



# Annual Report 2019-2020

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Image Credit - MW Canada

### Message from the Chair



The COVID-19 pandemic has disrupted manufacturing and life in general. Governments, businesses, and individuals all play important roles in minimizing the impacts of the pandemic and speeding the recovery. Over the past few months, communicating and connecting with others has become challenging given the current realities of social and physical distancing.

That's why the Trillium Network's mission to Connect, Convene, and Collaborate is more important than ever.

By connecting companies to government agencies we help identify suppliers of PPE and help manufacturers obtain valuable business. By convening discussions with our partners we help governments develop policies and programs to support companies, and we ensure that these supports are timely and relevant. Similarly, we help make industry associations and manufacturers aware that such supports exist. Finally, as we adapt to new challenges and to pivot our manufacturing processes and supply chains to develop and manufacture essential products, collaboration between manufacturers, associations, and government is more important than ever.

Everyone at the Trillium Network is enthusiastic in their belief that manufacturing is vital to Ontario's prosperity. We will play a critical role in supporting that vision. As we move into the reopening and recovery phase, manufacturers will need information and support in order to return to trajectories of growth. Even more importantly, manufacturers will need courage, vision, and hope. Trillium provides company profiles that illustrate paths to prosperity, reports that identify growth segments, and success stories about Industry 4.0 adoption. We will help Ontario overcome the challenges of today more quickly, make opportunities easier to identify and position our manufacturing sector for success.

### **BEN WHITNEY**

Chair of the Board Trillium Network for Advanced Manufacturing

# **Message from the Managing Director**



Much has changed since I joined Trillium last Fall. Our priorities recently shifted to supporting government, manufacturers, and partners during the COVID-19 pandemic. We will continue to prioritize this work as we emerge from the pandemic and move towards the next stage in the evolution of Ontario manufacturing.

We have learned a lot over the past few months. The COVID-19 pandemic has reinforced the importance of Trillium's efforts. It has deepened our relationship with our partners and illuminated the value of an innovative advanced manufacturing ecosystem.

Prior to the pandemic, we introduced several initiatives. We worked with Automate Canada to identify companies that are developing and manufacturing industrial automation technologies and quantify their economic impact. We worked with new partners like the Ontario Craft Brewers (OCB) and longtime partners like the Automotive Parts Manufacturers' Association (APMA) to examine the growth and evolution of the craft brewing and automotive industries (respectively) over the past decade. We continue to pursue our asset and ecosystem mapping work, and worked with partners to build a comprehensive database of Ontario manufacturers and their capabilities. These data will be displayed on our augmented and open-access GIS application.

All that said, perhaps the most rewarding part of my time at Trillium has been developing and advancing relationships with our staff, board, and partners. I am grateful for the support and mentorship that I have received from our founder, Paul Boothe and our Chair, Ben Whitney. I would also like to recognize our Office Manager, Denise Deschênes-McKay, our Program Officer, Jonathan Soriano, and our Deputy Directors, David Hudson, David Moloney, and Alister Smith for their support during this transition.

I am very excited to continue our important work as we emerge from the COVID-19 pandemic and enter the next phase in the evolution of Ontario manufacturing.

### **BRENDAN SWEENEY**

Managing Director Trillium Network for Advanced Manufacturing

# **Our Mission**

The Trillium Network for Advanced Manufacturing is a nonprofit organization dedicated to raising public and investor awareness of Ontario's advanced manufacturing ecosystem, with the intention of supporting growth and improving competitiveness. We connect with like-minded partners to ensure that our work is timely and relevant. We convene and participate in virtual and in-person meetings and workshops with partners on a regular basis. We collaborate with our partners to learn more about their priorities and identify synergistic initiatives of common interest.



Image Credit - Bluewrist Robot & Vision Solutions

# The Trillium Team

### **BOARD OF DIRECTORS**

The Trillium Network for Advanced Manufacturing is governed by a Board of Directors chaired by Ben Whitney. Current Board members include Paul Boothe, Ian Howcroft, Paul Madden, Jayson Myers, Alison Newton, and Ray Tanguay.

