

Corridor 2030

Driving Competitiveness Guided By Economic Complexity

Pathway To Quality Jobs



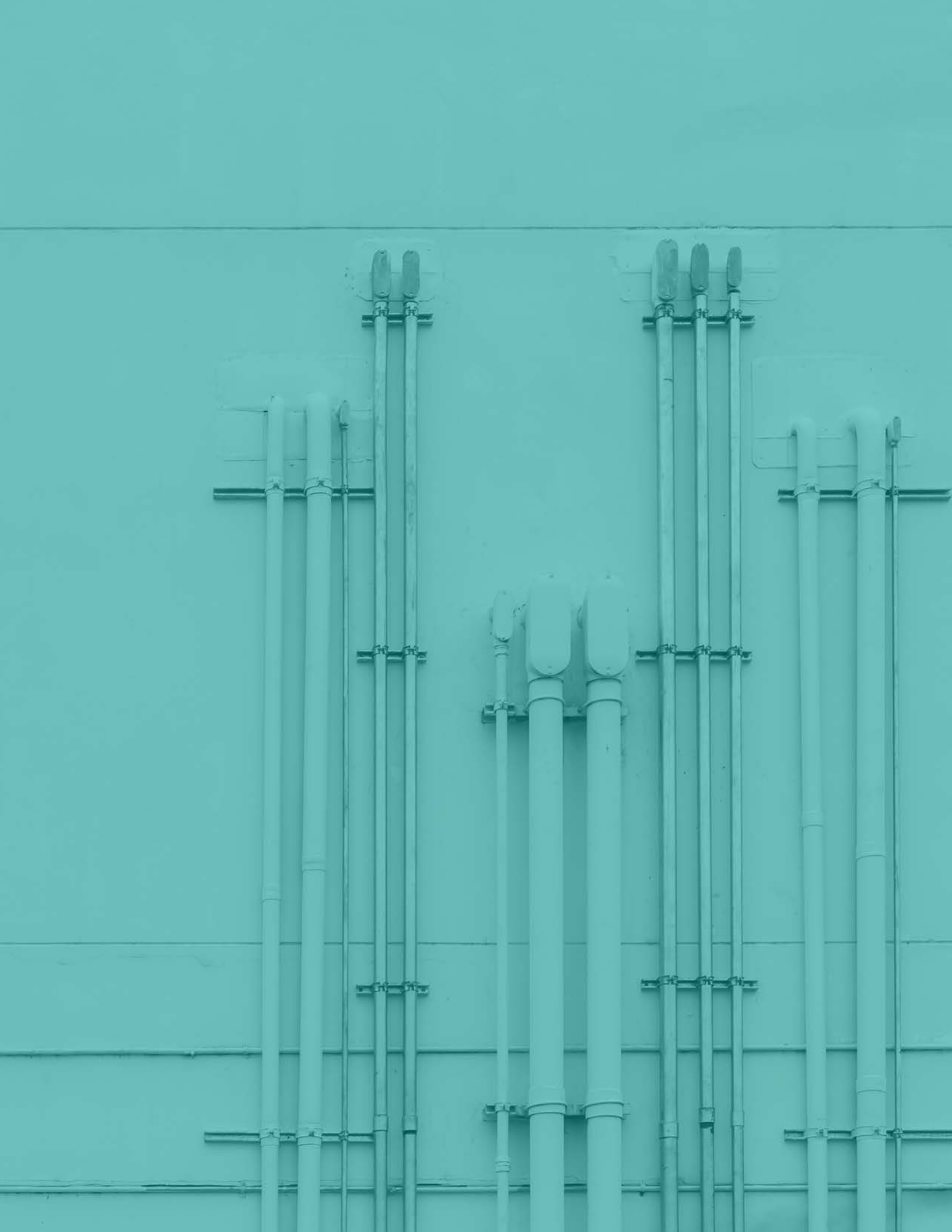
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James Wilson

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OPPORTUNITY
IS MISSED BY MOST PEOPLE BECAUSE IT IS DRESSED IN OVERALLS AND LOOKS LIKE WORK.

Thomas Edison



Acknowledgement

This research and recommendations were made possible through the support of the Province of Ontario and the City of Brockville. A report like this is not possible without the support of an engaged community. Throughout our research and recommendation building, over 100 people were consulted and interviewed, far too numerous to mention individually, and too important to not recognize.

The driving force behind this was Robert Nolan from the City of Brockville and his advisory team of Councillor Jane Fullerton, Councillor Mike Kalivas, Shelley Bacon, CEO Northern Cables and Charlie Mignault, Commissioner St. Lawrence Economic Development Commission. This group committed a great deal of their personal time to act in a mentorship role throughout the development of this report.

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Finally a special thanks to Cesar Hildago and his team at Datawheel. Cesar and his team's willingness to share their experience and wisdom on his theories on economic complexity proved to be invaluable to analyzing the St. Lawrence Corridor Region.

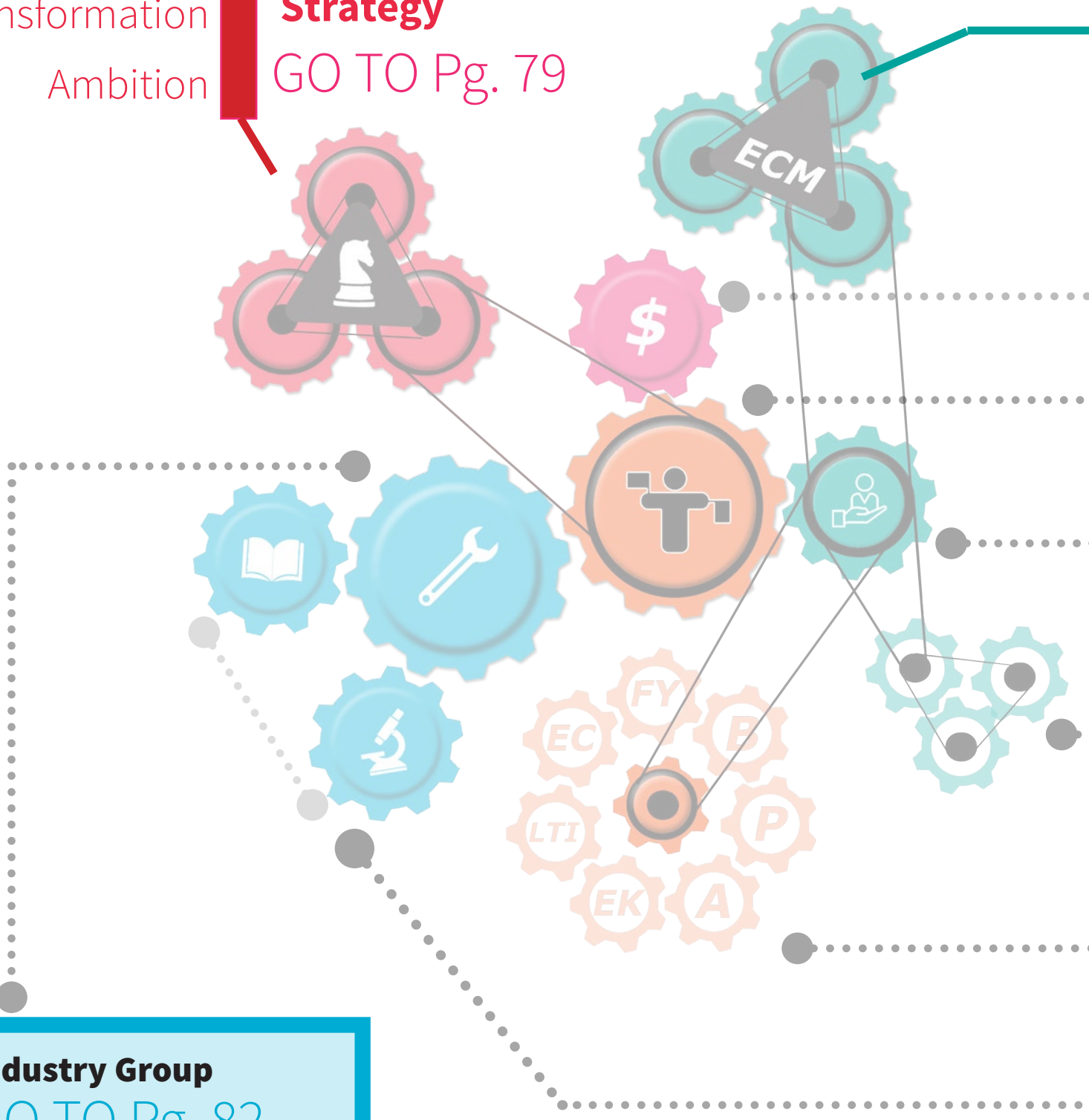
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Executive Summary

Problem Statement

The St. Lawrence Corridor Region, with Brockville as the economic hub, is a community in transition. Over the past several decades the region has and continues to experience a loss of jobs due to the reduction of the traditional branch plant economy. Over the past ten years it is estimated that industrial downsizing has impacted 1,000 people. Leaders have expressed a desire and the community has demanded action to create more and better quality jobs This is in the context of a population that is older than the Canadian population compounded by a perceived youth retention issue. The announcement of Procter & Gamble closing in 2020 is providing a shock to the job market with forecast impact to 530 direct and indirect jobs and a $28.3 million impact to the economy. There is an immediate need for the regional economy to develop and grow quality jobs for displaced workers.

The Opportunity

This dramatic change continues to occur in the regional economy, through all of this, the St. Lawrence Region and its residents have shown remarkable resiliency. The region has been successful in growing jobs at a faster rate than they have been disappearing. The region has seen the traditional branch plant economy replaced with an entrepreneurial economy. The jobs are being replaced at an equal rate. The region now hosts more companies with local leadership. Traditionally branch plants keep the majority of their research and development at a head office outside of the region. Locally owned innovation remains in the region.

The economic and employment landscaped continues to change, families have endured hardship with the closing of branch plants, there remains room for optimism. There has been job growth above the provincial average and an industrial sector of the regional economy that is significantly outpacing growth when compared to the Province of Ontario.

The scope of the opportunity, as recommended in this report, over the next five years is to positively impact the market with 1,200 new jobs. There is an immediate opportunity for jobs to help displaced workers, as the near term staffing requirements of industry have the potential to absorb the majority of the job losses. This transition to new employment cannot happen without specific actions being undertaken by local leaders.

The goal of the strategy presented in this report is to create opportunities for displaced workers and grow the overall quality of jobs in the regional economy. This report will take the reader on a journey of economic complexity. While the analysis is worthy of an extended read, the region needs to focus on activities that leverage the human knowledge and knowhow potential in the region, creating more complex

> ***"The propensity to truck, barter and exchange one thing for another...Is common to all men, and to be found in no other race of animals."***
>
> **Adam Smith**

products, higher in the value chain. Complexity is achieved by innovating and building products that take more people along with increased amounts of tacit knowledge. The goal is to create more complex products in local industries where the research, development and innovation will occur locally. Through this the economy will transform into a more competitive, ambitious economy that creates quality jobs.

To recommend where economic developers and community leaders should focus their efforts, one first needs to understand what the region is great at and where there is currently an advantage. The concept of cluster economies is often used by those looking to develop a more robust economy. A cluster is defined as a "geographical proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and externalities". (Michael E. Porter, On Competition) The Region does not have sufficient economic mass to build or sustain a cluster. This does not mean there is not a group of industries to focus on. This paper will introduce the novel approach of an "Industry Neighbourhood", a group of industries connected by knowledge and labour with an existing advantage. The research shows that the St. Lawrence Corridor Region has an Industry Neighbourhood that has a comparative advantage over Ontario with respect to sales and labour. Also within this neighbourhood, the probability of employee success across companies and industries is greater. The research identified the target neighbourhood as the Electrical Component Manufacturing neighbourhood. In this neighbourhood the region is seeing sales and labour growing at 204% and 618% respectively. This advantage is strengthened by a high probability that an employee can move from one company to another, be successful and share knowledge with the new company. All of this resulting in innovation to either their products or processes impacted through the movement of tacit knowledge.

The identification of this high-value neighbourhood also uncovers the need for top talent within this industry neighbourhood and at these companies. The combination of existing demand for employees combined with their short-term growth goals is an employee number that is similar in magnitude to the estimated number of people from P&G who will be displaced as a result of that plant closing.

Competitive Advantage

The St. Lawrence Corridor region is often portrayed as a great place to live, with less expensive housing, strong education systems, shorter commutes all enhanced by the St. Lawrence River. These are important factors to those who live in the region and are potentially a factor as the final tipping point for a company relocation. These are not a competitive advantage when developing the economy. Through the strategy and tactics recommended in this report the region can improve their competitive advantage through training, investment and focus.

The Electrical Component Manufacturing industry is the industry neighbourhood to focus on to achieve incremental and sustainable economic growth. There are several competitive advantages for a company in that neighbourhood to relocate to the region, with the largest being knowledge through talented employees. Within this industry neighbourhood, there are several locally owned companies with two of the larger company examples

being Northern Cables and Canarm. These are companies whose head office and corresponding tacit knowledge have remained in the region with innovation, product and process development all continuing to be accomplished in the region. The knowledge held in these various buildings represents an opportunity for companies moving to the area that are connected through employee knowledge, or relatedness. The research has shown that this region has a competitive advantage with the number of industry connections where there is employee relatedness, the higher probability an individual can move between industries and be successful. In the ECM neighbourhood, there are eight industry groups present in the region that are connected through relatedness. The competitive advantage for a company that moves to the region is to have confidence that there is sufficient knowledge (skilled labour) to satisfy their labour demands.

It is not enough to simply understanding where the opportunity is and the competitive advantage it represents, this will not achieve the stated goals. To achieve incremental job growth goals research, analysis and words need to be translated to strategy , tactics and actions. The St. Lawrence Corridor Region needs to increase it's ability to compete as the global reach of the economy increases. To increase competitiveness employees and companies need to be provided with the opportunities, tools and resources to be better than others. There also needs to be a transformation of the economy. Transformation is the opportunity to diversify the companies within the target industry, assisting existing companies to grow through innovation and expansion and adding complementary industries and companies to the region. This is already happening through the transformation of the branch plant economy. This transformation needs to

TACTICAL IMPERATIVES

Industry Group	An Industry lead group focused on industry opportunities and solutions.
Education & Training	A need for employment and pre-employment training specific to the advanced manufacturing environment.
Research & Development	To increase the complexity of an economy, innovative products, solutions and processes must be developed.
Investment Fund	Availability of sufficient capital to fund capital efficient growth.
Sales & Marketing	St. Lawrence Corridor Region currently has many of the resources required to execute against a tactical sales and marketing plan to grow the ECM neighbourhood.



be more purposeful through a focus on the Electrical Component Manufacturing industry neighbourhood. Through all of this, the economy needs to be Ambitious. In the absence of ambition, growth will stagnate. Ambition is a strong desire and determination to achieve success, for all stakeholders, government, employees and employers.

Transforming the economy and growing 1,200 jobs is an audacious goal. Strategic direction alone will not achieve what is needed. On the ground, tactics and actions aligned with goals are also required.

The cornerstone for success will be industry input. Too often stakeholders from outside of industry make decisions and allocate resources based on what they feel industry needs. While this is generally done with the intention of achieving goals, it is difficult to accomplish if one is too far removed from the source. For this reason, an Industry Group should be a tactical first step. This group of industry leaders will be the first move for other tactical imperatives. Many of these tactics can be implemented quickly to build quick wins with a longer vision toward the goal of creating an integrated, industry lead structure.

The industry needs to lead the opportunities with support and guidance from other stakeholders such as Economic Development and government offices. As the proposed solution does not exist in its entirety currently, it is recommended that a quick start Task Force be formed and handed this initial responsibility. This can then move to an industry lead steering group over the following 12 -24 months. The plan as presented is at a high level and will take continued work with stakeholders to create a project management list. Implementation will also stretch the resources of the region as many of the tactics are incremental to existing activities.

It will be shown that although the closure of P&G and other branch plants are unfortunate economic events, to the broader economy, this event will provide resources to reduce the current labour and skills shortages. The St. Lawrence Corridor region is growing and the ECM Industry Neighbourhood is accelerating their growth. The research shows a focus on these industries, while they are on the upward curve for growth, will further accelerate and assist in sustaining them for a longer period of time.

The research shows that the region has opportunities in increasing the skills of individuals, increasing communication between companies along with attracting companies within the Industry Neighbourhood and additional employees to the Region. This is a long-term project with short-term milestones that are achievable. As mentioned, the first step is the formation of a group of industry leaders who will take on much of the thought leadership for the next phases. The attached implementation chart shows the potential runway to success. It should be noted that minimal investment from Municipal Government will be required to make this successful.

Along with the formation of an Industry Group there are five other key operational tactics that are recommended. Education and training were cited by industry leaders as key building blocks to company expansion. It is recommended that an agency be formed to focus on the aggregation of programs for



industry priorities. This organization will not replace existing delivery models such as St. Lawrence College, it will take on the role of aggregating potential employees and programs through an understanding of the training required.

A key component of company growth and innovation is the availability of sufficient capital to fund efficient growth. It is recommended that an investment fund focused on investing in companies in the ECM industry neighbourhood be formed. Initial target for fund size should be $10 million with a combination of private and government investment. It is not projected that municipal funding would be required for this fund.

To increase the complexity of the economy innovative products, solutions and processes must be developed. As employees move between companies taking knowhow and tacit knowledge with them, they begin applying this knowledge to their new employer, creating innovation. The growth of this innovation requires a culture of Research and Development. This is not a recommendation to create an additional Regional Innovation Centre as these already exist in Kingston and Ottawa. This recommendation is to create a network of research and development across companies and educational institutions.

The solutions required are complex, spanning several stakeholders, requiring resources and collaboration among many players. While leadership will evolve during the startup phase, there needs to be a centralized body to provide governance and act as a unifying body.

All of the tactics and actions require a sales and marketing plan to understand how to leverage the existing resources in the community and to focus on high value opportunities. It is recommended that three streams of sales be pursued:

Demand Stream
Regional Growth
Attraction Stream

The demand stream provides an active solution to satisfy the current demand for talent in the market. The Regional growth stream will accelerate the growth of the Electrical Component Manufacturing neighbourhood and the Attraction Stream will focus on bringing new industries and companies, within the ECM neighbourhood, to the St. Lawrence Corridor Region.



Recommendations & First Steps

Formation of an Industry Group

6 Month Milestone

Comprised of stakeholders from industry and Economic Development to fast-track a task force to build a regional Industrial Group. Initial focus for the Industrial Group will be to provide direction on required skills training to fill current labour shortage.

Education & Training

18 Month Milestone

Independent body, receiving direction from the Industrial Group will aggregate the training programs necessary to provide skilled workers to satisfy the immediate labour shortage. Initial steps will be to understand the training requirements and build partnerships with program delivery agencies.

Sales & Marketing

18 Month Milestone

Stakeholders need to assess existing sales capacity to understand how resources can be allocated to recommended activities. Initial allocation of resources should be to build leads, focused on the ECM neighbourhood for both companies and employees. Economic Development offices to provide industries within the ECM neighbourhood support for business expansion and job growth.

30 Month Milestone

Research & Development

Working with the Industrial Group develop an inventory of available space throughout the region that can be used to innovate new ideas and products within the ECM neighbourhood. This decentralized approach requires no seed capital and drives immediate innovation.

30 Month Milestone

Investment Fund

Industry group should be consulted to understand who can best lead first steps. Initial steps will be to determine government and private investor interest.

18 Month Milestone

Future State Leadership

A centralized, governance board, to maintain the strategy, leadership and oversight of Industry Group, Education and Training, R&D and Marketing and Sales. This body will have strong representation from all stakeholders within this strategy.



Focused Growth

Focusing on Electrical Component Manufacturing (ECM) provides a comparable advantage against other regions and will growth the competitiveness of industries within this neighbourhood thus increasing the number and quality of jobs.



"The corridor project is the best example that I've seen of **collaboration** along the St. Lawrence Corridor"

Director, St. Lawrence Corridor Economic Development Commission

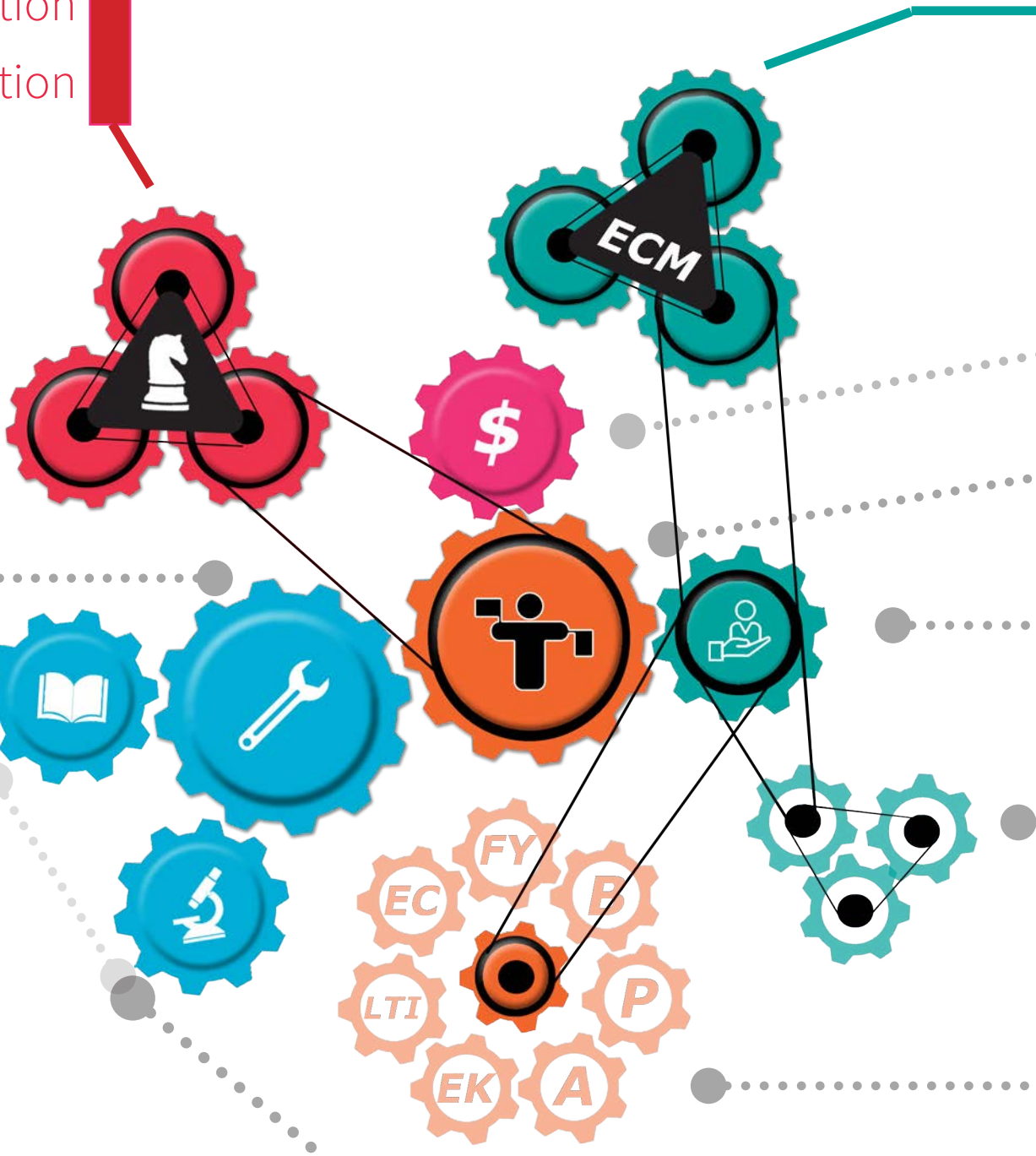
STRATEGY & TACTICAL IMPERATIVES

Strategy

Competitiveness

Transformation

Ambition



Industry Group

Provides a structure that will allow industry networking across various levels of industrial and manufacturing companies, provide a critical mass for lobbying and a forum to share ideas and best practices.

Legend

Tactic

Key Imperative

Focus & Growth

Demand Stream

Attraction Stream

Expansion Stream

Investment Fund

Sufficient capital to ensure efficient growth occurs. Ideally, funding would be accompanied by mentorship, to the companies being funded. Companies being funded should be within the recommended ECM neighbourhood.

Leadership

Provides strategic direction and governance that drives collaboration throughout the system.

Sales & Marketing

Required to execute against a tactical sales and marketing plan for the ECM neighbourhood. Support the Industry Group's Activities.

Economic Develop.

Support from regional economic developers, committees and staff. Strategic focus on supporting the Industry Group's activities leading to growth through the Expansion & Demand Stream.

SLCEDC

Provides resources against the Attraction Stream while assisting existing business to expand. Provides a regional voice to bolster influence with stakeholders.

Education / Training

The industry needs to lead program development, providing guidance on existing and future skills gaps. The organization needs to be planning for this growth along with planning for new companies to enter the region.

Research & Develop.

A decentralized approach, activities need to be focused on the industrial sectors of the economy, with the greatest impact and focusing on the ECM neighbourhood.

The Corridor Region

Overview

The St. Lawrence Corridor is a geography spanning seven municipalities. The Corridor is not defined by a single existing political boundary and is comprised of the seven partnering municipalities. Bordered on the south by the St. Lawrence River, the Corridor has responsibility for 62,000 residents. There are three major transportation routes for distribution, the St. Lawrence Seaway (serviced by the Port of Johnstown), Highway 401 and the CN/CP Rail lines.

For the past several decades, Eastern Ontario has pursued a traditional path to economic development. Each of the seven municipalities has implemented independent strategies to attract and retain business along with the United Counties of Leeds & Grenville establishing an office of Economic Development. There has been success with each entity able to build their economy through business expansion and attraction.

Economic Development is complex, broad and expansive, encompassing retail, commercial, industrial, institutional, real estate, tourism etc.. The current economic developmenet teams have been successful in creating a resiliant economy, realizing growth as a result of their activities. Their success is then measured across a broad set of metrics including commercial, retail, institutional and tourism growth. The pooling of resources into one entity, St. Lawrence Corridor Economic Development Commission ("SLCEDC") allows for a focus on industrial and commercial expansion with a narrow set of metrics measuring success. The region has several other entities that work in partnership with each other to deliver economic development across the broader spectrum of opportunities.

Location

The area is conveniently located within easy driving distance from most major cities in Ontario and Quebec. Major highways include Highway 401 and Highway 416 with minor highways 15, 29, 42 and 43. Driving distances are shown in the following chart.







To Leeds-Grenville			
From	Estimated Distance (Kms)	Estimated Distance (Miles)	Estimated Driving Time
Kingston, Ontario	85	53	1 hour
Trenton, Ontario	177	110	2 hours
Toronto, Ontario	341	211	3-1/2 hours
Ottawa, Ontario	133	82	1-1/2 hours
Montreal, Quebec	225	139	2 hours
New York, New York	371	230	7 hours
Detroit, Michigan	433	268	8 hours
Boston, Mass	680	425	6-1/2 hours



Opportunities ands Challenges

Eastern Ontario has realized several years of declining manufacturing and industrial jobs. The area has seen closures and downsizing in major industrial complexes such as Invista and Procter & Gamble (pending 2020). This has impacted employment with the region seeing increasing unemployment in low skilled and semi-skilled labour pools. The region's employers are also reporting that it is increasingly difficult in sourcing and retaining a skilled workforce. There are several root causes to both issues and there is an opportunity present to work towards bridging the employment gap.

Eastern Ontario is blessed with several transportation routes available to commercial travel with Highway 401 providing traditional ground transportation with an increasing number of ramps that support long combination vehicles, the St. Lawrence Seaway continues to be an important transportation route and the CN rail line provides an additional transportation route. The Port of Johnstown is an important distribution node that to date remains underutilized representing both a strategic advantage to the attraction of business and an opportunity to create a customs ready port.

City of Brockville

The City of Brockville is a small City in Eastern Ontario on the St. Lawrence River with a population of 22,000. Although a vibrant community, Brockville has struggled to retain its traditional manufacturing base. In the late 1980s the City went through a significant restructuring with major closures of large international firms like Nortel, Philips Cables, Abbot Laboratories along with the closure of the psychiatric hospital. While the economy stabilized following this restructuring, over the last 10 years Brockville has begun to see a slow decline in manufacturing employment, with over 1,000 jobs being lost during this period (not including closures in 2017 & 2018).

In May of 2017 Procter & Gamble, the City's second largest employer announced the closure of their Brockville site. P&G has been an important part of the City for almost 40 years and this closure will directly affect 480 employees and their families, as well as local suppliers and businesses. While the plant is located in Brockville the impact of the closure will be felt much wider, with over 75% of their workforce living in the rural communities surrounding Brockville; and their local supply chain extending to companies across the broader region as well. Utilizing the OMAFRA Input/Output model the city has estimated that with multipliers the P&G closure will result in a total loss of 530 jobs which will equate to a loss of $28.3 million in wages to the region. In addition to significant job losses at P&G, the region has also seen other closures since this announcement. This included the closure of Transcomm, a call center resulting in the loss of 80 jobs; the closure of Chemours a chemical company in Maitland



affecting 33 people; and the closure of the local Sears Canada store affecting 60 employees.

The decline in manufacturing seen in the past decade and these types of closures are raising serious concerns about the regions ability to retain and generate new employment opportunities and to attract new investment.

United Counties of Leeds and Grenville

The United Counties of Leeds and Grenville is located in Eastern Ontario in an area of rich natural and cultural heritage comprised of significant landscapes and waterways. These include the Canadian Shield; the St. Lawrence River and 1000 Islands Region; the Rideau Canal UNESCO World Heritage Site, National Historic Site of Canada and Canadian Heritage River; the Algonquin to Adirondacks region; and the Frontenac Arch Biosphere Reserve, a UNESCO World Biosphere Reserve. Maintaining and enhancing the high quality of life in the local municipalities afforded by the Counties' natural landscape, cultural history, and rural beauty will continue to play a major role in the management of growth and economic development across the Counties.

The Counties are bordered to the east by United Counties of Stormont, Dundas and Glengarry, to the north by the County of Lanark and City of Ottawa, and to the west by the County of Frontenac and the City of Kingston. The Counties are also situated between the City of Kingston and the National Capital Region and the City of Ottawa, important economic centres in eastern Ontario.

United Counties of Leeds and Grenville
Township of Athens
Township of Augusta
Township of Edwardsburgh/Cardinal
Township of Elizabethtown-Kitley
Township Front of Yonge
Township of Leeds & The Thousand Islands
The Municipality of North Grenville
Township of Rideau-Lakes
The Village of Westport



Background & Industrial History

History of the Corridor & Brockville

Brockville's origin story is deeply rooted in the American Revolution and the re-settlement of the Loyalist refugees. Although the identity of Brockville's founding father remains up for debate, it is often attributed to William Buell, a Connecticut-born Loyalist. At the outbreak of the American Revolution in 1775, Buell travelled to Montreal to join the forces fighting for Britain. He maintained his loyalty to the crown throughout the war and two separate captures by the American soldiers. In 1783, As a reward for his service, Buell and his family were given a land grant amounting to a total of 600 acres located along the St. Lawrence River. The land he chose was commonly referred to as Buell's Bay by settlers, however, it would later be known as the city of Brockville. At this time, there were no roads in the area and the primary mode of transportation was via the St. Lawrence River, which was used for commerce and travel. Buell's Bay quickly grew in popularity as a site for trade as well as a launching point for the settlers living nearby. Its location approximately half-way between Montreal and Toronto brought many people to the area and facilitated success for the settlers as they could access other markets along the river, thereby increasing their economic reach.

The demand for lumber increased in Quebec as a direct result of the Napoleon Continental System which prohibited trade with Britain. Settlers living in Johnstown, the area is now known as Leeds and Grenville, capitalized on this opportunity by becoming lumbermen and using the St Lawrence River to deliver log rafts to Quebec. The common launch point for these lumbermen was Buell's Bay. With the increasing traffic to Buell's Bay and the obvious economic advantage it provided due to its location, the area began to expand its economic and political influence. As a result, in 1796, the legislature was passed to move the courthouse and jail from Johnstown to Buell's Bay. Buell's Bay, as it was formerly known, was located in the larger township of Elizabethtown. However, given their rising influence, the people of Buell's Bay wanted an official name for the town that would distinguish them from the general area. This prompted a great deal of conflict between William Buell and Charles Jones who were social and political influencers in the area. According to Russ Disotell, this feud ended when General Isaac Brock was asked to mediate the argument and recommended the name Brockville, which became the official name in 1816.

The opening of the courthouse and jail solidified Brockville's political influence in the area. However, it was the introduction of the Grand Trunk railway in 1855 that increase Brockville's capacity for economic growth and expanded the breadth of practice and diversity of local industries. Over time, Brockville became known for contributions in the agriculture and food industry, automobile industry, patent medicine and, most recently, the chemical and electrical manufacturing industries.



