

RESILIENCE • RECOVERY • REBUILDING

# ROI

RETURN ON INNOVATION

## OCI ANNUAL REPORT

2020–2021

[OC-INNOVATION.CA](http://OC-INNOVATION.CA)





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For more than three decades, OCI has focused on ensuring the people of Ontario reap the personal and economic benefits of leading-edge research underway at our publicly funded universities, colleges and research hospitals by growing businesses, accelerating innovative products and services to global markets, and driving job creation.

Our vision is prosperity from innovation – an Ontario where bright minds connect to create prosperity. Together with our government, industry, and academic partners, we are working to maximize the commercial impact of intellectual property (IP) developed in Ontario and accelerate the commercialization of new technologies that drive job creation and create prosperity for our province.

## OUR IMPACT



### An important catalyst in Ontario's economy, OCI:

- Generates more than double the amount of its original investment in industry co-investments
- Helps attract follow-on investments in Ontario companies, primarily from angel investors and venture capitalists
- Helps companies create and retain thousands of jobs
- Supports projects that drive revenue and create jobs, contributing substantively to Ontario tax revenues



OCI has brought together collaborators and supported R&D and commercialization projects in over 250 communities across Ontario, spanning from Thunder Bay to Windsor to Cornwall and all parts in between. Our perspective is informed by market pull, our network is broad, our expertise is deep, and our focus is on province-wide economic development.

## Our province-wide Business Development team:

- Initiates unparalleled partnership opportunities
- Develops and manages successful industry-academic R&D collaborations
- Supports high-potential SMEs commercializing new technologies
- Provides access to emerging and advanced technology platforms
- Delivers one-of-a-kind hands-on training and skills development opportunities for the next generation of innovators



**HON. VIC FEDELI**

Minister of  
Economic  
Development,  
Job Creation  
and Trade

“

Since the pandemic began, Ontario's world-class entrepreneurs and innovators have demonstrated the best of what we like to call the Ontario Spirit. OCI's efforts are a great example of how public-private partnerships can continue to spur innovation, foster economic ecosystems, and create opportunities in new markets around the globe to drive economic success at home.”

## ABOUT US

### WHAT SETS US APART



#### Experienced Business Development Team

OCI is unique in deploying an on-the-ground, experienced business development (BD) team across the province. The BD team not only helps build industry-academic collaborations to commercialize innovation but also support high-potential companies in adopting emerging technologies.



#### Strong Knowledge of Communities

Because no two communities are the same, OCI plays a central role in bringing together stakeholders who can work together to meet the economic development needs of each region. OCI brings together large industry, SMEs, and academic and government partners to help the most promising businesses grow.



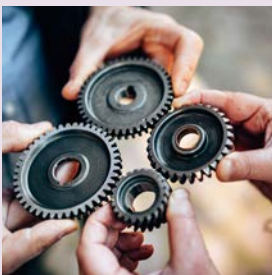
#### Requirement for Matching Industry Funds

OCI requires matching industry funding and on average industry contributions are 2:1. This unique private-sector matching requirement leads to follow-on investments by angel investors and venture capital funds resulting in many multiples of invested dollars.



#### De-risking Expertise

OCI's strong expertise in de-risking innovation helps attract private investors and other funders to companies they would otherwise overlook due to the risks associated with early-stage and new ventures.



#### Unparalleled Network

A gateway to Ontario's innovation ecosystem, OCI continues to expand its powerful network of partners, including government, large industry, academia, SMEs, entrepreneurs, investors, and other key players.



The past year has illustrated the vital importance of resilience through innovation.

COVID-19 forced governments, industries, SMEs, and researchers to come together and collaborate on developing the expertise and know-how to create made-in-Ontario solutions addressing the health crisis and enabling our recovery.

Towards this effort, I offer our sincere thanks to the Government of Ontario for entrusting us with the important mandate of accelerating innovation to create jobs and build a strong provincial economy.

For nearly 35 years, OCI has been proud to work in close partnership with the provincial government – sparking the creativity and imagination of Ontario innovators and driving tangible economic outcomes – which has resulted in tens of thousands of jobs and billions of dollars in new follow-on private sector innovation funding.

I extend my personal thanks to my Board of Directors colleagues for their vision and guidance, and to the OCI team, led by President and CEO Claudia Krywiak, who have demonstrated remarkable resilience and foresight. Throughout all the disruptions of the past year, the OCI team has shown grit, perseverance, and – most importantly – passion in delivering our vision of “prosperity through innovation.” On behalf of our entire Board of Directors, thank you.



**Dan Patterson, PhD., ICD.D**  
*Chair, Board of Directors, OCI*

## MESSAGE

### PRESIDENT & CEO



As entrepreneurs, researchers, and inventors, we understand that innovation is never a linear process – it comes in fits and starts, and relies on support, resources, and collaborators.

This work of supporting the development and adoption of advanced technologies is not only essential to economic recovery and increased resilience of Ontario, but it is also embedded deep into the DNA of this organization.

For this reason, and after a year of unprecedented challenges, 2020 marked a critical time in our organization's history as we rebranded from the "Ontario Centres of Excellence" to "Ontario Centre of Innovation." Throughout this process, the Government of Ontario has been a strong partner in initiatives to equip Ontario's high-potential companies with access to the advanced technology platforms they need to accelerate their growth and improve their global competitiveness.

We are proud to report the outcomes of our efforts from the past year and we are deeply appreciative of our industry, academic, and government partners, as we work to provide Ontario's talent with the most cutting-edge tools available.

It is in this spirit that we invite you to review our record of performance and join in celebrating the many successful entrepreneurs, companies, researchers, and innovators profiled in this year's Annual Report.

Because their success is Ontario's success.

**Claudia Krywiak, PhD.**  
*President and CEO, OCI*



## ABOUT US

### PARTNERS WE WORK WITH



OCI works with diverse partners across the innovation ecosystem to drive the commercialization and adoption of new technologies by connecting high-potential companies to the capital, research expertise, markets, and technologies they need to grow and succeed.

#### Partners include:

- The Government of Ontario
- Federal and Municipal Government Partners
- Global Multinationals
- Interprovincial and International Partners
- Offices of Research and Innovation/  
Technology Transfer Offices
- Ontario Start-ups, Scale-ups and SMEs
- Ontario's Universities, Colleges,  
and Research Hospitals
- Private Investors (Angels/VCs)
- Economic Development Offices
- Regional Innovation Centres (RICs)
- Small Business Enterprise Centres (SBECS)
- National and Provincial Business Associations

## THE POWER OF IP COLLABORATION

### Protecting Ontario's Intellectual Property through Strategic Partnerships

With the increasing pace of economic activity derived from “intangible” products and services related to the tech sector, Ontario's global competitive advantage is increasingly linked with our ability to foster, commercialize, and protect IP. Ontario SMEs are a key driver of these IP-related prosperity outcomes and it's been continually demonstrated that companies with an IP strategy are able to scale more quickly and raise more funding.

That's why we're working with key partners to better support and equip Ontario SMEs with the tools they need to develop, scale, and export their IP-based products.

Alongside the Canadian Intellectual Property Office, the Innovation Asset Collective, and the Business Development Bank of Canada, OCI has partnered with leading experts to ensure that tools are available to support the next generation of made-in-Ontario innovation.

Visit our website for more information on how these partners are supporting the journey from laboratory to marketplace.