### PARTNERS

Automate Canada Automotive Parts Manufacturers' Association Automotive Policy Research Centre **Business Council of Canada Business Development Bank of Canada Canadian Manufacturers and Exporters City of Toronto** Conference Board of Canada County of Simcoe Economic Development Office **Excellence in Manufacturing Consortium Export Development Canada** FedDev Ontario Golden Horseshoe Food and Farming Alliance Innovation, Science and Economic Development Canada InvestinOntario InvestStratford Lawrence National Centre for Policy and Management Ministry of Economic Development, Job Creation and Trade National Research Council of Canada **Ontario Auto Mayors Ontario Craft Brewers** Waterloo Economic Development Corporation Windsor-Essex Economic Development Corporation **Yves Landry Foundation** 

### STAFF (2019-2020)

Paul Boothe, Managing Director (outgoing) Brendan Sweeney, Managing Director (incoming) David Hudson, Deputy Director David Moloney, Deputy Director Alister Smith, Deputy Director Denise Deschênes-McKay, Office Manager Jonathan Soriano, Program Officer David Zhang, Program Officer Jake Anderson, Research Associate Brandon Chang, Research Associate Kriti Jangpangi, Research Associate Sumeeta Prihar, Research Associate Andrew Rebus, Research Associate Trevor Coppins, Mitacs Intern Eva Kwan, Mitacs Intern Erman Sener, Mitacs Intern

### WHAT WE DO

We are currently focusing our work on the following areas:

**Industry 4.0:** adopting and developing new manufacturing production technologies.

**The Manufacturing Workforce:** understanding the evolving skill requirements of manufacturers.

**Manufacturing Growth Segments:** quantifying and qualifying growing manufacturing industries.

**Asset Mapping:** building and improving our database of Ontario manufacturers and their capabilities.

**The Impact of COVID-19:** examining the short- and long-term impacts of COVID on Ontario manufacturing.

We continue to grow our network and improve its capability to support Ontario manufacturers. In the last year, Ben Whitney replaced Carol Stephenson as Chair, Brendan Sweeney assumed the role of Managing Director, and Trillium's founder, Paul Boothe, transitioned from his role as Managing Director in order to focus on his activities with Trillium's board. We welcomed Alison Newton and Paul Madden as board members in April 2020, and Jayson Myers in May 2020.

Our network of partners grew with the addition of Automate Canada, the Ontario Craft Brewers (OCB), the County of Simcoe Economic Development Office, the Windsor-Essex Economic Development Corporation, the Ontario Auto Mayors, and the Golden Horseshoe Food and Farming Alliance (GHFFA). We maintained deep engagement with our partners, collaborating on research projects and participating in more than 60 partner-related meetings and events.

We increased our web presence with the launch of an updated website in the Spring of 2020. Our social media presence increased over the past year, both on Twitter and LinkedIn. We anticipate that this trajectory of growth will continue in the new fiscal year.

Our profiles of innovative Ontario manufacturers remains an important value-added activity. We completed over 30 profiles - exceeding the initial target of 20 - bringing our cumulative total to more than 120. We created a category of 'partner' profiles that recognizes the role of publicly-funded/non-profit organizations within Ontario's advanced manufacturing ecosystem. We undertook several thematic and industry-focused studies. In November 2019 we published a study of Ontario manufacturing SMEs and their experiences adopting Industry 4.0. In that same month we presented the results of our first 'Decade in Review' study, which focuses on the automotive industry, to the Ontario Auto Mayors (the final report will be published in May 2020). We presented the results of our study of Ontario's brewing industry to the OCB (the full report will be published in June 2020) and presented the results of our study of the economic impact of Canada's manufacturing automation industry to Automate Canada in April 2020.

We continue to collaborate with OG100. In addition to profiling OG100 members, several OG100 members participated in the aforementioned study of Ontario manufacturing SMEs and Industry 4.0. We also participate regularly in OG100 events and workshops.

We began augmenting TrilliumGIS. This includes improvements to the web-based application and to the database of Ontario manufacturers and their capabilities. We built a database of Ontario manufacturers and their capabilities, with the intention of sharing these data with our partners. Furthermore, we partnered with the GHFFA and over 40 Ontario municipalities to support their asset-mapping application ConnectON.

Finally, we met our targets of good governance by maintaining a balanced budget and offsetting GHG emissions to maintain carbon neutrality.