The Brockville Chemical and Super-phosphate Company opened in 1869 in response to the rising population of Brockville and the opportunity to capitalize on the by-product of this expansion. Settlers were clearing their land, many preparing it for farming, and they would burn the excess wood to create potash, a good that could be sold during their transition. The Brockville Chemical and Super-phosphate Company used this potash to create fertilizers and were the first company in Canada to produce super-phosphate fertilizer or sulphuric acid. The production stopped in 1884 when the pyrite mine was depleted and the raw materials were too expensive to acquire from a third party source.

Agricultural

The soil in Brockville was of poor quality for agriculture, which resulted in the settlers turning to dairy and meat farming. However, there was a ceiling on their demand due to American products in the market being sold at a much lower cost. In 1866, the reciprocity treaty with America was not renewed and therefore these cheaper American alternatives were no longer available. As a result, demand increased dramatically, and more people went into the industry.

Food Industry

This is evidenced by the increase in cheese production in Leeds from 120,000 pounds in 1851 to 13 million pounds in 1900, and over 122 factories located in Leeds and Grenville. In 1898, Brockville Packing and Provision Company opened and specialized in farm and dairy product packing and meat packing. In 1914, Laings produce and storage company opened; they manufactured and exported butter and condensed milk. These companies were joined by Whyte Packing Company in 1917, who were wholesalers located directly on the Grand Trunk railway and specialized in cheese, butter, milk, eggs, meat and cream. These food manufacturing and packing industries provided hundreds of jobs for the people of Brockville and were able to succeed in the area due to the ease of transporting goods and high flow of traffic through the city.

Patent Medicine

Brockville became home to two of the largest manufacturers of medical remedies in the world. Comstock Brothers Patent Medicine moved its operations to Brockville in 1860 to be closer to their consumer base, which was largely concentrated in Canada. Comstock chose the Brockville location because it provided distribution channels to areas across Ontario and Canada as well as the United States. This plant became a primary supplier to foreign markets such as Britain and Australia.



The company was sold in 1960 following the death of Comstock's son who had taken over operations after the death of his father. In 1887, the GT Fulford Company opened its manufacturing and distribution plant in Brockville, responsible for the "Pink Pills for Pale People". Fulford's decision to open the plant in Brockville was in large part due to his own ties to the city as one of five children born in Elizabethtown. Fulford bought the pills from a local physician and hired the owner of The Prescott Telegraph to create advertising material. The active ingredients in these pills were never released, however, it has been speculated that they contained low doses of iron oxide and magnesium sulphates (used in iron supplements). Though they had no scientific evidence to prove their superiority over other over-the-counter medications, the advertising of these supplements led to their overwhelming consumption. The GT Fulford Company was one of the first multinational companies in the world and by 1905, the pills were available in over 72 countries. This company changed advertising practices forever by showing the power of branding on consumer behavior. GT Fulford Company stayed open until 1962 when it was sold to Dodd's Company of Toronto. One of the Fulfords lines called "Baby's Own" still has products being manufactured today.



Automobile

In 1892, the Canada Carriage Company relocated from Gananoque to Brockville. This company produced buggies and represented a leading employer in the area with over 400 employees. At their peak, the plant produced 10,000 buggies per year. However, the company's demise was initiated with a fire in 1905, and although they attempted to rebuild the company, the introduction of cars shifted the demand. In 1909, the company was taken over by Canadian Factories Ltd which was established in Orillia, however, they kept the Brockville plant mainly for distribution. Automobile manufacturing began in 1911 building 80 "Brockville 30" automobiles. In late 1911, the general manager of Canadian Factories Ltd created a new company called the Atlas Auto Company, working out of the factory. However, a fire in 1918 destroyed the plant and it was never rebuilt.

Telecommunications

Almon Strowger, a Kansas City-born inventor, founded the Strowger Automatic Telephone Exchange Company in 1891 ("Automatic Electric", 2018). This company held the first patents for an automatic telephone exchange. In 1901, Strowger became a founding member of the Automatic Electric company (AE) which had exclusive rights to the automatic telephone exchange patents. AE was recognized worldwide due to a long term contract established with Bell Systems in 1919 to supply switching equipment to the multinational company ("Automatic Electric", 2018).



In 1935, AE expanded its manufacturing operations into Brockville with the acquisition of Phillips Electrical Works, a cable manufacturing plant("Automatic Electric", 2018). AE continued cable manufacturing processes while also building an addition onto the Phillips Electrical Works plant to allow for the manufacturing of telephones, automatic and manual switching equipment, and other communication technology. In 1953, AE sold the Phillips Electrical Works portion of the plant so that they could focus on the production of telephone equipment("Automatic Electric", 2018). Phillips Electrical Works was sold to British Calendar Cables Ltd and became known as Phillips Wire and Cable.

In 1979, AE merged with British Columbia Telephone Company (BC Tel) to form Microtel. This plant continued manufacturing in Brockville until 1990, when it was sold to Nortel and became known as Brock Telecom ("Automatic Electric", 2018).

In 1999, the Brock Telecom plant was sold to Sanmina SCI Systems Inc where it continued to operate as a circuit board manufacturing plant until it closed in 2002. The Sanmina SCI Corp closure resulted in the unemployment of 850 employees ("Automatic Electric", 2018).

Eastern Independent Telecommunications LTD (EIT) was incorporated in 1974 ("EIT: Company History and Profile", 2018). They saw an unmet need in the market for third party support. This includes "Engineering, installation and maintenance services to the Canadian telephone companies as a competitive alternative to the major manufacturers who were, at that time, the only companies providing such services." ("EIT: Company History and Profile", 2018)EIT is still headquartered in Brockville today.

Today's Industries & Economic Climate

In 1952, DuPont opened its factory in Maitland to hundreds of employees from the surrounding area. The plant was dedicated to the production of fluorocarbons, petroleum chemicals, and lycra spandex elastic yarn. DuPont has announced large cuts to their global operations in recent years and this includes the imminent closure of the Maitland plant and the loss of 85 employees. Following in their footsteps will be Procter and Gamble (P&G). P&G have been operating in Brockville for over 35 years, however, they have recently announced that the plant will close by 2021, resulting in the loss of hundreds of jobs in the area. The Brockville plant manufactured Swiffer Dusters, Swiffer WetJet, Downy, Bounce, and Gain fabric softener sheets and Tide to Go pens.

Phillips Cables, a manufacturer of copper rods, insulated wires, and cables, followed a similar pattern with their closure in 1996. However, six employees from the company came together to create a new company, Northern Cables, in the area. This largely bridged the unemployment gap resulting from the closure of the Phillips Cables branch. Finally, CANARM, then known as Danor Manufacturing Co., expanded operations into Brockville in 1963. CANARM is a global manufacturer of lighting, air moving and related products, and remains in Brockville today.

The history of Brockville's economic development demonstrates its resilience, its capacity for innovation, and its potential for ongoing development.



Notable Regional Industrial Employers

Procter & Gamble Inc. (Closing)
Manufacturing, 425 employees

Cardinal Health (formerly Medtronic)
Manufacturing, 425 Employees

3M Canada Company
Manufacturing, 350 Employees*

Burnbrae Farms Limited
Food manufacturing, 337 Employees*

Trillium Health Care Products Inc.
Pharmaceuticals, 300 Employees*

Kriska Transportation
Transportation, 260 Employees*

Ingredion Canada Inc.
Food Manufacturing, 250 Employees*

Prysmian Group
Power Cables and Systems, 200 Employees

Northern Cables Inc.
Power cables and systems, 200 Employees*

Canarm Ltd.
Manufacuring, 151 Employees*

Giant Tiger
Logistics, Employees unknown

Shell Lubricants
Distribution, Employees unknown

Greenfield Ethanol
Agribusiness, Employees unknown

Invista
Chemical, Employees unknown

**www.leedsgrenville.com (2018)*



Historical Economic Studies

In the 2002 economic development report commissioned by the County of Leeds and Grenville it was noted that although the region has a highly diversified economy, there was a lack of mobility within the labour force. Salary expectations were felt to reflect the compensation impact of having multinational employers and could not be matched by locally owned employers. It was recommended there was potential to stimulate and add value to the specialty agricultural sector. Further development of biotechnology centres along with life sciences and agricultural research was also recommended. Leeds and Grenville are one of the few regions of Canada that were reforesting this offered the potential for growth of both forest products and ecosystem regeneration. At that time identified threats included the decline of livestock farming, increasing age of farmers (imminent closures), gaps in labour force employment and shortages of skilled workers.

Labour Trends

Manufacturing to Agriculture

Retail to Health Care

Further studies commissioned by Ontario East Economic Development Commission noted a challenging global environment and Ontario is seen as having a strong industrial base in which it can create a competitive economy. On the other hand, Ontario's manufacturing sector has experienced greater losses in labour and production than any other North American region. It was recommended that Eastern Ontario prompt a shift in manufacturing towards high value-added investment through unique production processes and ICT. At that time there was a trend noted with many jobs in Eastern Ontario moving from manufacturing to agriculture and from retail to healthcare. In order to expand output and create efficiencies, it was recommended that industry invests in new technology. A strategic advantage was noted in trucking, with that industry expected to uphold its prominent position in transportation - a notable portion of employment growth will be within the sectors that require efficient transportation systems.

In 2014 Eastern Ontario felt a move from study to action was required and a workshop was held to gain stakeholder commitment and develop actionable items for consensus. To solve the issue of a lack of high-skilled workers and high unemployment rates, the creation of a new job posting service to conduct a labour force gap analysis was recommended. Encouraging relationships with educational institutions and creating an Eastern Ontario-wide training network was recommended to focus on the opportunity to increase employee skills. As disruptive technologies were recognized as a growing opportunity and threat, it was recommended to gain a better understanding of innovation services by bringing in leaders from the industry

2002 Focus

Agriculture
Biotechnology Centres
Life Sciences
Forest Products



to educate and inform. The creation of a regional manufacturing network along with agricultural producers together was seen as an important function for growth.. Finally, to continue enhancing transportation systems, developing an integrated transportation network and investing in specific transportation infrastructure is suggested. Decommissioning port and rail infrastructure while upgrading to 'smart' and 'non-traditional' systems will be the next step.

In the Millier Dickinson Blais report, they indicate that the reality of Eastern Ontario is that the strong culture of entrepreneurism is not assisting in realizing populations growth. There remains a steady youth out-migration and an aging workforce.

The same report outlined the resultant impact on the municipal tax base. As municipalities lose industrial assessment and increasing proportion of the municipal tax burden falls to the residential homeowners. During the periods' covered municipal governments have compensated for some of this by increasing local government debt, the impact has been a 216% increase in municipal debt from the period 2000 - 2012. The report recommended seven major themes from their consultation process that can be built upon as a result of this study.

The report recommended seven major themes from their consultation process that can be built upon as a result of this study:

2014 Findings

Lack of Skilled Workers
High Unemployment
Disruptive Technology
Transportation Issues

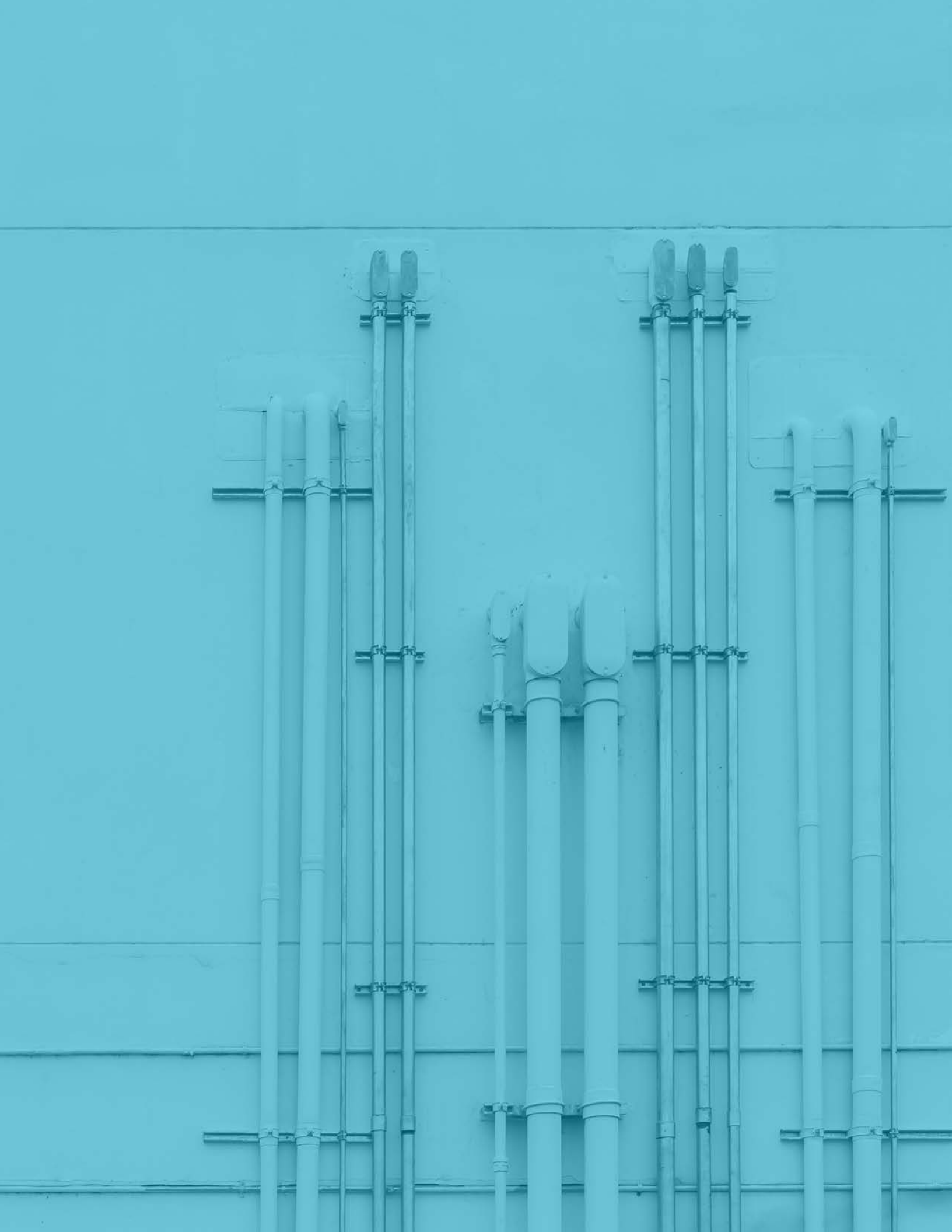
"... a strong culture of community and entrepreneurism that is evident in municipalities across the region. This should provide the region with enormous opportunity, but the reality is that Eastern Ontario is experiencing low population growth over large areas, the steady out-migration of rural youth into urban markets often outside of the region, an aging workforce, and a shift away from manufacturing to a service based economy dominated by public sector employment."





We're committed to business opportunity, we're committed to **prosperity**, we're committed to helping you grow with us.

Regional Mayor



Economic Theory

The traditional economic analysis focuses on both macro and micro trends aligned with the specific strengths of the region being looked at.

This provides a traditional SWOT analysis that prompts both governmental and non-governmental agencies with action items and industry focuses. Traditional economic theory mentions the factors that should be analyzed for a comparative advantage.

- Land
- Location
- Natural Resources
- Labour
- Local Population Size

This typical analysis allows local economies to focus on job creation utilizing the physical advantages of the economy. These factors are important, and are difficult for community leaders and economic developers to impact. Economic Development agencies have been successful in navigating growth through the use of location quotients, input/output analysis and workforce analysis. The local economy has benefited from this approach for the last several decades.

The global economy is changing rapidly to a knowledge based economy and economic analysis and development is evolving as these trends emerge.

A focus on strengthening competitiveness is multi-faceted and counter-intuitive. As community leaders want to quickly add jobs to the economy, however, understanding and strengthening the competitive or comparative advantage needs to occur in advance of adding jobs. This research was designed to better understand where the St. Lawrence Corridor has strengths and how to build competitiveness by adding inputs to any existing cluster economies. This research will build upon the existing economic development success and add the concept of knowledge and knowhow as a community asset.

Innovative Approach

The next few pages are going to walk through the existing research on cluster development and Economic Complexity. The premise the recommendations are based upon is that first, an economy that is built around developing an existing cluster will more rapidly expand than attempting to add industries that are currently not in the region. The identification and support of an existing cluster allow economic developers and community leaders to focus on adding value to the existing industries, providing a compelling value proposition for startups and companies in transition. Ultimately providing long-term high-value job creation for the region. The traditional approaches to economic development have provided the local economy with growth and resiliency. A focus on where the existing strengths are will provide additional growth and advantages. Community leaders should reshape their thinking based on understanding the drivers of competitiveness.



Economic Framework

The concept of economic complexity is relatively new in the realm of economic development. This report will walk the reader through the concepts of economic complexity, create an understanding of how unique products result in a relative comparative advantage for the region and how this focus will incrementally increase GDP production from the region.

The analysis needs to be data-driven, building on existing, documented strengths. All of this leads to focusing on strategic development as opposed to an action plan.

Cluster Theory

Defined

We operate in a global economy, an economy that is more mobile than ever. Transportation and communication continue to improve from both a cost point of view and efficiency. This prompts the question, why does Silicon Valley continue to be the epicentre of technology development and why does Italy remain a central point for worldwide fashion. This is due to what is now known as cluster economies, representing a relatively new way to think about competitiveness and economic development. Clusters are defined as geographic concentrations of interconnected companies and institutions in a particular field. A cluster defies traditional industrial classification systems. Clusters often extend past the companies and can include specialized suppliers of components, machinery etc.

Porter's Theory

Historically location, while still important, was vital to a competitive advantage. Competition is no longer driven to the same extent by input costs such as labour or transportation. While what happens inside companies will continue to impact that particular company's income statement and balance sheet, it is the immediate business environment outside of the company that is now seen to play a vital role.

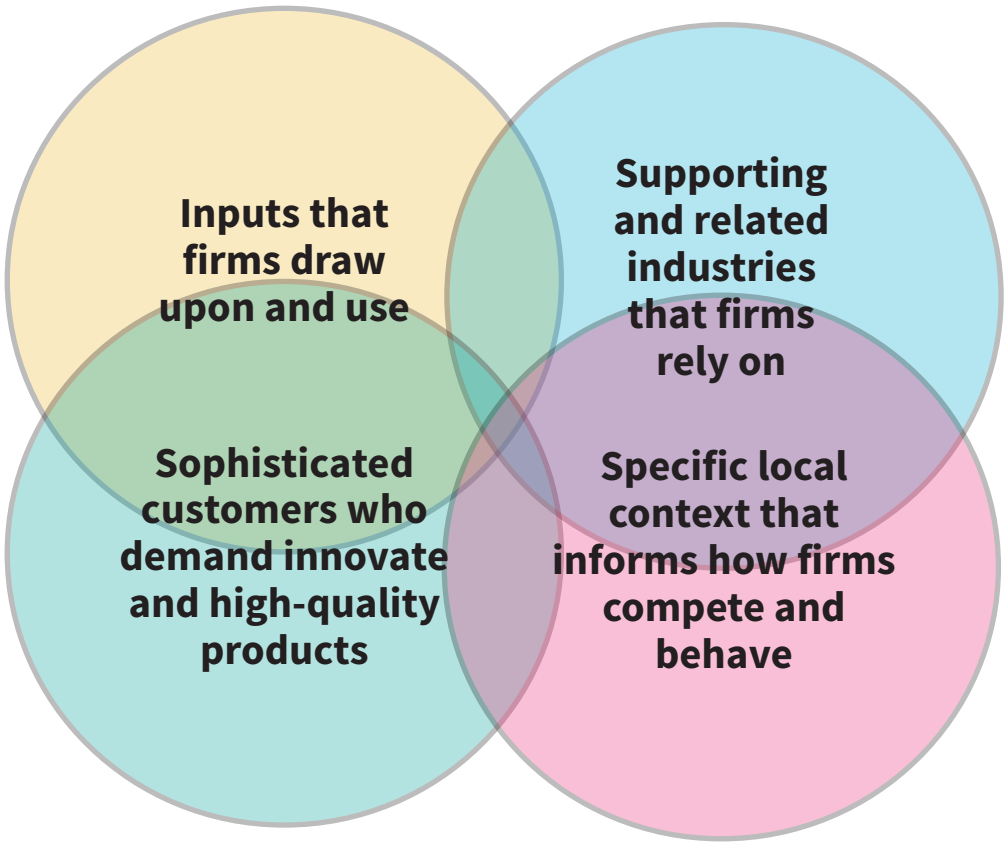
A cluster's boundaries are not defined by geography, they are defined by the linkages across industries and institutions. While clusters typically fit within political boundaries, there are examples of clusters crossing national borders. Clusters may go unrecognized as with the case of Massachusetts where more than 400 companies representing 39,000 jobs are involved with medical devices in some way. A cluster is an alternative way to organize

> Why are some nations or regions more prosperous than others? What conditions enable global corporations or local businesses to innovate and grow? Traditional economic theories fail to capture many of the underlying forces at work in today's global economy. Competitiveness is the only way to achieve sustainable job growth, improve wages, and raise the standard of living --- yet the real meaning of competitive advantage is poorly understood.
>
> *Michael Porter*



the value chain, a new spatial organizational form in between arm's-length markets and vertical integration. In a cluster, the entities have repeated and frequent interaction between each other fostering trust, coordination and information exchange (Porter 1998).

Elements Critical to a Cluster



There are four critical elements to clusters:

1. Inputs that firms draw upon and use
2. Supporting and related industries that firms rely on
3. Sophisticated customers who demand innovative and high-quality products
4. The specific local context that informs how firms compete and behave.

As the clusters are identify the cluster(s) to focus on, strategic intention around the four critical elements needs to be discussed. Referencing Porter's Diamond, if a region wishes to succeed in supporting any identified cluster, attention must be paid to the four corners of the diamond.

Factor or Input Conditions

As the cluster is identified, there must be specific support from the actors to help the clusters grow. The elements or factors of production must be sufficient to allow production. On the human side, a government can play a role by improving factors through training labour and on the infrastructure side through strategic infrastructure investments.

Demand Conditions

It is important that the consumer or client be sophisticated. This provides a competitive environment for research, development and innovation. As customers demand more innovative products a competitive environment will force companies to innovate in order to thrive.

Related and Supported Industries

An environment that encourages spin-off industry is necessary for a strong and resilient cluster. The support industry supplies the necessary inputs in a more cost-effective and innovative manner.

Actors	
Firms Leading economic driver. Depend on other three actors. Offer employment, tax revenue and profit.	**Government** Supplements the work of other actors. The role is to bring the other three actors together.
Venture Capital Provide capital and expertise. Can work with incubators.	**Academic** Use research data to inform and consult. Receive financial support from the other three actors. Educate the future workforce.

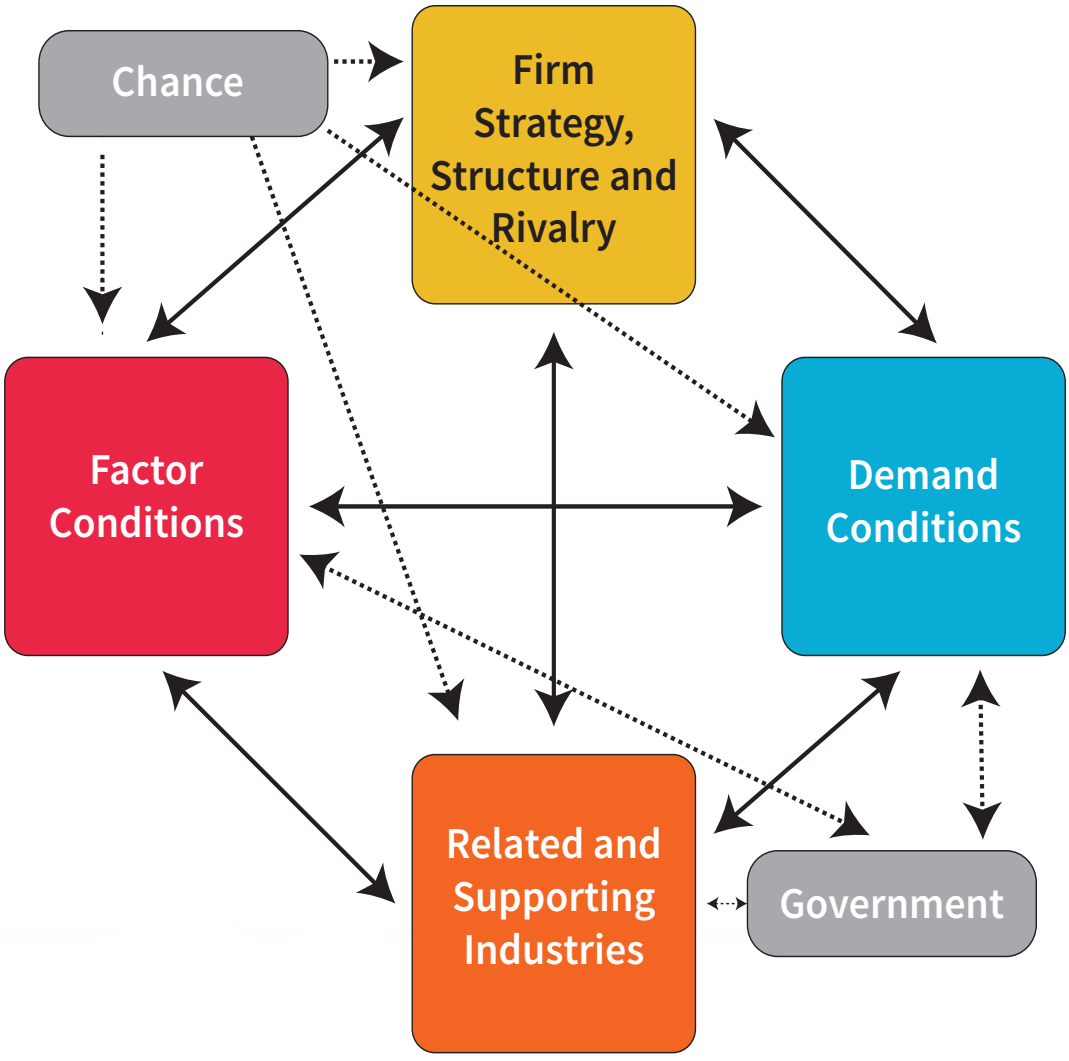


The context for Firm Strategy and Rivalry

Firms within the cluster need the impetus to compete. Low levels of regulation and lower barriers to entry assist in broadening the cluster.

An ecosystem that helps firms start-up and scale provides the necessary flywheel for a self-sustaining cycle of growth, attracting risk takers and innovators. Some of the advantages that help this growth are labour market pooling, knowledge spillover and supplier specialization.
Clusters are also made up of actors who contribute to the success of a cluster, with each actor playing a critical role in the development of the cluster. The cluster ecosystem fosters interactions between elements and actors.

As a result of the recognition of both the importance of clusters and the clusters existing in Ontario, the Ontario Government passed legislation in 2014, The Partnerships for Jobs and Growth Act. This was designed to support emerging or established clusters in their development and planning activities. The Government of Ontario has recognized the importance of supporting strong clusters and the positive impact this represents to Ontario's economy.





While it will be shown that attempting to build or expand a cluster in the Region will not be a good use of recourses, the concept remains key to developing the economy. The role of actors and the importance of factor or input conditions will play a large part in determining regional tactics and relative role responsibilities.

Applied in Ontario

Ontario has several strong traded clusters that have been identified

Automotive
Windsor
Marketing, Design & Publishing
Toronto
Communications Equipment & Services
Kitchener-Cambridge-Waterloo
Financial Services
Toronto
Hospitality & Tourism
St. Catharine's



Classifying Clusters

Local Clusters

Local clusters produce goods and services for the local economy. By Porter's definition, there are 16 clusters in any given jurisdiction. These are geographic specific and are not as unique as Local Clusters. These clusters can be located in several regions and are geographically constrained. Examples would include restaurants and grocery stores

Traded Clusters

Traded clusters produce goods locally and then export regionally, nationally and internationally. These clusters do not need to be in all geographic areas and can be concentrated in a handful of regions. Porter has identified 51 traded clusters

Employment Impact

The concentration of employment, clustering, impacts the employee's ability to find a job and sustain wages in the event of displacement. The existence and sustaining of a cluster economy can benefit workers by offering alternative employment, protecting against longer-term unemployment. The concept is built upon the theory of Marshallian externalities and the role that local industry concentrations play on employment. The theory states that there are benefits to workers with dense concentrations of firms involved in similar economic activities. The theory states that workers should have greater success in finding new work should their current job no longer exist. Workers tend to adjust their job search strategies in ways that allow them to take advantage of Marshallian job-search externalities. A strong local presence of industry prior to any major displacement has shown that employees are more likely to find work and the potential for earnings loss was reduced.

Conclusion

The St. Lawrence Corridor can benefit from the research on cluster theory. Through a focus on yet to be defined, existing clusters community leaders can maximize the return on efforts and investment.

The St. Lawrence Corridor region will benefit from research and thought on cluster theory. Through a focus on a defined and existing cluster, community leaders can maximize their return on both effort and investment.



Economic Complexity

Complexity

Defined

Most of the products used today require more knowledge than a single person could ever possess. For society to operate at a high level, individuals must possess knowledge of different things. The accumulation of product knowledge has not happened equally around the world and these differences are noted in the diversity of the products they produce.

While it may take physical activity, manufacturing and design to produce a product, ultimately products are made with knowledge and knowhow. Markets allow access to vast amounts of knowledge. The secret to modern production is that each individual holds a small amount of knowledge and shares this with a large number of people to create complex products.

Economic complexity is expressed in the composition of a geographic jurisdiction's productive output and reflects the structures that emerge to hold and combine knowledge.

Impact to Economy

Countries do not make the products and services they need or want, they make the products they can. Expanding the amount of productive knowledge a country or region has involves growing the set of activities that the region is able to do. In this respect, it is far easier for a region to add modest amounts of knowledge to what they already know as compared to learning entirely new activities. The crucial part of knowledge is tacit knowledge, therefore difficult to embed and transfer in people. As it is hard to transfer, tacit knowledge becomes a constraint on growth and is referred to as knowledge capacity. Increased economic complexity is necessary for a society to be able to hold and use more and additional productive knowledge.

Complex economies are those that can weave vast amounts of relevant information together across networks of people. This develops and produces a diverse set of products. As compared to simpler economies that have a narrow base of products that require a smaller group of interactions.

As a reference point to the importance of impacting the complexity of an economy, from 1975 - 2009 the country of Thailand improved their complexity quotient by one standard deviation. This has provided growth in their economy that is 1.6% above their annual expectations.

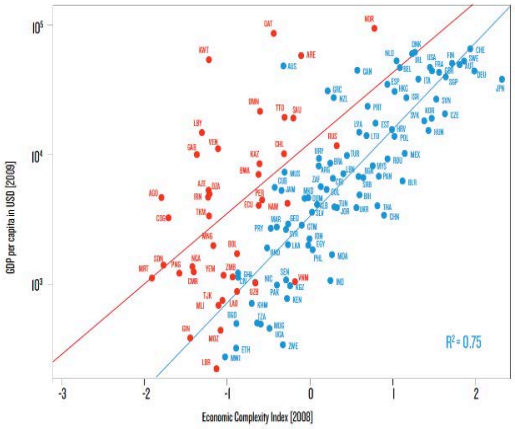


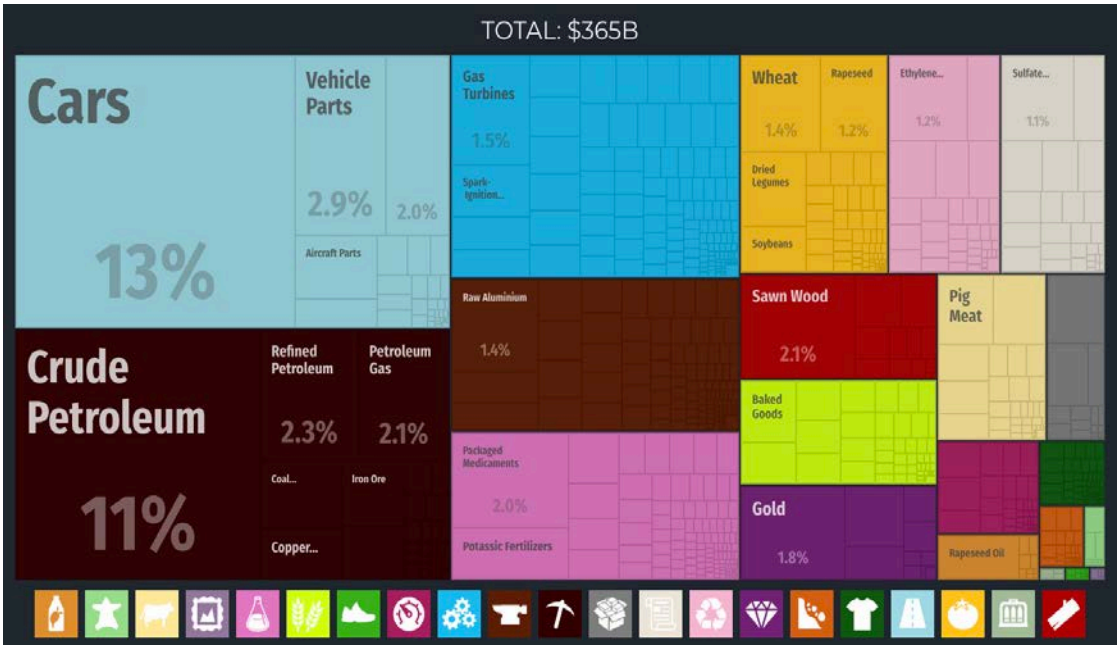
The following chart plots countries where economic complexity has been measured on a country average. In general, as the complexity of the country's economy increases so does the GDP per capita.