## OUTCOMES ACHIEVED FY2020–2021

As at March 30, 2021

**\$233.9M**

Total Program Investment  
into Collaborative R&D and  
Commercialization Projects

**\$164.9M**

Total Co-investment  
from Industry (and other)  
Partners

**2.4x** Leverage

**898**

Ontario Companies  
Supported

**5,644**

Jobs  
New & Retained

**\$265.2M**

Incremental Sales  
Revenues  
by OCI-supported  
Companies

**\$503.3M**

Private Sector  
Follow-on  
Investment

\*includes retrospective survey results and  
results from wound-down programs

COVID-19

## ONTARIO INNOVATORS RISE TO PANDEMIC CHALLENGE



### ABLE INNOVATIONS

**Solution: Automated and Intelligent Assistive Patient Transfer Technology**

Able Innovations is developing automated and intelligent robotic patient transfer technology to improve the safety, efficiency, and quality of healthcare delivery. Their ALTA Platform™ enables a single healthcare worker to effortlessly lift and move patients laterally from surface to surface. Current methods of transfer require two to eight staff to exert significant physical effort, leading to high burden, injury rates and labour usage. The pandemic has heightened issues of infection control and front-line staff burnout.

Due to its unique benefits, the ALTA Platform™ is revolutionizing transfers at a time it is needed most.

The ALTA protects front line staff by allowing for effortless and contactless transfers, reducing the risk of both injuries and infectious disease spread.

### NOVA INSTITUTE

**Solution: Visual Thermal Sensor for Automatic Fever Screening**

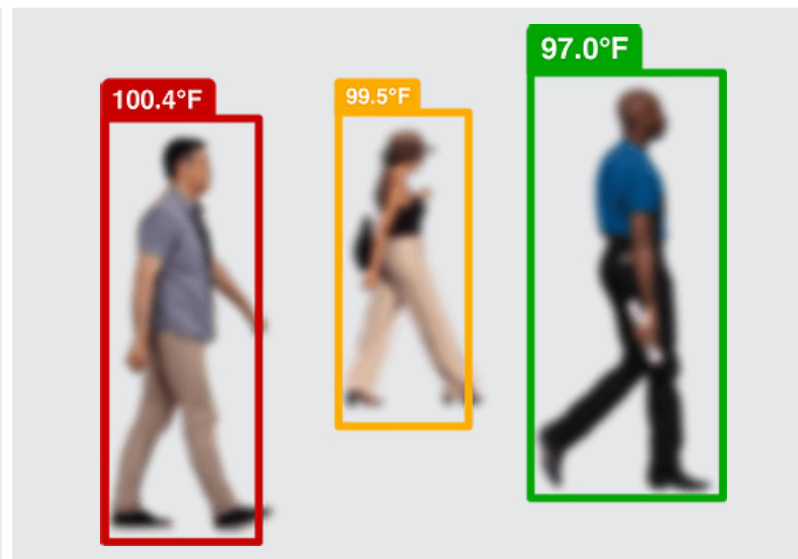
Nova Institute is a private research institute and training centre that has developed a visual thermal facial recognition device for physical access control. They recently repurposed thermal sensors in these devices to be used for automatic fever screening.

The resulting product is an automatic fever screening device that can be installed at the entrance of grocery stores and other essential services. The devices can alert security about individuals who are experiencing a fever within a five-metre range of the device. As 99% of people diagnosed with COVID-19 experience a fever, providing screening options to public-facing businesses can help keep their customers and employees safe.



COVID-19

## ONTARIO INNOVATORS RISE TO PANDEMIC CHALLENGE



## EAIGLE

**Solution: Digital Vaccine Pass for Vaccination Verification at Scale**

EAIGLE is a leader in artificial intelligence and computer vision technology, designing next-generation solutions to address the most complex challenges faced by a variety of industries.

Since the start of the pandemic, EAIGLE has been working with organizations to mitigate disruptions at work and in public spaces to maintain business continuity. The company has launched several solutions around wellness screening, crowd thermal monitoring, and a digital vaccine pass platform. EAIGLE's new Digital Vaccine Pass is a proof of vaccination platform that enables governments and organizations to verify vaccination status at scale. It empowers users to upload their proof of vaccination online or scan it on-site at EAIGLE's wellness stations through a touchless and automated process.



## ELAREX INC.

**Solution: Removing Refrigeration Need in Transportation and Storage of Vaccines**

Elarex Inc. is helping vaccine manufacturers escape the cold chain which can ultimately help reduce spoilage, improve the stability of new vaccine candidates, and make markets in developing nations more accessible, when cold chain infrastructure is unreliable or unavailable.

The Elarex vision is to change how vaccines and bio-therapeutics are distributed around the world. They want to achieve this by removing the need to maintain refrigeration of these vaccines and bio-therapeutics as they are transported and stored throughout the entire distribution system (the cold chain), before being administered to a person.



## OVERVIEW

# GATEWAY TO ONTARIO'S INNOVATION ECOSYSTEM



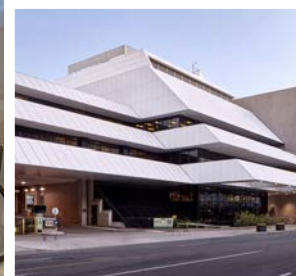
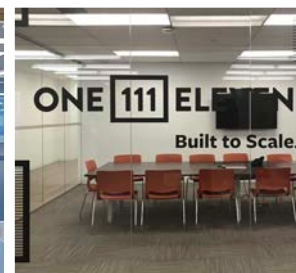
OCI's expansive network from across the innovation ecosystem offers a unique pan-provincial collaboration platform that accelerates the development, commercialization, and adoption of new technologies, driving job creation and long-term economic prosperity.

## WE CONNECT ONTARIO'S SMEs TO:



## OVERVIEW

OneELEVEN



## CANADA'S PREMIER POST-SEED TECH INNOVATION HUB

### OneEleven Launches Upskilling Programming to Accelerate Scale-up Growth

Since its founding in 2013, OneEleven has become the premier innovation hub for post-seed tech companies in Canada to grow and scale. It has been home to companies such as Wealthsimple, Clio, Koho, Borrowell, Maple, Properly, and Tulip.

When COVID-19 temporarily closed OneEleven's state-of-the-art "collision" space, the innovation hub pivoted to building a custom-built curriculum to help Canada's fastest growing companies. Using the pandemic and its limits on office density to reimagine how it adds value, OneEleven is building a first-of-its-kind-in-Canada program around talent upskilling, focused on key growth areas, including marketing, customer support, and product.

To support this initiative, OneEleven secured a \$2M federal grant and brought in the experts at Venture for Canada to design a curriculum focused on talent and upskilling of emerging people managers. This programming has been built entirely online during the pandemic, and earned rave reviews from OneEleven members. So much so that the tech accelerator has launched a new online-only membership tier, providing digital access to their programming as a standalone offering.

Besides building its talent upskilling program, OneEleven has improved its office space with accessibility and convenience upgrades, including adjustable height desks, a remote digital entry system, and new AV to support hybrid in-person and remote meetings. These upgrades, to accommodate the "Future of Work" post-COVID, are helping to draw new applicants to OneEleven as companies consider space utilization requirements and have allowed OneEleven to launch a "flex desk" option for their members.

OneEleven now begins the exciting work of combining their new upskilling programming with the safe return to in-office collaboration.