Image Credit - Unsplash

# **Initiative: Canada's Automation Industry**



Image Credit - Bluewrist Robot & Vision Solutions

Learning about how Ontario manufacturers engage with the technologies associated with Industry 4.0 is a priority for Trillium. This is reflected in our November 2019 report titled 'Catching the Wave: Lessons from Ontario's Digital Manufacturing Early Adopters.' This report provides insight from Ontario manufacturing SMEs that were early adopters of digital manufacturing technologies with the aim of helping companies seeking to adopt similar technologies in the near future.

Adopting the technologies associated with Industry 4.0 represents an important step forward for Ontario manufacturers. Developing and manufacturing these technologies is similarly important. To learn more about Ontario manufacturers' contributions to the adoption and the development of Industry 4.0, we partnered with the recentlyformed industry association Automate Canada to better understand the scope and the economic contributions of Canada's automation industry.

The results of our initial study, which were presented to Automate Canada and Canadian Association of Mold Makers (CAMM) members in April 2020, found that the industrial automation industry contributes over \$7.2 billion annually to Canadian GDP and employed over 58,000 people in 2019, and that over 50 percent of this industry is located in Ontario. Moreover, the study found that the contributions to GDP of this segment of Canada's manufacturing sector grew by over \$2.4 billion since 2010 and by over \$1 billion since 2015, and identified over 700 Ontario-based establishments that developed, manufactured, or integrated the technologies associated with Industry 4.0.

This is possibly the first time that the economic contributions of this important segment of manufacturing have been defined so precisely. One of the reasons why they are hard to define is because the companies involved in this industry are assigned several different NAICS codes. While some of these NAICS codes are consistent with traditional manufacturing activities (e.g. Industrial Machinery Manufacturing), others are not (e.g. Computer Systems Design). Working with Automate Canada leaders and member companies we were able to identify the NAICS codes assigned to companies involved in these activities. We then subsequently determined the proportion of the output from each of these activities that was related to manufacturing.

The industrial automation industry represents an exciting segment of Ontario manufacturing, and Automate Canada is an important Trillium Network for Advanced Manufacturing partner as we move forward. A copy of the presentation is available on the Trillium website. We anticipate publishing a report based on these data in the 2020-21 fiscal year.

# **Initiative: Ontario's Craft Brewing Industry**



Image Credit - Cowbell Brewing

One of Trillium's priorities is to identify growing segments of Ontario's manufacturing sector in order to quantify, qualify, and learn about the factors underpinning that growth. Perhaps the fastest-growing segment of Ontario manufacturing over the last decade - and especially over the last five years - is the Canadian-owned, or 'craft', segment of the brewing industry.

A growing majority of Ontario communities can boast that they are home to one or more breweries, most of which did not exist a decade ago. In fact, our data show that of Ontario's over 320 breweries, fewer than 30 were in operation prior to 2010. And while most craft breweries are relatively small, several, including Cowbell, Steam Whistle, Muskoka, and Beau's employ well over 100 people and are among the largest manufacturers in their community. Furthermore, larger and smaller craft brewers alike have modernized their brewing processes and invested substantially in reducing their environmental footprint.

Working closely with the Ontario Craft Brewers (OCB), we undertook initial data analysis, connected with brewery

owners and other partner organizations (e.g. the Niagara College Teaching Brewery, the Durham College Centre for Craft Brewing Innovation) at industry events, profiled a number of breweries across Ontario (travelling as far as Thunder Bay and Vankleek Hill), and presented our results to the board of the OCB for feedback (that presentation is available on our website). We plan to publish a series of craft brewery profiles in May, June, and July 2020, as well as a full industry report. This process serves as a template for future projects that focus on growth segments of Ontario manufacturing.

In addition to their growth over the past decade, Ontario's craft brewing industry represents a unique segment of manufacturing that intersects with agri-food, tourism, hospitality, and community economic development. The craft brewing industry is also virtually entirely Canadian-owned, provides an exceptional model of intra-industry collaboration, and illustrates the diversity of innovative activities that exist within Ontario's broader manufacturing sector.

# **Profile: Bluewrist Robot & Vision Solutions**



Image Credit - Bluewrist

Located in Markham, Ontario, Bluewrist Robot & Vision Solutions (Bluewrist) designs and develops innovative industrial automation solutions in the fields of robotics and machine vision. Every product at Bluewrist is created with the intention of increasing manufacturing efficiency and reducing operating costs and downstream defects for its customers.

