

Fiscal Year 2019
April 1 2018 - March 31 2019



Vision

Advancing global technology innovation for the prosperity of all Canadians

Mission

CENGN drives technology innovation and industry growth through our test bed, technical expertise, talent development, and partner ecosystem.

Accomplishments

61

SME Projects

2,068

Jobs Created*

\$195M

Contributed to
GDP*

23

Members &
Partners

1303

People Trained

155

Internships

*per Nordicity Group Limited

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Letter from the Chairman



This is the fifth annual report for CENGN and my first year as Chair. After reviewing this report I hope you will be as excited and encouraged as I am about CENGN's achievements to date, capabilities, mission and outlook as we enter our sixth year.

Our mission remains focused on our pan-Canadian mandate to accelerate innovation and especially commercialization in the networking sector. We believe this is key for economic development and competitiveness across all industries and regions in Canada. CENGN is an important part of Canada's global leadership in next generation networks and the creation of jobs that comes with nurturing this fast-paced technology sector.

Fiscal Year 2019 saw several achievements against our key performance indicators – including our work with a growing number of small and medium enterprises (SMEs), a student program that continues to flourish and the expansion of our training program under the banner of CENGN Academy. Notably, CENGN saw the growth of our networking infrastructure from one data centre to four. The CENGN Infrastructure has expanded across Ontario as a hyperconnected multi-site testbed hosted at CENGN HQ, as well as the innovation hubs MaRS, Communitech, and Invest Ottawa. With this expansion we have increased in capacity and accessibility, as well as bolstered our presence across Ontario to further enable the strong communities of growing tech businesses with our commercialization services.

It is very important to thank our two key government funding partners for their continued support. The Federal government's support through its Centres of Excellence for Commercialization and Research (CECR) program allows us to fulfill our pan-Canadian mandate, while the Ontario government through OCE and the Next Generation Network Program (NGNP) has enabled us to significantly expand our impact in Ontario. We are focused on utilizing this funding to not only advance Canada's innovation capacity, but to deliver a return on investment that has a positive impact on the economic and social well being of all citizens.

I would also like to recognize the important contributions from our Members. Their strong support, strategic and technical guidance, and strong contributions at the Board level remain the foundation of the organization. With the expansion of our reach and the increasing impact of the organization, there has never been a better time to become a Member of CENGN.

CENGN continues to develop expertise and technical partnerships. We are pleased to have a new membership with the Cloud Native Computing Foundation and continue to strengthen our partnership with the Linux Foundation by connecting our services with their training offerings.

I'd also like to say a special thanks to our retiring former Chairman, Mike Scott. Mike was the founding chair and a big part of why CENGN exists today.

And of course, all of our programs, achievements, and future plans would not be possible without the strong team we have at CENGN. The staff of CENGN show considerable energy and skill and it is because of their efforts that we continue to achieve and exceed on our goals.

Tom Astle
Chairman of the Board

Letter from President & CEO



Networking technology continues to be a key enabler of the productivity and competitiveness of businesses and services across all industry sectors. Whether it is the way we do business or our quality of life, advancements in connectivity and data services are driving the changes taking place in the world. Deployments of IoT sensors are ushering-in an era that is bringing the Smart City and autonomous transportation to a near reality as opposed to a distant future, and we are seeing significant change in what most consider traditional industries, like mining, agriculture, manufacturing and health. These industries are being revolutionized by digital transformation, leading to sustainable growth and greater competitiveness.

As Canadians continue to embrace new technologies to push their businesses to the next level, we will continue to see a positive impact on our economic and social prosperity. CENGN aims to be a driving force in enabling Canada's diverse industries to harness the potential of new technologies and innovative solutions and we have established programs to address this opportunity, notably in Smart Mining and Smart Agriculture. We have also launched our new program focusing on identifying new and innovative network solutions to enable better connectivity in remote and rural regions as this is a key enabler of equal opportunity for all citizens.

Canada has a very strong presence of tech startups and small businesses that are maintaining the country's position as a leading source of new technology for the global market. By offering these companies and pioneering entrepreneurs access to a multi-vendor commercial grade infrastructure to validate their technology, we are enabling them to flourish and accelerate the commercialization of their innovative products and solutions, strengthening our economy and building a more competitive Canada.