This following tree diagram shows the diversity of product mix in Canada for the 2016 trade year. For that year Cars made up 13% of the exports, with Crude Petroleum second with 11%.

Economic Complexity is expressed in the compostion of a country's productive output and reflects the structures that emerge to hold and combine knowledge.

Atlas of Economic Complexity







Top 5 Products By Complexity		
Product Code	Product Name	Product Community
7284	Machines & Appliances for specialized particular industries	Machinery
8744	Instrument & appliances for physical or chemical analysis	Chemicals & Health
7742	Appliances based on the use of X-rays or radiation	Chemicals & Health
3345	Lubricating petrol oils & other heavy petrol oils	Chemical & Health
7367	Other machine tools for working metal or metal carbide	Machinery

Bottom 5 Products by Complexity		
Product Code	Product Name	Product Community
3330	Crude Oil	Oil
2876	Tin ores & concentrates	Mining
2631	Cotton	Cotton, rice, soy & other
3345	Cocoa Beans	Tropical Agriculture
7367	Sesame Seeds	Cotton, rice, soy &other



Product Complexity

The countries whose inhabitants possess more knowledge have what it takes to produce a more diverse set of products. Therefore the number of distinct products a country produces is expressed in their productive diversity. The second component of product complexity is ubiquity. Products that demand large amounts of knowledge that are only available in a few places where that knowledge is available. The ubiquity of a product reveals information about the volume of knowledge that the product requires. Because of this the knowledge that a region or country has is expressed in the diversity and ubiquity of the products it makes.

Revealed Comparative Advantage

As regions and countries are of different sizes, it is not appropriate to measure advantage based on nominal trade or sales. It is stated that a country has a Revealed Comparative Advantage if it exports (sells) more than it's 'fair share'. A country has a Revealed Comparative Advantage in a product if it exports a share that is more than its fair share. A share that is equal to the share of total world trade that the product represents. This analysis can be extended to the analysis of areas smaller than a Country, such as a Province or Region. As the calculation is dependent on the comparator or denominator in the equation, the selection of the comparator should be based on economic reasoning. This analysis is similar in design to Location Quotient and uses exports instead of employment. The use of exports is based on the concept that products are a measure of knowledge. Once it is determined where a region has a comparative advantage in product exports, the products can be examined to understand the knowledge and knowhow required to produce, therefore understanding if the region has a comparative advantage with knowledge and knowhow.

Revealed Comparative Advantage - RCA

A country or region has a RCA if it exports a share that is more than it's fair share



Labour Market Research

Royal Bank of Canada commissioned one of Canada's most innovative research papers on where the Canadian Labour force is headed. The next generation is entering the workforce at a time of change and currently government, schools, employers and employees are not sufficiently reacting to the potential change. It is forecast that more than 1 in every 4 jobs will be disrupted by emerging technology.

The economy of the future will have a very different demand on employee skills. There will be an increased demand for foundational skills such as critical thinking. There is a perception that technology disruption will mean the elimination of jobs from the economy. Contrary to this the forecast is that the Canadian economy is expected to add 2.4 million jobs over the next four years. The important point is that these jobs will require a new mix of skills. Currently the economy is not reacting or designed to help people navigate these changes. The education system is not designed to help students navigate the changes, employers are not prepared to make their organizations more competitive and government is taking a passive role in responding.

When foundational skills versus job specific skills are focused on there can be a high degree of mobility between jobs. One constant is that digital fluency is essential for all new jobs. Clustering of skills allows one to see how skills apply across a range of jobs rather than the traditional ladder approach of increasing job specific competencies. This approach can provide visibility on how adding a small number of skills might allow one to change professions.

RBC in their report have grouped jobs into six clusters:

Defining Skill Sets

Doers	Emphasis on basic Skills
Crafters	Medium in technical skills, low in management skills
Technicians	High in technical skills
Facilitators	Emphasis on emotional intelligence
Providers	High analytical skills
Solvers	High logic, knowledge and intuition

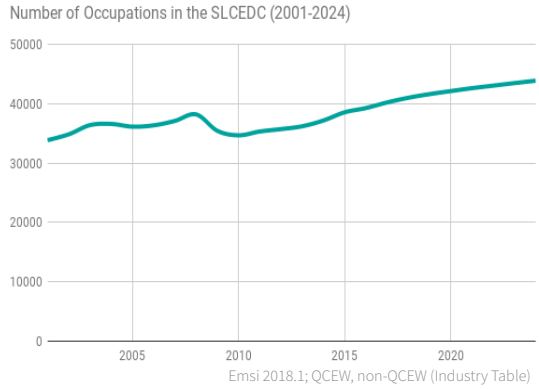


Current State of the Regional Economy

Labour Market

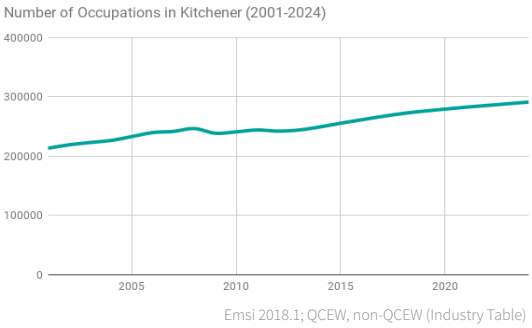
Total Occupations

The labour market of the St. Lawrence Corridor has largely mirrored the general Ontario economy over the past 15 years. Overall the economy has realized a net increase in jobs, with the economy projected to gain jobs over the coming decade. The St. Lawrence Corridor region did experience significant slippage in



jobs during the 2008 recession that took until 2014 to fully recover. This recovery was slower than what was experienced in the Ontario economy, however, when compared to the economies of some other regions it was quite favourable.

In comparison, the Kitchener-Waterloo region saw significant and sustained job losses beginning in 2008, continuing until 2016 with the market only starting to recover employment over the past year. Innately one would think the St. Lawrence Corridor job market has been under decades of sustained pressure when in fact it has shown to be more resilient some of the other economies in Ontario. This point of job resilience can be attributed to many



factors, one of which a more diversified skill set then some other regions with skill sets closer to other occupations and individuals finding their skills more transferable to other industries.

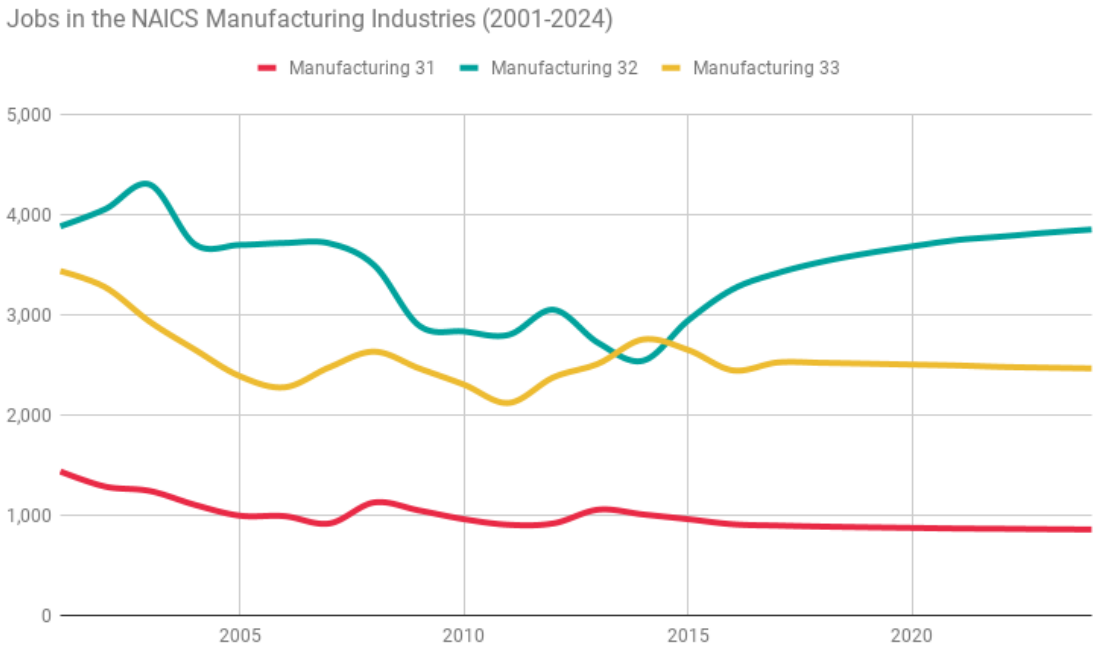
North American Classification Sectors

A deeper dive into specific industries by North American Industry Classification Sectors ("NAICS") one sees that industries have not reacted equally to changes in the economy as represented by employment levels.

Manufacturing industries are a tale of several different stories This analysis will be limited to the first level of the NAICS hierarchy at the two-digit level of classification. The primary areas of focus in manufacturing will be:

NAICS 31 - Food, Beverage and textile industry
NAICS 32 - Wood, Petroleum, Coal and Chemical industry
NAICS 33 - Machinery, Fabricated Metal and Electronic Equipment Industry





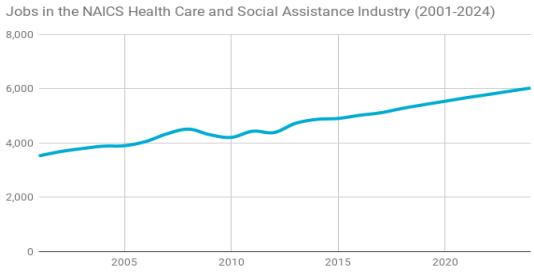
Emsi 2018.1; QCEW, non-QCEW (Industry Table)

The St. Lawrence Corridor experienced a significant decline in NAICS 32 during the period 2001 -2014, this was primarily in the chemical industry with major plants downsizing during this period. There was a drop in fabrication during the period 2001 - 2006, employment leveled off with some yearly employment volatility realized. Food, beverage and textile have seen an overall small decline that is projected to last through to 2022. Overall much of the projected declines in the industry are offset by employment growth from 2014-2017 and projected into 2022.

Transportation and Warehousing experienced cyclical results from 2008 - 2014 until we saw a strong recovery past 2017 that is projected to remain strong into 2022.

Healthcare & Social Assistance

Health care and social assistance are on track to be the fastest growing occupation group in the St. Lawrence Corridor region, potentially growing 2,400 jobs from 2001 - 2022. This is another sector of the economy that shed jobs during the 2008 recession and slowly recovered with late



Emsi 2018.1; QCEW, non-QCEW (Industry Table)

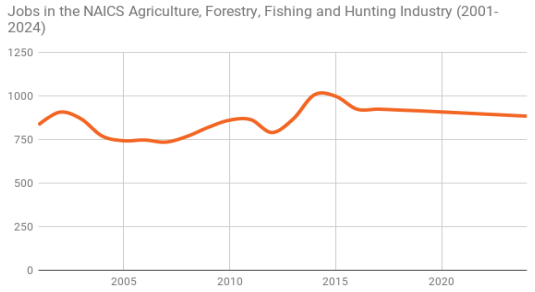
2012 showing a return to the pre-2008 employment levels. Over the next half decade, Health Care and Social Assistance



roles continue to show growth in the economy. While these roles are typically a reflection of economic growth, not growth drivers unto themselves, there remains the opportunity to better understand the nature of this growth, the potential to grow both institutional and private industry roles and look for opportunities to link skill levels to commercial and industrial opportunities.

Agriculture, Forestry, Fishing & Hunting

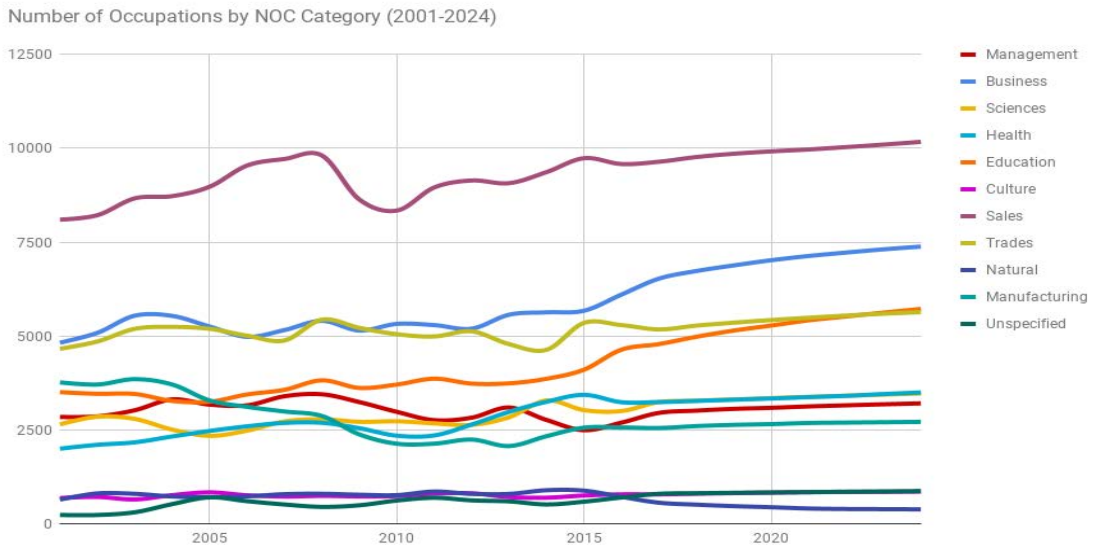
Agriculture, forestry, fishing and hunting did not experience any decline during the 2008 recession with a slight shedding of jobs into 2012 that was quickly recovered in 2013. This sector of the job market has shown a large percentage (low magnitude) growth in the period 2007-2014. Given the low level of forestry, fishing and hunting in the St. Lawrence Corridor, this growth has mainly been in the agricultural industries. A slow decline over the period 2014-2016 was recognized and is projected to continue a slow decline over the next several years.



Emsi 2018.1; QCEW, non-QCEW (Industry Table)

NOC Occupational Categories Employment Skills

Sales remain one of the largest employment roles in the St Lawrence Corridor and are predicted to increase at a similar rate to the current rate of increase into 2020. This is notwithstanding the 2008 recession where the number of sales roles dropped substantially, showing that economic cycles impact sales roles to an amount overweight to general economic trends.



Emsi 2018.1; QCEW, non-QCEW (Occupation Table)



Overall the economy has shown a net increase in jobs, with a decline and subsequent recovery shown through the 2008 recession. The economy has shown employment resiliency realigning employment to areas of opportunity.

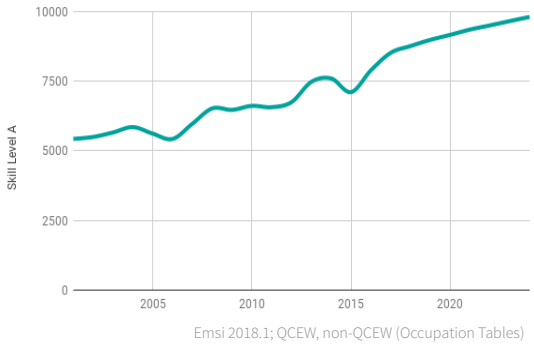
Skill Level Definitions	
NOC	**Description**
A	University degree (bachelor's, master's or doctorate)
B	Two to three years of post-secondary education at community college, an institute of technology or CÉGEP or Two to five years of apprenticeship training or Three to four years of secondary school and more than two years of on-the-job training, occupation-specific training courses or specific work experience Occupations with supervisory responsibilities are also assigned to skill level B. Occupations with significant health and safety responsibilities (e.g., firefighters, police officers and licensed practical nurses) are assigned to skill level B.
C	Completion of secondary school and some short-duration courses or training specific to the occupation or Some secondary school education, with up to two years of on-the-job training, training courses or specific work experience
D	Short work demonstration or on-the-job training or No formal educational requirements



Employment Skills

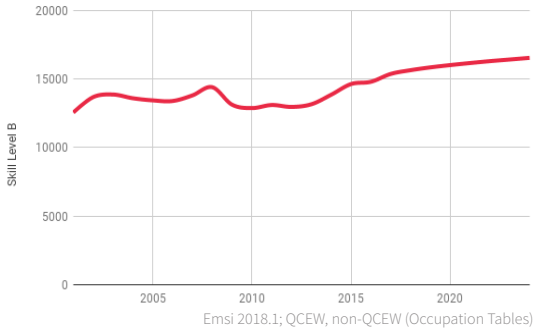
To analyze the skill level present and required along the St. Lawrence Corridor reference will be made to the skills definition from Statistics Canada, located on the facing page. Over the period 2001 - 2017 the St. Lawrence Corridor region has seen a trend line of increasing skill level A

Skill Level A Occupations in the SLCEDC (2001-2024)



Emsi 2018.1; QCEW, non-QCEW (Occupation Tables)

Skill Level B Occupations in the SLCEDC (2001-2024)

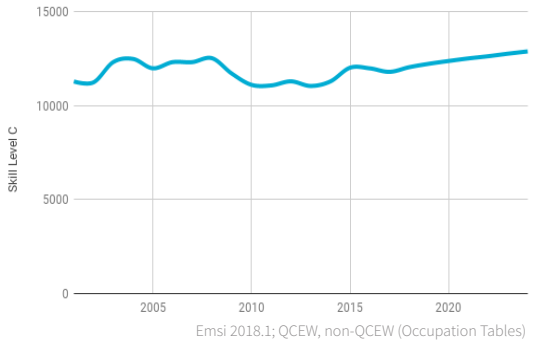


Emsi 2018.1; QCEW, non-QCEW (Occupation Tables)

requirement in roles. It is projected that in 2022 industry will have over 4,000 more roles requiring a university degree. This reflects the collective wisdom that roles are requiring increasing levels of skill. Attainment of a university will be used as a proxy for advanced skill achievement.

Skill Level B has remained flat with a spike during the 2008 recession. Similar to future

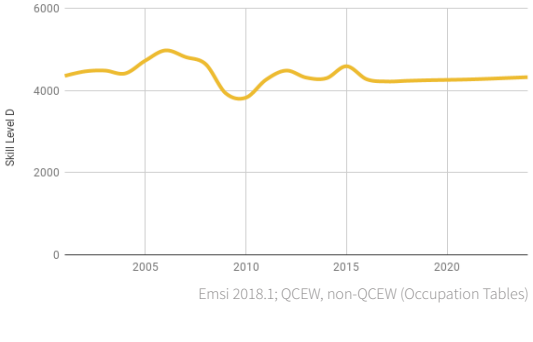
Skill Level C Occupations in the SLCEDC (2001-2024)



Emsi 2018.1; QCEW, non-QCEW (Occupation Tables)

demand for skilled workers as represented with those obtaining skill level A, skill level B is projected to have similar growth albeit at a slightly lower magnitude. The combination of occupations and roles requiring a university education and those requiring advanced training such as a

Skill Level D Occupations in the SLCEDC (2001-2024)



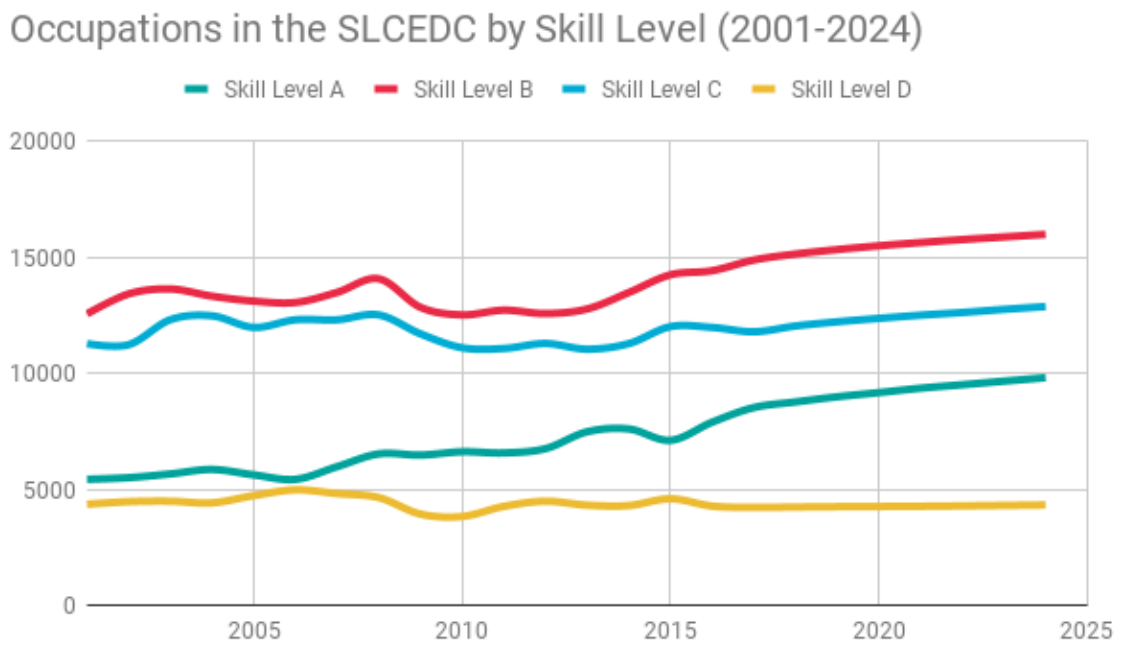
Emsi 2018.1; QCEW, non-QCEW (Occupation Tables)

college diploma or apprenticeship training nets to an aggregate increase in skills representing 7,000 roles.

Skill level C was impacted significantly in the 2008 recession and did not begin a recovery until fiscal 2010 and has not yet recovered to pre-recession levels. This skill represents those workers with secondary school education and potentially some job-specific training.

When combining Skill Level C declines with Skill level D, a significant loss of jobs,





Emsi 2018.1; QCEW, non-QCEW

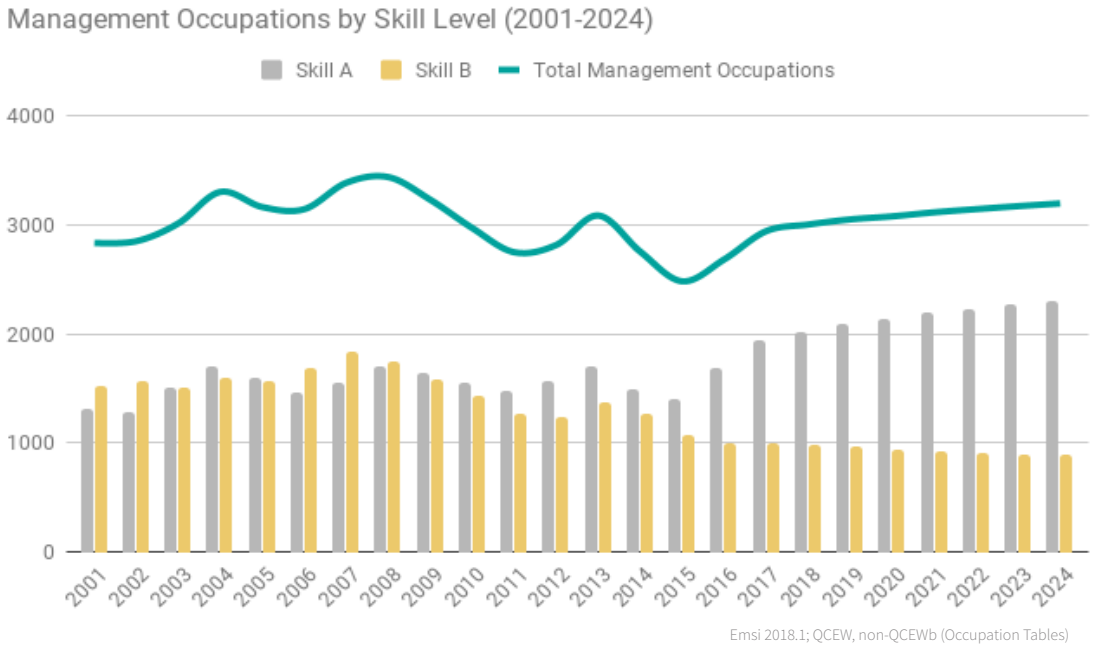
totaling a loss of jobs from peak to trough of close to 5,000 jobs. The economy has had difficulty recovering these lost jobs and it is not forecast that these jobs will be recovered on the run up to 2022. These projections support the assessment that the economy will require more skilled labour over the coming decade and the gap between current in-market skills and skills the expanding economy will require.

Overall the past 5-10 years an increasing number of occupations that require skills A-C with occupations requiring Skill Level D remaining constant or declining when expressed as a proportion of the total occupation market. There is a forecast increase in the number of occupations with a corresponding increased demand for a higher level of skill. This is causing a greater gap in skills, contributing to the perceived labour shortages in the market currently. From the data, it appears the greater issue is a skills gap as compared to a shortage of labour.

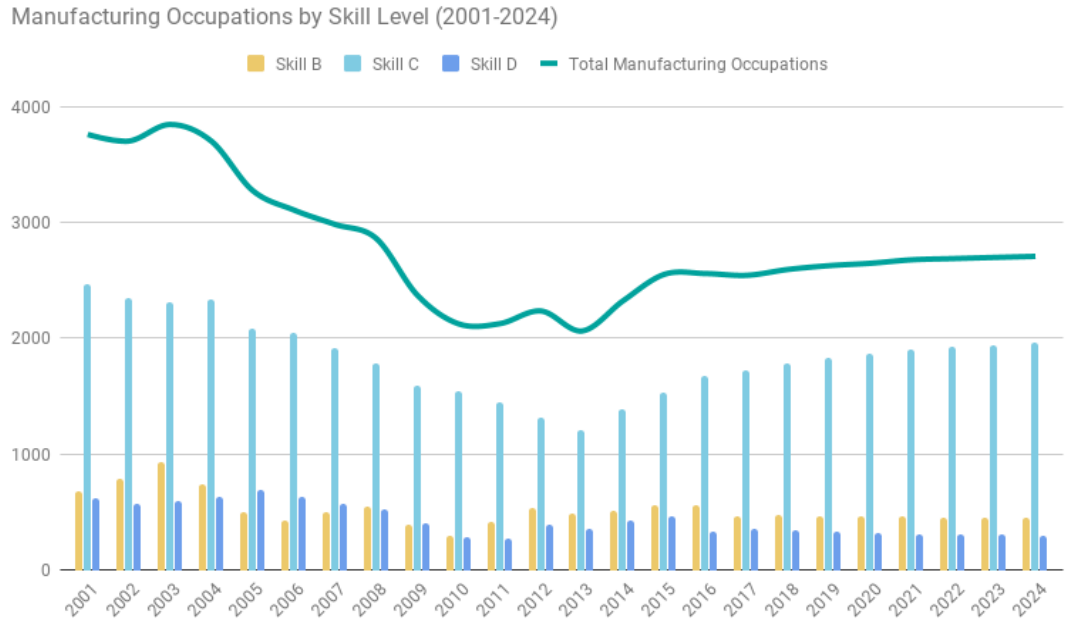
The opportunity for a skill gap due to increased demand for skilled workers is highlighted in the projections for management occupations. It is noted that the requirement for post-secondary education has risen significantly in the period 2014 - 2017 and is projected to significantly rise for the period to 2024. All roles are forecast to require additional skill levels and a post-secondary education will be a prerequisite for many of the future management roles.



While the increase in skills is not as dramatic in manufacturing occupations, one still notes an increase in Skills B and C with a decrease in skill D forecast into 2024. As manufacturing becomes more complex, automated and the use of advanced controls, the workforce will need increased levels of education and training to add value to the manufacturing process. Low skilled work will decrease over time, thus potentially increasing the skills gap issue over the short-term.



Emsi 2018.1; QCEW, non-QCEWb (Occupation Tables)



Emsi 2018.1; QCEW, non-QCEW (Occupation Tables)

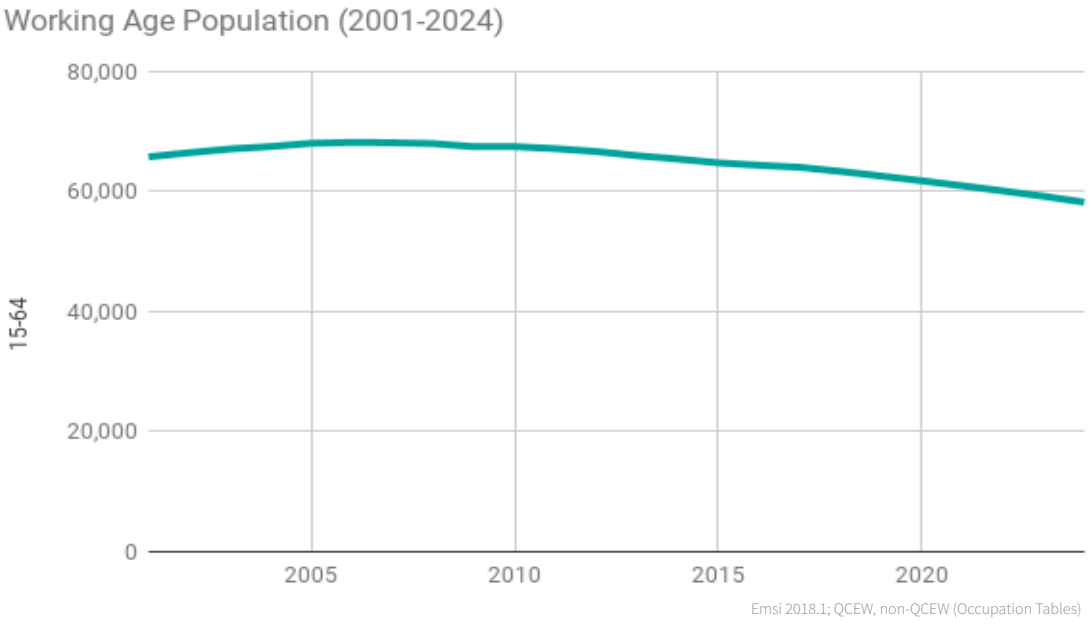


Demographic Trends

Population

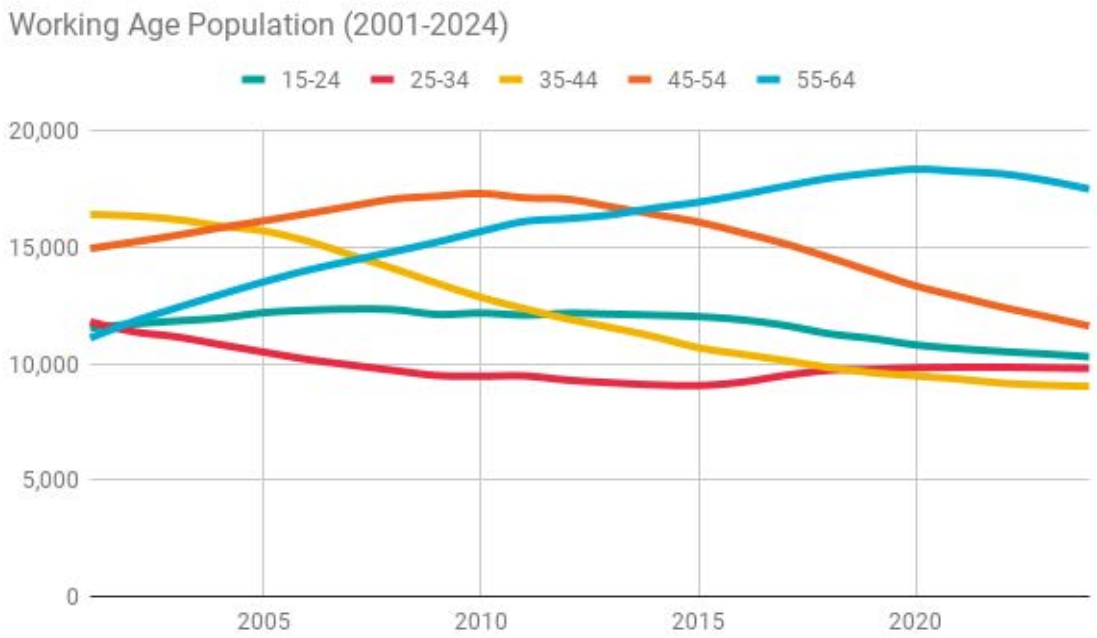
The working population has been represented in the graph below with the ages 15- 65 captured, both historical and the forecasted trend. A steady growth in the employable population until 2006, peaking at 68,168, then beginning a steady decline with a net reduction forecast in the employable population to a forecasted 58,254 in 2024. This represents a loss of potential labour of 9,914. There are various explanations for this trend, an aging population, immigration to more urban areas and perceived lack of opportunity. This trend also corresponds with other research in the general population trends for Canada. This combined with a lower then national average labour participation rate compounds the labour concerns.