The firm's intelligent software enables users to improve product quality by monitoring complex manufacturing processes via 100% inline inspection and statistical controls without hindering the speed of production. By contributing to the advancement of automation and quality control in its customers' facilities, Bluewrist positively affects their production efficiency and product quality. Thanks to its leading-edge technology, competitive pricing, and highly effective customer support, Bluewrist has become a recognized leader in the delivery of flexible vision systems.

The founder of Bluewrist, Najah Ayadi, established the company in 2006, but the idea behind Bluewrist came to him much earlier. Prior to starting his own company, Ayadi worked at a plant that utilized automation technology and data analytics. He witnessed first-hand the issues that occur when open communication is lacking across all operating areas in a facility, and the limitations of using 2D vision systems for quality inspection. Ayadi's experience in the automation industry and technical knowledge of robotic equipment gave him the appropriate skill set to successfully establish a company that would add value to manufacturers across various industries. Bluewrist has moved locations within Markham four times to accommodate its increasing domestic workforce, which has tripled over the last three years because of its rapid sales growth. Bluewrist has developed four software products, each of which adds a different element to its customers' operations: comXtream, SPCWorks, KinOptim, and ScanXtream. comXtream is an automation and communication engine that allows for data exchange among industrial devices like robot controllers, sensors, programmable logic controllers, and third-party software. ScanXtream is a metrologygrade 3D point cloud processing and viewing software that automatically analyzes point cloud data and compares it to a known model (typically a computer-aided design model), with the ability to extract features and compare surface dimensional variances. The main benefit of using 3D scanning is the availability of depth and volume information, which leads to more precise and accurate quality inspections. SPCWorks offers statistical data control through its instant collection of inspection data from inline and offline measurement systems, generating a variety of statistical reports for real-time quality control. KinOptim provides allin-one, six-axis robot calibration that results in volumetric accuracy improvement, temperature compensation, and offline programming compensation. All of Bluewrist's software is open source, which allows customers to integrate either custom hardware or standard off-the-shelf equipment into their own facilities.

The majority of Bluewrist's customers operate in the automotive industry, mainly because firms in this field are usually the first to implement cutting-edge automation technologies. However, Bluewrist has recently begun expanding into non-automotive sectors as more industries become aware of the efficiency improvements that automation can bring. Marketing and Communications Manager, Jason Niu, states that trade shows are still the company's best marketing tool because there is no true substitute for face-to-face meetings in which potential clients can observe Bluewrist technology firsthand. At the same time, the firm attracts some new customers by publishing stories on its website about unique applications of its technology, informing firms of the possibilities that Bluewrist products offer.

Customers value Bluewrist's products because they increase productivity through robotic automation and reduce the risk of passing defective parts downstream, which lowers overall costs. Rather than sampling parts for quality inspection, Bluewrist offers 100 percent inline inspection, meaning that each and every manufactured part is inspected. Moreover, all projects undergo comprehensive feasibility studies that are conducted at Bluewrist's onsite innovation lab to ensure that they meet the firm's quality standards prior to delivery. Bluewrist's customers realize that producing a defective part and addressing the issue at a later date is significantly more expensive than identifying and resolving the issue immediately.

Although the majority of Bluewrist's customers have already purchased hardware, the company has the internal expertise required to design and manufacture its own fixtures when customers request an in-house turnkey solution. Bluewrist's domestic and international sales have benefited greatly from the global shift toward automation, as highly repetitive tasks become automated and employees are given more analytical jobs. The firm currently exports approximately 60 percent of its products, primarily to the United States, Mexico and China. The scalability of Bluewrist's products is what differentiates the firm from competitors in the automation industry. Bluewrist can offer solutions that utilize up to 30 plus cameras because of its scalable software, along with its expertise in perfecting the timing, path planning and coordination of each camera to minimize interference (e.g., if two cameras shine a laser on a product at the same time, one laser will distort the image being taken by the other camera). Most competitors are more proprietary and can only offer a fully integrated system if the customer purchases both hardware and software from them, making it too costly and too technically challenging to scale up operations as drastically as Bluewrist can.

