City	Market Segment
Green Power Labs	Dartmouth	Marcato Digital Sydney
Halifax Biomedical	Mabou	Maritime BioLoggers Halifax
Harbr	Halifax	MediaSpark Sydney
HB Studios	Lunenburg	Medivirtual Consultation Annapolis Royal
Health Outcomes Worldwide	New Waterford	Medusa Medical Technologies Halifax
Health QR Inc.	New Glasgow	Metamaterials Halifax
Hello Focus	Halifax	Midgard Insect Farm Windsor
Hoops Innovation	New Minas	Mimir Networks Sydney
Hypergive	Halifax	Mindful Scientific Halifax
Imagine That Technologies	Bedford	Modest Tree Media Halifax
Immunio	Halifax/Toronto	MoneyFinder Halifax
Impath Networks	Halifax	MouseStats Halifax
Insitu Core Labs	Port Hawkesbury	Myconnex Bedford
InstrideWeb	Halifax	MySong Sydney
Instrument Concepts	Great Village	Neck Tronics Conquerall Mills
Integrated HACCP Solutions	Wolfville	Neothermal Energy Storage Halifax
Intelligent Dynamics Canada	Halifax	Neuroquest Halifax
InTheSpot Technologies	Wolfville	NewAE Halifax
Karma Gaming	Halifax	Norex Halifax
Kinduct	Halifax	NovaSight Halifax
Leadsift	Halifax	Ocean Executive Bridgewater
Lean MVNO	Sydney	OHS Data Halifax
LED Roadway Lighting	Halifax	Open Ocean Systems Halifax
LifeRaft	Halifax	OpenBlue Global Services Bedford
Living.Room	Halifax	Orenda Software Solutions Sydney
Lixar	Halifax	Orpheus Interactive Halifax
Lokol.me	Sydney	OrthoMX Halifax
Lootbag	Antigonish	PACTA Halifax
LREV	Halifax	Panag Pharmaceuticals Halifax
MacCormick	Sydney	Peer Ledger Halifax
MacKenzie Healthcare Technologies	Musquodoboit	Perata Data Systems Point Edward
Harbour		Performance Genomics Truro
Manifold	Halifax	PhotoDynamic Inc. Mount Uniacke
Manzer Apiary	Digby	Pitch Play Halifax
Map Master Technologies	Sydney	Player Pack Sydney
Mara Renewables Corp.	Bedford	PowerWhys Halifax

Company	City	Market Segment
Precision Biologic	Dartmouth	Tenderithm Mahone Bay
Presenter's Podium	Halifax	The Love Network Halifax
Project Disruption	Sydney	The Rounds Halifax
Proposify	Halifax	Tileographer Sydney
Punch Club	Sydney	Tranquility Online Halifax
Punk Science Studios Inc.	Halifax	Treventis Diagnostics Halifax
QRA Corp.	Halifax	TruLeaf Halifax
Quicklink	Halifax	Turbulent Research Dartmouth
ResMed	Halifax	Ubique Networks Sydney
RetiCAD	Halifax	Unified Software Technologies Wolfville
SABRTech	Halifax	Upcycle Waste Inc Halifax
SageCrowd	Halifax	UpMyGame (Granite Media) Halifax
Sandcastle Application Development	Sydney	UpTime Management Sydney
Satteligent Telemetry Solutions	Bedford	Velsoft New Glasgow
SayleGroup	Halifax	Vendeve Halifax
Securicy Data Solutions	Sydney	Vesuvius Media Halifax
SeeMePly	Halifax	VidSnippets Halifax
SGS Solutions	Dartmouth	Vitalo Halifax
SideStory	Halifax	WoodsCamp Technologies Mahone Bay
SimplyCast	Dartmouth	Xeos Technologies Dartmouth
Singular	Mahone Bay	Xona Games Yarmouth
Site 2020	Halifax	Xtidal Bedford
Sky Squirrel	Halifax	Yomes Halifax
Skyline	Halifax	znanja New Glasgow
Solid State Pharma	Halifax	Zora Halifax
SONA NanoTech	Halifax	
Spiri	Halifax	NEW BRUNSWICK
Spring Loaded	Halifax	360 Hockey Training Dieppe
Squiggle Park	Halifax	Advanced Publishing Saint John
STI	Halifax	Adventure Pack Fredericton
Stomp Labs	Sydney	Agora Mobile Moncton
SupplyStream	Halifax	AirVM Saint John
Sustane Technologies	Chester	Alongside Moncton
Swell Advantage	Halifax	BASE Engineering Saint John
Swept	Halifax	Be Ready Sussex
Tenacity Tech Innovations	Sydney	Biomolecules for life Moncton