### OneELEVEN ALUMNI COMPANIES

Total Financing Raised (USD)

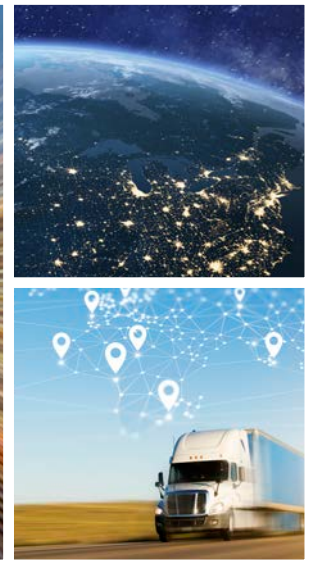
|                   |        |
|-------------------|--------|
| Wealthsimple      | \$900M |
| Clio              | \$386M |
| Gatik             | \$121M |
| KOHO              | \$113M |
| Borrowell         | \$92M  |
| Jobber            | \$84M  |
| Rubikloud         | \$81M  |
| Maple             | \$72M  |
| Tulip Retail      | \$51M  |
| 360insights       | \$48M  |
| 1QBit             | \$35M  |
| Cover             | \$27M  |
| Statflo           | \$14M  |
| CryptoNumerics    | \$7M   |
| Altus Assessments | \$2M   |

**\$2.033**  
**BILLION**

in total financing

## OVERVIEW

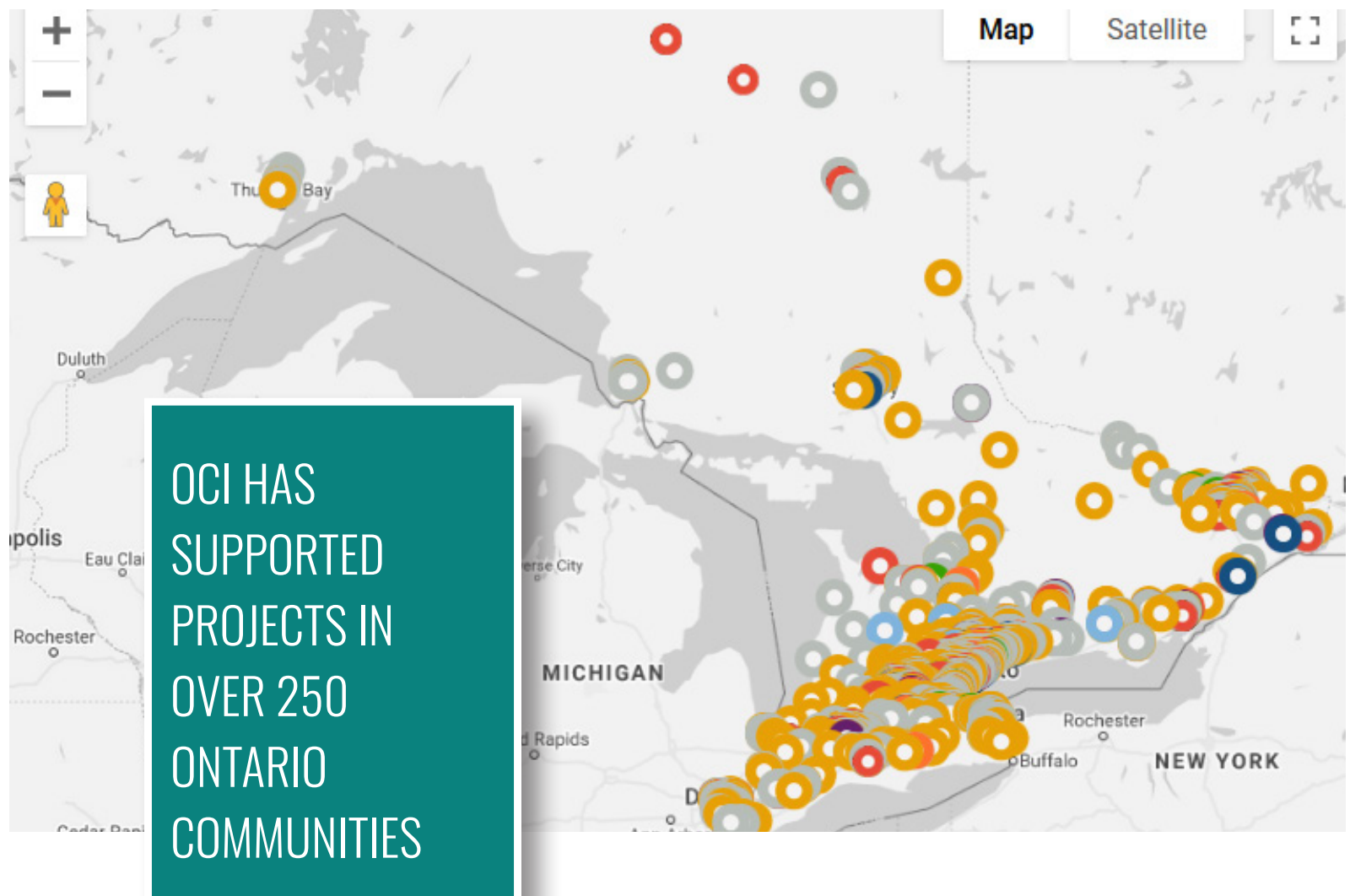
# ONTARIO'S INNOVATION ECOSYSTEM



## SERVING COMMUNITIES ACROSS ONTARIO

By visiting the OCI website, you can view an interactive map that lists our projects by region, economic sector, company, academic institution, company location, and project description.

This site also provides a view of the distribution of OCI funding by sector, number of projects by university, college, health institute, or research hospital, and the key details, including industry leverage, jobs created or retained, and project partners.



## OVERVIEW

# ACCELERATING ADVANCED TECHNOLOGY DEVELOPMENT & ADOPTION



Rapidly accelerating technology is having a profound impact on how industry and businesses work. To meet this challenge, the province of Ontario in partnership with OCI launched the Advanced Technology Platforms (ATP) to provide Ontario's innovators with access to leading-edge technologies that help accelerate company growth and global competitiveness.

Through the ATPs, researchers, entrepreneurs, and SMEs gain access to emerging technologies, including 5G and next-generation networks, smart and cloud computing, artificial intelligence, and data analytics.

By developing new partnerships between industry, academic researchers, and entrepreneurs, OCI plays a crucial role in transforming emerging technologies into new applications, while sharpening Ontario's competitive edge and building export capacity.

## ADVANCED TECHNOLOGY PLATFORMS (ATP)



### ENCQOR 5G

A transformational Canada–Québec–Ontario partnership focused on research and innovation in the field of 5G disruptive technologies, on adoption initiatives and system uses.



### Next Generation Network Program

Offered in partnership with OCI and CENGN, to support SMEs in the development of next-generation digital technologies, access business and technical expertise, and drive talent development.



### IBM Innovation Incubator Project

Offered in partnership with OCI and IBM, delivering an integrated suite of globally disruptive, advanced computing technology infrastructure and programming to Ontario's SMEs.



Ontario's **Autonomous Vehicle Innovation Network (AVIN)** builds upon the successful early entry of Ontario into the connected and autonomous vehicle (C/AV) space.

## INNOVATION HUBS

OCI works with Regional Innovation Centres to deliver the ATP suite and support Ontario SMEs to develop, test, and demonstrate their cutting-edge technical solutions.



OTTAWA

COMMUNITÉCH

WATERLOO



TORONTO

## PROGRAMS

### ENCQOR 5G



ENCQOR 5G (Evolution of Networked Services through a Corridor in Québec and Ontario for Research and Innovation) is a transformational Canada–Québec–Ontario partnership focused on research and innovation in the field of 5G disruptive technologies, on SME adoption initiatives, and on system uses. The partnership establishes the first Canadian pre-commercial 5G testbed and infrastructure – the key to making the digital economy a reality.