One of the key enablers of this commercial success is the availability of skilled graduates and professionals with leading-edge expertise in the networking sector. As is the case with all fast-paced and disruptive industries, the availability of talent remains one of the top challenges to growing tech companies. Networking technology continues to develop at an accelerating pace, leading to quick technological shifts and the adoption of new solutions and methods. To address the industry's need, CENGN continues to build its training offerings under the CENGN Academy banner. We are developing courses for professionals to remain on top of the most relevant skills in the sector, as well as a certification program that will help bridge the gap between academia and the workforce for new graduates.

This annual report highlights the great work that has been accomplished in FY 2019. It also gives insights into our plans to further drive innovation and commercial success in Canada's ICT sector. You will notice the growing impact CENGN continues to make on the Canadian ICT landscape, completing more commercialization projects with SMEs across Canada than in previous years, expanding our infrastructure to four data centres, and developing a more robust set of services. Whether you represent a growing Canadian business, a multinational technology leader, or are a recent graduate, I invite you to join us in our mission to advance Canada's next generation networking technology and innovation economy.

Jean-Charles Fahmy
President and CEO

Board of Directors



Tom Astle
Chairman



Stephanie Ratza
Vice Chair



Chris Bachalo
Global Director
Cloud Solutions
Juniper Networks



Sam Bucci
Senior VP & GM
IP Transport Networking
Nokia



Tom Bursey
CFO & VP
Council of Canadian
Academies



Code Cubitt
Managing Director
Mistral Venture Partners



Sacha Gera
SVP, Cloud & SaaS Products
Ribbon Communications



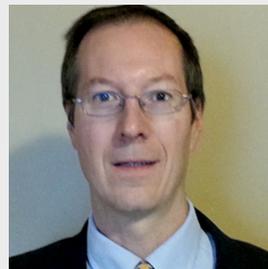
Rafik Goubran
VP & Chancellor's
Professor
Carleton University



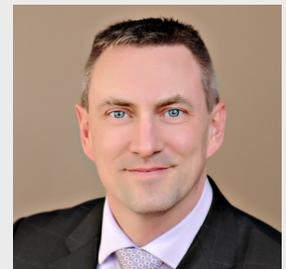
Joe Hickey
President & CEO
ROCK Networks



Al Hurren
Senior VP of Research &
Development
Mitel



Rob Keates
Manager of IP/Optical
Standards
TELUS



Matt Pearson
Associate Partner SR&ED &
Business Incentives
Ernst & Young



Mike Scott
Independent Director



Steven Wood
Principal Engineer - Enterprise
Architecture & SD-WAN
Cisco



Peter Wilenius
VP of Business Development
CANARIE Inc.

Members

CENGN draws its strength from the combined contributions and commitments of its Members. Members provide expertise and commercial offerings that allow Canada's most promising tech businesses to validate their solutions to overcome barriers to market entry and business acceleration. By working with CENGN, Members are able to ensure the growth and sustainability of the communications industry in Canada and solidify the country's leadership in next generation networking.

Member Benefits

Access to a pipeline of complimentary technology and solutions

Access to a talent pool of trained professionals

Co-creation and incubation opportunities

Connectivity to the innovation ecosystem

Brand exposure



Student Program

CENGN collaborates with colleges and universities across Canada to welcome approximately 40 student interns each year. Interns are provided with hands-on experience in the fields of engineering, project management, customer service, marketing, HR, finance, and administration. Throughout their term, each intern contributes to the company's success while developing their professional skills and making a valuable impact on the industry.