Bluewrist employs approximately 100 individuals, with 60 working at the Markham facility and the remaining 40 stationed at facilities in China, Mexico, and the United States. These international locations were established to provide customers with accessible product installation assistance and troubleshooting customer service. The majority of employees hold various engineering degrees (e.g., mechanical, software, and electrical). Although the company has experienced rapid growth, Bluewrist has little difficulty recruiting talent. When hiring, managers emphasize how exciting it is to work at a high-growth company with a family-oriented work environment. Bluewrist also boasts a high retention rate, primarily because employees enjoy being consistently exposed to different manufacturers, products, and ideas. Rather than working on the same project every day, employees constantly face new challenges and are presented with countless opportunities to create solutions for cuttingedge problems.

Markham's proximity to the U.S. automotive hub in Michigan is a strong advantage for Bluewrist, as it enables the firm to

offer exceptional onsite customer support to its manufacturing clients across the border. In addition, Markham provides excellent access to both domestic and international talent from nearby universities. The firm has established partnerships with educational institutions such as Ontario Tech University and Queen's University for collaborative research projects.

Recognizing the importance of research and development (R&D), Bluewrist has intentions to become involved with the Ontario-based Next Generation Manufacturing Supercluster (NGen) endeavour.

Prior research initiatives conducted by Bluewrist include collaboration with the Natural Sciences and Engineering

Research Council of Canada, and participation in the Automotive Supplier Innovation Program, which saw Bluewrist receive \$820,000 from the federal government in 2016. The company is also a member of the Robotic Industries Association, which gives it access to additional resources and a larger local network.

Bluewrist does not face any direct challenges at present, but the firm is constantly working to create a better algorithm that will provide customers with more accurate data within a smaller time frame, even though its current products already vield measurements with less than 0.01 mm of error. However, in the data collection and automation industry, the sky's the limit, and Bluewrist plans to focus its future R&D projects on new processes that can be utilized to detect product defects, such as machine learning, deep learning, or artificial intelligence. This R&D will have significant implications for quality inspections on welding and assembly seams because no two seams are ever the same. Bluewrist's R&D team believes that by finding new algorithms and processes for the firm's software, they can revolutionize the industry by improving upon the current best practice for defect detection, which is to compare a scanned product image with the original computer-aided design model. This drive to innovate and improve existing technology will help Bluewrist solidify its reputation as a global leader in intelligent automation systems.

# **Profile: Ross Video Limited**



Image Credit - Ross Video Limited

Ross Video Limited is an Emmy-winning designer and manufacturer of live video broadcast equipment. From small beginnings, the firm has experienced dramatic growth in the past several decades and now boasts a workforce of almost 1,000 employees across 13 global offices.

Ross Video was founded in 1974 by its namesake, John Ross, a former engineer for the Canadian Broadcasting Corporation (CBC). Flying down the St. Lawrence River in his personal plane, Ross identified the town of Iroquois as an optimal location for the business. After selling his plane for \$3,500 of starting capital, Ross set up a small production facility in a local strip mall. In 1982, having outgrown the original location, Ross built a brand new 10,000-square-foot production facility. Over the years, this facility has expanded several times—in 1999, 2013, and again in 2019. The firm is already looking for ways to continue expanding, despite not having completed its most recent renovation.

### "We can't expand the building fast enough,"

says Senior Vice-President of Manufacturing and Services, Jeff Poapst.

In 2005, John Ross transferred ownership of Ross Video to his son, David Ross. John's leadership built a strong and stable company, and David's leadership continues to build on that legacy by pursuing aggressive growth and expansion. With a high reinvestment rate, the firm has grown organically through acquisitions, earning David the Ottawa Business Journal's 2016 CEO of the Year award. The firm has seen 27 years of consecutive exponential growth, with its strongest growth occurring within the last decade—Ross Video grew by 20.5 percent last year and is on track to grow by 17 percent this year. Since 2009, Ross Video has acquired 14 smaller companies that have allowed the firm to round out its live broadcast portfolio. The first acquisition was of Media Refinery, a Dutch graphics company and world leader in onscreen graphics. Today, this subsidiary alone generates 35 percent of total revenue and enables Ross Video to service large clients such as high-profile award shows and a majority of NFL stadiums.