## PROGRAM INVESTMENT

**\$58.5M**

Program  
Investment

**\$45.2M**

Co-investment from Industry  
(and other) Partners

**ENCQOR 5G**

## ENCQOR 5G OUTCOMES FY2020–2021\*

**\$7.6M**

Incremental Sales  
Revenues

**\$10.4M**

Private Sector  
Follow-on  
Investment

**370**

New  
Projects

**317**

Jobs  
New & Retained

**359**

Ontario Companies  
Supported

\*includes retrospective survey results

ENCQOR 5G brings together five global digital technology leaders, including Ericsson, Ciena, Thales, CGI, IBM, and provincial delivery partners Prompt, Innovation ENCQOR, and OCI. The program is supported with funding from industry and the governments of Canada, Ontario and Québec.



## ENCQOR 5G SUCCESS STORIES



### B-DATA

#### Enhancing Blockchain Technology to Prevent Cyber Attacks

Cyber attacks, cyber warfare, and ransomware are happening at an unprecedented rate, and attacks on critical infrastructures have revealed weaknesses in the modern IT system.

B-Data's technology is one of the first to use blockchain technology for cybersecurity on IoT, edge, and smart devices. Although blockchain has many key characteristics that are a perfect fit for cybersecurity, the technology has been mainly used for cryptocurrency and fintech related applications. This is due to the size and latency of the blockchain technology needing to update every node when there is a new data transaction.

BDATA used the ENCQOR 5G platform to demonstrate the secure remote operation of Robotics and Process Control Valves using blockchain-smart contracts. BDATA's award winning BIOT technology provides end to end encrypted data streaming with intrusion detection, monitoring and end point management.

BIOT enabled devices are available through key hardware companies including Arrow, Intel, Advantec, Supermicro and Opto22.

\$600,000

Follow-on  
Investment

15

Jobs  
New &  
Retained

3

Products  
Developed

3

New  
Customers

### MERO TECHNOLOGIES

#### The Future of Dynamic Cleaning

Mero Technologies is an IoT smart building data company, providing an end-to-end analytics platform for building owners, commercial property managers, and tenants.

By providing smart sensing to optimize cleaning schedules, Mero provides up to 10x the ROI to commercial buildings, ushering in a future of dynamic cleaning.

Through the ENCQOR 5G program, Mero tested the scalability of their product prior to its rollout across Canada. It provided first access to game-changing 5G technology for the company and strategic advantage to the business.

Mero's core product offering tripled during COVID-19 and the company subsequently released Comfort by Mero, a tenant-facing visibility product into a commercial building's cleanliness, built on Mero's existing sensing platform.

Mero, which incubated at the Innovation Park at Queen's University, has rolled out over 50 deployments of Comfort across Canada and continues to see significant traction for the new product.

\$2M

Follow-on  
Investment

16

Jobs  
New &  
Retained

3

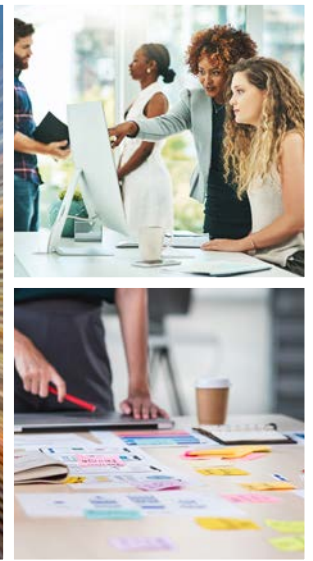
Products  
Developed

14

New  
Customers

## PROGRAMS

# NEXT GENERATION NETWORKS PROGRAM (NGNP)



As the world moves increasingly towards cloud applications, the changing needs of businesses are being met through NGNP providing SMEs with access to an ultra-high-speed, open multi-vendor network and cloud testbed, which provides technical services to support the development of new digital technologies, products, and services.

The program is offered through a partnership between the Centre of Excellence in Next Generation Networks (CENGNN), OCI, and the Government of Ontario.



## PROGRAM INVESTMENT

**\$25.2M**

Program  
Investment

**\$10.9M**

Co-investment from Industry  
(and other) Partners

## NGNP OUTCOMES FY2020–2021\*

**\$7.2M**

Incremental Sales  
Revenues

**\$23.4M**

Private Sector  
Follow-on  
Investment

**147**

New  
Projects

**512**

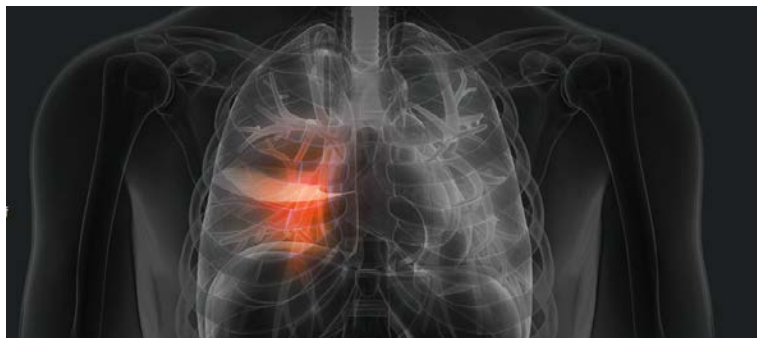
Jobs  
New & Retained

**133**

Ontario Companies  
Supported

\*includes retrospective survey results

NGNP provides access for Ontario-based SMEs to the CENGNN testbed for the development of proof-of-concept projects of new technologies, products, processes, and/or services.



## ALTIS LABS

### AI Advancements in Medical Imaging to Better Predict Patient Outcomes

Imaging data, and the technology that supports it, is critical to providing accurate medical diagnosis for patients.

Toronto's Altis Labs, a clinical information company, is working to enhance patient outcomes by helping clinicians and researchers leverage medical imaging to better predict and quantify treatment effect in lung cancer patients using artificial intelligence.

Traditionally, insight derived from imaging data is limited (e.g. tumor diameter) and subject to variability. Altis Labs' deep learning models take advantage of the rich, three-dimensional features present in imaging data to help accelerate development of novel therapies and facilitate personalized treatment decisions.

Engagement through NGNP has enabled Altis to rapidly accelerate development and validation of its technology in an easy-to-use infrastructure.

Having validated their technology in lung cancer, Altis is now expanding its focus to include prognostic imaging biomarkers for pulmonary diseases like COPD and pneumonia, as well as COVID-19.

8

Jobs  
New & Retained

3

Products  
Developed



## PHYXABLE

### Virtual Personal Rehab through Machine Learning and AR

Traditional physical therapy clinics see over 70% of patients dropping their rehab programs prior to being discharged due to time commitment inefficiencies and reduced funding by insurers.

Markham-based Phyxable is the only online solution for rehabilitation care with an end-to-end virtual rehab platform. Their optimized platform integrates 1:1 practitioner tele-rehab via video chat, personalized programs with machine learning, and augmented reality tools to deliver in-depth feedback data to practitioners.

Phyxable offers a competitive advantage as a market network that supports patients by integrating the insurers and corporations that pay for their insurance plans, as well as practitioners through an all-in-one platform.

Through NGNP collaboration, Phyxable increased its online platform target load from 1,000 to 10,000 concurrent users and enabled an understanding of scaling costs and better price points.

\$180,000

Private Sector Follow-on  
Investment

2

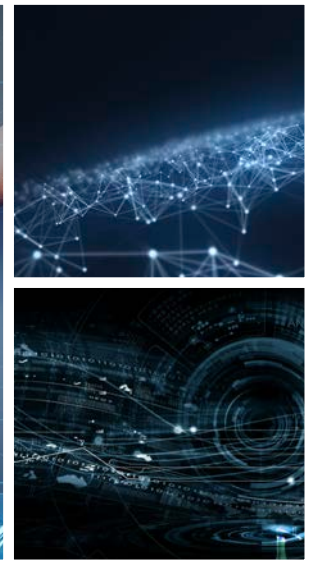
Products  
Developed

1,500

New  
Customers

## PROGRAMS

# IBM INNOVATION INCUBATOR (I3) INITIATIVE



The IBM Innovation Incubator (I3) initiative enables SMEs to develop, demonstrate, and commercialize new innovations that leverage smart computing and artificial intelligence – accelerating their time to market and driving economic growth.