Emsi 2018.1; QCEW, non-QCEW (Occupation Tables)





Emsi 2018.1; QCEW, non-QCEW ((Occupation Tables))

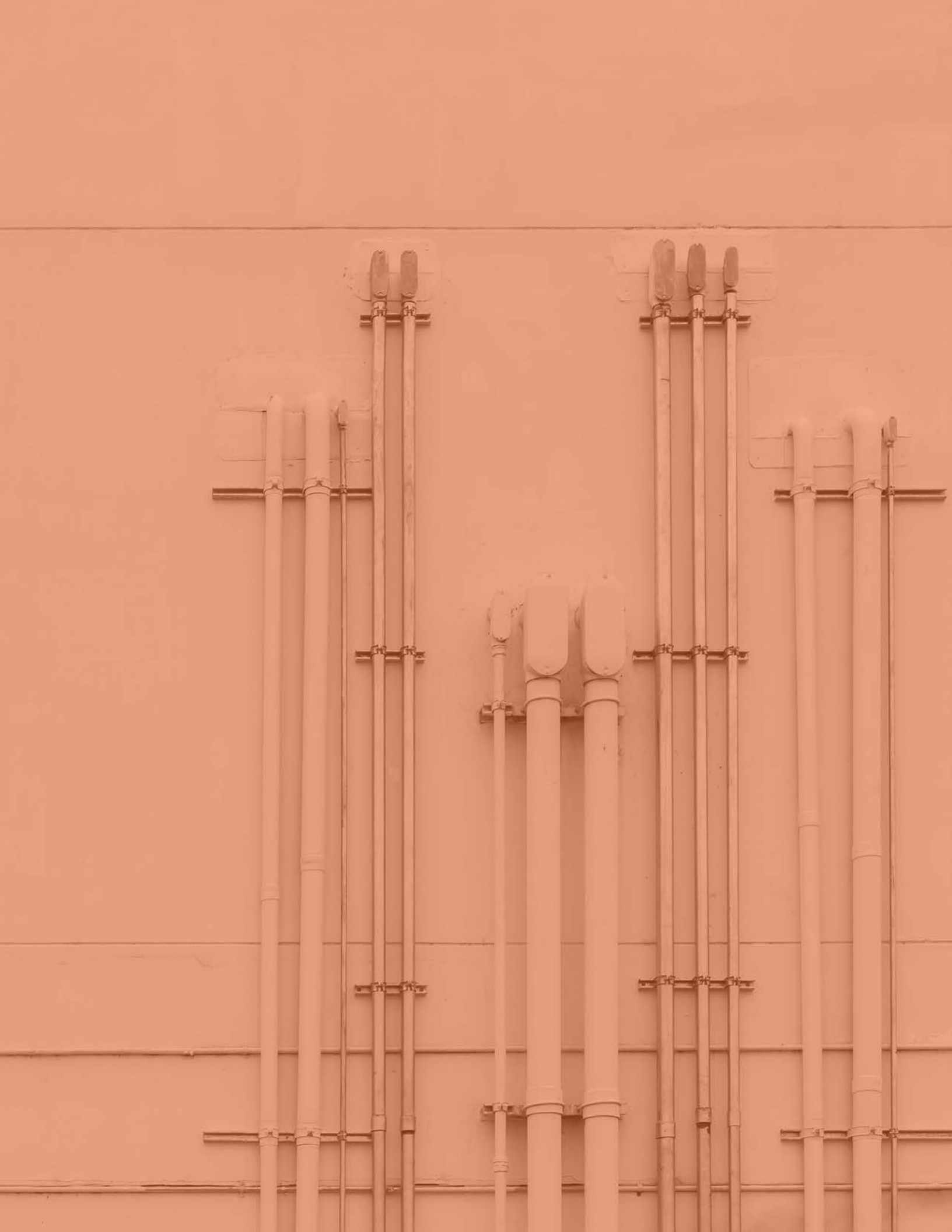
Additional insights can be gained from viewing the population trends in 10 year age group increments. It is recognized that a ten-year aggregation or cohort is a large segment with significant differences within the cohort, however, the information does provide interesting insights. The first trend line to look at is the 55-64 age group. One can see a historical and forecasted growth in this cohort. While it cannot be assumed this entire cohort will or has exited the workforce, this is the age group where planned and/or forced exits are most common. This is contrasted with the 45-54 age group cohort where one sees a dramatic decrease in the number of people available in the regional market for employment. This age group cohort often represents the largest store of tacit knowledge and by extension it can be inferred that this decline in a core group of employable assets represents a loss of tacit knowledge for the region. When analyzing the potential cluster economies, the impact of the decline in the 45-54 age group cohort must be considered and the impact on the transition of knowledge mitigated.



Overview
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Quantitative Analysis

The St. Lawrence region is a complex organism of companies, industries, institutions and government. Employees move between companies taking knowledge with them and applying that knowledge in related and unrelated ways.

The St. Lawrence Corridor has a rich history of this knowledge departing branch plant economies and moving into entrepreneurship. Often the existence of an emerging or early stage knowledge cluster is not discovered until well after the industry or cluster has reached a stage of maturity. An example in the region for an industry that might be past the mature stage would be telecom where the region saw several entrepreneurs leave companies such as Nortel. Upon their departure from these large national and multi-national organizations, they started and operated successful companies for several decades. Identifying these clusters where tacit knowledge is stored and transferred at scale is important to provide focus in building the regional economy at a rate greater than forecast GDP growth. This knowledge relationship will be termed as relatedness and the analysis will uncover where this relatedness can provide insight to potential growth To complement this knowledge it is also important to understand where the region has an advantage over Ontario. Specifically, where does the region have an advantage in Sales and Labour and in what specific industries does this occur in? This potential advantage will be defined as a Relative Comparative Advantage. The understanding of these factors, complemented with local market knowledge, will provide insight into what industries and clusters the St. Lawrence Corridor should focus their growth, attraction and retention activities on.

> As people and firms specialize in different activities, economic efficiency increases, suggesting that development is associated with an increase in the number of individual activities and with the complexity that emerges from the interactions between them"
>
> *Cesar A. Hidalgo, The Building Blocks of Economic Complexity*

Industry Complexity Distance

To accurately calculate the product complexity, data must be obtained at the product level for the region. The size of the St. Lawrence Corridor and the available data are not sufficient to calculate the product complexity or product distance, and therefore do not provide reasonable accuracy for analysis and forecasting.

Accordingly, complexity will be mapped based on the proximity of jobs between industries. Employees can move between industries typically based on the following chart on the next page.

The greatest employment success is found when employees move within in the same industry to the same occupation, with the lowest probability of success in moving to a different industry and different occupation. This proximity or relatedness is the probability that an employee in one industry has skills and abilities that are



mobile to another industry and that they will be successful. The inference from this is that the employee has the ability to apply the tacit knowledge or knowhow they had in their previous role at their new role. Therefore this allows to measure the movement of tacit knowledge. As individual and collections of employees are stores of knowledge, the movement of these employees across industries implies that knowledge is moving and is being utilized.

Different Industry Same Occupation	**Same Industry Same Occupation**
Different Industry Different Occupation	**Same Industry Different Occupation**

This relatedness between industries can be calculated based on the historical movement of employees between the various industries. To understand the proximity or relatedness of jobs between industries, the United States data classified as the County Business Patterns reporting ("CBP") was utilized. The US and Canadian industrial economies closely mirror each other with complexity, wealth distribution, access to inputs, access to capital and technological development all being similar. To provide a template for job proximity the four-digit NAICS global listing was matched to occupations from the County Business Patterns report. This provided a proximity calculation for each 4-digit NAICS category across the United States and Canada. This calculation expressed as a probability allows one to understand the relatedness of industries based on the probability that labour, as a store of tacit knowledge, can move between industries.

As the US County Business Patterns are seen as a proxy for Canadian labour and knowledge movement, this allows the comparison to actual and potential industries in the St. Lawrence Corridor. The US CBP relatedness results were then mapped the over the local Industry data to understand where the industries are related based on abilities for employees to move between industries and be successful. Utilizing this data allowed the creation of a matrix for analysis based on job proximity between industries in the Region.





Relative Comparative Advantage

Once the relationships between the St. Lawrence Corridor industries are calculated and understood, it is now necessary to understand where the region may have a comparative advantage over other in the Province of Ontario. There are various reasons to compare against the province versus either Canada or the Global economy. The primary reason is the purpose of this paper, to improve the economic conditions of the St. Lawrence Corridor region, ultimately increasing the quality and quantity of jobs. As a comparator, Ontario makes the assumption that to simply outperform the province would provide satisfactory growth. From the point of view of actionable items, it would be difficult for the region to convince industry to locate in Ontario, however, it will be possible to convince a company to locate in the St. Lawrence Corridor once they have decided to locate in Canada/Ontario. Data was gathered in the following categories of Labour and Industry:

Based on collaboration with partners, equations were developed to calculate the Related Comparative Advantage in Sales and Labour for all of the industries located in the St. Lawrence Corridor. To facilitate further analysis this information was mapped in software designed to create a visual mapping of complex networks. As software for this type of analysis has not been developed for economic research, software designed to map biological relationships. The result was a network graph that provided a visual representation of the relatedness between industries, both present in the St. Lawrence Corridor and those not present.

The result is NAICS codes visually represented by connections based on relatedness and nodes representing the RCA for both sales and labour. To understand where economic development activities should be focused on, the industries where the St. Lawrence Corridor Region has a comparative advantage or more than their fair share provides additional data for analysis and consideration.

Labour	Industry
Wages Occupations Skills	Occupations Skills Sales Exports Purchases



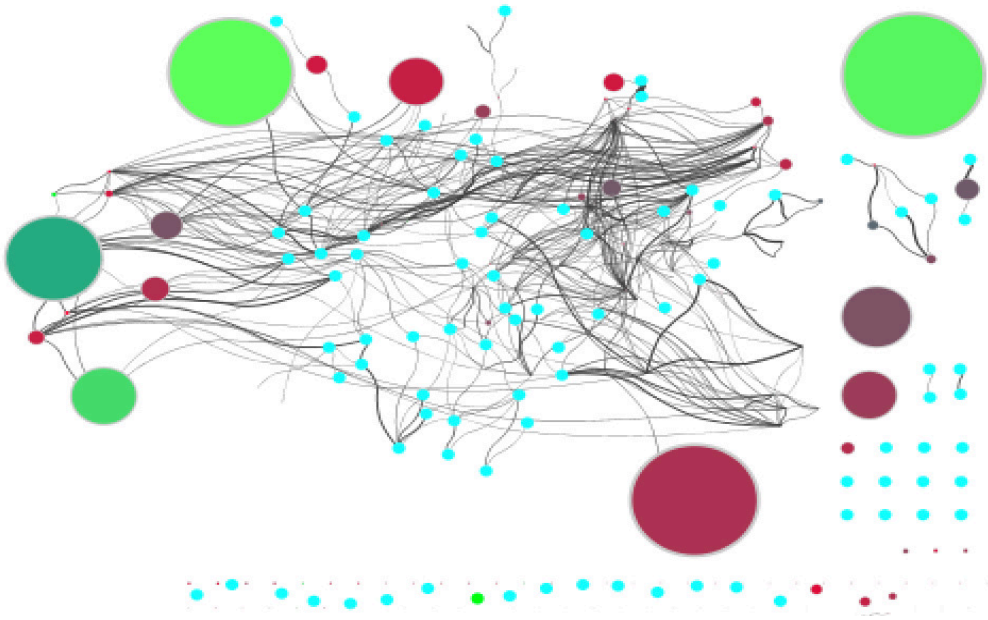
The resulting map codes the nodes for their RCA in Labour as represented by the relative size of the node, the RSA for Sales as represented by the colour of the node with the scale moving from Red as a comparative disadvantage (less than our fair share) and Green being a comparative advantage.

Build a Network Neighbourhood

Once the framework for the network was built, a visual and mathematical analysis were utilized in understanding where the best neighbourhood is. For the purpose of this analysis, the traditional residential housing definition of a neighbourhood is not being used, neighbourhoods are first degree, second degree and third degree based on the relatedness connections. A first-degree neighbourhood is the industries that are immediately connected to an anchor industry via their relatedness. Visually this is represented by the vectors between the nodes, mathematically this is represented by the number of relatedness connections to the industry.

Industry Complexity

As data at the product level is not available for the regional level, the calculated sophistication of the industries will be used as a proxy for product complexity. There are two components to complexity, the sophistication and the ubiquity of the product. As the analysis is with industries instead of individual products , the calculation has been reconfigured into Sophistication and Spatial Concentration. The calculations have been created for each of these separately. Industry complexity can typically be calculated as the aggregate of the products that the industry produces. As the data at this level is not available it is more appropriate to break the calculation into its core components for analysis. The





Sophistication of the industry and Spatial Concentration of the industry have been calculated, where industry continues to be defined as the four-digit NAICS code.

The resulting figures provide a standard deviation, allowing the analysis to combine the complexity of the industry, or Sophistication. Sophistication is defined as the amount of knowledge and knowhow required to produce products in that industry. The larger the number the higher the level of sophistication the industry represents. Spatial Consideration measures the ubiquity of the industry as measured by the number of places the industry could be located indexed to allow for relative comparison. The higher the number for Spatial Consideration the more places the subject industry could be located. The ideal industry that has the potential to provide sustainable growth through innovation is complex as represented by a high Sophistication number and cannot be located in many different places as represented by a low Spatial Consideration number.

It can be noted at this point in the analysis that little discussion or analysis is done with innovation. Innovation is required to create complex products resulting in sophisticated industries. The movement of knowledge provides the impetus for innovation, competition drives the requirement and the market rewards it. Sophistication can be viewed as the aggregate of all of these factors.

Sophistication

Sophistication is defined as the amount of knowledge and knowhow required to produce products in that industry. The larger the number the higher the level of sophistication the industry represents.

Spatial Consideration

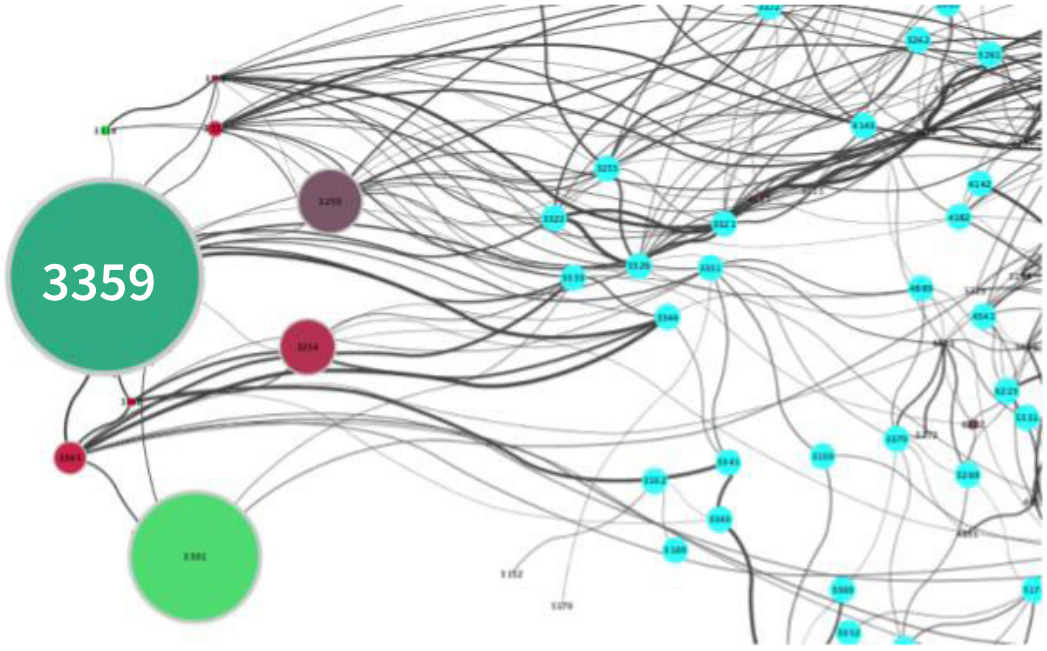
Spatial Consideration measures the ubiquity of the industry as measured by the number of places the industry could be located indexed to allow for relative comparison.



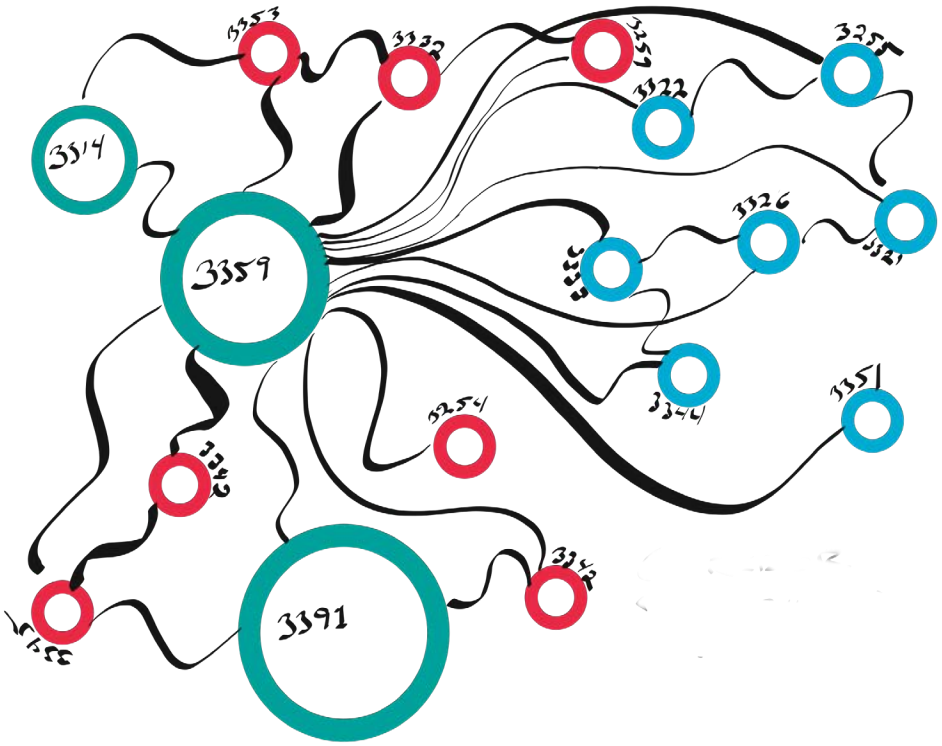
Analysis
Industry Focus

To better understand the region and analyze the data there needs to be a visual representation of the information supported by economic modeling. This analysis presents the region as an ecosystem of complex interconnected parts and the probabilities of job relatedness between industries. This complex analysis requires complex visualization. To better show these relationships bio-analysis industry software was used to map the network. The information was then plotted through calculations and graphically. The St. Lawrence Corridor Region's industry connections is represented by the network graphic below.

In the graph where the node is in green, it represents a comparative advantage in sales and the size of the node represents the comparative advantage in labour. Nodes in blue represent industries who are not currently located in the St. Lawrence Region. To understand where the St. Lawrence Region potentially has a cluster, industries were analyzed where a substantive comparative advantage exists. From there industries who had the most neighbours as defined by connecting nodes through relatedness of labour were identified. Those industries where the related nodes have industry located in the St. Lawrence Region were given precedence over industries not currently in the region. Through analysis of comparative advantage combined with relatedness, the industry **3359 - Other electrical equipment and component manufacturing** was prominent as an anchor in the neighbourhood and is the strongest in all categories.







Industry 3359 - electrical equipment and component manufacturing is a good neighbourhood anchor based on an industry sophistication of 1.2 and Spatial Concentration of 6.2. This indicates the industry produces a more complex product as compared to the average industry and there are a limited number of locations the industry would flourish.

This strong relatedness with several industries who are currently present in the region was then cross-referenced to industries that have an RCA in Sales and Labour that provide a comparative advantage over Ontario. Other electrical equipment and component manufacturing industry segment remains as the recommended industry to focus a development strategy against.

This industry has an RCA of jobs that is 12.92 and sales RCA of 11.64, showing that this region carries well above its fair share as compared to Ontario.

There are several existing industries in the region that also are already operating where we see the distance between occupations as attainable for employee success are indicated in the next chart.

With the calculation of the distance between industries providing a grouping of companies and the industries grouped into the clusters defined by Porter, we note one large difference in industries included. Industry code 3391 - Medical equipment and supplies manufacturing, shows as having a comparative advantage in labour and sales, while having good potential for sharing of knowledge with the other industries present. The Medical equipment industry is strongly connected to the recommended industry neighbourhood through relatedness, with two connections to industries present in the region and one connection to an industry not present. This represents a high probability that employees from this industry can move to others within the recommended neighbourhood, be successful and share their knowledge and knowhow.

Industries Currently Located in the St. Lawrence Corridor & located within the Neighbourhood

NAICS	NAICS Name	Labour RCA	Sales RCA	Sophistication	Spatial Concentration
3359	Other Electrical Equipment and Component Manufacturing	12.92	11.64	1.20	6.34
3332	Industrial Machinery Manufacturing	2.92	2.11	-050	6.98
3259	Other Chemical Product and Preparation Manufacturing	4.50	5.47	1.30	6.41
3314	Non Ferrous Metal (except Aluminum) Production and Processing	0.02	0.02	1.50	5.40
3254	Pharmaceutical and Medicine Manufacturing	4.24	3.36	0.90	5.97
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	4.29	2.54	1.00	6.58
3391	Medical Equipment and Supplies Manufacturing	17.96	16.80	2.00	7.13
3342	Communications Equipment Manufacturing	1.46	0.07	2.10	5.00
3353	Electric Lighting Equipment Manufacturing	1.31	0.86	2.10	6.14



There are also a number of industries that currently do not have a footprint in the St. Lawrence region that have a high probability of skill migration between industries.

Industries Currently Not Located in the St. Lawrence Corridor, but represented in the neighbourhood			
NAICS	NAICS Name	Sophistication	Spatial Concentration
3351	Electric Lighting Equipment Manufacturing	1.2	4.91
3344	Semiconductor and Other Electronic Component Manufacturing	1.6	6.12
3333	Commercial and Service Industry Machinery Manufacturing	0.7	6.37
3326	Spring and Wire Product Manufacturing	2.0	5.70
3321	Forging and Stamping	0.6	6.57
3322	Cutlery and Handtool Manufacturing	0.9	5.40
3255	Paint, Coating, and Adhesive Manufacturing	1.4	6.23



Industry Overview
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This information from the primary industry can be aligned with Porter's definition of a cluster and cross-referenced to Porter's Cluster 27 - Lighting and Electrical Equipment Cluster.

Porter's Lighting and Electrical Equipment Cluster			
NAICS	NAICS Name	Subcluster Name	Present in the Region
335110	Electric Lamp Bulb & Part Mfg	Lighting Fixtures & Parts	N
335121	Residential Electric Lighting & Fixture Mfg	Lighting Fixtures & Parts	N
335122	Commercial, Industrial electric Lighting & Fixture Mfg	Lighting Fixtures & Parts	N
335129	Other Lighting Equipment Mfg	Electrical Equipment	N
335311	Power, Distribution & Specialty Transformer Mfg	Electrical Equipment	Y
335312	Motor & Generator Mfg	Electrical Equipment	N
335313	Switchgear & Switchboard Apparatus Mfg	Electrical Equipment	N
335314	Relay & Industrial Control Mfg	Electrical Equipment	N
335929	Fiber Optic Cable Mfg	Electrical Equipment	N
335929	Other Communication & Energy Wire Mfg	Electrical Equipment	Y
335931	Current Carrying Wiring Device Mfg	Electrical Equipment	Y
335932	Noncurrent Carrying Wiring Device Mfg	Electrical Equipment	N
335991	Carbon & Graphite Product Mfg	Electrical Equipment	N
335999	All Other Miscellaneous Electrical Equipment & Component Mfg	Electrical Equipment	Y
335911	Storage Battery Mfg	Storage Battery	N



This industry is not present in Porter's definition of this cluster and appears to not be relevant in building a cluster based on traditional cluster definitions.

The difference occurs as Porter's traditional definition is based upon companies within the cluster doing business with each other, competing with each other and the potential for shared inputs and knowledge. This primary analysis is based on the concept of relatedness, or the probability that knowledge, via employees, can be transferred between industries. This is mainly through the potential movement of employees and information between these companies. Accordingly, there is relatedness between Medical Equipment and Supplies Manufacturing and the other industries in this grouping through industrial manufacturing. This differs from industries such as 3119 - Food Processing where the manufacturing processes are different and tacit knowledge is not as relevant between the industries. This industry is not the one to focus on for several reasons. The relative size in sales is less than the target industry neighbourhood, it appears it is mainly represented by a single company and the products are produced, but not developed in the region. Therefore the tacit knowledge and potential innovation are limited to production abilities, not product development.

As the following table is analyzed It should be noted there is an industry in 3256 - Soap Making that has a large comparative advantage for both sales and labour. The relatedness between industries in the manufacturing sector is limited. It can be assumed that the Procter & Gamble plant is represented in this NAICS coding.

The analysis indicates that employees in this industry, while skilled employees, have tacit knowledge that is not easily transferable to the target grouping lead by 3359 - Other electrical equipment and component manufacturing. This does not mean the closure of the P&G plant will cause mass unemployment. It must be recognized as an opportunity that the target industry of 3359 - Other electrical equipment and component manufacturing is two steps away in relatedness, with some of the industries in the grouping being three steps of relatedness away. A mitigation strategy of training will help bridge this gap.

The distance between these two industries offers the opportunity for increased research. There is an opportunity to better understand this low probability of successful employee movement can be reduced through industry or neighbourhood specific training.

As seen in the Network Diagrams, the industry that holds Proctor & Gamble does not have a local industry within one degree of relatedness connection. This provides a local market opportunity to add skills and training to the departing P&G employees to reduce any on the job learning curve when they move to industries where there is employment opporutnity. Skills should be industry specific to ensure the greatest potential for short term employment success.

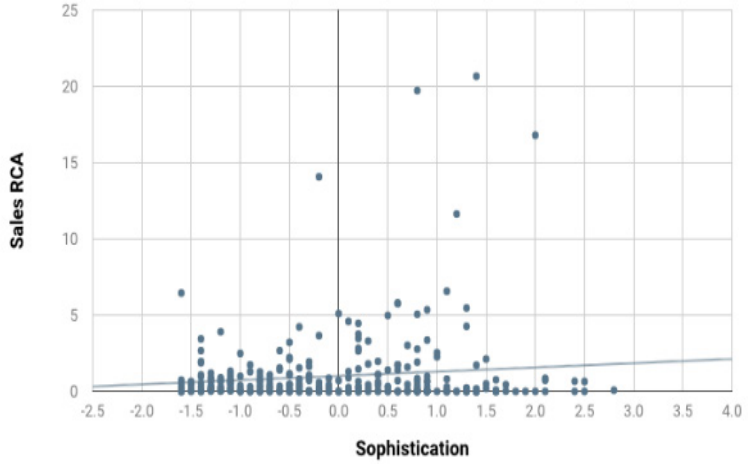


Analysis - Complexity

The recommendations will be validated through a review of the industry complexity as measured through Sophistication and Spatial Consideration. The following chart maps out the Sophistication against the Spatial Index. To provide a more complex industry the ability for the industry to be located in multiple locations should be low e.g., low Spatial Index and the Sophistication should be high, correlating to the upper left hand quadrant of the chart below. The recommended anchor industry has a Sophistication of 1.2 and Spatial Index of 6.2, moving it to the upper left hand area of the graph. This data means that the industry is calculated as being more complex than the majority of industries in North America and it is middle of the road for ubiquity of location. This does not mean it could be located anywhere in North America, however multiple locations can exist.



Plotting the Sophistication against the Sales RCA also provides the user with interesting insight. The target state is an industry where the region has a comparative advantage, in this case in Sales, and where there is higher than average complexity as represented by Sophistication. In the graph below, one can see there are a few outliers in the upper right hand quadrant where there is a significant advantage in sales and a more complex industry. The anchor industry with a complexity of 1.2 and





SCORECARD | Top NAICS Groupings										
NAICS	Sales $	Sales Growth	Sales RCA	Jobs	Jobs Growth	Jobs RCA	Sophistication	Spatial Index	Related	Count "A"s
3359	B	A	A	B	A	A	B	C	A	5
3256	A	C	A	A	A	A	B	C	C	5
3391	B	A	A	B	A	A	B	C	C	4
4171	B	A	A	B	A	A	C	C	C	4
3332	B	A	B	B	A	B	C	C	A	3
3345	B	A	B	B	A	B	B	C	A	3
3241	A	A	B	B	A	B	C	B	C	3
3253	B	A	A	B	C	A	B	B	C	3
3329	B	A	C	C	A	B	B	C	A	3
4162	B	A	B	B	A	B	B	C	A	3
4853	C	A	C	C	A	B	A	C	C	3
5171	B	A	C	B	A	C	A	C	C	3
5239	C	A	C	C	A	C	A	C	C	3
6215	C	A	C	C	A	C	C	C	A	3
3259	B	C	B	B	A	B	B	C	A	2
3342	B	A	C	C	C	B	A	B	B	2
3353	B	C	C	C	C	B	A	C	A	2
2361	B	A	B	B	A	B	C	C	C	2
2381	B	A	C	B	A	B	C	C	C	2
2382	B	A	C	B	A	C	C	C	C	2

NAICS Grouping with Name			
NAICS	NAICS Name	NAICS	NAICS Name
3359	Other Electrical Equipment and Component Manufacturing	4853	Taxi and Limousine Service
3256	Soap, cleaning compound and toilet preparation manufacturing	5171	Wired telecommunications carriers
3391	Medical equipment and supplies manufacturing	5239	Other financial investment activities
4171	Farm, Lawn and Garden Machinery and Equipment Wholesaler-Distributors	6215	Medical and diagnostic laboratories
3332	Industrial machinery manufacturing	3259	Other chemical product manufacturing
3345	Navigational, Measuring, Medical and Control Instruments Manufacturing	3342	Communications equipment manufacturing
3241	Petroleum and coal product manufacturing	3353	Electrical equipment manufacturing
3253	Pesticide, fertilizer and other agricultural chemical manufacturing	2361	Residential building construction
3329	Other fabricated metal product manufacturing	2381	Foundation, structure, and building exterior contractors

Sales RCA of 11.64 shows it is one of four industries in the region that provide both complexity and where there is already a comparative advantage in sales.

The data can also be used to understand how the data sets perform at forecasting one another. One of the more relevant for this work is the correlation between the Sales RCA and Jobs. The two have a high correlation meaning that an increase in sales will likely result in an increase in jobs. This seems intuitive, however the correlation presents a high degree of probability this will occur. When applied to the target industries this correlation provides a probability calculation that can be then applied to the job multiplier number to provide a more mathematically sound estimate of total jobs.

As a final form of validation, the industry data can be ranked relative to the other industries. The rankings can then be aggregated. From the attached chart, one can see that one of the top ranked industry is Soap Making. Through local market knowledge it is assumed that Procter & Gamble is anchored within this industry and therefore cannot be considered as a focus industry due to the pending closure. The second highest aggregate ranking is from 3359, therefore once again validating this industry as the anchor industry and focal point for activities related to cluster and industry growth.

	Spatial Index	Sophistication	Sales RCA	Wages RCA	Jobs RCA
Spatial Index		-0.353* (3.000×10^{-10})	-0.00269 (0.963)	-0.00276 (0.962)	-0.00639 (0.912)
Sophistication			0.117* (0.0425)	0.117* (0.0425)	0.0992 (0.0858)
Sales RCA				1* (0)	0.973* (1.509×10^{-195})
Wages RCA					0.973* (1.872×10^{-195})
Jobs RCA					



Validation & Outreach

The analysis and conclusions are based on economic theory, mathematical modeling and local market knowledge. The calculations and theory have been built and tested through a collaborative model with the partners. It is prudent to validate the conclusions through presentations and discussions with community stakeholders and industry leaders. Over the course of several weeks, small group meetings were held to present findings and solicit feedback. Overall the response was supportive and the conclusion drawn from all parties was that this neighbourhood is the one that will continue to provide an overweight amount of economic benefit to the region. To ensure opinions obtained were from across the spectrum of stakeholders, a diverse group of contributors were met, both inside and outside of the focus neighbourhood.

Diversity of Contributors

Total individual contributors ~100

Industries	9
NAICS Industry Group	6
Regions	7
Supporting Agencies	2
Human Resources	3
Private Industries	4
Public Industries	4
Politicians	7
Foreign Owned	2
Education & Training	2
Investment & Loans	2

Total Employment Represented >2,200

Message and Delivery

Within the stakeholder presentations, the project was positioned as providing the City of Brockville along with the St. Lawrence Corridor Economic Development Commission, direction and focus on developing economic growth within the Region. The City and region have finite resources to put against economic growth. Once the strategic industry or neighbourhood has been agreed upon it then becomes strategically important to allocate and spend those resources to maximize the economic benefit to the community.