170
Total Internships

97%
Employment Rate



Student Spotlights



Areum Cho

Algonquin College
Cloud Solutions Engineer
Algonquin's Co-op Student
Achievement Award
Currently employed at Entrust Datacard



Zain ul Abdin

University of Victoria
Cloud Service Engineer
Developed GNS3 CENGN service
MAsc Electrical and Computer Eng
University of Victoria



Kyler Manseau

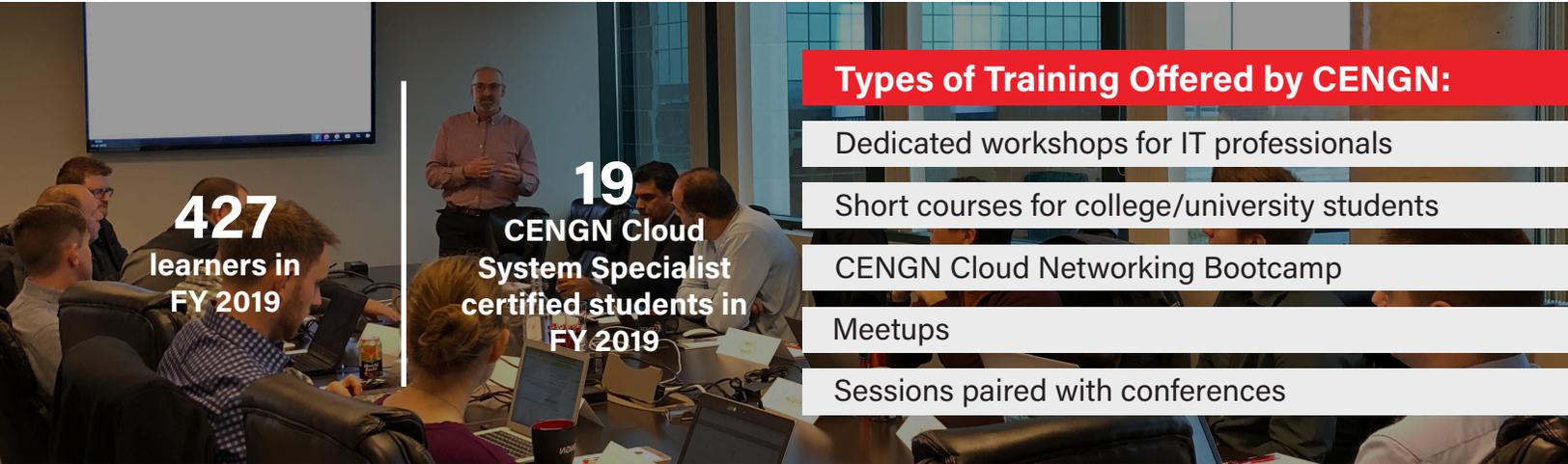
Carleton University & Algonquin College
Cloud Infrastructure Engineer
CENGN WOW Award
Completing CarletonU Bachelor of IT,
specialization in Networking

Interns leave CENGN as technical professionals ready for real-world positions in the tech industry

Contact us at student-hr@cengn.ca to see how your organization can benefit from CENGN alumni



CENGN Academy offers a variety of training opportunities to the networking community, with the aim of helping strengthen Canada's talent pool and supporting a growing sector of innovation. By keeping professionals up to date on one of the most fast-paced, growing industries in the world, CENGN continues to solidify the Canadian ICT community's global competitiveness.



427
learners in
FY 2019

19
CENGN Cloud
System Specialist
certified students in
FY 2019

Types of Training Offered by CENGN:

Dedicated workshops for IT professionals

Short courses for college/university students

CENGN Cloud Networking Bootcamp

Meetups

Sessions paired with conferences

FY 2019 Accomplishments

This year saw the introduction of CENGN Academy. Under this new banner, CENGN expanded its training program with the goal of levelling up professional and student knowledge on next generation networking technologies.

With CENGN Academy came a new web portal allowing learners to access and register for training offerings online. New courses and services are being added to the portal as CENGN continues to build partnerships and new content. Below are some highlights of FY 2019's training partnerships:

With **The Linux Foundation**, CENGN hosted community building events including OSN Days Ottawa and Open Source Meetups. These public events emphasize learning about the latest networking technology and a coming-together of professionals.

By partnering with **Juniper Networks**, CENGN brought self-paced training and certification preparation to students at 3 Ontario institutions: Carleton University, Cambrian College, and La Cite Collegiale. This training allows students to grow their career options by providing industry certifications.

In collaboration with **CloudOps**, CENGN delivered 4 Docker Kubernetes workshops. These workshops bridge the gap between virtualization and containerization and promote these tools to help organizations take advantage of this new software delivery model.