## IBM INNOVATION INCUBATOR OVERALL PROGRAM OUTCOMES\*

The I3 program has successfully concluded with the following positive outcomes:

**\$162M**

Incremental Provincial  
Tax Revenue

**\$969M**

GDP to  
Ontario's Economy

**\$206M**

Incremental Sales  
Revenue

**\$238M**

Private Sector Follow-on  
Investment

**2,281**

Jobs  
New & Retained

**1,967**

New Products  
& Services

Launched in 2016, this cutting-edge collaboration succeeded in reducing barriers for Ontario SMEs to leverage IBM's expertise and information technology, providing a best-in-class program to help businesses spur innovation, increase productivity, and connect to new global markets.

PROGRAM DELIVERED  
IN PARTNERSHIP WITH:



## PROGRAM OUTCOMES FY2020–2021\*

**\$5.6M**

Incremental  
Sales Revenue

**293**

Jobs  
New & Retained

**\$27.6M**

Private Sector Follow-on  
Investment

\*includes retrospective survey results

## PROGRAMS

# 13 SUCCESS STORIES



## APP8 INC.

### Enabling a New Dining Experience through AI

The COVID-19 pandemic forced many dine-in restaurants to pivot and provide services off-premises through takeout or delivery.

By accessing the AI and machine learning technology through the I3 Program, App8 created the foundation for a new product line that provides establishments with actionable insights regarding their customers and diners.

The Ottawa company was able to leverage results of their project to accelerate the data architecture needed to accommodate the digital and contactless solutions required for off-premises dining experiences.

By allowing businesses to receive insights that convey their customers' preferences, they can create more preferable dining experiences in the future, encouraging repeat business, loyalty, and higher profit margins.

App8's technology is now integrated across numerous establishments throughout Canada and the U.S. and has enabled their latest follow-on investment of over \$1M.

\$1M

Follow-on  
Investment

5

Jobs  
New &  
Retained

2

Products  
Developed

55

New  
Customers



## ACCU-LABEL INC.

### Blockchain Integration for Fruit Labelling Technologies

Accu-Label is a leader in eco-friendly fruit labelling technology and has been supplying the industry since 2001.

The Windsor-based company delivers item-level traceability with lot code and grower code printed directly onto the fruit label through their Print & Apply™ real-time print technology.

The Accu-Label technology was integrated into a leading fruit packhouse that is serviced by their distributor partners ORORA Landsberg. The development and adoption of a digitally enabled produce label will not only mitigate against food safety risks and food fraud but also will be environmentally conscious by reducing contamination of landfills and recycling facilities.

The I3 project allowed Accu-Label to explore a new technology and a new line of business of integrating blockchain within the scope of produce labelling. Accu-Label were able to improve and streamline their product through the connections established with industry leaders at IBM and key grocery retail partners.

\$100,000

Follow-on  
Investment

2

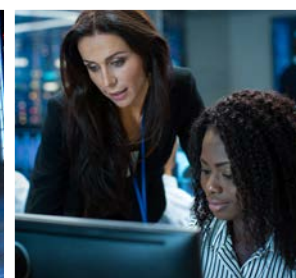
Jobs  
New &  
Retained

1

Products  
Developed

## PROGRAMS

# AUTONOMOUS VEHICLE INNOVATION NETWORK (AVIN)



As the automotive industry undergoes an evolution, driven by technological advances and evolving mobility preferences, Ontario, through the Autonomous Vehicle Innovation Network (AVIN), is at the forefront of this transformation. AVIN capitalizes on the economic potential of advancements in the automotive and mobility space and enables the province's transportation and infrastructure networks to plan for and adapt to this evolution. Through AVIN we are supporting the development, testing, and commercialization of new advanced automotive technologies and smart mobility solutions, and cultivating the capacity of a province-wide network to drive future mobility solutions, reinforcing Ontario's position as a global leader.

## PROGRAM INVESTMENT

**\$30.1M**

Program  
Investment

**\$17.9M**

Co-investment from Industry  
(and other) Partners



## AVIN OUTCOMES FY2020-2021\*

**\$17.3M**

Incremental Sales  
Revenues

**\$27.4M**

Private Sector  
Follow-on  
Investment

**96**

New  
Projects

**742**

Jobs  
New & Retained

**165**

Ontario Companies  
Supported

\*includes retrospective survey results

Since launching in 2017, AVIN has committed \$70 million in provincial funding, leveraging an additional \$112 million in industry co-investment. Currently, AVIN has supported 372 Ontario SMEs.



## AVIN SUCCESS STORIES



### ACERTA ANALYTICS

#### Empowering Data from Assembly Line to Finish Line

Acerta translates complex product data into actionable insights and assists precision manufacturers to take their digital transformation beyond manually crunching sensor data. Their platform identifies the earliest indications of defects and failures, enabling automotive and off-highway vehicle OEMs and Tier1s to make the right decisions fast, optimize production, and improve product quality.

Built exclusively for the auto industry, Acerta's technology allows precision manufacturers to benefit from the power of machine learning and artificial intelligence (ML/AI) capabilities that can help manufacturers and fleet operators in Ontario remain competitive in the market and gain an edge as the industry continues to move towards digitalization and EVs.

The Kitchener company's engagement with the AVIN program has accelerated their ability to expand their AutoPulse technology and demonstrate its applicability for fleets by supporting the collaboration between Acerta and Challenger Motor Freight.

\$9M

Private Sector Follow-on  
Investment

5

Jobs  
New & Retained



### AUTZU

#### Smart and Sustainable Drivesharing

Autzu is a drivesharing platform which aims to decrease global carbon emissions by switching all rideshare vehicles to electric. This is accomplished by building smart and sustainable infrastructure for mass vehicle control, charging, and connectivity.

Autzu builds dedicated software applications focused on managing its rideshare drivers and controlling its drivesharing vehicles. It uses advanced algorithms to connect its vehicles to multiple ridesharing platforms, maximizing the efficiency of its operations and allowing the drivesharing model to scale globally.

Their technology supports Ontario's aim to be a global leader in electric and autonomous vehicle utilization and reduces the carbon footprint produced by urban passenger transportation.

AVIN assisted Autzu with its engineering projects through technical and financial support, focused on in-car hardware and software development, prototyping, and testing.

8

Products  
Developed

11k+

New  
Customers

\$6M

Incremental  
Sales Revenue

## PROGRAMS

### MARKET READINESS (MR) CO-INVESTMENT FUND



The Market Readiness Co-investment Fund is Ontario's leading early-stage direct investment fund for Ontario companies and entrepreneurs with competitive and transformational IP. It helps build disruptive next-generation technologies and supports the growth of these companies into scalable businesses.

The objective of the program is to accelerate the commercialization of IP and prepare companies for seed investments and to attract follow-on funding.

## PROGRAM INVESTMENT

**\$14.9M**

Program  
Investment

**\$11.3M**

Co-investment from Industry  
(and other) Partners



## MARKET READINESS OUTCOMES FY2020–2021\*

**\$60.2M**

Incremental Sales  
Revenues

**\$111.5M**

Private Sector  
Follow-on  
Investment

**20**

New  
Projects

**835**

Jobs  
New & Retained

**67**

Ontario Companies  
Supported

\*includes retrospective survey results

Through Market Readiness, OCI has invested in over 250 companies to date and supports early-stage start-ups that demonstrate evidence of a scalable, repeatable business model serving an identified need in their market.