NAICS Industry Group Other electrical equipment and component manufacturing (3359) as a neighbourhood anchor was received as a logical, supported focus for the region. Strategically, putting resources against this group to expand and grow in order to positively impact our regional ecosystem made sense.

Perceived current and future labour shortages were identified as a growth risk with all outreach contributors. Training, immigration and automation were seen as potential solutions. Training was seen as the most viable solution and agreement across industries was that industry and job-specific training was not being provided currently in the region.

As an extension of these discussions, regional industrial networking and the sharing of information was addressed as a necessity and currently lacking in the region.



Topics Discussed

In general, all stakeholders received the same information. As each stakeholder group brought different strengths to the discussion, areas of focus did change. Discussions with all parties included the underpinning of the theory of economic complexity, discussion of cluster economics, the St. Lawrence Corridor region analytics and a walk through of the initial hypotheses and recommendation on where the focus should be.

Cluster Economics

Cluster Economics was explained to contributors. This was not an unknown topic, in contrary, many individuals cited examples of global and national clusters. The researchers outlined the difficulty in building or creating an economic cluster under the traditional definition. Using Porter's Clusters and his traditional definition would not be possible as the Corridor by size is not capable of growing a Cluster. The concept of clustering need not be completely abandoned as the Corridor is well suited to growing a regional industrial neighbourhood.

"Automation increases dependency on skills that are not readily available in our region."

Regional Industrialist

Economic Complexity

As a method of understanding and growing a regional economy, the concept of Economic Complexity was new to all of the stakeholders. Although generally a new topic it was easily understood. It was outlined that for this project complexity was balanced against Industry whereas typically it is shown as coding a product. Contributors easily accepted that those industries that are more complex to build more complex products, and, there is an economic advantage, shown through prosperity, in building more complex products. The concept of working to build an economy around its base of knowledge versus its infrastructure was accepted as both innovative and the correct approach to building the St. Lawrence Corridor economy.

Economic Complexity is expressed in the compostion of a country's productive output and reflects the structures that emerge to hold and combine knowledge.

Atlas of Economic Complexity

Relative Comparative Advantage

Stakeholders agreed that understanding what the region is already good at provides a better position for growing the economy as compared to other analytical structures such as focusing on high growth industries to attract from outside the region e.g., software. Related Comparative Advantage or Sales and Labour relative comparative



advantage calculations were presented to the stakeholders to solicit their feedback and continue on the analysis journey with them. The concept was positioned as the primary methodology to determine what the region already has a strategic advantage in. Developing the Relative Comparative Advantage using Ontario as the comparator was accepted by all contributors. Based upon these calculations, the concept of a region having a Regional Comparative Advantage in Sales or Labour was introduced.

Relatedness and the Neighbourhood

Industry relatedness as defined by an employee's ability to successfully move between industries as a key component of the analysis was discussed in depth with all stakeholders. Stakeholders agreed that this network represented how employees and their knowledge can move between industries and ultimately companies. Industry leaders, once presented with the data, reinforced they have better employee success rates when acquiring employees from certain industries as highlighted in the industry relatedness calculations. Upon diving deeper into actual employee movement, some expressed hesitancy to hire from other specific industries. Historically this has been attributed to poor fit, different culture etc., it was now agreed that often this was due to a difference in skill-sets, specifically the tacit knowledge and specific skills not being transferable. While stakeholders acknowledge the potential impact on business when a more competitive labour pool is built, they are supportive of building a larger pool of labour with the basic to work within the industry neighbourhood.

As an Industry Group to focus on, Other electrical equipment and component manufacturing (3359) with its top rankings in Sales, Labour RCA, Sophistication, sales growth combined with its high degree of relatedness were discussed. As specific examples were relevant to any discussion, it was proposed and agreed upon that Northern Cables & Prysmian Cables sat within this industrial neighbourhood as major employers and representative of the type of product and company in this industry. Stakeholders agreed that this industry had expanded significantly and the success of the key employees from Phillips Cable starting Northern Cables was a strong example of how tacit knowledge can move and build successful companies. It also reinforced the importance of moving away from a branch plant economy.

All of the major industries (those industries with an advantage in labour and/or sales) were profiled to the stakeholders. There was a general consensus that the Other Electrical Manufacturing area was a logical place of focus. As the industry that Procter & Gamble is located in represents both an advantage in sales and labour, a discussion on the implications of this plant closing and the labour relatedness to other industries was conducted with each group. The P&G labour pool was identified as having two degrees of separation from the 3359 neighbourhoods and the difficulties this can predict. Although lacking an immediate linkage into the target neighbourhood, with additional skills research, gaps could be identified and training developed in order to increase the potential for successful employment in another industry who is looking for top talent.. One branch plant industry identified having previous success finding individuals from P&G



along with other local multinational company. Labour rates were often raised as a topic of concern when this potential for industry employment within the target neighbourhood was raised. Upon deeper questioning of the participants, it could not be determined what the pay gap is nor who would be responsible. Data on the wage discrepancy, if any, would be helpful in understanding the potential for a mass exodus from P&G being employed quickly and productively upon that plant closing.

Action Items

Labour and Training

Industry was queried on labour and training requirements along with success to date on-boarding from differing industries. Overall, industries are having difficulty sourcing employees who they consider skilled for positions. Industry stakeholders stated that they are tolerating longer than historically normal time lines to employee efficiency due to lack of specific skills and training. On the recruitment side, stakeholders showed a consensus opinion that there appears to be a labour shortage, based on the number of vacant positions each of them are experiencing. The most difficult jobs to recruit for are professional positions such as engineers. Individuals possessing these credentials are difficult to attract and the local labour pool is not large enough to allow for any professional movement between companies. It was also noted that Industrial trades, technicians and labourers, are difficult to attract and retain.

The components of employee attraction were not discussed in great detail as these tend to be a company rather than industry focused. The concept of developing a labour pool with skills that directly support industry was received as an advantage to support existing industry and to attract new. It was indicated that this training does not currently exist locally, although specific historical examples such as chemical operator training, were available in the past.

Industrial Networking

It became evident that industry stakeholders see value in sharing and do not have the time to facilitate this sharing. There were examples of companies and industries who would benefit from larger recruitment and training drives along with marketing programs designed to promote skilled labour jobs in the industry, specifically manufacturing. Stakeholders also have difficulty lobbying government to create positive impact. It was suggested that an industry group combined with data and metrics would be more effective at impacting change.

Most industries have implemented automation to some degree, only one business spoke to an immediate automation upgrade. Some spoke to the concern that this region lacks the support for implementing robotics / automation. This was expressed in two related themes; the first was the lack of skilled workers in robotics/ automation robotics and automation and the second was the lack of training support for robotics in the area.

Outside of the focus industry it was expressed by a chemical industry stakeholder that over the next 5 years more than 40 chemical operator positions may be available as a result of natural attrition. Over the past several years industry in the region have been drawing\ chemical operators from those DuPont employees that were downsized in 2009-2010. This pool is effectively gone, leaving a known future gap.



Summary

The reader has been walked through the idea of creating a more complex economy, one that provides greater opportunity for the St. Lawrence region. This needs to be a more competitive economy, one that has an advantage over other areas. The data shows that the Electrical Component Manufacturing neighbourhood is one where industry has the potential to pool labour resources given the ease at which talent can move between neighbours and the related comparative advantage the neighbourhood has in both sales and labour support this as the focus neighbourhood. This neighbourhood as validated through comprehensive industry outreach is the recommended focus for economic development activities in the commercial and industrial sectors. The next section will lead towards high-level implementation of a plan to take advantage of, and grow this significant industry in the St. Lawrence Corridor Region.



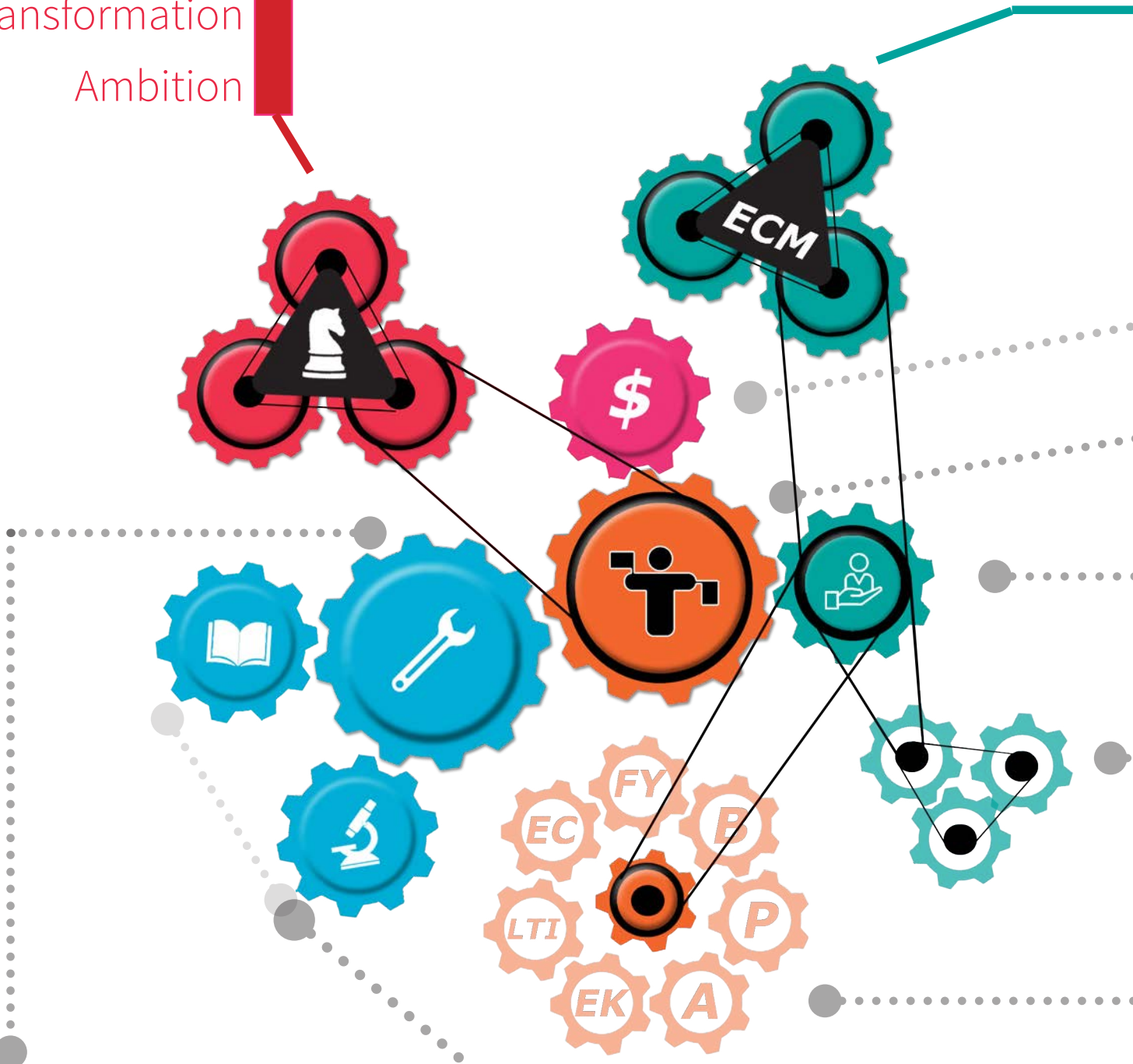
STRATEGY & TACTICAL IMPERATIVES

Strategy

Competitiveness

Transformation

Ambition



Industry Group

Provides a structure that will allow industry networking across various levels of industrial and manufacturing companies, provide a critical mass for lobbying and a forum to share ideas and best practices.

Legend

Tactic

Key Imperative

Focus & Growth

Demand Stream

Attraction Stream

Expansion Stream

Investment Fund

Sufficient capital to ensure efficient growth occurs. Ideally, funding would be accompanied by mentorship, to the companies being funded. Companies being funded should be within the recommended ECM neighbourhood.

Leadership

Provides strategic direction and governance that drives collaboration throughout the system.

Sales & Marketing

Required to execute against a tactical sales and marketing plan for the ECM neighbourhood. Support the Industry Group's Activities.

Economic Develop.

Support from regional economic developers, committees and staff. Strategic focus on supporting the Industry Group's activities leading to growth through the Expansion & Demand Stream.

SLCEDC

Provides resources against the Attraction Stream while assisting existing business to expand. Provides a regional voice to bolster influence with stakeholders.

Education / Training

The industry needs to lead program development, providing guidance on existing and future skills gaps. The organization needs to be planning for this growth along with planning for new companies to enter the region.

Research & Develop.

A decentralized approach, activities need to be focused on the industrial sectors of the economy, with the greatest impact and focusing on the ECM neighbourhood.



Moving Words & Theory to Action

The pending closure of Procter & Gamble provides the region with a demarcation point in its economic evolution. The past several decades have seen the diminishing of the branch plant economy with an increase in the number and size of locally owned companies. Research has shown an opportunity to focus developmental efforts and the region now has a responsibility to take action. This means being able to articulate a strategy, attach tactical solutions to the strategy then align measured and intended outcomes to strategic goals and milestones. Economic research of the region, complemented by outreach to understand best in class economic development activities has lead to the following high-level strategy with tactical opportunities for action. One will note that Sales, Marketing and Communication tactics are more detailed and prescriptive than the others. The resources and infrastructure for implementation are already in place through the collaborative efforts of the various Economic Development offices throughout the region. These existing resources provide a regional opportunity to engage this tactic quickly on scale.

Mission Statement

The St. Lawrence Corridor region will grow at a rate that outpaces GDP growth by focusing growth, attraction activities and investments in the Electrical Component Manufacturing Industry neighbourhood. Focus on this neighbourhood will spur growth across the region, increasing competitiveness and increase the number and quality of jobs.

Network Complexity

The potential for incremental growth in the St. Lawrence Corridor region is substantial when tasks and activities are focused on the target industry neighbourhood creating a culture of increasing the complexity of the economy. It needs to be reinforced this focus does not mean that any opportunity should not attract the economic development resources to explore. The complexity of the subject neighbourhood and network is great, meaning that any solution presented will not have a singular action or item that will move towards the goal of growth. These solutions are





multifaceted and interconnected. Often action plans are presented as a straight line through strategy, objectives and tactics. In the case of the St. Lawrence Corridor Region, the proposed solution is presented as an integrated model with the ultimate objective of building a more complex economy. As represented in the implementation framework, each tactical opportunity impacts the entire region. Although the graphical representation of gears and cogs appears simplistic, these are complex stakeholder relationships without reporting lines.

Strategic Alignment

Creating and pushing an economy to increase in complexity is not a simple task. There needs to be a strategic focus guiding decision making to ensure actions and activities are aligned to the community and organizational goals. There are three areas of strategic importance that should be used to guide tactical solutions and decision making:

- **Competitiveness**
- **Transformation**
- **Ambition**

Competitiveness

The concept of complexity and cluster economies means that building competitiveness is a more important goal compared to singularly focusing on jobs. The analysis has shown that there is a straight line correlation between industry sales and jobs, this correlation means that as the sales of the region increases in the focus industry, jobs will move with a similar growth pattern. Competitiveness means to be better than others, in a comparative nature, in all facets of the focused area of the regional economy.

Transformation

The focus industry of ECM has grown 204% over the past several years, an impressive result significantly outpacing aggregate regional growth. The opportunity for continued exponential growth remains, however external forces are required to stimulate this industrial neighbourhood. Transformation is the opportunity to diversify the companies within the target industry, assisting existing companies to grow through innovation and expansion. Transformation includes the attraction of high growth companies within the target neighbourhood and creating a competitive labour pool that can more easily move between these companies.

Ambition

In the absence of ambition, growth will stagnate. Ambition is the strong desire and determination to achieve success. Ambition, like transformation, extends to all of the inputs into industry growth. Labour needs to be provided with an understanding of how they contribute

Strategic Imperatives

Competitiveness

Tranformation

Ambition



to community and company success, and provided with the tools and resources to accomplish their goals. The high growth areas of the neighbourhood need to maintain or accelerate their rate of growth. The companies who lag neighbourhood growth need to be ambitious in their pursuit of growth. Other stakeholders such as the various levels of government need to be ambitious in their support of the neighbourhood. Ambition should be seen as aligned to innovation and growth.

Tactical Imperatives

To achieve the strategic imperatives and yet to established goals, there must be tactical solutions provided and executed against. The key tactics, in broad form, are:

- **Leadership**
- **Industry Group**
- **Education & Training**
- **Research & Development**
- **Investment Fund**

Leadership Model

While it seems an unusual starting point for objectives and tactics, the solutions provided are complex, spanning several stakeholders, requiring resources and collaboration among many players. An important step will be to determine who is tasked with leading and managing change. The difficulty of change management should not be underestimated as the tactics provided will cause the resources of the community to be stretched to achieve the growth potential.

The best models across the world are using a decentralized implementation and tactical structure, with centralized leadership, governance along with shared services. The leadership model will evolve from activities, a key component in the successful models examined was that they were all overweight on industry input and underweight, (approaching super-minority status) of political input.

Given the proposed areas of focus, involved stakeholders could potentially look similar to this matrix:

	Industry	Municipal Government	Provincial Government	Federal Government	Educational Institutions	Training Institutions	SLCEDC	Private Sector
Industry Group								
Education and Training								
Sales & Marketing								
Investment Fund								
Research & Development								



In researching models Certi Brazil is a successful example of a decentralized model of execution, with a centralized model of governance and shared services. This organization has a central body that provides strategic direction and alignment of activities. Operational activities and execution against the strategy is a delegated responsibility to the individual business units.

Guiding Principles

The role of leadership will be to work with all of the stakeholders, negotiating alignment to the strategic imperatives. The goal is to have an industry lead group who pushes operational decision making to the leaders closest to the decision and implementation. Government advice and council should be taken as a stakeholder, and the group should be lead by industry.

Timing

Full implementation of a leadership and governance model is not realistic during the start-up phase of this venture as it requires further consultation with the stakeholders. Given their regional reach and connection to industry, it is recommended that the St. Lawrence Corridor Economic Development Commission or a Task Force of that organization take on the initial responsibility to begin the implementation. The Task Force should have members from other stakeholder groups and be relatively small in size to allow for faster decision making and implementation.

Leadership First Stage

A Regional Body to form a Task Force To Drive Initiatives

Industry Group

Any industry group will require outside political and administrative support to become established. The end result must be an Industry lead group focused on industry opportunities and solutions. It is recommended that this is accomplished by industry only membership with support by request.

The mission of the industry group will be to create a structure providing for industry networking across various levels of industrial and manufacturing companies, provide a critical mass for lobbying and a forum to share ideas and best practices. This group will be required to provide input into other areas of development, with a specific focus on Education & Training.

The first step will be to create a low barrier industry event allowing companies to meet each other and profile their specific capabilities. The goal will be simply to bring the regional manufacturing and industrial companies together. Interest in creating a broader



group with a larger impact can be judged as a result of this event. While this paper recommends a focus on the Electrical Component Manufacturing industry, other companies and industries should not be excluded.

From this industry event, an advisory group can be developed and an industry liaison between the yet to be built Education & Training tactic as the next step in the development of the ECM neighbourhood. Industry has specific training and development needs for immediate opportunities, these should be the first area of focus for any group.

Education & Training

Research has found that there remains a need for employment and pre-employment training specific to the advanced manufacturing environment. There are several advantages to be gained through training that would be generic to the ECM neighbourhoods:

- **Industry gains efficiencies through reducing the learning curve.**
- **Employees gain the ability to more easily move between industries and companies.**
- **Wage rates will increase as a result of more skilled employees, increased competition for top talent;**
- **Industry will expand as a result of filling current labour shortages.**

Research also found that there are significant industry employers whose employees would statistically have difficulty moving successfully to the focus neighbourhood. Through industry and stakeholder interviews this was validated and an employment and skills gap noted that is impacting the success of growing the focus industry.

In the short, to medium term, there is potential for a relatively large number of skilled employees entering the job market as a result of the pending closure of Procter & Gamble. The most efficient way to fill this skills gap is through industry and role specific training. These skills and abilities needs to be articulated by industry leaders. Through interviews, industry stakeholders in the St. Lawrence Corridor region currently have highlighted a demonstrated need for trained talent in:

- **Welding**
- **Machine Operators**
- **Machinists**

Outside of the ECM neighbourhood, there will also be a short to medium term need for Chemical Operators as evidenced by the number of retirements forecast to occur in several employers within this industry. The industry has indicated that historically St. Lawrence College has played a role in training and development, there has not been a corresponding college course for several years. The industry, along with the specific companies, do not currently have direction on where the replacement workers will come from.

The demonstrated need has been validated through industry interviews and is based on two recurring themes. The first is the growth and expansion of the ECM neighbourhoods over the past several years, along with forecast expansions. This neighbourhood has seen 204% growth in sales over the past 6 years with many companies having further expansion plans underway. This activity forecasts a requirement of 50-70 jobs by the end of 2019, anecdotally this is in excess of the available trained workforce.





There is a requirement for short and long-term planning as there are several tranches of industry expansion that need to be filled. Industry has expressed short-term concerns with staffing required positions. There is an immediate need to fill labour gaps as there appears to be pent up demand for talent that is holding back incremental growth in many companies. When this is coupled with the expansion plans of several companies, the opportunity for good employment in the region approaches 200 vacancies into fiscal 2020. Education and Training is seen by industry as the cornerstone of building a competitive workforce.

Best In Class

The Region of Quinte has done a admirable job in matching employer needs to deliver training programs. The partnership between the Quinte Economic Development Commission and Loyalist College training program is a good example of how the resources to deliver high-quality targeted training results in an employee with a greater probability of a high-quality position. The economic impact is magnified with the employer gaining a trained or partially trained employee, reducing on the job learning curve and reducing training costs. One notable example in the Quinte Region was the pilot program they ran, called Elevate Plus. This program took at-risk individuals and provided them with basic training for working in a manufacturing facility. The program realized a 100% success rate in placing graduates in jobs related to their training.

Guiding Principles

To be successful, the industry needs to lead program development, providing guidance on existing and future skills gaps. Industry, specifically with locally owned companies, is looking ahead 5 years in growth and has an understanding of the potential number of roles they will have available. From a longer-term perspective, the organization needs to be planning for this growth along with planning for new companies to enter the region. Partnerships with organizations, companies and individuals to deliver content will be essential during the start-up phase as this organization's core competency will be industry liaison, not content development.

Organizational Structure

This organization needs to be industry leaders, supported by best in class program developers. The formation of a Not-For-Profit or For-Profit agency that will focus on aggregation of programs for industry priorities and allow contracting for best in class service providers to deliver programming and training. Membership in the organization will consist of those

The Elevate Plus Program

Provides free training and support for workers to enter local manufacturing and food processing jobs. Four weeks of classroom training are followed by a two week job trial. The trial period gives both employer and employee a chance to see if it is a good fit, eliminating the major expenditure, of finances and time, typically spent on the hiring process.



companies or industry leaders who are willing to provide the seed capital to form the organization. This organization would not initially be a school, training, vocational or educational centre The organization will take on the role of aggregating potential employees, understanding industry training requirements and procuring educational services from outside vendors similar to the role of a buying group.

The organization would partner with key content and programmer suppliers such as CSE, EEC, St. Lawrence College, Algonquin College etc. to provide training and education to the prospective employees.

The need for a permanent physical location should be assessed over time as much of the programming can be delivered in situ at Member and partner locations. Prior experience has shown that training individuals to work in a manufacturing environment requires that a component of the training occurs in a manufacturing environment. The St. Lawrence Region is fortunate to have several industry leaders who are willing to present some guidance to students, along with best in class industry employees who can assist with program delivery as appropriate. The combination of onsite training and positive interaction with industry employees will ensure every student gets adequate time with industry and shorten the learning curve between industries.

The industry will see a key success factor of this program to be an increase in the efficiency of the workforce. There are several key performance indicators that, such as reduced waste in production, the number of vacancies reduced and the percentage of graduates placed that can be used to measure the success of the programs. Ultimately stakeholders need to be able to realize an adequate return on program costs through measurable improvements for the employer.

Once the initial need and employment demand has been addressed, programs can be expanded to assist both workers desiring to enter the industry job market and those looking to increase their skills.

Potential Educational Institution Capital Structure

A corporation can be formed to authorize shares for sale to potential investors at an amount of $5,000.00 per share with the goal of raising the first $100,000 to start the organization.

Investment Fund

A key component of company growth and innovation is the availability of sufficient capital to fund capital efficient growth. Ideally, funding would be accompanied by mentorship, leadership and guidance to the companies being funded. As companies being funded should be within the recommended ECM neighbourhoods, there should be sufficient tacit knowledge in the region to assist in filling knowledge and development gaps.





Decision-Making Structure

While there is a desire to improve the speed of decision making, there are some decision making layers that should be put in place to ensure prudent investments are being made. It is recommended that there are two layers:

1. Recommendation

The organization will require an ability to contract expert analysis as required. This group would be tasked with sourcing deals through community stakeholder partnerships and then underwriting for presentation to the investment committee.

2. Investment Committee

The final step in approval would be through an investment committee comprised of a diverse group of skills and experiences. This committee would receive recommendations from staff and contractors to complete the final adjudication on potential investments.

Investment criteria

The fund should ultimately have a diversified and balanced portfolio across the business cycle from start-up to mature expanding companies. Investments should be focused on the ECM neighbourhood and those companies who have demonstrated, either through historical results or plans that they have the potential for impactful growth. This fund would invest in closely held Canadian companies with the intent of a financial exit within a ten to twelve year investment horizon. The investments, where possible and appropriate, should be partnered with intellectual capital through either industry or business experience.

This fund will not be designed to be competitive with existing financing options, it is designed to be complementary and additive to other financing options such as the Community Futures programs, Business Development Bank and traditional financing solutions. The strategic intent of this fund is to provide patient capital to companies in the form of common shares, preferred shares and convertible debentures. The intent is to assist in building balance sheets that will allow participation from traditional and non-traditional financing opportunities as appropriate to the business stage and financial condition of the company.

Initial Capital Required

$10 Million

PUBLIC | PRIVATE

This model was influenced by the success of Bio-Industrial Innovation Canada (“BIC”) in Sarnia who have built a fund that is impacting the bio-economy across Canada. Along with BIC, Enterprise Ireland has a good system for funding High Potential Startups and SME existing companies for various stages and funding requirements.
It is expected this fund can be financed through a proportionate share of private and government investment. It is not expected that municipal funding would be required for this recommendation.



Research & Development

To increase the complexity of an economy, innovative products, solutions and processes must be developed. As the movement of employees across industry groups increases, the identification of innovative opportunities will occur. Employees will be taking their knowledge and knowhow to new industries and finding better ways to produce and new products to develop. This type of innovation requires the support of a Research and Development network.

There remains the opportunity to attract innovative companies and people through a culture of Research and Development and Innovation. The Research has shown that physical innovation centres often present a financial burden on smaller population centres such as the St. Lawrence Corridor Region. A physical location with sufficient space to scale growth has been shown to be a financial distraction, often diverting both funds and attention away from innovation. The Province of Ontario has already established a physical network of innovation centres (Regional Innovation Centres), with both Ottawa and Kingston having centres, therefore the region does not need to establish an innovation centre.

Research & Development activities should be focused on the industrial and manufacturing sectors of the economy, with the greatest impact on the local economy, focused on the ECM neighbourhood. As with the investment fund, R&D should be spread across the business cycle. Initial momentum seen during the beginning of many innovation cultures stalls due to the attraction of several start-up or pre-commercialization companies with no balance across the business cycle. There is the opportunity to leverage the opportunities expected from the Investment fund to attract and grow companies across the business cycle.

It will be important that R&D has a strong linkage with post-secondary institutions at both the community college and university level. These partnerships will accelerate ideation and also provide an influx of talent at the student and graduate level to leverage outside academic knowledge.

Innovation is occurring now, however it is siloed inside of existing companies. There is the opportunity to encourage spin-off companies and new companies to relocate to the region.

This needs to be an industry lead culture and can start through liaison with the Education and Training tactics and overseen by the leadership group.



A Foreward Thinking Case Study

Procter & Gamble
Innovation | Research & Development

Introduction

The status of P&G with the pending 2020 closure provides an interesting opportunity for developing the neighbourhood and other economies in Eastern Ontario. The Brockville P&G plant is one of the highest performing plants in the P&G plant family and this is largely due to the high quality of employee who works there. These employees have a demonstrated and proven ability to create a lean manufacturing environment, exhibit leadership and ownership at all levels of the organization and produce best in class products. The research shows that for an employee to move from P&G directly to the target neighbourhood requires training and education. The timelines involved, the partnerships already established, P&G's commitment to a successful transition and the requirement of skilled employees in the target neighbourhood, along with other industries in the St. Lawrence Corridor are perfect for creating a synergistic response to P&G's pending closure.

To demonstrate the opportunity the following hypothetical case study has been produced.

P&G is filled with talented people who each possess tacit knowledge along with skills and abilities. There is a group of employees who have experience in making the substrate for fabric softener sheets.

Group of Five

Over the past several years a core group of 5 employees have successfully increased the productivity of the line by making changes to the composition of the fabric and adapting the production line to run faster. The employees who became friends while solving problems were discussing their individual and possibly collective futures after the plant closed. They each explored all of the options with each other, move to Belleville, move to the US, find work in Brockville, retire early and find a hobby. The one thought they did not jump to was forming a start-up company. They felt that they had specialized knowledge that might allow them to build a small plant that would supply the same type of substrate, they just needed a company to work for and do it. They collectively have the knowledge to design the operating line and build the product, however, they do not have a location or the capital and none of them have ever owned a business.

In speaking with their HR partner, they decided to meet with two groups to discuss their idea. The first was the Industrial Group, an organization of industry leaders who work to organize the local businesses for training, growth and expansion opportunities. In discussion with the industry group, it was recommended that attempting to expand into the fabric softener manufacturing would be difficult as Eastern Ontario only had P&G as a producer. It was

recommended that they explore alternate areas to use their expertise. They were recommended to discuss with the head of Innovation at St. Lawrence College to see if there was a program available to support work on adapting their knowledge to alternate uses that would fit into the existing market.

In discussion with the centre for innovation that given the region's focus on electrical component manufacturing along with the composition of the substrate, there might be an opportunity to adapt the process to the manufacturing of other products. This required the development and writing of a business plan outlining the commercial opportunities and understanding the amount of capital required to move the process from idea to the bench, then commercialization. Through the development process, the group was supported by P&G and the network established by P&G to support employees moving to new opportunities.

The group established that the process would take 24 months to move from idea to commercialization with expenses and capital expenditures far past what the group was able to support. The penultimate stop on their journey to self-employment was with the recently formed Investment Fund. They met with staff analysts to help them better understand the opportunity and costs. Through a couple of months working together, it was decided that there was the potential for success with the idea and a presentation for the investment committee was built and presented. The investment committee after deliberation supported the request and made a decision to support the project with an equity investment, coupled with a low-interest loan from the Community Futures Development Fund.

The combination of input from the innovation centre and financial support from the regional investment group got the group of five out of P&G and quickly on to the bench with an idea and within 16 months were building the first test line.

Sales & Marketing Plan

The sales and marketing plan has been developed from observations, data collection and analysis conducted throughout the research stages. Data collection and analysis was complemented with local market knowledge of the existing economic development sales resources and their success in attracting, growing and retaining companies to the region. The key factors in developing this plan are:

1. The ECM Neighborhood offers both immediate and long term economic growth potential;
2. Employment mobility exists within ECM Neighbourhood;
3. Sales and employment growth momentum within the aggregated ECM Group and;
4. Opportunity to attract new companies and industries within the neighbourhood both within Canada and as the attraction of Foreign Direct Investment.

Given the current strength of the ECM neighbourhood and the opportunities presented, the sales and marketing plan will be measured by short, medium and long-term goals. The ECM Growth Plan provides both strategic directions against the target neighbourhood and tactical components that are actionable, leveraging the existing resources expanding the economic reach of the region.

Prior to 2017, the St. Lawrence Corridor Region had four centres of formalized economic development:

Brockville,
Prescott,
United Counties of Leeds & Grenville ,
Leeds and Thousand Islands

In the summer of 2017, the regional economic sales and attraction efforts were strengthened by the launch of the St. Lawrence Corridor Economic Development Commission ("SLCEDC"). The SLCEDC has a mandate to focus on the attraction of new industrial and commercial employers to the region, increasing the number of net new jobs within its boundaries. This commission has been designed to broaden, augment and support the industrial economy currently found in the region. These combined sales and marketing resources can be leveraged for the start-up phase of sales as outlined in this report.

This plan will require the resources of economic development staff throughout the various municipalities and cities to have some strategic effort and direction through a focus on the ECM neighbourhood. It should be noted that these efforts may be incremental to the existing successful work these organizations have realized. The Region currently has many of the resources required to execute against a tactical sales and marketing plan to grow the ECM neighbourhood. Implemented fully, this will stretch the available resources of the region. The various regional economic development offices (Brockville, Prescott, Leeds and the Thousand Islands, County and the SLCEDC) have been successful in attracting and assisting the growth of the business community and these efforts should not be reduced. These resources can be collaborated between to execute the recommended tactics. The pathway



continues to work towards building an ECM economy with greater complexity and increasing competitiveness leading to additional and higher quality jobs.