Ross Video's product line spans over 600 different products across 18 product lines. The company supplies comprehensive solutions for live video productions, including production equipment, broadcast infrastructure, and software. One of its most notable products is the openGear® box, an open-protocol signal processor that allows for the use of non-proprietary circuit boards from specialty production software companies. Through a partnership of 80 other circuit board manufacturers, this frame allows customers to use what they need without the constraints of incompatible hardware. For this product, Ross Video received a Technology and Engineering Emmy Award in 2015.

Ross Video's extensive product line services a diverse range of industries in addition to television networks. The firm supplies equipment for a wide range of applications, including live venues production, virtual studio production, government broadcasting, education, and house of worship production. Ross Video has even supplied its products to technology firms like Google and Facebook, which are also beginning to branch into video production for things like in-house advertising and live video streaming. A new opportunity for Ross Video is professional e-sports (competitive video gaming), which requires large stadium video production and live streaming.

This diversity in product applications smooths out seasonality effects but also creates a competitive business environment. Ross Video faces competition from both large video production conglomerates and small specialized businesses. The firm's management realizes that it won't always be able to compete on price, so it focuses on being a quality and innovation leader. Reinvesting a large portion of profits into research and development, Ross Video builds an average of eight new prototyped products each week. The company's research and development function is centered in a dedicated facility in Ottawa that employs almost 300 workers. The firm has additional R&D staff distributed globally including in Virginia, California, Utah, Australia, the Netherlands, the UK, and more. In August of 2019, the National Research Council of Canada (NRC) awarded Ross Video up to \$5 million in research and development funding through its Industrial Research Assistance Program (IRAP); this is the largest research funding agreement that the NRC has issued to a Canadian business to date.

Poapst claims that Ross Video wouldn't be able to build nearly as many prototypes if it outsourced its manufacturing, due to the extra costs and latencies outsourcing introduces. The firm benefits by having the research and development team so close to production.

With such a strong focus on innovation and acquisition, Ross Video has found itself on the leading edge in various areas of live video technology, and this has translated into remarkable revenue growth. One example of this innovation is the firm's high-efficiency 4K routing systems, which were introduced two years ago and have exceeded initial sales forecasts. To promote its innovations, Ross Video attends over 100 industry trade shows per year. For its largest trade show, the National Association of Broadcasters tradeshow in Las Vegas, Ross Video has a 10,000-square-foot display and brings over 100 employees.

All of this growth means that Ross Video's manufacturing facility is tight for space, despite ongoing expansions. All manufacturing is done in Canada, so the production of acquired products is often moved to the Iroquois facility – a stark contrast from the decisions of many firms to move their electronics manufacturing operations offshore. The facility has implemented lean manufacturing practices to free up space and reduce product lead times. To remain innovative, Ross Video keeps its production process modern and efficient. It is currently in the process of retrofitting outdated machinery to maintain consistent production quality. The firm makes use of automation wherever possible for processes such as printed circuit board assembly and quality control. In 2018, Ross Video



Image Credit - Ross Video Limited

produced 110,000 circuit boards, and it will likely produce more in future years to match the company's growth. The firm also implemented a parts tracking system that allows access to an individual part's detailed production data simply by scanning its barcode.

Ross Video's labour force contains roughly 820 workers, 500 of whom are located in Canada. However, given the firm's strong expansion, it is looking to continuously grow its workforce and has nearly 50 job vacancies. Unlike many other Ontario manufacturers, Ross Video has not had significant difficulty recruiting skilled workers, aside from certain specialty positions. Many workers are attracted to the company because of its reputation for investing heavily in its workforce. In addition to a competitive salary and benefits package, the firm offers a variety of perks, including a flexible working environment, opportunities for professional growth and development, and personal wellness allowances. Management knows that the company's success is driven by the quality of its workforce and therefore makes these investments to attract and retain top talent and continuously improve productivity.

Ross Video's management is well aware of the changing trends in live broadcasting, particularly those driven by evolving media consumption habits and an increase in media digitization. By staying ahead of the curve with a keen market insight and extensive research and development, Ross Video is sure to ride the momentum of its recent success for years to come.