## FABLE

### Delivering Digital Accessibility in the Online World

Globally, more than one billion people have some form of disability. Digital products are rarely designed with this in mind, rendering them inaccessible for a large segment of the population.

Fable is an accessibility platform powered by people with disabilities. They quickly connect Fortune 500 companies, leading organizations and governments to people with disabilities for user research and accessibility testing. Fable's work enables millions more users around the world to better access and contribute to the online world.

Fable's unique approach to solving digital accessibility issues has also created flexible and sustainable employment opportunities for many Ontarians with disabilities.

The Market Readiness investment provided the organization with capital at a critical, early stage and positioned Fable to hire the right talent to support scaling, increase velocity of growth, and ultimately become a leader in the industry.

23

Jobs  
New & Retained

2

Products  
Developed



## KNOWTIONS

### Protecting Health by Transforming Insurance through AI

Increasing healthcare costs, population aging, and a rise in chronic illnesses pose a challenge to developing affordable insurance products.

Knowtions, an applied health AI company with a multidisciplinary team of machine learning researchers, insurance experts, bioinformaticians, and actuaries, are helping insurance companies launch Pay How You Live insurance products that apply health AI on new sources of data.

Their Lydia AI is trained on global health data to help insurers redefine health risks and develop products using health risk predictions that more accurately reflect population health needs, resulting in more inclusive and diverse insurance products, based on a customer's life stage, to meet their evolving health requirements.

Market Readiness support allowed Knowtions to find product market fit, ultimately enabling them to hire machine learning talent in Ontario and export their algorithms for global impact.

\$5M

Series A  
Funding

2

Patents  
Created

3

New  
Customers

## PROGRAMS

# VOUCHER FOR INNOVATION AND PRODUCTIVITY (VIP)



Ontario's VIP program supports collaboration between industry and academia to solve an industry-based problem and drive the commercialization of intellectual property.

These specialized collaborations drive revenue generation, grow businesses, and create high-value jobs for Ontario companies, improving Ontario's competitiveness.

## PROGRAM INVESTMENT

**\$8.2M**

Program  
Investment

**\$4.7M**

Co-investment from  
Industry (and other) Partners

## VIP PROGRAM OUTCOMES FY2020-2021\*

**\$26.2M**

Incremental Sales  
Revenues

**\$45.9M**

Private Sector  
Follow-on  
Investment

**91**

New  
Projects

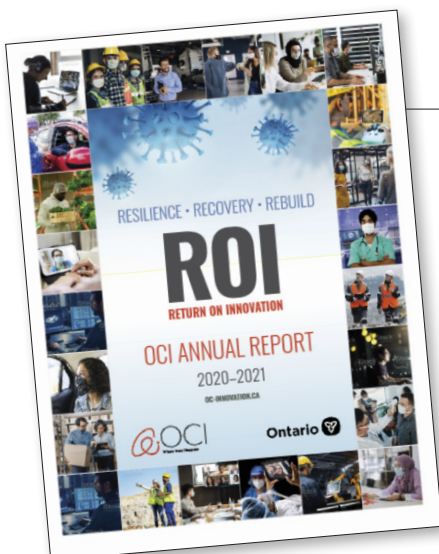
**569**

Jobs  
New & Retained

**97**

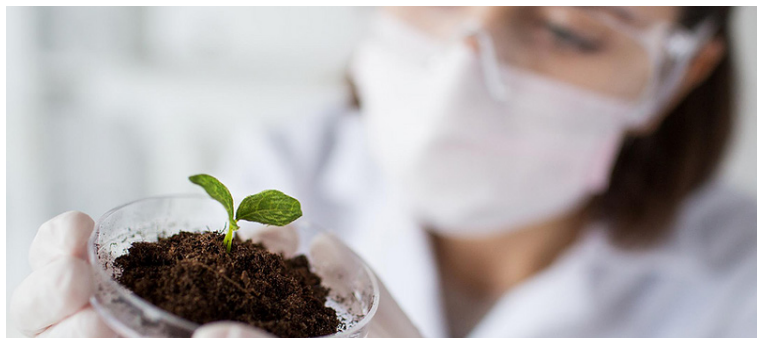
Ontario Companies  
Supported

\*includes retrospective survey results



## ABOUT OUR COVER

OCI recognizes and celebrates the contributions of frontline workers, innovators, and technologies during the incredible challenges of the COVID-19 pandemic. We dedicate this Annual Report to their tireless sacrifice, ingenuity, and compassion that showcases humanity's best, even while facing the worst.



## A&L BIOLOGICAL INC.

### Measuring Soil Health: A New Benchmark for Sustainable Agriculture

A&L Biological Inc. is a research and discovery company focused on bringing practical bio-based solutions to the agricultural industry.

Their technology is addressing the need for sustainable food production through improved farm practices by providing new insights to the soil microbiome and its impact on crop productivity.

The resulting commercial product allows industry stakeholders and producers to benchmark farm practices which impact soil health and to implement management practices for improved soil health and crop performance (yield and nutrient use efficiency).

The VIP program assisted the company by increasing their capacity to work through the project and bring in additional expertise to fulfill project goals.

The launch of this innovation has triggered the interest of academic institutions and multinational corporations who have now launched international trial projects with their technology.

\$500,000

Incremental  
Sales  
Revenue

3

Jobs  
New &  
Retained

2

Products  
Developed

2

Trademarks  
Established



## GENECIS BIOINDUSTRIES

### Biodegradable Plastics for a Circular Economy

Genecis proprietary technology utilizes bacteria to convert food waste destined for landfill into PHA plastic, a biodegradable alternative to traditional plastics.

Today many bioplastics are not truly compostable and lack the functionality and affordability of traditional petroleum plastics. Together these factors hinder the large-scale transition to a circular economy. PHAs (polyhydroxyalkanoates) are a revolutionary type of biodegradable plastic that have the functional properties to replace 60% of petroleum plastics globally.

The VIP project allowed the company to fine-tune the properties of their PHAs, create formulations that meet the customers' specifications, and replace their existing product lines. The project also helped Genecis to secure one of the largest anaerobic digestion plants in Canada as a first commercial integration partner.

Genecis is poised to lead the burgeoning industry of compostable plastics and biomanufacturing, and anticipates creating up to 10 new full-time positions in addition to the 25 currently on staff.

\$2.67M

Private Sector  
Follow-on  
Investment

25

Jobs  
New &  
Retained

1

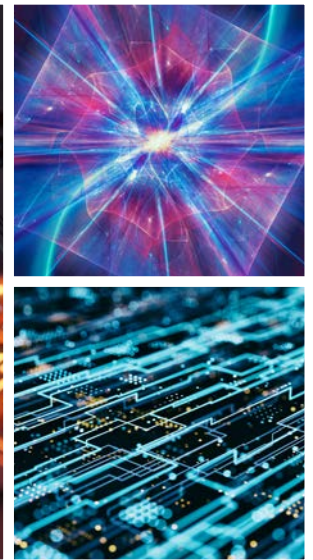
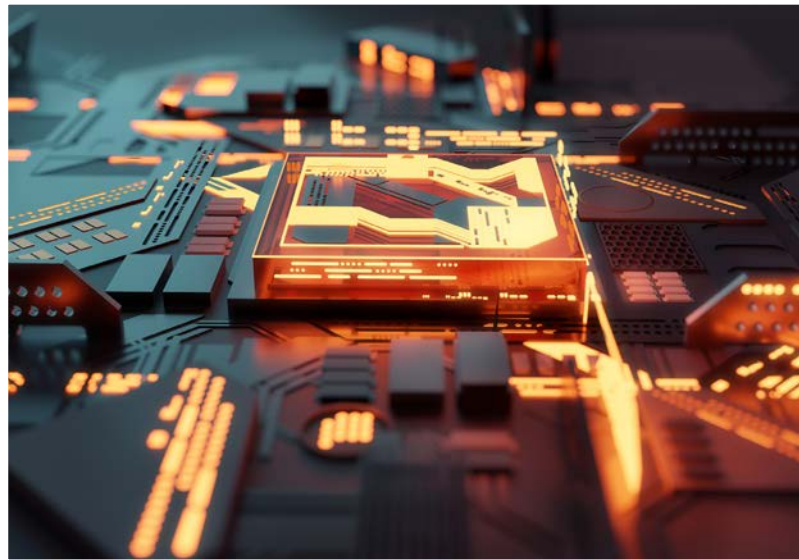
Patent  
Created