To balance growing the existing companies within the ECM neighbourhood and to pursue the attraction of additional companies, three streams of growth should be pursued. The objective of the activities must align with the strategic intent of creating a competitive economy, transforming the economy and creating ambition. For the purpose of building a sales and marketing plan, the potential for quality jobs will be used as a measure of success, while still ensuring alignment to the proposed strategy. There are three distinct streams of opportunity that should be focused on from a sales and sales management perspective.

The first is the **Demand Stream**, an opportunity to provide an active solution to the current demand for talent in the ECM neighbourhood. Industrial leaders have indicated they are not able to hire and retain a sufficient number of skilled workers, this is compounded by a forecast short-term increase in employee demand due to retirements. There is an immediate need to create a workforce with sufficient skill to bring industry staffing to a stable level. Through stakeholder conversations it has been identified that industry forecasts over 125 manufacturing roles to require additional employees over the next 12 - 18 months. These roles range from engineers, operators, tradespeople, and labour. All roles should be considered as career building and not entry level positions. This was further verified through discussions with employment and education stakeholders in the region. The impact of this pent up demand for labour is that several regional companies are operating below capacity with no near term solution obvious to them.

The second stream is **Regional Growth** to accelerate the growth of the ECM neighbourhood existing companies. The neighbourhood has realized sales growth of 204% over the past several years, this number has the potential to increase as a result of focused and targeted efforts. This stream focuses on those companies identified to be within the ECM neighbourhood who are active commercial enterprises within our region and possess the opportunity for growth. Typically viewed as expansion, this opportunity is forecast to create 962 incremental jobs in the next five years. This calculation used a forecast of 4.4% growth rate (estimate based on fiscal years since 2008 recession) It is recommended that development and sales efforts are focused on the ECM neighbourhood. Initial efforts in this stream should be spent in understanding the various barriers to exponential success in the

Marketing Streams

Employee Demand
Regional Growth
Industry Attraction



ECM neighbourhood. It is understood and expected that industries and companies that are not connected through employee relatedness will be impacted positively due to supplier - vendor relationships.

The third is an **Attraction** Stream, focusing on industries and companies not currently located in the St. Lawrence Corridor region to locate in the region. These attraction efforts remain aligned with the ECM neighbourhood. The region possesses and will increase its strategic advantage to companies who align with the ECM neighbourhood. Based on the prioritization scorecard, sales efforts should be focused on companies who have a greater potential for regional impact. The industry groupings will allow the economic development offices to choose the appropriate industry to target and then research for those companies who best fit the opportunity. This opportunity is forecast to result in the growth of 250 jobs over five years. Similar to the Regional stream, it is reasonable to expect that industries and companies that are not connected through employee relatedness will be impacted positively due to supplier - vendor relationships.





Prioritization & Growth Potential

Based on the last half-decade of growth in the ECM network, if the current growth is maintained it can be expected that a modest 300 jobs will be added with a net wage benefit to the economy of $632 million dollars, over 5 years. It is noted that it will be difficult for the ECM neighbourhood to maintain these growth levels if the current staffing shortfalls continue. With the recommended focused activities and execution against a sales and marketing plan, the five-year goal is to add over 1,200 jobs while providing an added value of $147 million in wages over 5 year.

Economic Benefit from Directive (5 Year Plan)

	2018	2019	2020	2021	2022	2023	2018-2023 (+/-)
Job Growth with the ECM							
Eastern Ontario Employment Growth Rate (2.7% 2018, Ontario Emp. Report)	2,300	2,362	2,426	2,491	2,558	2,627	327
ECM Economic Directive	2,300	2,587	2,832	3,061	3,313	3,589	1,289
Economic Benefit ($50,713* per Job)							**Total**
Eastern Ontario Employment ($Millions)		$120	$123	$126	$129	$133	$632
ECM Economic Directive ($Millions)		$131	$144	$155	$168	$182	$780
Yealy ECM Benefit ($Millions)		$11	$21	$29	$38	$49	$147

*2017 Average Wage within the ECM



Economic Directive Rationale

Drive growth, increase competitiveness and ultimately increase the number and quality of jobs across the region by focusing on manufacturing growth, attractions and investments activities in the ECM Industry neighbourhood.

5 Year Employment Goal | Pathway to 1,200 Jobs with an Economic Incremental Impact of $147Million

		2018	2019	2020	2021	2022	2023	(+/-)
Projected Ongoing Employment		2,300	2,587	2,832	3,061	3,313	3,589	1,289
INSIDE of the ECM Neighbourhood								
Stream 1	Demand		80	30				110
Stream 2	Expansion		101	114	124	133	142	614
Stream 3	Attraction		40	40	40	40	40	200
	Ongoing Expansion		0	10	20	30	40	100
	Total		**221**	**194**	**184**	**203**	**222**	**1,024**
OUTSIDE of the ECM Neighbourhood								
Stream 1	Demand		30	10				40
Stream 2	Expansion		25	29	31	33	36	154
Stream 3	Attraction		10	10	10	10	10	50
	Ongoing Expansion		0	2	4	6	8	20
	Total		**65**	**51**	**45**	**49**	**54**	**264**
Combined Jobs								
Stream 1	Demand		110	40	0	0	0	150
Stream 2	Expansion		127	143	155	166	178	768
Stream 3	Attraction		50	50	50	50	50	250
	Attraction Expansion		0	12	24	36	48	120
	Total		**287**	**245**	**229**	**252**	**276**	**1,288**

The Scorecard

The following Scorecard is a summary of the data from across the region's industrial landscape. For the industry groupings in the St. Lawrence Corridor region, this will allow the prioritization of where efforts would be best focused to accelerate existing company growth. For industries where there is currently not a presence in the region, the chart and data can be used to better understand where attraction activities can be focused. Ranking of "A" is favourable, "B" is acceptable and "C" is weak.

ECM Scorecard

NAICS	Sales $	Sales Growth	Sales RCA	Jobs	Jobs Growth	Jobs RCA	Sophistication	Spatial Index	Relatedness
3359	B	A	A	B	A	A	B	C	A
3391	B	A	A	B	A	A	B	C	C
3332	B	A	B	B	A	B	C	C	A
3345	B	A	B	B	A	B	B	C	A
3259	B	C	B	B	A	B	B	C	A
3353	B	C	C	C	C	B	A	C	A
3342	B	A	C	C	C	B	A	B	B
3254	B	B	B	B	A	B	B	B	B
3314	B	A	C	C	C	C	B	B	C
3255	Not represented within our region. No Data is available						B	C	A
3321							B	C	A
3326							B	B	A
3333							B	C	A
3351							B	B	A
3322							B	B	B
3344							B	C	B

NAICS	NAICS Name	NAICS	NAICS Name
3359	Other Electrical Equipment and Component Manufacturing	**3351**	Electric Lighting Equipment Manufacturing
3332	Industrial Machinery Manufacturing	**3344**	Semiconductor and Other Electronic Component Manufacturing
3259	Other Chemical Product and Preparation Manufacturing	**3333**	Commercial and Service Industry Machinery Manufacturing
3314	Non Ferrous Metal (except Aluminum) Production and Processing	**3326**	Spring and Wire Product Manufacturing
3254	Pharmaceutical and Medicine Manufacturing	**3321**	Forging and Stamping
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	**3322**	Cutlery and Handtool Manufacturing
3391	Medical Equipment and Supplies Manufacturing	**3255**	Paint, Coating, and Adhesive Manufacturing
3342	Communications Equipment Manufacturing		
3353	Electric Lighting Equipment Manufacturing		

Employee Attraction Demand Stream

The data collected does not allow an understanding if adding skills and motivation would be sufficient for the under-skilled and under-utilized labour in the region to satisfy pent up labour demands. It is known that the number of job vacancies is currently causing industry difficulties in production capacity with the growth of many companies being negatively impacted. It is often stated that automation will eliminate jobs, in the local market there was no evidence that automation is eliminating jobs. It was noted that the potential for automation will not satisfy current demands for labour. Where implemented, automation has increased plant capacity requiring the same number of employees or additional staff. The following recommendations are based on the assumption that there is labour in the market who can be trained and mobilized into vacancies. It is also recognized that this labour pool is not sufficient to satisfy existing and future requirements. The importance of the formation of an Industry Group and their guidance on skill building and their forecast of labour demand should be noted here. Industry skill requirements and potentially the number of positions available needs to be cataloged prior to any sustained community outreach. From this aggregation of skills requirements industry, through the proposed Training & Education tactical imperative, will provide the assets and opportunities to better align skills with requirements for target employees in this area of the market.

Estimated Labour Shortage

50 - 100 jobs

To accomplish the goal of satisfying labour requirements for the target ECM neighbourhood there are three key areas that must be focused on; Local Labour, Canadian Labour and Immigration.

Although it is often seen as an obligation of individual employers to recruit employees the St. Lawrence Corridor region is not alone in the need for regional recruitment and training support. Labour shortages are now seen as an issue in the Canadian economy and it will be over a decade before the demographics combined with industrial change solve this systemic shortage. The St. Lawrence Corridor region needs to be seen as a competitive force for attraction and growth of talent for the ECM neighbourhood. Embedded in the sales process, there are three key areas of opportunity that need to be acted on quickly.

The first step should be to attract existing residents to opportunities in the focus ECM neighbourhood. The region has people in the community who are either unemployed

Labour Attraction

Local Labour
Canadian Labour
Immigration



or underemployed. Eastern Ontario has one of the lowest labour participation rates in Canada and impacting the participation rate should be a key performance indicator for the region. Profiling the existing and potential employment opportunities should be the first step in working to change the employment landscape. A campaign to help the community understand the value of these roles, the contribution to the company and the potential for growth will be the first step in changing the regional labour environment. A strategic campaign needs to attract potential employees to generic roles in advanced manufacturing in the region. Targeted role or company specific decisions can be made once initial training and/or consultations are held.

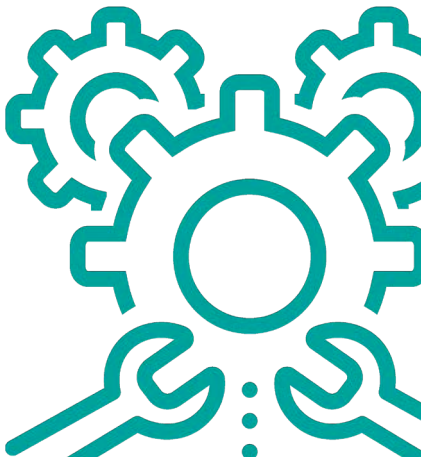
With the combined industry growth rate and worker retirements, it is unlikely that any recruitment strategy specific to the St. Lawrence Corridor region would attract and train a sufficient number of employees to fill the pent up and growing demand for labour. Attracting potential employees to the region will be required to fill these growing gaps. An attraction campaign operated regionally will have the advantage of profiling the ECM industry employment opportunity on a regional level. Potential employees will have the confidence in the long-term potential of the industry and community support behind its growth. A regional approach to employee attraction also provides synergies across businesses who are recruiting for similar skill sets.

In addition to attracting workers from other areas of Canada, there remains the opportunity to attract from outside of Canada. An attraction strategy that focuses on newcomers to Canada could provide the top-up to labour that is forecast.

This does not mean solely focusing on labour. The attraction of foreign direct investment through entrepreneurs making the strategic decision to locate their company in Canada is a good strategic option to both increases the number of workers and move tacit knowledge to the region. As with the other recommendations, these efforts should be focused on employees and entrepreneurs with linkages to the ECM neighbourhood. In the case of employees, the aforementioned education and training program provides additional incentive for top talent to consider moving to the region.

The initial work on foreign worker attraction should be focused on roles identified by industry as under-serviced, some examples from the project outreach are:

- **Welder**
- **Machinists**
- **Chemical operators**
- **Machine operators**
- **Engineers**







“The invisible lines between the municipalities really mean nothing to **businesses**...”

Director,
St. Lawrence Corridor
Economic Development
Commission

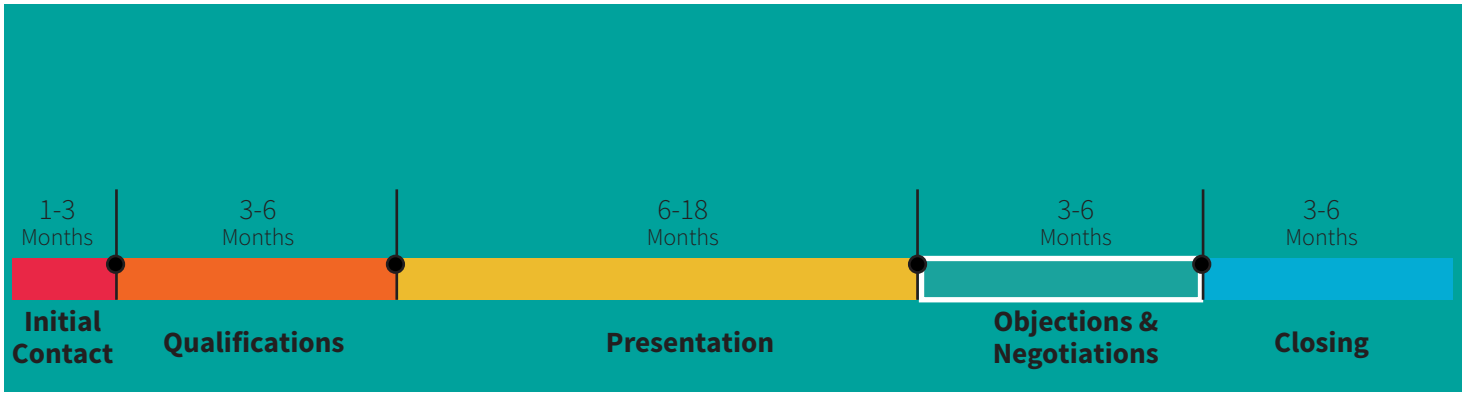
Sales Attraction

An Operational Approach



Potential Timeline

Initial Contact to Close



Attraction Stream

The attraction of additional companies in the ECM neighbourhood to the St. Lawrence Corridor Region requires a structured sales and sales management program. A properly structured sales funnel will align the current and future strengths of the ECM neighbourhood with the opportunities the market presents. This structured approach also allows for focus on high value target companies and sectors as defined in the ECM scorecard. The sales funnel provides the structure necessary to focus on a defined group, organize and qualify leads, and ultimately drive success. Performance measures can be applied throughout this sales process.

Although there are many variations and customizations on the sales funnel methodology, the following represents the five distinct stages that build a structured sales approach for economic development sales.

Initial Contact Stage 1 - 3 Months

This stage represents the opportunities present through an analysis of the industry group across North America providing top end leads for the sales funnel. The following list identifies areas of broad opportunity within the industry groups. Research yields 11,645 companies who are present and active within the United States and are considered as leads for attraction at the high end of any sales attraction activity.

To further refine the search, industry groups showing strong innovation with entries early in the product life cycle will

NAICS Industry Code	Description	US Company Universe	Total Companies
335910	Battery Manufacturing	622	11,645
334512	Medical Equipment Manufacturing (334510 - US)	178	
3255	Paint, Coating, and Adhesive Manufacturing	877	
3321	Forging and Stamping	1,665	
3326	Spring and Wire Product Manufacturing	691	
3333	Commercial and Service Industry Machinery Manufacturing	1,730	
3351	Electric Lighting Equipment Manufacturing	664	
3322	Cutlery and Handtool Manufacturing	509	
3344	Semiconductor and Other Electronic Component Manufacturing	4,709	



Qualification Stage
Case Study

Forward Thinking
Qualifying 33590 - Battery Manufacturing

To create an initial list of prospects in the target industry of the industrial market, a first cut provides 11,000 American businesses within the industry NAICS classification. It is known that many companies are relying more on portable electrical storage devices to power products and therefore there is the potential to find innovative high growth companies in the more finite industry of Battery Manufacturing. This further targeting provides a North American list of 622 companies within the same geography.

Additional research reveals there are two main types of batteries manufactured; primary and secondary (rechargeable) batteries. The primary batteries such as alkaline zinc and lithium batteries, are decreasing in popularity as consumers become more environmentally conscious, and this trend is exacerbated by the tendency of new technology to rely solely on secondary battery sources. Secondary batteries include automobile batteries, batteries in mobile devices, etc. The environmental impact of multiple use batteries is also contributing to their rising in popularity.

Significant innovation is occurring around secondary battery applications, material, and technology. Several Universities within the United States have significant innovative Research and Development within this sector.

As an example of how the St. Lawrence Corridor can further refine the sales attraction targeting to individual companies, Voltronix - Korver Corp. has risen as a possible target company due to the aforementioned research.

Voltronix – Korver Corp, represents a company focused on innovative solutions for niche markets like mobile military bases, the cannabis sector, and cryptocurrency mining. Based on the available information, this company represents an innovative, forward-thinking company that would integrate well into the ECM neighbourhood in the Region, introduce new skills and revenue into the community, and would benefit from the network of industries, workforce, and infrastructure available in the region.

Korver Corp recently expanded their reach and product scope through the acquisition of Voltronix USA. Voltronix has a similar focus on green energy with products such as Lithium-ion batteries

Battery management systems that monitor batteries and report errors to prevent damage and offsetting the risk of battery use in harsh conditions,

Energy storage systems for large scale power consumers. The acquisition of Voltronix will open doors into new product lines, expose ground-breaking research on electric vehicle battery technology.

Voltronix's energy storage technologies are recognized globally, and in high demand from manufacturers, cryptocurrency miners, and the cannabis sector. According to the new CEO of Korver Corp, the company recognizes the impact that this advanced technology will have in these sectors and they plan to continue to capitalize on the market position and connections previously established by Voltronix.

The cannabis sector represents a point of leverage for the region. This sector is demonstrating unprecedented growth in Canada due to the recent changes in legislation. As one of the two countries to legalize recreational and medical marijuana, Canada has an opportunity to become a leader in the cannabis industry. Ontario is currently leading the change, with the largest cannabis product supplier in Canada, Canopy Growth Corp, situated in Smith Falls. This represents a major opportunity for Korver corp, as they are now in a position to supply large scale energy storage to the companies in the cannabis sector.

The messaging for the attraction of Voltronix – Korver Corp., or companies that share its characteristics are influential.

The St. Lawrence Corridor is strategically positioned geographically to allow fast, direct access and partner-like integration into several emerging, growth markets;

- Cannabis
- Canadian / US Military, mobile command
- A skilled workforce, supported by continuous education and training is available.

Resulting in the 2020 P&G closure, there is the potential to attract skilled labour have:

- Received world-class training in Quality Control, Lean Manufacturing & Safety
- Been exposed to advanced manufacturing
- Advanced technical/operator skills.

- World class manufacturing facilities are readily available with little to no additional capital costs.
- Access to investment capital and potential Government support.
- Both Manufacturing and government associations are ready to provide support for relocation activities.
- Significant innovation is being developed within high capacity energy storage, at the MaRS Institute in Toronto Ontario.

be the primary targets. The following list of industries is diverse in order to increase the diversity of information and business intelligence introduced to the region This also mitigates regional exposure to any one specific industry due to over-concentration within one grouping while still maintaining the industry relatedness. The chart speaks to the rationale for industry target choices and innovative opportunities within each industry target. By refining the selection criteria as described above, the target list is reduced to 1,582 companies.

This stage of the sales process can be supported through a digital outreach framework. Digital campaigns are cost-effective, highly efficient and provide the necessary information and outcomes for progression to the Qualification and

NAICS Grouping Examples with Strong Innovation and Growth

NAICS Coding	Rationale	Innovation	Target Total
Battery Manufacturing, (335910)	Although 3359 is well represented with the ECM, the subcategory of 335910 has no entry. This provides an opportunity to attract an innovative, early adopter into the neighbourhood. Additionally, this fortifies the requirement for a skilled workforce.	Emerging and advancing secondary markets. New product applications increasing constant advancement in performance	622 Leads siccode.com, 2018 (US)
LED Manufacturing (334410)	3344 is a broad NAICS grouping, that is not currently represented in the ECM. 334410 (LED manufacturing) represents an opportunity to diversify within neighbourhood while advancing the need for a skilled workforce.	The constant drive for global energy reduction. An increasing need for smart-lighting. An increasing need for custom light applications.	788 Leads IBIS World Report, 2018 (US)
Medical Device Manufacturing (334512)	3345 is represented within 3359N and boasts strong statistics including connectivity and comparative advantage. Industry 334512 (medical device manufacturing), within 3345, represents an opportunity.	An aging population is creating a constant demand for innovation within healthcare. Innovation needed to support the management of increasing patient load. Constant advancement of quality of care.	172 Leads siccode.com, 2018 US)
Total Leads			**1,582 (US)**



Presentation stages. The overarching strategy is to use business-to-business marketing techniques that drive interest and engagement. The goal is to move potential companies into the Qualification stage or out of the pipeline as unqualified prospects.

Qualification Stage 3-6 Months

This stage begins to refine the prospect list to those that more specifically fit the sales criteria established. During this phase economic development sales teams should perform additional research to refine the outreach messaging and targets and qualify companies for more formal communications, pitches and presentations. This qualification is largely absent of direct prospect contact as it is intended in developing a more focused calling list. A list of qualifying questions and criteria has been developed for the initial phases of a calling program. These questions have been highlighted in the graphic on the next page.

Presentation Stage 6 - 18 Months

As the leads move through Contact and Qualification Stages, in the Presentation Stage, the communication becomes increasingly focused and one-to-one. The goals are to understand the pressure points of the client and balance them against the benefits of the region.

This stage represents a natural hand-off to senior economic staff as the relationship grows and needs become increasingly complex.

Virtual communication, tours, and meeting would be highly cost-effective and efficient for both the Corridor and the client however the value of in-person meetings cannot be underestimated..

Objections and Negotiations Stage 3 - 6 Months

Well executed sales tactics will uncover gaps between the desired outcome and the opportunities present in the St. Lawrence Corridor Region in this stage. This is also the stage where more detailed communications on what the opportunity in the region looks like, to both increase the confidence in relocation and ensure both parties understand the communication. At this stage, the sales professional's goal is to continue moving the prospect forward to a soft close. This is also the stage where working beyond digital communication is essential and therefore the costs increase. The economic staff should prepare to visit the client and negotiate face-to-face, along with more extensive hosting and stakeholder meetings within the region.

The senior economic staff will coordinate details required for the relocation like:

- Facility and physical space detail
- Permitting and compliance
- Investment or funding applications
- Coordination with employment agencies
- Coordinate and legal issues/concerns
- Coordination with education and training agencies
- Coordinate with governmental agencies
- Coordinate with additional stakeholders



Qualification Stage Questions

Company Research



Tactic: Education and Training

- What is the number of staff required and at what skill level?
- What is the linkage within the ECM workforce in order to immediately leverage knowledge and employment mobility?
- Is there an opportunity to leverage existing regional training programs?

Tactic: Investment Requirements

- Is there an immediate need for capital?
- What is the ownership of the company?
- At what stage of commercialization is the business?
- Have they been listed on any “Top” lists, such as the “100 Top Innovators” within the United States?
- What have their capital requirements been in the past?

Tactic: Manufacturing Group

- Where is their current manufacturing located?
- Is there a potential of mentorship?
- Is there a natural benefit to leveraging an industrial group?

Tactic: Research and Development

- Does the company make any specific claims on investment within R&D?
- Where is their core Research and Development performed?
- Is innovation easily identified within their material?
- What is the company’s product mix?
- What is the complexity of their current product mix?

Filter: Geographic Advantages

- Is there a geographic advantage to locate in Ontario / Eastern Ontario?
- Is there a value chain advantage within Eastern Ontario?
- Is there a chemical facility requirement?
- Is there a requirement for access to the 401 Hwy, rail access?
- Is there a requirement to utilize a shipping port?

Filter: Government Funding / Investment Support

- Are there any Provincial / Federal jobs grants, like the Ontario Jobs and Prosperity Fund, which could advance the process.

Closing Stage
3 - 6 Months

This stage is focused on obtaining a commitment from the prospect. It is expected that many items are outside of the control of the sales professional, such as a purchase and sale agreement or zoning changes. The economic developer ultimately coordinates and oversees the completion of documents, tasks, and contract signings while continuing to overcome objections and provide access to any additional opportunities such as employee recruitment and training.

Expansion Stream

This stream supports the growth of the manufacturers that already exist within the neighbourhood. Typically this is referred to as retention and expansion. Within the scope of these recommendations, the Senior Economic Development offices will have three core objectives. First, to support the development of a regional Industrial Group. Second, once established, support the Industry Group in efforts to achieve a pilot skills training program within the region and third, assist or the recruitment of potential employees to enter the skills training programs. Through proactive activities that provide the industry with a predictable, skilled labour pool is the connecting activity between a regional training program and sustained growth.

As shown in the aforementioned research, the ECM neighbourhood is a strong area of growth for the St. Lawrence Corridor region, representing several existing companies. Attached is a list of those industries currently present in the St. Lawrence Corridor ECM network.

NAICS Industry Code	Description
3359	Other Electrical Equipment and Component Manufacturing
3391	Medical Equipment and Supplies Manufacturing
3332	Industrial Machinery Manufacturing
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing
3259	Other Chemical Product and Preparation Manufacturing
3353	Electric Lighting Equipment Manufacturing
3342	Communications Equipment Manufacturing
3254	Pharmaceutical and Medicine Manufacturing
3314	Non Ferrous Metal (except Aluminum) Production and Processing



Implementation Timeline

Full implementation decisions will need to be negotiated through stakeholder engagement. There will be many implementation factors not considered as part of this report. At a high level implementation can begin as per the chart below, with a full implementation plan taking 60-84 months. There is an opportunity to quick start the proposed strategy through the involvement of a task force and smaller high impact activities. See the Implementation Timeline on the following page.

There are two tactical components that can be quickly brought to action. The first is the beginning of an industry group to provide direction to the other key components of the strategy. To provide guidance there needs to be leadership. It is too early in the process of transformation to start a leadership and governance organization it is recommended that, as the existing regional economic development body, the St. Lawrence Corridor Economic Development Commission form a Task Force to begin the implementation of this plan. The Task force should have non-SLCEDC members and it is also recommended that an economic development representative from the municipal Economic Development office serve on this task force, plus one other external member of a proposed four or five person committee.

A quick start can be made with the proposed Industry Group through an industry event, an event that several industrialists in the region have expressed interest in participating. This would lead the initial development of an advisory group. This group can then be tasked with understanding what opportunity could represent a quick start for a regional training program. Given the potential impact, the ECM neighbourhood should be focused on, however it should not be exclusive to these industry groups.

The sales program can also be implemented quickly as the sales funnel is not dissimilar any calling and customer management programs the various economic development offices would be using currently. The St. Lawrence Corridor Economic Development Commission was formed with the strategic mission to acquire new companies to the region, primarily as a sales organization. For this reason the SLCEDC has the opportunity to take on much of the external sales responsibility. The research, list filtering and electronic outreach can be outsourced initially to preserve the existing sales resources. As leads begin to develop, organizations can make the tactical decision if they wish to divert efforts from other development activities or add capacity in their business development team.

The entire plan will take several years to realize strategic success, and the setting of shorter term milestones and success measures can assist in keeping the momentum generated and provide profile for public celebration.

There is no section of this plan that success will be seen quickly or easily. The coordination and collaboration required is substantial and will take broad based leadership and support. The success desired is long-term and leadership must be confident in their direction and united by a singular sense of purpose to the community.



Implementation Timeline

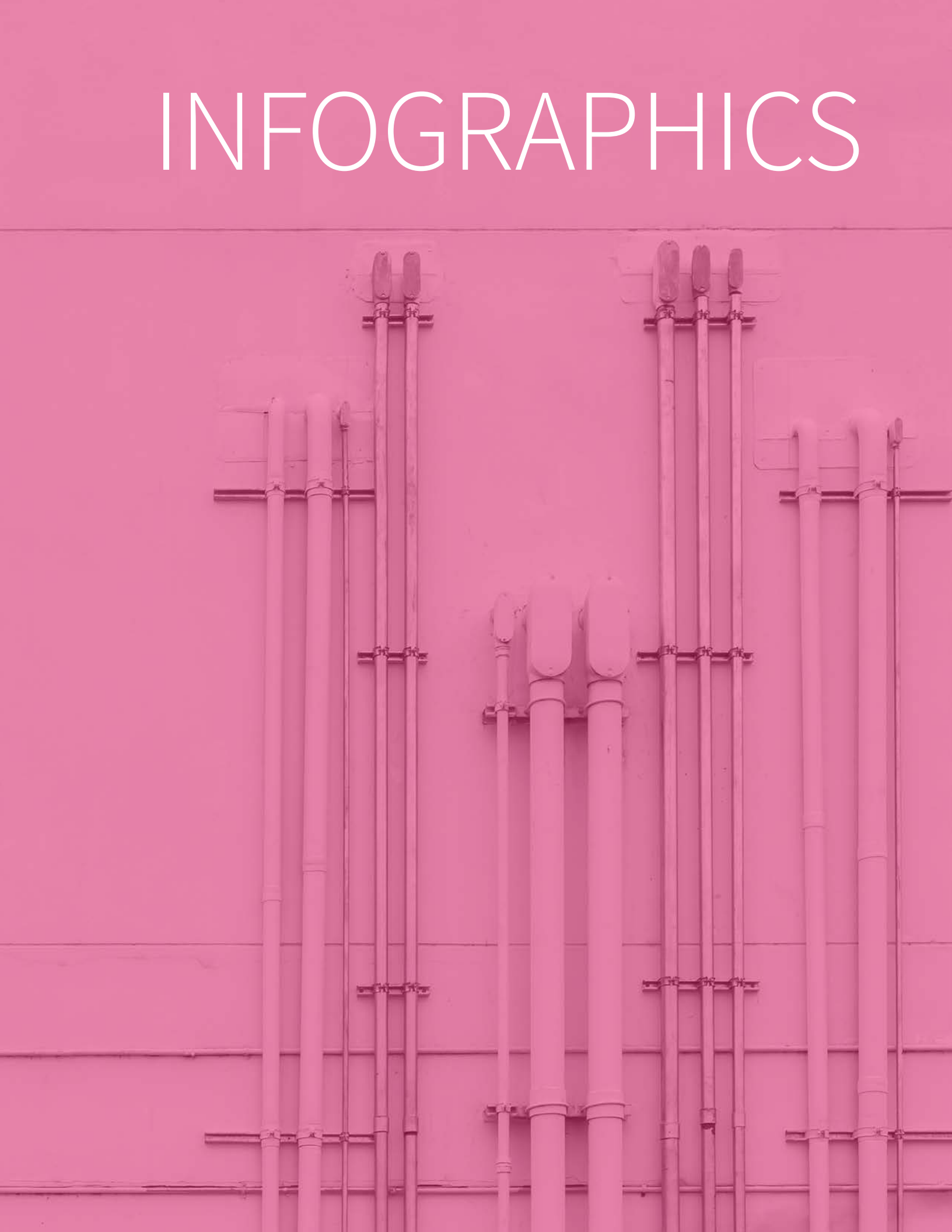
	Months	6	12	18	24	30	36	42	48	54	60
Industry Group & Education											
	Leadership Task Force focused on building the Industry Group	M1									
	Industry Group finding consensus around skills										
	Industry Group seeking and establishing education partners										
	Begin to run pilot training programs			M2							
	Regular educational programs being offered										
	R&D consensus from Industry Group										
	Decentralized R&D pilot program initiated										
	R&D “Group” formed					M5					
Sales & Marketing											
	Attraction Stream to begin (SLCEDC)										
	Demand Stream to begin (Regional EcDev)			M3							
	Expansion Stream to begin (Regional EcDev)										
Investment Fund											
	Industry Group / stakeholders initiate conversions										
	Framework / partners established										
	Funding Available					M6					
Leadership Group											
	Develop areas of responsibility										
	Develop director skills matrix										
	Recruit for Board										
	Initial meetings & strategy			M4							
	Board strategy developed										

Milestones

M1	Leadership Task Force focused on building the Industry Group
M2	Begin to run pilot training programs
M3	Demand Stream to begin
M4	Initial meetings & strategy
M5	R&D “Group” formed
M6	Funding Available