For more information about Ross Video, visit: <u>www.rossvideo.com</u>

# Statement of Financial Position as of March 31, 2020

ASSETS CURRENT		2020	2019	
Cash	\$	37,125	51,726	
Short-term Investments	\$	91,500	75,823	
Grants Receivable	\$	-	10,000	
HST Rebate Recoverable	\$	18,164	4,151	
Prepaid Expenses	\$	19,602	945	
	\$	166,391	142,645	
Capital Assets	\$	10,303	11,921	
	\$	176,694	154,566	
LIABILITIES AND NET ASSETS CURRENT		2020	2019	
Accounts Payable and Accrued Liabilities	\$	7,105	17,910	
Accounts Payable and Accrued Liabilities HST Payable	\$ \$	7,105	17,910 10,855	
Accounts Payable and Accrued Liabilities HST Payable Source Deductions Payable	\$ \$ \$	7,105 1,020 -	17,910 10,855 14,222	
Accounts Payable and Accrued Liabilities HST Payable Source Deductions Payable Deferred Revenue	\$ \$ \$ \$	7,105 1,020 - 66,118	17,910 10,855 14,222 15,658	
Accounts Payable and Accrued Liabilities HST Payable Source Deductions Payable Deferred Revenue	\$ \$ \$ \$ \$ \$	7,105 1,020 - 66,118 <b>74, 243</b>	17,910 10,855 14,222 15,658 <b>58,645</b>	
Accounts Payable and Accrued Liabilities HST Payable Source Deductions Payable Deferred Revenue Deferred Contributions Related to Capital Assets	\$ \$ \$ \$ \$ \$ \$	7,105 1,020 - 66,118 <b>74, 243</b> 10,303	17,910 10,855 14,222 15,658 <b>58,645</b> 11,921	
Accounts Payable and Accrued Liabilities HST Payable Source Deductions Payable Deferred Revenue Deferred Contributions Related to Capital Assets	\$ \$ \$ \$ \$ \$ \$ \$ \$	7,105 1,020 - 66,118 74, 243 10,303 84,546	17,910 10,855 14,222 15,658 <b>58,645</b> 11,921 <b>70,566</b>	
Accounts Payable and Accrued Liabilities HST Payable Source Deductions Payable Deferred Revenue Deferred Contributions Related to Capital Assets Net Assets	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	7,105 1,020 - 66,118 74,243 10,303 84,546 92,148	17,910 10,855 14,222 15,658 <b>58,645</b> 11,921 <b>70,566</b> 84,000	

#### Auditor's Statement

The financial summary is an excerpt from the complete Financial Statements of the organization, which were audited by BDO Canada LLP, dated May 12, 2020 and as such does not contain all disclosures required under Canadian accounting standards for not-for-profit organizations. A copy of the complete audited Financial Statements is available from the organization upon request.

# Statement of Operations as of March 31, 2020

REVENUE	2020	2019	
Grants	\$ 445,390	496,278	
Honorariums	\$ 7,500	84,000	
Amortization of Deferred Contributions Related to Capital Assets	\$ 5,768	2,201	
Interest - Ministry	\$ 2,036	1,441	
Interest - Other	\$ 648	-	
Federal Economic Development Grant	\$ -	18,204	
Rent	\$ -	5,038	
	\$ 461,342	607,162	

EXPENSES	2020	2019	
Salaries, Benefits and Consulting Fees	\$ 278,715	426,231	
Projects and Initiatives	\$ 57,082	-	
Software and Website	\$ 29,125	6,959	
OG100 Membership Fees	\$ 16,573	17,205	
Rent	\$ 16,320	20,187	
Professional Fees	\$ 15,362	11,369	
Meetings and Travel	\$ 14,407	22,862	
Office and General	\$ 11,390	3,602	
Publications and Promotions	\$ 6,477	2,110	
Amortization of Capital Assets	\$ 5,768	2,201	
Insurance	\$ 1,738	1,723	
Bank Charges, Interest and Penalties	\$ 237	3,027	
Geomapping Programming Fees	\$ -	5,686	
	\$ 453,194	523,162	
Excess of Revenue Over Expenses from Operations	\$ 8,148	84,000	

# 2020-21 Operating Plan

The Trillium Network for Advanced Manufacturing will focus on achieving the following objectives:

### **OBJECTIVE 1: FOCUS ON WORK IN PRIORITY AREAS**

### **Manufacturing Growth Segments**

We will work with partners to learn more about segments of Ontario manufacturing that are growing and to disseminate knowledge through presentations and reports to our partners and the public. These presentations and reports will focus on better understanding the factors promoting growth with the intention of facilitating further growth in Ontario's manufacturing sector. Growth segments include aerospace, breweries, medical device manufacturing, wineries, and industrial machinery manufacturing. We will publish at least three related reports.