\$200,000

Incremental  
Sales  
Revenue

## EMERGING TECH

# THE FUTURE OF COMPUTING QUANTUM



## SUPPORTING THE NEXT GENERATION IN COMPUTING

### Cementing Ontario's Position as a Leader in Quantum Technologies through Collaboration

Canada is on the cusp of securing its place as a leader in quantum innovation. We are faced with the opportunity to leverage the current momentum of research and development in the industry to spark cross-sector transformation.

Ontario is well positioned to lead this charge. As a powerhouse in the industries setting the stage as prime markets for quantum today – finance, global energy and advanced industries – Ontario can enable the development of the applications to prepare our economy for quantum innovation.

In 2020, OCI continued its support of quantum companies, searching for opportunities to collaborate to aid in the development of economic opportunities for Ontario businesses. Companies such as Xanadu Quantum Technologies, a hardware and software company, and iSara, a security company optimizing for quantum, are examples of the teams we've supported.

Our newly announced partnership with Quantum Industry Canada (QIC) looks to accelerate the development, commercialization, and adoption of quantum technologies across Canada. This partnership will enable the Canadian innovation ecosystem to build capacity for economic ventures in quantum technology through the development of a national consortium of companies.



Thank you to Xanadu for their significant contributions to the field of Quantum Computing in Ontario and for supporting the next generation of Ontario innovators as sponsor of the the 2021-2022 Mind to Market Award.

## QUANTUM INDUSTRY CANADA (QIC) MEMBER COMPANIES:



## EMERGING TECH

# WEB- ENABLED HIGH PERFORMANCE COMPUTING



## KINGS DISTRIBUTED SYSTEMS

### Putting a Supercomputer at Everyone's Fingertips

Dan Desjardins is a computational physicist and, as one of many Canadian researchers whose work critically depends on timely access to large amounts of computing power, he can't access enough computing power to run his physics simulations.

Now CEO of Kings Distributed Systems, a deep tech company located in Kingston, Desjardins leads a team developing the Distributed Compute Protocol (DCP), a web-based platform that spreads computations over the many idle computers found in schools, homes, and businesses instead of in commercial cloud data centres.

Unlike commercial cloud platforms that are expensive and require significant technical know-how to manage, powerful applications are easily run on DCP with just five lines of code. This means that developers, innovators, and researchers worldwide have access to a powerful, accessible computing platform. The platform is purpose-built for data scientists and scientific computing experts, both expert and novice alike.

Through the Next Generation Network Program, access to CENGN's unique testbed allowed a full-scale deployment and test of DCP. Operating across multiple data centres on heterogeneous hardware and in different environments simultaneously, DCP was shown

to perform as well at scale as it did in the laboratory, validating commercial readiness.

"Working with OCI has allowed us to demonstrate our technology at scale, which in turn has helped us prepare for commercialization. OCI has also helped connect us with other companies in Ontario," says Desjardins.

Since their debut in July 2017, they have raised \$7M in investment, project revenues, and grants, and in the spring of 2021 raised US\$1.5M at a US\$45M company valuation. They currently employ 27 full-time employees and have incremental sales revenue of \$850,000.

DCP currently powers a number of applications, including Osler, an automated, data-driven surgery schedule generator that runs on in-hospital DCP computing networks to increase surgical throughput and decrease surgical backlogs, and Looking Glass, a COVID-19 predictive analytics platform designed for individual municipalities.



## FEATURE

# INNOVATION IN NORTHERN ONTARIO



## PATTERN DISCOVERY

### Supporting Clean Drinking Water for First Nations Communities through Data Analytics

Drinking water advisories are an unfortunate fact of life for many northern communities.

In an effort to support a solution, Waterloo-based Pattern Discovery utilized the I3 program and leveraged IBM cloud technologies to enhance technical support capabilities offered to water operators in remote communities through the use of data analytics.

The I3 program created an opportunity for Pattern Discovery to launch a pilot and establish a business relationship with the Chippewas of Nawash Unceded First Nation community. The pilot demonstrated the value of remotely monitoring operations by streaming live data from the plant and performing real-time analytics on the operating parameters. The success of this pilot created an opportunity for Pattern Discovery to establish a relationship with Canadore College and their First Peoples' Centre in North Bay for the development of a comprehensive program called the Clean Water Initiative. The program will showcase innovative water treatment technologies and provide the

framework to improve technical support for remote operators. The College will develop a teaching curriculum and field study activities geared towards First Nations communities and water treatment best practices.

As COVID-19 transmission remains a risk, especially to those in First Nations communities, having a remote monitoring system that delivers real-time support provides a valuable and contactless solution.

Pattern Discovery's services improve the overall quality of drinking water and ultimately improve the health and well-being of people in First Nations communities. The technologies and services will have a profound impact on the ability for First Nations water treatment operators to reliably and sustainably deliver clean drinking water to their communities.

2

Products  
Developed

12

Customer  
Opportunities

5

New Positions  
Created for 2022

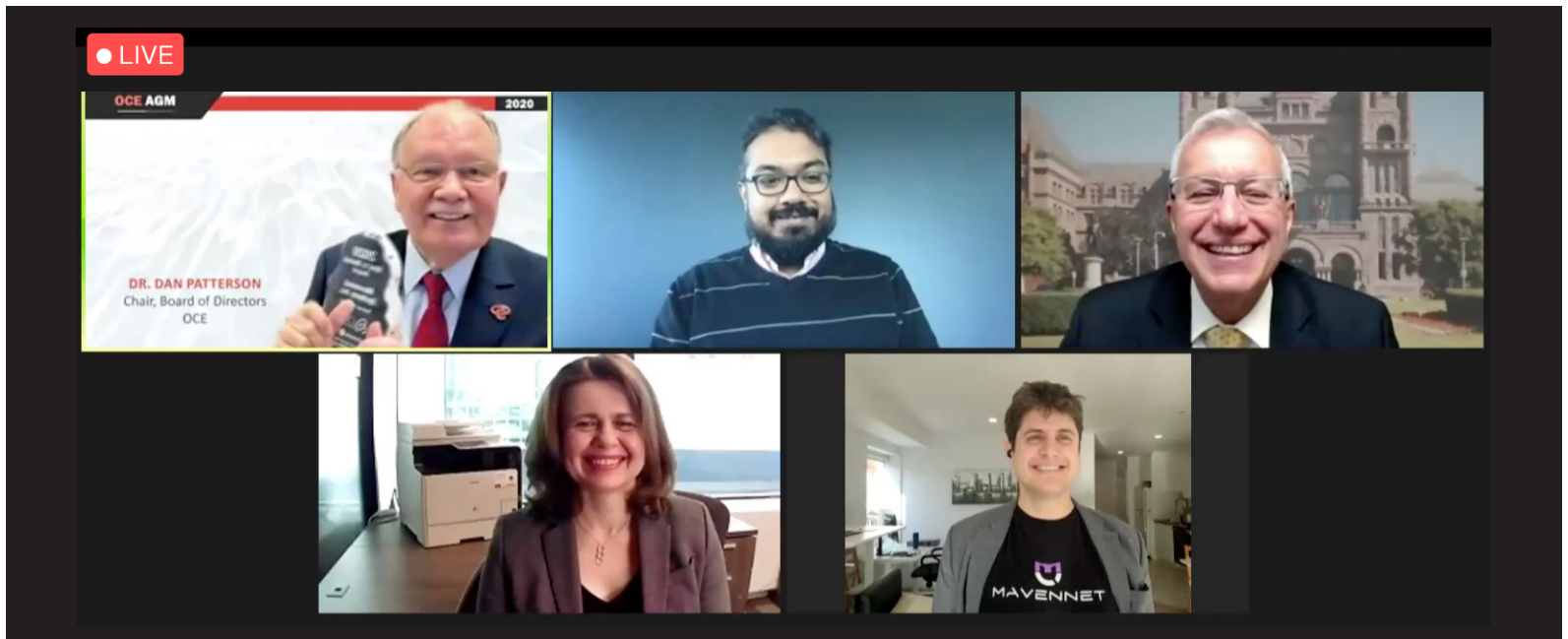
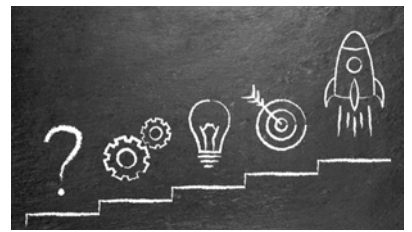