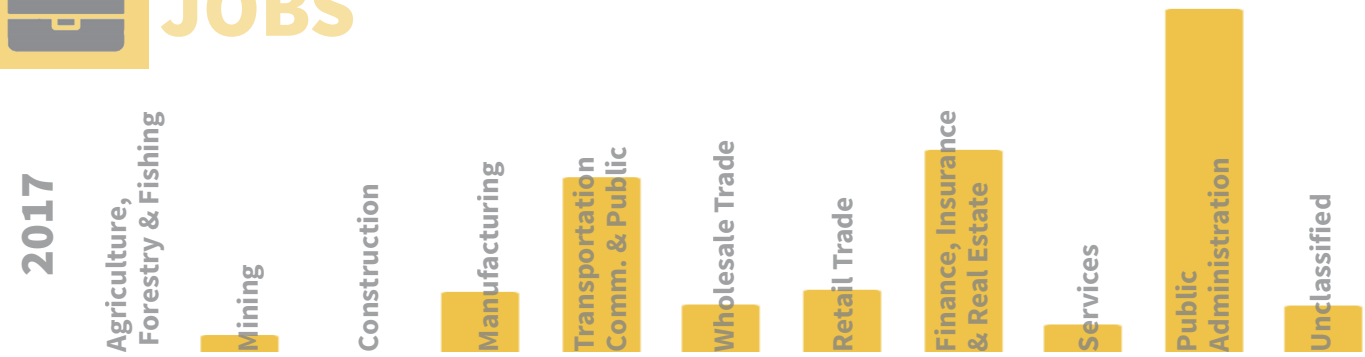
INFOGRAPHICS



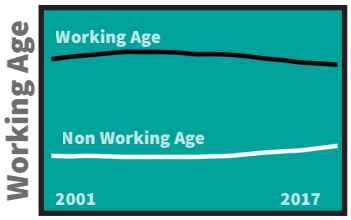
OVERVIEW BROCKVILLE & CORRIDOR STATUS CARD

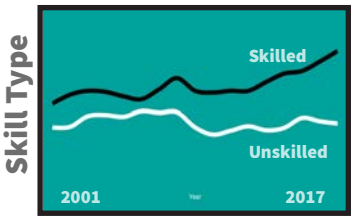
POP. 2017	Jobs 2017	Sales 2014
95.5k	40.2k	$9.3B

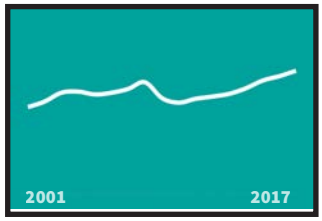
JOBS

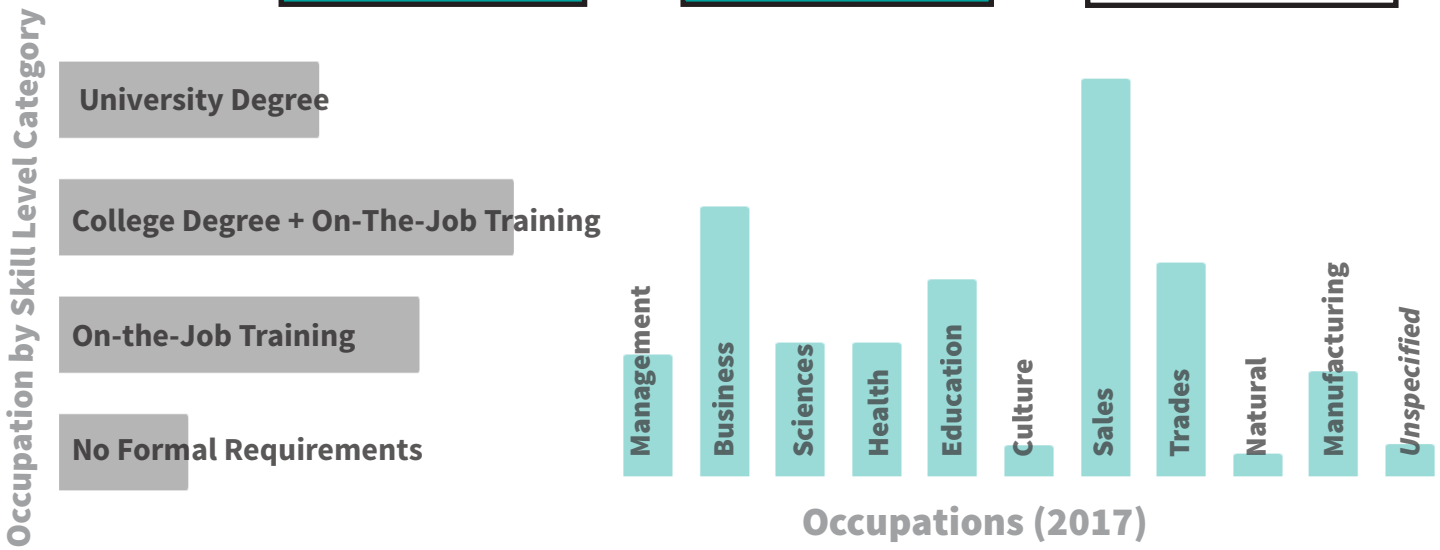


PEOPLE









Purchases, Wages, Sales

Purchases 2014	Wages 2014	Sales 2014
$3.4B	$1.4B	$9.3B

Top Growing NAICS Industry

Sector 31 Sales Growth	Sector 33 Sales Growth	Sector 62 Sales Growth
+54%	+45%	+24%

References

Emsi 2018.1; QCEW, non-QCEW

ECM Neighbourhood

Index

3359 Other Electrical Equipment and Component Manufacturing
335910 335920 335930 335990

3391 Medical Equipment and Supplies Manufacturing
339110

3332 Industrial Machinery Manufacturing
333245 333246 333247 333248

3345 Navigational, Measuring, Medical and Control Instruments Manufacturing
334511 334512

3259 Other Chemical Product Manufacturing
325910 325920 325991 325999

3353 Electrical Equipment Manufacturing
335311 335312 335315

3342 Communications Equipment Manufacturing
334210 334220 334290

3254 Pharmaceutical and Medicine Manufacturing
325410

3314 Primary Metal Manufacturing
331410 331420 331490

3255 Paint, Coating and Adhesive Manufacturing
325510 325520

3321 Forging and Stamping
332113 332118

3326 Spring and Wire Product Manufacturing
332611 332619

3333 Commercial and Service Industry Machinery Manufacturing
333310

3351 Electric Lighting Equipment Manufacturing
335110 335120

3322 Cutlery and Hand Tool Manufacturing
332210

3344 Semiconductor and Other Electronic Component Manufacturing
334410

SECTOR 33 Manufacturing

GROWTH CARD

SUB SECTOR 335 Electrical equipment, appliance and component manufacturing

INDUSTRY GROUP DESCRIPTION

3359 Other Electrical equipment and component manufacturer

Multiplier 2014 Jobs **1.18**

Multiplier 2014 Sales **1.05**

REGIONAL STATS

Sales

Sales		
2014	$447m	B
Growth		
2011-2014	204%	A
RCA		
vs Ontario	11.64	A

Jobs

Jobs		
2017	403	B
Growth		
2001-2017	618%	A
RCA		
vs Ontario	12.92	A

Network

Relatedness		
2017	16	A
Spatial		
2017	6.34	C
Sophistication		
	1.2	B

Growth Statement

This is a high growth Industry within the Corridor, acting as the anchor of **ECM**. Availability of skilled labour is a key growth factor. Constant innovation is required to maintain high product sophistication. Battery Manufacturing and other electrical component manufacturing present opportunity for attraction withing this Industry Group.

335910 ATTRACT	335920 GROW	335930 ATTRACT	335990 RADAR
Battery Manufacturing	**Communication and energy wire and cable manufacturing**	**Wiring device manufacturing**	**All other electrical equipment and component manufacturing**
alkaline batteries, manufacturing	insulated coaxial cable, non-ferrous, manufacturing	headlight switches, manufacturing	appliance extension cord sets, manufacturing
batteries, primary, dry or wet, manufacturing	radio wire and cable, insulated, manufacturing	starters for fluorescent lamps, manufacturing	battery chargers, manufacturing
batteries, storage, manufacturing	weatherproof wire and cable, non-ferrous	switch boxes, electric, manufacturing	carbon or graphite electrodes, manufacturing
hearing aid batteries, manufacturing	armoured cable or conductors, manufacturing	trolley line material, overhead, manufacturing	cord sets, electric, manufacturing
Rebuilding batteries	heating cable, electric, insulated, manufacturing	wall plates, electrical, manufacturing	hydrogen fuel cells, manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

SUB SECTOR 339 Miscellaneous Manufacturing

INDUSTRY GROUP DESCRIPTION

3391 Medical Equipment and Supplies Manufacturing

Multiplier 2014 Jobs 1.18

Multiplier 2014 Sales 1.08

REGIONAL STATS

Sales

Sales	Growth	RCA
2014 $475m — B	2011-2014 10.4% — A	vs Ontario 16.8 — A

Jobs

Jobs	Growth	RCA
2017 894 — B	2001-2017 60.1% — A	vs Ontario 17.96 — A

Network

Relatedness	Spatial	Sophistication
2017 4 — C	2017 7.13 — C	2.0 — B

Growth Statement

This group posts high values in RCAs and sophistication as well as reasonable values in growth. Typical products produced have a relatively high sophistication. The region has also had a history in supplying medical markets and shares some connections within the neighbourhood. Attracting start-ups with innovative products like dermal regeneration matrix would support this plan's Strategic Imperatives.

339110 ATTRACT

Medical equipment and supplies manufacturing
atomizers, medical, manufacturing
dental material (e.g., impression compounds, cements, glues, plaster, wax), manufacturing
inhalators (inhalation therapy equipment), surgical and medical, manufacturing
safety and industrial clothing (e.g., fire resistant, protective, cool suits), manufacturing
wheel chairs, other specialized chairs, and parts for persons with disabilities, manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

SUB SECTOR 333 Machinery Manufacturing

INDUSTRY GROUP DESCRIPTION

3332 Industrial Machinery Manufacturing

Multiplier 2014 Jobs 1.23

Multiplier 2014 Sales 1.11

REGIONAL STATS

Sales

Sales		
2014	$45.7m	B
Growth		
2011-2014	85.5%	A
RCA		
vs Ontario	2.11	B

Jobs

Jobs		
2017	101	B
Growth		
2001-2017	124%	A
RCA		
vs Ontario	2.92	B

Network

Relatedness		
2017	14	A
Spatial		
2017	6.99	C
Sophistication		
	-0.5	C

Growth Statement

This is a well connected group within **ECM**. Although this group does not boast large sales it shows reasonable growth in both sales and Jobs. Access to a skilled labour pool and ability to collaborate with regional industrial players would assist in maintaining growth. 333247 represents an exisitng opportunity of growth.

333245 RADAR	333246 RADAR	333247 GROW	333248 RADAR
Sawmill and wood-working machinery manufacturing	**Rubber and plastics industry machinery manufacturing**	**Paper industry machinery manufacturing**	**All other industrial machinery manufacturing**
bandsaws, woodworking type, manufacturing	blow moulding machinery for plastics, manufacturing	chippers (e.g., logs), stationary, manufacturing	anodizing equipment, manufacturing
circular saws, woodworking, stationary, manufacturing	calendering machinery for plastics, manufacturing	envelope making machinery, manufacturing	beaming machines, yarn, manufacturing
planers, woodworking type, stationary, manufacturing	granulating and pelletizing machinery for plastics, manufacturing	fourdrinier machinery, manufacturing	boot making and repairing machinery, manufacturing
saws, woodworking type, stationary, manufacturing	tire shredding machinery, manufacturing	paper and paperboard converting machinery, manufacturing	digital printing presses, manufacturing
shapers, woodworking type, manufacturing	thermoforming machinery for plastics, manufacturing	pulp making machinery, manufacturing	ovens, bakery, manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

SUB SECTOR 334 Computer and Electronic Product Manufacturing

3345

INDUSTRY GROUP DESCRIPTION

Navigational, Measuring, Medical and Control Instruments Manufacturing

Multiplier 2014 Jobs **1.17**

Multiplier 2014 Sales **1.07**

REGIONAL STATS

Sales

Sales		
2014	$166m	B
Growth		
2011-2014	83%	A
RCA		
vs Ontario	2.54	B

Jobs

Jobs		
2017	206	B
Growth		
2001-2017	260%	A
RCA		
vs Ontario	4.29	B

Network

Relatedness		
2017	11	A
Spatial		
2017	6.58	C
Sophistication		
	1.0	B

Growth Statement

3345 is well represented within the ECM and boasts strong statistics including connectivity and comparative advantage. Industry 334512 (medical device manufacturing), within 3345, represents an opportunity.

334511 RADAR	334512 GROW
Navigational and guidance instruments manufacturing	**Measuring, medical and controlling devices manufacturing**
aeronautical navigational systems, electronic, manufacturing	appliance regulators (except switches), manufacturing
gyroscopes, manufacturing	clock parts (e.g., cases, movements, springs (except crystals)), manufacturing
mine detectors, sending out and responding to a signal, manufacturing	computerized axial tomography (ct/cat) scanners, manufacturing
speed, pitch and roll navigational instruments and systems, manufacturing	electromedical apparatus, equipment and instruments (e.g., cystoscope, otoscopes, retinoscopes), manufacturing
warfare countermeasures equipment, manufacturing	motor vehicle instruments (e.g., fuel level gauges, oil pressure, speedometers, tachometers, water temperature), manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 32 Manufacturing

GROWTH CARD

SUB SECTOR 325 Chemical Manufacturing

INDUSTRY GROUP DESCRIPTION

3259 Other Chemical Product Manufacturing

Multiplier 2014 Jobs 1.59

Multiplier 2014 Sales 1.27

REGIONAL STATS

Sales

Sales	Growth	RCA
2014 $140m — B	2011-2014 -26% — C	vs Ontario 5.47 — B

Jobs

Jobs	Growth	RCA
2017 137 — B	2001-2017 17.5% — A	vs Ontario 4.5 — B

Network

Relatedness	Spatial	Sophistication
2017 14 — A	2017 6.41 — C	1.3 — B

Growth Statement

Although well connected within the ECM, this grouping displays poor growth. With relatively high RCAs, there maybe an opporunity to expand the business activivities around 325920 - explosive manufacuting.

325910 RADAR	325920 GROW	325991 RADAR	325999 RADAR
Printing ink manufacturing	**Explosives manufacturing**	**Custom compounding of purchased resins**	**All other miscella-neous chemical product manufacturing**
gold and bronze printing inks, manufacturing	azides explosive materials, manufacturing	compounding plastics resins from recycled materials	activated carbon and charcoal, manufacturing
inkjet cartridges, manufacturing	detonators (except ammunition), manufacturing	custom compounding of purchased plastics resins	aerosol can filling, on a job order or contract basis
manufacturing of ink jet cartridges	dynamite, manufacturing	reformulating plastics resins from recycled plastics products	fire extinguisher chemical prepara-tions, manufacturing
screen process inks, manufacturing	fuses, detonating and safety, manufacturing		inhibitors (e.g., corrosion, oxidation, polymerization), manufacturing
textile printing inks, manufacturing	safety fuses, blasting, manufacturing		recycling services for degreasing sol-vents (e.g., engine, machine part)

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

SUB SECTOR 335 Electrical Equipment, Appliance and Component Manufacturing

INDUSTRY GROUP DESCRIPTION

3353 Electrical Equipment Manufacturing

Multiplier 2014 Jobs 1.28

Multiplier 2014 Sales 1.15

REGIONAL STATS

Sales

- Sales 2014 $28.6m — B
- Growth 2011-2014 -26% — C
- RCA vs Ontario 0.86 — C

Jobs

- Jobs 2017 38 — C
- Growth 2001-2017 -68% — C
- RCA vs Ontario 1.31 — B

Network

- Relatedness 2017 15 — A
- Spatial 2017 6.14 — C
- Sophistication 2.1 — A

Growth Statement

Although once strong, this grouping has lost considerable jobs and sales. However, this grouping maintains strong Relatedness within the ECM. There maybe a possibility to pivot knoweledge and move closer to the wire industry with products offerings related to power, power management and power generation.

335311 RADAR	335312 RADAR	335315 RADAR
Power, distribution and specialty transformers manufacturing	**Motor and generator manufacturing**	**Switchgear and switchboard, and relay and industrial control apparatus manufacturing**
autotransformers, electric (power transformers), manufacturing	coils, for motors and generators, manufacturing	brakes and drives (electrical control), manufacturing
laminated magnetic cores, manufacturing	frequency changers, electric, manufacturing	low voltage air circuit breakers, manufacturing
ratio transformers, manufacturing	motor generator sets (except automotive and turbogenerators), manufacturing	relays, electrical, manufacturing
transformers, ignition, for use on domestic fuel burners, manufacturing	slip rings for motors and generators, manufacturing	switches, electric power (except snap, push button, tumbler and solenoid), manufacturing
vibrators, interrupter, manufacturing	torque motors, electric, manufacturing	timing relay, mechanical and solid-state (except clockwork), manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

SUB SECTOR 334 Computer and Electronic Product Manufacturing

INDUSTRY GROUP DESCRIPTION

3342 Communications Equipment Manufacturing

Multiplier 2014 Jobs 1.18

Multiplier 2014 Sales 1.07

REGIONAL STATS

Sales

Sales		
2014 $54.3m	B
Growth	
2011-2014 11.1%	A
RCA	
vs Ontario 0.73	C

Jobs

Jobs		
2017 57	C
Growth	
2001-2017 -93%	C
RCA	
vs Ontario 1.46	B

Network

Relatedness		
2017 6	B
Spatial	
2017 5.04	B
Sophistication	
2.1	A

Growth Statement

Industry in this group has had a declining job base, however has maintained modest sales. The strategic opportunity would be to identify product and value areas that more closely fit within 3359 grouping, and that can be expanded upon.

334210 RADAR	334220 RADAR	334290 RADAR
Telephone apparatus manufacturing	**Radio and television broadcasting and wireless communications equipment manufacturing**	**Other communications equipment manufacturing**
central office and switching equipment, telephone, manufacturing	amplifiers (e.g., RF power, I-F), broadcast and studio equipment, manufacturing	automotive theft alarm systems, manufacturing
PBX (private branch exchange) equipment, manufacturing	marine radio communications and earth station equipment, manufacturing	nurse call systems, manufacturing
subscriber loop equipment, telephone, manufacturing	receiver-transmitter units (i.e., transceivers), manufacturing	railroad signalling equipment, manufacturing
telephones (except cellular telephones), manufacturing	studio equipment, radio and television broadcasting, manufacturing	signalling equipment (i.e., traffic, pedestrian), manufacturing
toll switching equipment, telephone, manufacturing	transceivers (i.e., transmitter-receiver units), manufacturing	smoke detectors, manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 32 Manufacturing

GROWTH CARD

SUB SECTOR 325 Chemical Manufacturing

INDUSTRY GROUP DESCRIPTION

3254 Pharmaceutical and Medicine Manufacturing

Multiplier 2014 Jobs 1.35

Multiplier 2014 Sales 1.17

REGIONAL STATS

Sales

Sales	2014 $369m	B
Growth	2011-2014 7.44%	B
RCA	vs Ontario 3.36	B

Jobs

Jobs	2017 465	B
Growth	2001-2017 87%	A
RCA	vs Ontario 4.24	B

Network

Relatedness	2017 6	B
Spatial	2017 5.97	B
Sophistication	0.9	B

Growth Statement

This grouping maintains a heritage within the neighborhood. The strategic opportunity would to advance the exisitng sales and job patterns by better understand labour concerns and coordinate training programs for the companies and job roles.

325410 GROW

Pharmaceutical and medicine manufacturing
adrenal derivatives, uncompounded, manufacturing
barbiturates, uncompounded, manufacturing
cinchona (e.g., quinoline alkaloids quinine, quinidine, cinchonine, cinchonidine) and derivatives (i.e., basic chemicals), manufacturing
liquid pharmaceutical preparations (e.g., decoctions, ointments, solutions, syrups, infusions), manufacturing
undertaking one or more of several basic processes such as chemical synthesis, fermentation, distillation and solvent extraction; grading, grinding and milling; and packaging in forms suitable for internal and external use, such as tablets, vials, ampoules and ointments

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

SUB SECTOR 331 Primary Metal Manufacturing

INDUSTRY GROUP DESCRIPTION

3314 Non-Ferrous Metal (Except Aluminum) Production and

Multiplier 2014 Jobs **2.19**

Multiplier 2014 Sales **1.12**

REGIONAL STATS

Sales

Sales 2014	Growth 2011-2014	RCA vs Ontario
$15.4m **B**	22.8% **A**	0.18 **C**

Jobs

Jobs 2017	Growth 2001-2017	RCA vs Ontario
5 **C**	N/A **C**	0.18 **C**

Network

Relatedness 2017	Spatial 2017	Sophistication
4 **C**	5.4 **B**	1.5 **B**

Growth Statement

This grouping represents modest sales with strong sales growth. The growth opportunity would be to find products offerings that fit closely withing 3359 or the customers of 3359.

331410 RADAR	331420 RADAR	331490 RADAR
Non-ferrous metal (except aluminum) smelting and refining	**Copper rolling, drawing, extruding and alloying**	**Non-ferrous metal (except copper and aluminum) rolling, drawing, extruding and alloying**
anodes, for electrolytic refining, copper, manufacturing	alloying purchased copper	alloying purchased precious metals
cobalt smelting and primary refining	automotive and aircraft wire and cable, insulated, made in copper wire drawing plants	bar, made from purchased non-ferrous metal (except aluminum, copper)
iridium smelting and primary refining	plate, copper and copper alloy, made from purchased metal or scrap	iridium, recovering from scrap and/or alloying purchased metals
tantalum smelting and primary refining	rod, copper and copper alloy, made from purchased metal or scrap	nickel, recovering from scrap and/or alloying purchased metals
zirconium smelting and primary refining	wire, mechanical, copper and copper alloy, made in wire drawing plants	precious metal bar, sheet, strip and tubing, made from purchased metal or scrap

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

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Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 32 Manufacturing

GROWTH CARD

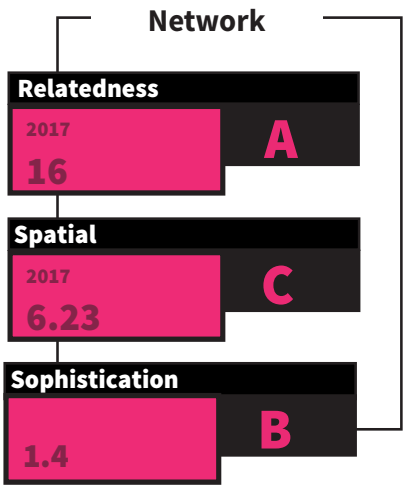
SUB SECTOR 325 Chemical Manufacturing

3255 INDUSTRY GROUP DESCRIPTION

Paint, Coating and Adhesive Manufacturing

Multiplier 2014 Sales 1.0

REGIONAL STATS



Growth Statement

This is a well connect group within the **ECM**. Availability of skilled labour, a collaborative industrial environment combined with access to funding would be key benefits for a companies looking to grow and innovate within into region. Additionally, leverage regional assets such as access to large markets, access to transportation and international bridges.

325510 RADAR	325520 RADAR
Paint and coating manufacturing	**Adhesive manufacturing**
architectural coatings (i.e., paint), manufacturing	adhesives (except asphalt, dental, gypsum-based), manufacturing
plastisol coating compounds, manufacturing	caulking compounds (except gypsum-based), manufacturing
primers, paint, manufacturing	glue (except dental), manufacturing
stains (except biological), manufacturing	plumbers' putty, manufacturing
wood fillers, manufacturing	tile adhesives, manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

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Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

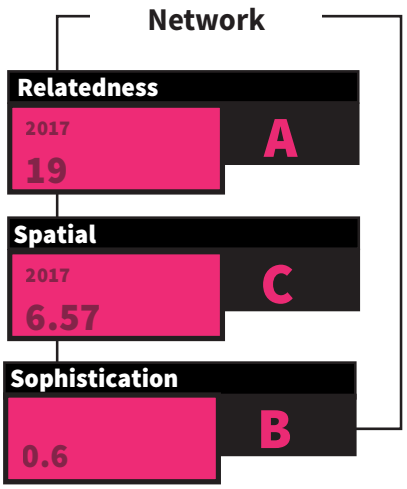
SUB SECTOR 332 Fabricated Metal Product Manufacturing

INDUSTRY GROUP DESCRIPTION

3321 Forging and Stamping

Multiplier 2014 Sales 1.0

REGIONAL STATS



Growth Statement

This is a well connect group within the **ECM**. Availability of skilled labour, a collaborative industrial environment combined with access to funding would be key benefits for a companies looking to grow and innovate within into region. Additionally, leverage regional assets such as access to large markets, access to transportation and international bridges.

332113 RADAR	332118 RADAR
Forging	**Stamping**
aircraft forgings, unfinished, made from purchased iron or steel	chassis, radio and television, unfinished metal, stamping
engine and turbine forgings, unfinished, made from purchased metal	housings for business machines, unfinished metal, stamping
plumbing fixture forgings, unfinished, made from purchased non-ferrous metal	metal pressings (i.e., stampings) (except automotive, cans, coins), manufacturing
railroad bumping posts, forged, unfinished, made from purchased iron or steel	powder metallurgy products, manufactured on a job or order basis
upset forgings, unfinished, made from purchased iron or steel	stampings (except automotive, cans, coins), metal, unfinished, manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

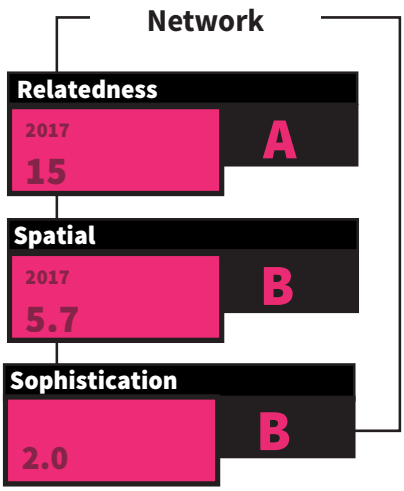
SUB SECTOR 332 Fabricated Metal Product Manufacturing

INDUSTRY GROUP DESCRIPTION

3326 Spring and Wire Product Manufacturing

Multiplier 2014 Sales 1.0

REGIONAL STATS



Growth Statement

This is a well connect group within the **ECM**. Availability of skilled labour, a collaborative industrial environment combined with access to funding would be key benefits for a companies looking to grow and innovate within into region. Additionally, leverage regional assets such as access to large markets, access to transportation and international bridges.

332611 RADAR	332619 RADAR
Spring (heavy gauge) manufacturing	**Other fabricated wire product manufacturing (CAN)**
automobile springs (e.g., suspension, leaf), or torsion bars, manufacturing	automobile skid chains, made from purchased wire
coil springs, heavy gauge, manufacturing	drying belts, made from purchased wire
flat springs, heavy gauge, manufacturing	helical springs, light gauge, made from purchased wire
helical springs, heavy gauge, manufacturing	upholstery springs and spring units, made from purchased wire
springs (except motor vehicle and railroad), heavy-gauge, manufacturing	wire ties (for vegetable bags), manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

SUB SECTOR 333 Machinery Manufacturing

GROWTH CARD

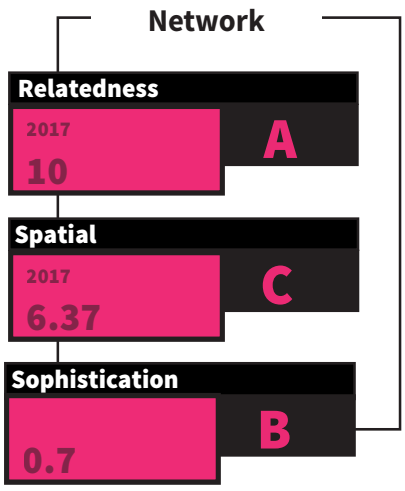
3333

INDUSTRY GROUP DESCRIPTION

Commercial and Service Industry Machinery Manufacturing

Multiplier 2014 Sales 1.0

REGIONAL STATS



Growth Statement

This group is well connected within the **ECM**. Availability of skilled labour, a collaborative industrial environment combined with access to funding would be key benefits for a companies looking to grow and innovate within into region.

333310 RADAR

Commercial and service industry machinery manufacturing
binding equipment (i.e., plastic or tape binding), office type, manufacturing
dishwashing machines, commercial type, manufacturing
frame and body alignment equipment, motor vehicle, manufacturing
photographic film developing equipment (i.e., tanks and trays for fixing and washing, etc.), manufacturing
water heaters (except boilers), commercial type, manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

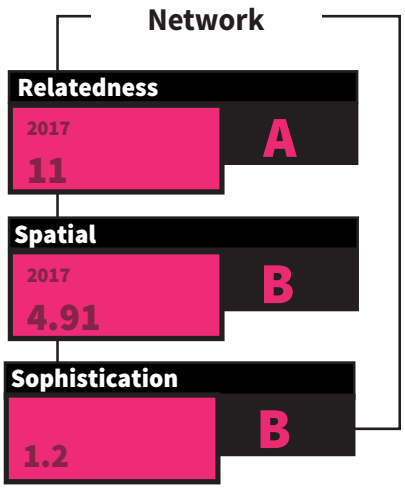
SUB SECTOR 335 Electrical Equipment, Appliance and Component Manufacturing

INDUSTRY GROUP DESCRIPTION

3351 Electric Lighting Equipment Manufacturing

Multiplier 2014 Sales 1.0

REGIONAL STATS



Growth Statement

This is a well connect group within the **ECM**. Availability of skilled labour, a collaborative industrial environment combined with access to funding would be key benefits for a companies looking to grow and innovate within into region. An exisitng, innovative LED manufacturer with a growth requirement would be a prime target for attraction.

335110 ATTRACT	335120 ATTRACT
Electric lamp bulb and parts manufacturing	**Lighting fixture manufacturing**
bicycle lamp bulbs, electric, manufacturing	beacon, lighthouse, non-flashing, electrical, manufacturing
electric lamp (bulb) parts, manufacturing	decorative fireplace logs and light units, electric, manufacturing
incandescent filament lamp bulbs, complete, manufacturing	industrial mercury lighting fixtures, manufacturing
lead-in wires, electric lamp, made from purchased wire, manufacturing	street lighting fixtures and equipment (except traffic signals), manufacturing
wires, lead-in, for electric bulbs, manufacturing	underwater lighting fixtures (e.g., swimming pool), manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

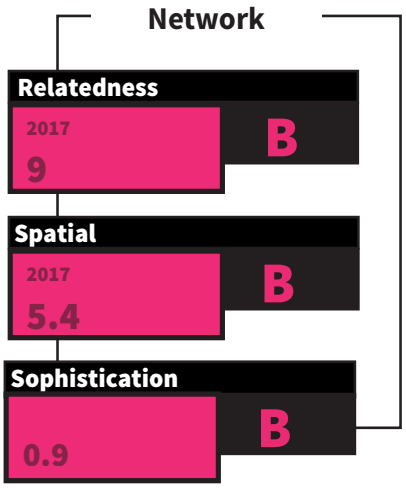
SUB SECTOR 332 Fabricated Metal Product Manufacturing

INDUSTRY GROUP DESCRIPTION

3322 Cutlery and Hand Tool Manufacturing

Multiplier 2014 Sales 1.0

REGIONAL STATS



Growth Statement

This group posts modest score within the **ECM**. Availability of skilled labour, a collaborative industrial environment combined with access to funding would be key benefits for a companies looking to grow and innovate within into region.

332210 RADAR

Cutlery and hand tool manufacturing
agricultural hand tools (e.g., hay forks, hoes, rakes, spades), non-powered, manufacturing
coordinate and contour measuring machines, machinists' precision tools, manufacturing
flatware or cutlery (e.g., forks, spoons, knives), base metal plated with precious metal, manufacturing
kitchen utensils (e.g., colanders, garlic presses, ice cream scoops, spatulas), fabricated metal, manufacturing
wrenches, hand tools, non-powered, manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

SECTOR 33 Manufacturing

GROWTH CARD

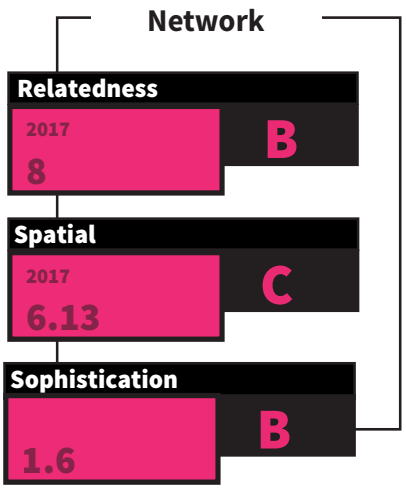
SUB SECTOR 334 Computer and Electronic Product Manufacturing

INDUSTRY GROUP DESCRIPTION

3344 Semiconductor and Other Electronic Component

Multiplier 2014 Sales 1.0

REGIONAL STATS



Growth Statement

This group posts modest score within the **ECM**. Availability of skilled labour, a collaborative industrial environment combined with access to funding would be key benefits for a companies looking to grow and innovate within into region.

334410 RADAR

Semiconductor and other electronic component manufacturing
connectors, electronic (e.g., coaxial, cylindrical, printed circuit, rack, panel), manufacturing
electron tube parts (e.g., bases, getters, Gunn effect) (except glass blanks), manufacturing
instrument transformer, electronic, manufacturing
memory card for digital camera, personal digital assistant (PDA), laptop and cellular telephone), manufacturing
thermistors (except industrial process type), manufacturing

References

Emsi 2018.1; QCEW, non-QCEW

NAICS 2017 Version 1.0 - 31-33 - Manufacturing-Sector. (2019). Retrieved from http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532&CVD=307533&CPV=31-33&CT=01012017&CLV=1&MLV=5

United States. (2016). County business patterns. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census, Data User Services Division.