### Industry 4.0

We will work with partners to collect and disseminate information related to the adoption of Industry 4.0 with the intention of helping Ontario-based companies improve competitiveness and productivity. We will work with our partners to identify and learn more about Ontario companies that are developing and manufacturing the technologies associated with Industry 4.0. We will publish at least one report related to Industry 4.0 and Ontario manufacturing.

### Skills, Talent and the Manufacturing Workforce

We will work with partners to collect and disseminate information about the evolving skills and workforce needs of Ontario manufacturers, especially in the context of Industry 4.0. We will work with research and educational institutions to learn more about their role in developing the next generation of the manufacturing workforce and how to best connect them with manufacturers. We will collect and disseminate information related to the demographics of Ontario's advanced manufacturing workforce, with a focus on learning from manufacturers that have successfully built a diverse organization. We will publish at least two reports that focus on workforce-related issues, at least one of which will focus on diversity.

### **Asset and Capability Mapping**

We will continue to work with our provincial (MEDJCT) and municipal partners to develop and augment our database of Ontario manufacturers and their capabilities. These data will be disseminated through our newly-enhanced TrilliumGIS application and in partnership with Ontario municipalities through the ConnectON platform. We will also continue to share this data with MEDJCT for the purposes of economic development and investment attraction.

#### Impact of COVID-19

We will work to understand the short-, medium-, and long-term impacts of the COVID-19 pandemic on Ontario's advanced manufacturing ecosystem. We will identify Ontario manufacturers that pivoted during the pandemic and connect with them to learn about and share their experiences. We will support our partners' efforts during the anticipated recovery period. This may include learning about the new opportunities available to firms that pivoted during the pandemic. We anticipate a series of short reports and presentations focused on the impacts of the COVID-19 pandemic on Ontario manufacturing.

### **OBJECTIVE 2: BUILD AND PROMOTE OUR NETWORK AND IT'S CAPABILITIES**

We will continue to promote our work through our updated website, social media platforms, and other web-based applications. We will increase our social media presence and traffic to our website by 20 percent over the previous year. We will increase the number of published company profiles to 150, with an emphasis on companies that pivoted during the COVID-19 pandemic and companies from segments of Ontario manufacturing that are growing.

We will continue to contribute to OG100. We will broaden and deepen our partnerships with industry associations, municipal economic development offices, government agencies, and educational and research institutions, and develop collaboration groups among these partners in accordance with our Strategic Outreach plan. We will add at least six more partners in 2020-21.

### **OBJECTIVE 3: GOOD GOVERNANCE**

We will meet our financial target of budget balance. We will offset emissions and meet our target of being a carbon neutral organization. We will operate according to principles of good governance and in accordance with the Canada Not-for-Profit Corporations Act.

We will work to improve equity, diversity, and inclusion (EDI) within our organization and in Ontario's advanced manufacturing ecosystem. This includes recruiting staff that are diverse in gender, age, and ethnicity. It also includes working with partners to increase the diversity of Ontario's manufacturing workforce.



Image Credit - Unsplash

# Trillium Network 2021-2023 Financial Plan

REVENUE	2021	2022	2023
Province	\$ 498,000	498,500	498,500
Interest on Provincial Funding	\$ 2,000	1,400	1,400
Provincial Carry Forward + HST Rebate	\$ 84,100	63,600	31,500
Other Revenue	\$ 0	0	0
Other Carry Forward	\$ 91,500	92,100	92,700
Interest on Other Carry Forward	\$ 600	600	600
Total Revenue	\$ 676,200	656,200	624,700
EXPENSES			
Staff	\$ 425,000	425,000	425,000
Accomodations	\$ 17,000	20,000	20,000
Office Expenses & Supplies	\$ 7,500	10,000	10,000
OG100	\$ 15,000	15,000	15,000
Travel & Event Expenses	\$ 15,000	20,000	20,000
Projects and Initiatives Expenses	\$ 25,000	25,000	25,000
Miscellaneous Expenses	\$ 5,000	5,000	5,000
HST Expenses	\$ 11,000	12,000	12,000
Total Expenses	\$ 520,500	532,000	532,000
Surplus	\$ 155,700	124,200	92,700



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