Company	City		Market Segment
Biopolynet Inc	Fredericton	Ginglelive.com	Moncton
BioScript Pharmacy	Moncton	Gogii Games	Moncton
Blaze Studios	Moncton	GradsFinder	Moncton
Bonkk	Fredericton	Green Imaging Technologies	Fredericton
Braveno	Fredericton	Hit The Road Ap	Oromocto
Castaway Golf	Fredericton	HotSpot Merchant Solutions	Fredericton
Chatham Biotec	Riverview	iCubemedia	Dieppe
ChemGreen Innovations	Sackville	Introhive	Fredericton
Chinova Bioworks	Fredericton	Inversa Systems	Fredericton
Cirrus9 Technology Partners	Saint John	IPSNP	Saint John
Cloudlinx	Fredericton	IQ Evolve	Moncton
Corruven	Kedgwick	Ironflow Technologies	Dieppe
DealerMine	Saint John	iTacit	Fredericton
Dgrief	Saint John	Itavio	Moncton
Doorval	Moncton	Kasis Environmental	Moncton
Dovico	Moncton	KnowCharge	Fredericton
eChart	Moncton	Kognitiv Spark	Fredericton
Eggroll Digital	Miramichi	Limbic	Fredericton
EhEye	Saint John	Liv9	Fredericton
Eigen Innovations	Fredericton	Loft1 Media	Fredericton
Elandas	Saint John	LuminUltra Technologies	Fredericton
Elevate Atlantic	Moncton	Lymbix (Measurely)	Moncton
Ella	Saint John	Mariner Partners	Saint John
Encore Interactive	Saint John	Masitek Instruments	Moncton
Enkidu	Moncton	MasterControl	Fredericton
Envenio	Fredericton	Methapal	Moncton
Eyesover	Fredericton	MotiFIT	Moncton
Featured	Fredericton	Mycodev	Fredericton
Fiddlehead Technology	Moncton	NB-Biomatrix	Saint John
Food Profit Group	Moncton	Newpy	Fredericton
FoodTender	Shediac	On It App	Moncton
Foursum Golf	Moncton	Patchell Brook Equity Analytics	Miramichi
Full Pint Development	Fredericton	Pfera	Fredericton
Garago Software	Moncton	Populus Global Solutions	Fredericton
Gemba Software Solutions	Saint John	Porpoise	Moncton
Geode Technology	Fredericton	Precious Cargo	Fredericton



Company	City		Market Segment	
Provincial Pack	Saint John	WellTrack	Fredericton	
Quber	Fredericton	WEnTech Solutions	Fredericton	
ReadyPass Services	Fredericton	Xiplinx	Fredericton	
Remarketeers Inc.	Hillsborough	Yimbie	Saint John	
Remsoft	Fredericton	Zaptap	Fredericton	
Repable	Moncton	Zechen Laboratories	Sackville	
Resson	Fredericton	NEWFOUNDLAND AND LABRADOR		
Rise	Fredericton			
Rising Tide Technologies	Fredericton		Adfinitum	St. John's
RtTech	Moncton		Agile Sensors	St. John's
Scene Sharp Technologies	Fredericton		Andes VR	St. John's
Screening Devices Canada	Hatfield Point		Arc Instruments	St. John's
Search2go	Saint John		BlueLine Innovations	St. John's
Sentrant Security	Fredericton		Brownie Points	St. John's
Shift Energy	Saint John		CalibreFour Technologies	St. John's
Shoplaw	Fredericton		Celsius Games Studios	St. John's
Simptek	Fredericton	Celtx	St. John's	
Smart NBS Solutions	Fredericton	ClearRisk	St. John's	
Smart Skin Technologies	Fredericton	Clockwork Fox Studios	St. John's	
Smartpods	Moncton	CSlpix	St. John's	
SnapAp	Dieppe	DashAll	St. John's	
SomaDetect	Fredericton	DuJour	St. John's	
Soricimed Biopharma	Sackville	Empowered Homes	St. John's	
Spacial Quest	Fredericton	EMSAT	St. John's	
Spinzo Corporation	Saint John	Event Ryno	St. John's	
Stash Energy	Fredericton	Grey Island Energy	St. John's	
The Farmers' Truck	Moncton	GRR Systems	St. John's	
Timbre Cases	Fredericton	Help Me Order	St. John's	
TotalPave	Fredericton	HeyOrca	St. John's	
Trispectra Innovation	Fredericton	Linxspot	St. John's	
Unity Project	Fredericton	Metrics Flow	St. John's	
VeroSource	Fredericton	MusicEdZone	St. John's	
Vibes Intelligence	Moncton	Nocland Solutions	St. John's	
Vidcruiter	Moncton	Odd Couple	St. John's	
Vintelligence Digital Solutions	Moncton	Power HV	St. John's	
Wear Your Label	Fredericton	Red Meat Games	St. John's	