## NEVER MISS AN UPDATE

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## SUPPORTING ONTARIO'S BEST-OF-THE-BEST



2020 Mind to Market Winner:  
Mavenet Systems Inc.  
Kesem Frank, Chief Maven

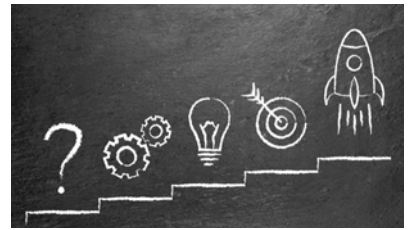
## 2020 MIND TO MARKET AWARD

The Mind to Market Award celebrates the best in Ontario Centre of Innovation–supported R&D collaborations between the business and research communities that result in commercialization of transformative leading-edge solutions and IP. Award recipients exemplify the innovation that is possible when the brightest minds in industry and academia collaborate to address today's most critical issues. The Award is presented each fall at OCI's Annual General Meeting.

The 2020 Mind to Market Award winner, Mavenet, fosters digital trust by harnessing blockchain technology. They digitize assets in diverse industries such as oil, gas, steel, and aerospace, and work in collaboration with governments.

Mavenet products enable any asset to have its own digital passport as it travels the world through complex supply chains. They create digital certainty as to where assets originate, where they've been, and any changes happening to them, enabling fully automated trade between organizations.





## HYIVY HEALTH

### Necessity Is the Mother of Invention ... and Innovation

More than 50 million women will experience a pelvic health complication in their lifetime, ranging from menopause to post-partum, gynecological diseases to cancer, and the medical technology to support them hasn't changed since 1938.

Necessity has proven to be a great motivator for femtech innovator Rachel Bartholomew, who started Hyivy Health following her recent fight with cervical cancer.

Hyivy has created a patent-pending intelligent and holistic pelvic rehabilitation system for women dealing with pelvic floor issues. Their technology consists of a multitherapy vaginal wand in combination with biosensors which are collecting the first ever data set on the pelvic floor. This data is tracked using a patient mobile application and a remote, patient-monitoring clinician software portal for OBGYNs and pelvic floor therapists.

Hyivy's work with the ENCQOR 5G program enabled proof of concept for their technology, and further Market Readiness funding is helping scale their solution, advancing the standard of care for pelvic health and moving towards predictive and proactive medicine in this area of women's health.



OCI's tagline, "Where Next Happens," speaks to our focus on supporting the development of cutting edge technologies where Ontario is a world leader.

As part of our focus on these transformational emerging technologies, we're supporting the companies that are on the cutting-edge of high-opportunity areas, including augmented reality, genomics, and quantum computing.

# BUSINESS DEVELOPMENT & COMMERCIALIZATION TEAM



Our team of highly qualified Business Development and Commercialization Directors and Managers are available to help connect Ontario-based industry to research expertise in Ontario universities, colleges, and research hospitals.



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## **Dr. Nicole De Long**

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Currently on leave

Visit the "OCI Team" webpage, under "About" on our website for more information.

# OCI GOVERNANCE



OCI is a not-for-profit organization governed by an independent Board of Directors that includes observers from the provincial government. OCI is funded by the Government of Ontario and also receives funding from the Government of Canada.

## BOARD OF DIRECTORS



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Vice President,  
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Ford Motor Company of Canada  
• GOVERNANCE & NOMINATING COMMITTEE



**Janet Ecker**  
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• HUMAN RESOURCES &  
COMPENSATION COMMITTEE (CHAIR)  
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**Colin Kelleher**  
Kelleher Group  
• FINANCE & AUDIT COMMITTEE



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AI Partnerships Corp.  
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System2 Neurotechnology and  
Senior Fellow, Munk School of  
Global Affairs, University of Toronto  
• HUMAN RESOURCES &  
COMPENSATION COMMITTEE



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CEO  
DeveloperMedia



**Victoria Paine-Mantha**  
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Brontaine Limited  
• FINANCE & AUDIT COMMITTEE



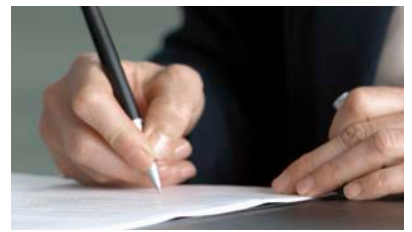
**Linda Franklin**  
President and CEO  
Colleges Ontario  
• GOVERNANCE & NOMINATING  
COMMITTEE (CHAIR)  
• EXECUTIVE COMMITTEE



**Dr. Claudia Krywiak**  
(Ex-Officio)  
President and CEO  
Ontario Centre of Innovation (OCI)



**Mark Henderson**  
Principal  
Nomofob Consulting  
• FINANCE & AUDIT COMMITTEE (CHAIR)  
• EXECUTIVE COMMITTEE



## OBSERVERS



**Giles Gherson**

Deputy Minister of Economic Development, Job Creation and Trade, Government of Ontario



**Anne Bermonte**

Assistant Deputy Minister (Acting), Innovation, Scale-up and Regional Economic Development Division, Government of Ontario

## EXECUTIVE TEAM



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President and CEO



**Hiten Makim**

Vice President, Finance & Operations



**Dr. Ketaki Desai**

Vice President, Business Development



**Raed Kadri**

Vice President, Strategic Initiatives and Head of the Autonomous Vehicle Innovation Network (AVIN)

## ANNUAL REPORT

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Director, Communications & Strategy

**Sandy Bowers**

Manager, Public Affairs

**Deanna Tosto**

Creative Lead

**Rebecca Chiu**

Communications & Digital Engagement Specialist

Ontario Centre of Innovation promotes a healthy workplace, which is key to well-being and, by extension, innovation.



Ontario Centre of Innovation is a member of the Institute of Corporate Directors (ICD).



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A not-for-profit organization, OCI is funded by the Government of Ontario and works in partnership with government, industry, and academia to commercialize innovation and build a strong provincial economy.