Attract new industries within the code

Grow and expand an exisiting industry within this code

Watch and find opportunities as they occur.

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Definitions	
Term	Definition
Product Complexity	The amount of tacit knowledge required to produce a given product; in this report, sophistication is used as a proxy for product complexity
Sophistication	The amount of tacit knowledge required to produce products in a given industry. As the knowledge required increases, the industry sophistication increases.
Ubiquity	The number of countries or regions that an industry could be located; the more areas able to sustain a given industry, the higher the ubiquity of the industry.
Diversity	The number of distinct products a country produces
Economic Complexity	the diversity of knowledge held by a region and the ability to combine this knowledge at the societal level to create a productive output
NOC	National Occupation Classification
Occupation	This report uses the National Occupation Classifaction system (NOC) which defined occupations as a collection of jobs, sufficiently similar in work performed to be grouped under a common label for classification purposes. A job, in turn, encompasses all the tasks carried out by a particular worker to complete their duties
NAICS	North American Industry Classification System
Industry	This report uses the NAICS which define industries as economic units that have similar production processes are classified in the same industry, and the lines drawn between industries demarcate, to the extent practicable, differences in production processes
Skill Level A	Occupations requiring: University degree (bachelor's, master's or doctorate)
Skill Level B	Occupations requiring: Two to three years of post-secondary education at community college, institute of technology or CÉGEP or Two to five years of apprenticeship training or Three to four years of secondary school and more than two years of on-the-job training, occupation-specific training courses or specific work experience Occupations with supervisory responsibilities are also assigned to skill level B. Occupations with significant health and safety responsibilities (e.g., fire fighters, police officers and licensed practical nurses) are assigned to skill level B.
Skill Level C	Occupations requiring: Completion of secondary school and some short-duration courses or training specific to the occupation or Some secondary school education, with up to two years of on-the-job training, training courses or specific work experience
Skill Level D	Occupations requiring: Short work demonstration or on-the-job training or No formal educational requirements
Relative Comparative Advantage (RCA)	The sales/number of jobs/exports/wages in a given region as a proportion of those in Ontario as a whole. Regions with a relative comparative advantage produce more than their fair share (RCA>1).
Spatial Concentration:	the ubiquity of a given industry (measured by the number of regions with that industry)
Relatedness	probability that knowledge, via employees, can be transferred between industries.
Sophistication	the amount of tacit knowledge required to produce products in a given industry
Neighbourhood	Group of industries that are connected by one or two degrees of relatedness to a common industry "anchor"; employees working within a common neighborhood are able to transition between industries and be successful
Network	A graphical visualization of the relatedness between all of the NAICS industries
SLCEDC	St Lawrence Corridor Economic Development Commission
SLCEDC Plus	The group of 12 locations in Southern Ontario for which data was collected and aggragated to represent the area of interest (SLCEDC). This group includes: South Dundas, North Dundas, Edwardsburgh/Cardinal, Augusta, Prescott, Elizabethtwon-Kitley, Brockville, Front of Yonge, Leeds and the Thousand Islands, Gananoque, Athens, and Merrickville-Wolford.
EMSI	The database used to gather employment, industry, demographic, and market data.
County Business Patterns (CBP)	CBP is an annual series that provides subnational economic data by industry. This series includes the number of establishments, employment during the week of March 12, first quarter payroll, and annual payroll. This US based data was used to calculate the sophistication and spatial concentration index for the 305 4-digit NAICS codes.

3359 Neighbourhood Industry Groups		
NAICS Code	Name	Description
3359	Other electrical equipment and component manufacturing	This industry group comprises establishments, not classified to any other industry group, primarily engaged in manufacturing electrical power storage and transmission devices, and accessories for carrying current.
3332	Industrial machinery manufacturing	This industry group comprises establishments primarily engaged in manufacturing machinery designed for use in specific manufacturing industries.
3259	Other chemical product manufacturing	This industry group comprises establishments, not classified to any other industry group, primarily engaged in manufacturing chemical products.
3314	Non-ferrous metal (except aluminum) production and processing	This industry group comprises establishments primarily engaged in smelting, refining, rolling, drawing, extruding and alloying non-ferrous metal, except aluminum.
3254	Pharmaceutical and medicine manufacturing	This industry group comprises establishments primarily engaged in manufacturing drugs, medicines and related products for human or animal use. Establishments in this industry may undertake one or more of several processes, including basic processes, such as chemical synthesis, fermentation, distillation and solvent extraction; grading, grinding and milling; and packaging in forms suitable for internal and external use, such as tablets, vials, ampoules and ointments
3345	Navigational, measuring, medical and control instruments manufacturing	This industry group comprises establishments primarily engaged in manufacturing navigational, measuring, medical and controlling devices
3391	Medical equipment and supplies manufacturing	This industry group comprises establishments primarily engaged in manufacturing medical equipment and supplies. Establishments primarily engaged in grinding eyeglasses and hard contact lenses to prescription, on a factory basis, are included
3342	Communications equipment manufacturing	This industry group comprises establishments primarily engaged in manufacturing equipment used to move signals electronically over wires or through the air, such as telephone apparatus, radio and television broadcast equipment, and satellite communications equipment
3353	Electrical equipment manufacturing	This industry group comprises establishments primarily engaged in manufacturing equipment that generates and distributes electrical power.
3351	Electric lighting equipment manufacturing	This industry group comprises establishments primarily engaged in manufacturing electric lamp bulbs and tubes and lighting fixtures
3344	Semiconductor and other electronic component manufacturing	This industry group comprises establishments primarily engaged in manufacturing semiconductors and other electronic components.The following activities involving printed circuit boards are undertaken in this industry group: the production of the laminate material; the manufacture of the bare (rigid or flexible) printed circuit boards without mounted electronic components; and the loading of electronic components onto the boards
3333	Commercial and service industry machinery manufacturing	This industry group comprises establishments primarily engaged in manufacturing machinery for use in commercial and service industries.
3326	Spring and wire product manufacturing	This industry group comprises establishments primarily engaged in manufacturing wire products made from purchased wire
3321	Forging and stamping	This industry group comprises establishments primarily engaged in shaping hot metal by forging to produce a part near its final size and shape; or pressing and cutting sheet metal stock to form stampings. These establishments generally operate on a job or order basis, manufacturing metal stampings or forgings for sale to others or for inter-plant transfer. These establishments may surface-finish the forgings and stampings produced, by such activities as deburring and grinding, but they do not further process them
3322	Cutlery and hand tool manufacturing	This industry group comprises establishments primarily engaged in manufacturing non-precious and precious plated cutlery and flatware. Establishments primarily engaged in manufacturing files and other hand and edge tools for metalworking, woodworking and general maintenance are included
3255	Paint, coating and adhesive manufacturing	This industry group comprises establishments primarily engaged in manufacturing paints, coatings and adhesives

3359 Neighbourhood Industries		
Industry Group	Industry	Description
3254	325410	This Canadian industry comprises establishments primarily engaged in manufacturing drugs, medicines and related products for human or animal use.
3255	325510	This Canadian industry comprises establishments primarily engaged in mixing pigments, solvents, and binders into paints, stains, and other coatings; and manufacturing related products.
3255	325520	This Canadian industry comprises establishments primarily engaged in manufacturing glue, adhesives and related products.
3259	325910	This Canadian industry comprises establishments primarily engaged in manufacturing printing inks and ink jet inks, whether black or coloured.
3259	325920	This Canadian industry comprises establishments primarily engaged in manufacturing explosive preparations, detonators for explosives, and explosive devices, except ammunition.
3259	325991	This Canadian industry comprises establishments primarily engaged in the custom mixing and blending of purchased plastics resins, and compounding plastics resins from recycled plastics products.
3259	325999	This Canadian industry comprises establishments, not classified to any other Canadian industry, primarily engaged in manufacturing chemical products.
3314	331410	This Canadian industry comprises establishments primarily engaged in smelting non-ferrous metals, except aluminum, from ores; and refining these metals by electrolytic or other processes.
3314	331420	This Canadian industry comprises establishments primarily engaged in rolling, drawing, extruding and re-alloying copper, brass, bronze, and other copper-based alloys, to produce products such as plates, sheets, strips, bars, wire and tubing, and specialty alloys.
3314	331490	This Canadian industry comprises establishments, not classified to any other Canadian industry, primarily engaged in rolling, drawing, extruding and re-alloying non-ferrous metals, to produce products such as plates, sheets, strips, bars, wire and tubing, and specialty alloys.
3321	332113	This Canadian industry comprises establishments primarily engaged in hot forming metal using hammers or presses to forge parts. The forging process involves the use of dies to draw out or increase the length of a part, squeezing the part to reduce its length and increase its cross section, or piercing the part to create a cavity. Forging techniques such as hammer, drop, press, upset, roll and hydraulic forging.
3321	332118	This Canadian industry comprises establishments primarily engaged in using a press to form and cut sheet-metal stock in one or a series of operations. The operations can be done in a single press closing with a mated die, or with several press closings and multiple dies. The part involved may have holes, slots, notches or features formed in it and be cut to size and deburred, but is otherwise essentially completed by the stamping operation. Establishments primarily engaged in custom roll-forming, using the rotary motion of rolls with various profiles to bend metal, are included.
3322	332210	This Canadian industry comprises establishments primarily engaged in manufacturing non-precious and precious plated cutlery and flatware.
3326	332611	This Canadian industry comprises establishments primarily engaged in manufacturing heavy gauge springs. These springs are typically used in machinery, motor vehicles, and other transportation equipment.
3326	332619	This Canadian industry comprises establishments, not classified to any other Canadian industry, primarily engaged in manufacturing wire products from purchased wire.
3332	333245	This Canadian industry comprises establishments primarily engaged in manufacturing machinery of a type used in processing logs or lumber.
3332	333246	This Canadian industry comprises establishments primarily engaged in manufacturing machinery used in processing rubber or plastics materials.
3332	333247	This Canadian industry comprises establishments primarily engaged in manufacturing paper-making machinery.
3332	333248	This Canadian industry comprises establishments, not classified to any other Canadian industry, primarily engaged in manufacturing industrial machinery.
3333	333310	This Canadian industry comprises establishments primarily engaged in manufacturing machinery for use in commercial and service industries.
3342	334210	This Canadian industry comprises establishments primarily engaged in manufacturing wired telephone and data communications equipment. These products may be stand-alone or board-level components of a larger system.
3342	334220	This Canadian industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communication equipment.
3342	334290	This Canadian industry comprises establishments, not classified to any other Canadian industry, primarily engaged in manufacturing communications equipment.

3344	334410	This Canadian industry comprises establishments primarily engaged in manufacturing semiconductors and other electronic components.
3345	334511	This Canadian industry comprises establishments primarily engaged in manufacturing navigational and guidance equipment.
3345	334512	This Canadian industry comprises establishments primarily engaged in manufacturing measuring, medical and controlling devices.
3351	335110	This Canadian industry comprises establishments primarily engaged in manufacturing all types of electric lamps.
3351	335120	This industry comprises establishments primarily engaged in manufacturing lighting fixtures and lamps.
3353	335311	This Canadian industry comprises establishments primarily engaged in manufacturing power, distribution, instrument, and specialty transformers.
3353	335312	This Canadian industry comprises establishments primarily engaged in manufacturing electric motors and generators.
3353	335315	Switchgear and switchboard, and relay and industrial control apparatus manufacturing.
3359	335910	This Canadian industry comprises establishments primarily engaged in manufacturing primary batteries and secondary storage or accumulator batteries and parts thereof.
3359	335920	This Canadian industry comprises establishments primarily engaged in manufacturing insulated communications and energy wire and cable, made from purchased non-ferrous wire and optical fibres.
3359	335930	This Canadian industry comprises establishments primarily engaged in manufacturing current and non-current carrying wiring devices.
3359	335990	This Canadian industry comprises establishments, not classified to any other Canadian industry, primarily engaged in manufacturing electrical equipment and components.
3391	339110	This Canadian industry comprises establishments primarily engaged in manufacturing medical equipment and supplies.

NAICS Ranking									
NAICS	Sales Dollars (2014)	Sales Growth (2011-2014)	Sales RCA (2014)	Jobs (2017)	Jobs Growth (2001-2017)	Jobs RCA (2017)	Sophistication (2016)	Spatial Index (2016)	Relatedness
1110	B	A	B	B	B	B	#N/A	#N/A	C
1131	C	C	C	C	C	C	#N/A	#N/A	C
1132	C	C	C	C	C	C	#N/A	#N/A	C
1133	C	C	C	C	C	C	C	C	C
1141	C	A	C	C	C	B	C	C	C
1142	C	C	C	C	C	C	C	C	C
1150	B	A	B	C	C	B	C	C	C
1153	C	C	C	C	C	C	C	B	C
2111	C	C	C	C	C	C	C	B	C
2121	C	C	C	C	C	C	C	B	C
2122	C	C	C	C	C	C	C	A	C
2123	C	C	C	C	C	C	C	C	C
2131	C	C	C	C	C	C	C	C	C
2211	B	C	C	B	C	C	C	C	C
2212	C	C	C	C	C	C	C	B	C
2213	C	C	B	C	A	B	B	C	C
2361	B	A	B	B	A	B	C	C	C
2362	C	C	C	C	C	C	C	C	C
2371	B	A	C	B	C	B	C	C	C
2372	C	C	C	C	C	C	C	C	C
2373	B	B	C	B	C	B	B	C	C
2379	C	C	C	C	C	C	C	C	C
2381	B	A	C	B	A	B	C	C	C
2382	B	A	C	B	A	C	C	C	C
2383	C	C	C	C	C	C	C	C	C
2389	B	A	B	B	A	B	C	C	C
3111	B	A	B	B	A	B	C	B	C
3112	B	A	B	B	C	B	C	B	C
3113	C	C	C	C	C	C	B	B	C
3114	C	A	C	C	C	C	B	C	C
3115	B	A	B	B	C	B	B	C	C
3116	C	A	C	C	C	C	B	C	C
3117	C	C	C	C	C	C	C	B	C
3118	C	C	C	C	C	C	B	C	B
3119	B	A	B	B	A	B	B	C	B
3121	C	C	C	C	C	C	B	C	C
3122	C	C	C	C	C	C	C	C	C
3131	C	C	C	C	C	C	C	B	C
3132	C	C	C	C	C	C	B	B	C
3133	B	A	B	C	C	B	B	B	C
3141	C	C	C	C	C	C	B	B	C

3149	C	C	C	C	C	C	B	C	C
3151	C	C	C	C	C	C	B	B	C
3152	C	A	C	C	C	C	B	B	C
3159	C	C	C	C	C	C	B	B	C
3161	C	C	C	C	C	C	B	B	C
3162	C	C	C	C	C	C	B	B	C
3169	C	C	C	C	C	C	B	B	C
3211	C	A	C	C	C	C	B	C	C
3212	B	A	B	B	A	B	C	B	C
3219	B	C	B	B	C	B	B	C	C
3221	C	C	C	C	C	C	C	B	C
3222	B	C	B	B	C	B	B	C	A
3231	B	C	C	B	C	C	B	C	B
3241	A	A	B	B	A	B	C	B	C
3251	B	C	B	B	C	B	B	C	C
3252	B	A	B	C	B	B	B	C	C
3253	B	A	A	B	C	A	B	B	C
3254	B	B	B	B	A	B	B	B	B
3255	C	C	C	C	C	C	B	C	A
3256	A	C	A	A	A	A	B	C	C
3259	B	C	B	B	A	B	B	C	A
3261	C	C	C	C	C	C	B	C	A
3262	C	C	C	C	C	C	C	C	B
3271	C	C	C	C	C	C	B	B	C
3272	C	C	C	C	C	C	B	B	C
3273	C	C	C	C	C	C	B	C	C
3274	C	C	C	C	C	C	C	C	C
3279	B	A	B	C	C	B	C	C	C
3311	C	C	C	C	C	C	B	B	C
3312	B	C	B	C	C	B	B	B	C
3313	C	C	C	C	C	C	B	B	C
3314	B	A	C	C	C	C	B	B	C
3315	C	A	C	C	C	C	B	C	B
3321	C	C	C	C	C	C	B	C	A
3322	C	C	C	C	C	C	B	B	B
3323	C	C	C	C	C	C	B	C	C
3324	C	A	C	C	C	C	C	C	C
3325	C	C	C	C	C	C	B	B	C
3326	C	C	C	C	C	C	B	B	A
3327	B	C	B	B	C	B	B	C	C
3328	C	B	C	C	C	C	C	C	A
3329	B	A	C	C	A	B	B	C	A
3331	C	A	C	C	C	C	B	C	C
3332	B	A	B	B	A	B	C	C	A
3333	C	C	C	C	C	C	B	C	A

3334	B	A	B	B	A	B	B	C	C
3335	C	C	C	C	C	C	B	C	B
3336	C	C	C	C	C	C	C	B	C
3339	C	C	C	C	C	C	B	C	A
3341	C	C	C	C	C	C	B	B	C
3342	B	A	C	C	C	B	A	B	B
3343	C	C	C	C	C	C	B	B	C
3344	C	C	C	C	C	C	B	C	B
3345	B	A	B	B	A	B	B	C	A
3346	C	C	C	C	C	C	B	C	B
3351	C	C	C	C	C	C	B	B	A
3352	C	C	C	C	C	C	A	B	C
3353	B	C	C	C	C	B	A	C	A
3359	B	A	A	B	A	A	B	C	A
3361	C	C	C	C	C	C	B	A	C
3362	C	C	C	C	C	C	A	B	C
3363	C	C	C	C	C	C	C	C	C
3364	B	A	C	C	C	C	C	B	C
3365	C	C	C	C	C	C	B	B	C
3366	C	C	C	C	C	C	B	B	C
3369	C	C	C	C	C	C	C	B	C
3371	C	A	C	C	C	C	C	C	C
3372	C	C	C	C	C	C	C	C	A
3379	C	C	C	C	C	C	B	B	B
3391	B	A	A	B	A	A	B	C	C
3399	B	A	B	B	A	B	B	C	C
4111	C	A	C	C	C	C	C	C	C
4121	C	C	C	C	C	C	C	C	C
4131	B	A	C	B	A	C	C	C	C
4132	C	C	C	C	C	C	C	C	A
4133	C	C	C	C	C	C	B	C	C
4141	B	A	C	C	C	C	C	B	C
4142	C	C	C	C	C	C	B	C	C
4143	C	C	C	C	C	C	B	C	B
4144	B	A	C	C	A	C	B	C	B
4145	C	C	C	B	A	C	B	C	C
4151	C	A	C	C	C	C	B	C	C
4152	B	A	C	C	A	B	B	C	C
4153	C	A	C	C	C	C	C	C	C
4161	B	C	C	B	A	B	C	C	A
4162	B	A	B	B	A	B	B	C	A
4163	B	A	B	B	A	B	B	C	C
4171	B	A	A	B	A	A	C	C	C
4172	B	C	C	B	A	C	C	C	C
4173	C	C	C	C	C	C	C	C	A

4179	B	C	B	B	A	B	B	C	A
4181	C	C	C	C	C	C	B	C	C
4182	C	C	C	C	C	C	C	C	A
4183	C	C	C	C	C	B	B	C	A
4184	B	C	B	C	A	B	B	C	B
4189	C	A	C	C	C	C	C	C	A
4191	C	C	C	C	C	C	B	C	C
4411	B	C	B	B	A	B	C	C	C
4412	B	B	B	B	A	B	C	C	C
4413	C	B	B	B	A	B	C	C	C
4421	C	C	C	C	A	C	C	C	C
4422	C	C	C	C	C	C	C	C	C
4431	C	C	C	C	C	C	C	C	C
4441	B	A	B	B	A	B	C	C	C
4442	C	C	C	C	A	C	C	C	C
4451	B	A	C	B	C	C	C	C	C
4452	C	A	C	B	A	C	C	C	C
4453	C	C	B	B	B	B	C	C	C
4461	B	A	C	B	A	B	C	C	C
4471	B	A	B	B	B	B	C	C	C
4481	C	A	C	B	B	C	C	C	C
4482	C	A	C	C	A	C	C	C	C
4483	C	A	B	C	A	B	C	C	C
4511	C	C	C	C	C	C	C	C	C
4513	C	C	C	C	C	C	C	C	C
4521	B	C	B	B	A	B	B	C	C
4529	B	B	C	B	A	C	C	C	C
4531	C	C	C	C	A	B	C	C	C
4532	C	C	C	B	B	B	C	C	C
4533	C	A	C	C	A	B	C	C	C
4539	C	A	B	B	A	B	C	C	C
4541	C	C	C	C	C	C	C	C	C
4542	C	C	C	C	C	C	C	C	A
4543	C	A	C	C	B	B	B	C	C
4811	C	A	C	C	C	C	C	B	C
4812	C	C	C	C	C	C	B	C	C
4821	C	C	C	C	C	C	B	C	C
4831	C	C	C	C	C	C	B	B	C
4832	C	C	C	C	C	C	B	B	C
4841	B	C	B	B	A	B	B	C	C
4842	B	C	C	C	C	C	C	C	C
4851	C	B	C	C	C	C	C	B	C
4852	C	C	C	C	C	C	A	B	C
4853	C	A	C	C	A	B	A	C	C
4854	B	B	B	B	A	B	B	C	C

4855	C	B	C	C	C	C	C	B	A
4859	C	A	C	C	C	C	B	C	B
4861	C	A	B	C	C	B	B	B	C
4862	C	A	B	C	C	B	C	B	C
4869	C	C	C	C	C	C	C	B	C
4871	C	C	C	C	C	C	C	B	C
4872	C	C	B	C	C	B	B	B	C
4881	C	C	C	C	C	C	B	C	C
4882	C	A	C	C	C	C	B	B	C
4883	B	A	B	C	A	B	B	B	C
4884	B	A	B	B	A	B	B	C	C
4885	B	A	B	B	A	B	C	C	C
4889	C	C	C	C	C	C	B	C	B
4911	B	C	C	B	A	B	B	C	B
4921	C	C	C	C	C	C	B	C	B
4922	C	A	C	C	C	C	B	C	B
4931	C	B	C	B	A	C	B	C	C
5111	C	C	C	C	C	C	C	C	C
5112	C	C	C	C	C	C	C	C	B
5121	C	C	C	C	C	C	B	B	C
5122	C	C	C	C	C	C	C	B	C
5151	C	C	C	C	C	C	B	C	A
5152	C	C	C	C	C	C	C	A	C
5171	B	A	C	B	A	C	A	C	C
5172	C	C	C	C	C	C	C	C	C
5174	C	C	C	C	C	C	C	C	C
5179	C	B	C	C	C	C	C	C	C
5182	C	C	C	C	C	C	B	C	A
5191	C	C	C	C	A	C	B	B	C
5211	C	C	C	C	C	C	C	B	C
5221	B	A	C	B	A	C	C	C	C
5222	C	C	C	C	C	C	C	C	C
5223	C	C	C	C	A	C	C	C	C
5231	B	A	C	C	A	C	C	C	C
5232	C	C	C	C	C	C	B	A	C
5239	C	A	C	C	A	C	A	C	C
5241	B	A	C	B	A	C	B	C	B
5242	B	C	C	C	C	C	B	C	B
5261	C	C	C	C	C	C	C	C	B
5269	C	C	C	C	C	C	C	C	B
5311	B	A	C	B	A	C	C	C	C
5312	C	A	C	C	B	C	C	C	B
5313	B	A	C	C	C	C	C	C	C
5321	C	C	C	C	C	C	C	C	A
5322	C	C	C	C	C	C	B	C	C

5323	C	B	B	C	C	B	C	C	B
5324	B	C	B	B	A	B	B	C	B
5331	C	C	C	C	C	C	C	C	B
5411	B	A	C	B	B	C	B	C	C
5412	C	C	C	C	C	C	C	C	C
5413	B	C	C	B	A	C	C	C	C
5414	C	C	C	C	C	C	C	C	C
5415	B	A	C	B	A	C	B	C	B
5416	B	B	C	B	A	C	B	C	C
5417	C	C	C	C	C	C	C	C	C
5418	C	C	C	C	A	C	B	C	C
5419	B	A	C	B	A	B	B	C	C
5511	C	C	C	C	C	C	C	C	C
5611	C	C	C	C	C	C	B	C	C
5612	C	A	C	C	C	C	C	C	C
5613	B	C	B	A	A	B	B	C	C
5614	B	A	C	B	A	C	C	C	C
5615	C	A	C	C	C	C	B	C	C
5616	C	C	C	B	A	C	B	C	A
5617	B	C	C	B	C	C	B	C	C
5619	C	C	C	C	C	C	C	C	C
5621	C	C	C	B	C	C	C	C	C
5622	C	A	C	C	C	C	C	C	C
5629	C	C	C	C	C	C	B	C	B
6111	B	B	B	A	A	B	C	C	C
6112	B	A	C	B	C	C	C	C	B
6113	C	A	C	C	C	C	B	C	C
6114	C	A	C	C	C	C	B	C	B
6115	C	C	C	C	C	C	B	C	A
6116	C	C	B	B	A	C	B	C	A
6117	C	B	B	C	A	B	C	C	C
6211	B	A	C	B	A	C	B	C	C
6212	B	A	B	B	A	B	C	C	C
6213	B	A	B	B	A	B	C	C	C
6214	B	A	B	B	A	B	C	C	C
6215	C	A	C	C	A	C	C	C	A
6216	B	A	B	B	A	B	B	C	C
6219	C	C	C	C	C	C	C	C	C
6221	B	A	C	B	B	C	C	C	A
6222	B	B	B	B	A	B	B	B	C
6223	C	C	C	C	C	C	B	B	B
6231	B	A	B	B	C	B	B	C	C
6232	B	C	C	B	B	B	C	C	C
6233	B	B	C	B	A	C	C	C	C
6239	C	C	C	C	C	C	C	C	A

6241	B	A	B	B	A	B	B	C	C
6242	C	C	C	C	C	C	C	C	C
6243	B	B	B	B	A	B	C	C	C
6244	B	C	C	B	A	C	C	C	C
7111	C	A	C	C	A	C	C	C	C
7112	C	C	C	C	C	C	B	C	C
7113	C	A	C	B	A	B	B	C	C
7114	C	C	C	C	C	C	B	B	C
7115	C	A	C	C	C	C	B	C	C
7121	B	A	B	B	A	B	C	C	C
7131	C	C	C	C	C	C	C	B	C
7132	B	B	B	B	A	B	B	B	C
7139	B	C	B	B	A	B	C	C	C
7211	B	A	C	B	C	B	C	C	B
7212	C	A	B	C	C	B	C	C	C
7213	C	C	C	C	C	C	C	C	C
7223	C	C	C	C	C	C	B	C	C
7224	C	C	C	C	C	C	C	C	C
7225	B	B	C	A	A	B	C	C	C
8111	B	B	C	B	C	C	C	C	C
8112	C	C	C	C	C	C	C	C	C
8113	C	C	C	C	C	C	B	C	C
8114	C	A	C	C	C	B	C	C	C
8121	B	A	C	B	B	C	C	C	C
8122	C	A	C	C	A	B	C	C	C
8123	C	C	C	C	C	C	C	C	C
8129	C	C	C	C	C	C	C	C	C
8131	B	A	B	B	A	B	C	C	C
8132	C	A	C	C	A	C	C	C	C
8133	C	B	C	C	C	C	C	C	B
8134	C	A	C	C	C	C	C	C	C
8139	C	C	C	C	C	C	C	C	C
8141	C	C	C	C	C	C	C	C	C
9111	C	A	C	C	A	C	C	C	C
9112	B	C	C	B	A	C	C	C	C
9120	B	C	C	B	C	C	C	C	C
9130	B	C	C	A	A	C	C	C	C
9141	C	C	C	C	C	C	C	A	C

Scorecard Limits

Sales Annualized Dollars (2017)	Upper Limit	Lower Limit
A	Greater than 500,000,000	
B	Less than or equal to $500,000,000	Greater than $10,000,000
C	Less than or equal to $10,000,000	

Sales Long Term Historical Growth (2001 - 2017)	Upper Limit	Lower Limit
A	Above 10%	
B	10%	0%
C	Negative growth	

Sales Relative Comparative Advantage	Upper Limit	Lower Limit
A	Above 10	
B	Less than 10	Greater than 1
C	Less than 1	

Jobs (2017)	Upper Limit	Lower Limit
A	Above 1,000	
B	Less than 1,000	Greater than 100
C	Less than 100	

Jobs, Long Term Historical Growth (2001 - 2017)	Upper Limit	Lower Limit
A	Above 10%	
B	10%	0%
C	Negative	

Jobs, Relative Comparative Advantage	Upper Limit	Lower Limit
A	Above 10	
B	Less than 10	Greater than 1
C	Less than 1	

Jobs, Long Term Historical Growth (2001 - 2017)	Upper Limit	Lower Limit
A	Above 10%	
B	10%	0%
C	Negative	

Sales Relative Comparative Advantage	Upper Limit	Lower Limit
A	Above 10	
B	Less than 10	Greater than 1
C	Less than 1	

Sophistication	Upper Limit	Lower Limit
A	Greater than 2	
B	Less than 2	Greater than 0
C	Less than 0	

Spatial Index	Upper Limit	Lower Limit
A	Greater than 6	
B	Less than or equal to 6	Greater than 3
C	Less than or equal to 3	

Connectedness	Upper Limit	Lower Limit
A	Greater than 10	
B	Less than or equal to 10	Greater than 5
C	Less than or equal to 5	

Outreach	
David Beatty	Chair SLCEDC, Canarm (Retired), Investor
Bob Anderson	Vice Chair SLCEDC, Burnbrae Farms, (retired)
George Horton	Business Representative SLCEDC, Owner Horton Homestead Farm, Economic Development
Joe Hendriks	Business Representative SLCEDC, Invista Plant Manager and Company Director (retired)
Brendan Bland	Business Representative SLCEDC, Plant Manager at GreenField Global
Richard Marcoux	Business Representative SLCEDC, Councillor & Chairman of Economic Development at Front of Yonge Township, Economic Development
Shelley Bacon	Business Representative SLCEDC, Northern Cables (Founding Member)
Dave Henderson	Mayor, City of Brockville
Brett Todd	Mayor, Town of Prescott
Doug Malanka	Mayor, Township of Augusta
Roger Haley	Mayor, Township of Front of Yonge
Joe Baptista	Mayor, Leeds and the Thousand Islands
Jim Pickard	Mayor, Township of Elizabethtown Kitley
John Conrad	St. Lawrence College
Ian McFall	Burnbrae Farms
Matt Murton & Staff	Invista Site Manager, Maitland
Steve Holmgren	Excellence in Manufacturing Consortium (EMC)
Jim Cooper	Canarm
Kelly McKinnon	Shell Lubricants, Brockville
Sue Watts (& Staff)	Employment and Education Centre
Bob Pearce	Entrepreneur, Investor, Business Owner
Jag Chawla	Apex, Owner / Founder
Barry Moss	Strategic Entrepreneur, Investor, Four-O-One Ltd., Investor
Doug Roughton	Dean, St. Lawrence College Brockville
Ellen Barton	HR / Line Leader, Procter & Gamble
Kathy O'brien	SLC, Senior Vice President, Strategy, Communications and Advancement
Michael Jiggins	Office of MPP Steve Clark, Leeds-Grenville-Thousand Islands and Rideau Lakes
Charlie Mignault	Commissioner, St. Lawrence Corridor Economic Development Commission.
Andreas Sturb	General Manager, James Ross
Dana Valentyne	Economic Development Officer at Corporation of the Town of Prescott
Ray Morrison	CAO/Treasurer, Township of Augusta
Debra McKinstry	CAO/Clerk, Township of Edwardsburgh/Cardinal
Zeke Cox	BDC, Senior Account Manager
Brett Prikker	BDC, Manager Business Centre

Businesses / Agencies
Office of MPP Steve Clark, Leeds-Grenville-Thousand Islands and Rideau Lakes
St. Lawrence Corridor Economic Development Commission
Northern Cables
Prysmian Group
Burnbrae Farms
Shell Lubricants, Brockville
Invista Maitland
Employment & Education Centre (Brockville)
Henderson's Printing
BDC Kingston / Brockville
St. Lawrence College Brockville
St. Lawrence College Corporate Learning & Performance Improvement
Apex Warehousing
Four-O-One Electric
Greenfeild Ethanol
Excellence in Manufacturing Consortium
Horton Homestead Farm

Steering Committee	
Robert Nolan	Director of Economic Development, Brockville
Jane Fullerton	Councilor, Chair Economic Development Committee, City of Brockville. Director of Big Brothers Big Sisters of Leeds and Grenville
Mike Kalivas	Councilor, City of Brockville, restaurant owner (interim)
Shelley Bacon	Northern Cable, Owner / founding member
Charlie Mignault	Commissioner SLCEDC