Company	City	Market Segment
Seaformatics Systems	St. John's	RevlQ
Sequence Bioinformatics	St. John's	R-Form
SNM Global	St. John's	ScreenScape Networks
Solace Power	Mount Pearl	skipthewaitingroom
Sweett	St. John's	Somru Bioscience
Verafin	St. John's	Spotful
Virtual Marine Technologies	St. John's	Stay Golden Apparel
Vish Solutions	St. John's	Strue
Whitecap Scientific	St. John's	Timeless Technologies
Zambara	St. John's	TimeShift
PRINCE EDWARD ISLAND		Vitrak
		Zengo Innovations
Airbly	Argyle Shore	
ARK Bio	Charlottetown	
BamText Corp	Charlottetown	
CrowdFound	Charlottetown	
Discovery Garden	Charlottetown	
Engineering Technologies Canada	Stratford	
Forestry.io	Charlottetown	
GradPeek	Charlottetown	
Icejam	Charlottetown	
Island Abbey Foods	Charlottetown	
Island Water Technologies	Charlottetown	
JKN Inc (form. Justice Knowledge)	Charlottetown	
Jobsite to Go	Charlottetown	
Litesprout	Charlottetown	
Mighty Pebble Games	Charlottetown	
Nautilus Biosciences Canada	Charlottetown	
Neurodyn	Charlottetown	
Onset Communication	Charlottetown	
Ooka Island	Charlottetown	
Origins Xtractions	Charlottetown	
Precise.ai	Kensington	
Quannessence	Summerside	
Queen Bee Games	Charlottetown	
Retrievium	Charlottetown	

ABOUT ENTREVESTOR

Entrevestor was founded in 2011 by Nova Scotia-based writers Peter and Carol Moreira as a portal to unite and inform the startup community in Atlantic Canada. It posts daily news on Atlantic Canadian startups on its website, www.entrevestor.com, and its articles appear thrice weekly in the Chronicle-Herald.

ABOUT THE AUTHOR

Peter Moreira spent more than 30 years in journalism in Asia, Europe and North America. He worked with The Deal of New York, covering M&A, private equity and VC markets in the U.S. and Canada for six years and serving four years as London Bureau Chief. At Bloomberg, he covered European and U.K. banking and finance. He previously worked for the South China Morning Post in Hong Kong, Knight-Ridder Financial in Hong Kong and Seoul, and the Canadian Press's parliamentary bureau in Ottawa. His writing has appeared in USA Today, the Globe and Mail, The Toronto Star, National Post, the Chronicle-Herald and the Independent on Sunday (London). Peter is a graduate of the Canadian Securities Course. He is the author of *Hemingway on the China Front* (Potomac, 2006) and *Backwater: Nova Scotia's Economic Decline* (Nimbus 2009). His latest book, *The Jew Who Defeated Hitler*, the story of Henry Morgenthau Jr.'s work in financing the Allied effort in WWII, was published in autumn 2014. His novel *The Haight* will appear in the spring of 2018.

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