FY 2020 Direction

Moving forward, CENGN is planning to expand its training catalogue and build out a fully functioning cloud training lab Infrastructure that can support both remote and on-location skill-building. Stay up-to-date with CENGN Academy as the public CENGN Cloud System Specialist certification is rolled out and new workshops, short online courses, and meetups are announced.

Driving Innovative and Economic Growth Across Canada

CENGN's mission is supported by the Networks of Centres of Excellence's (NCE) CECR Program and the Government of Ontario's NGNP. Through each program's support and funding, CENGN is able to provide its services to businesses across Ontario and throughout Canada.

The Centres of Excellence for Commercialization and Research (CECR) Program



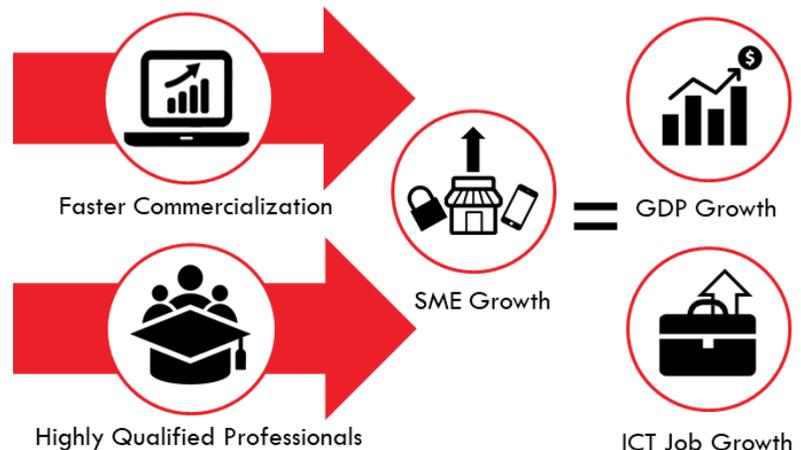
CENGN was created as part of NCE's CECR Program to bridge the gap between innovation and commercialization in the ICT sector. With NCE's support, CENGN continues to accelerate the commercialization of Canadian tech businesses and usher in the next generation of networking in Canada.

The Next Generation Network Program (NGNP)



NGNP, funded by the Ontario government (Ministry of Economic Development, Job Creation and Trade), supports Ontario's innovation ecosystem through its focus on the expansion of digital infrastructure across the Province, development of talent and high quality ICT jobs, and overall enrichment of Ontario's global competitiveness. Together with OCE, CENGN works on behalf of the Ontario government to expand the availability and scope of our services to improve all sectors.

Both the NGNP and CECR programs are designed to promote economic strength and prosperity in Canada's ICT sector. CENGN delivers services to SMEs as well as develops talent (students and industry training) to allow for faster commercialization and the growth of Canada's pool of highly qualified professionals. By enabling the success of Canadian businesses and professionals, CENGN fuels economic and ICT job growth in Canada.



Additional NGNP Program Streams

Beyond developing talent and the commercial growth of tech businesses, NGNP leverages CENGN's Infrastructure to enable business growth and the success of key sectors and regions through the advancement of innovative and disruptive technology. Additional program streams include agriculture, mining, as well as rural and northern communities.



Smart Agriculture

The agriculture sector is crucial to Canada's economy, accounting for 6.7% of Canada's total GDP and providing Canadians with over 2.3 million jobs. Growth and success in this sector have an extensive impact on the lives of all Canadians. By connecting the innovations of the ICT sector with the agriculture industry, we can supercharge Canada's farming revenue, efficiency, and environmental friendliness.

CENGN is supporting and driving Smart Agriculture projects to validate technology solutions that improve agricultural efficiency and productivity. Ukko Agro, a start-up helping farmers grow crops more sustainably by using IoT sensors and data analytics to predict potential pest and disease attacks, leveraged CENGN's services. After completing a functionality and scale testing project at CENGN, Ukko Agro was prepared to deploy their solution on multiple farms across Canada and the United States.



Smart Mining

Canada ranks in the top 5 for global production of 16 major minerals and metals, with Ontario having the most active mines of any province or territory. Making up over \$97 billion of our country's GDP, the mining sector is crucial to Canada's economy.

Through NGNP, CENGN will fund innovative projects that demonstrate flexible, cost-effective, and enhanced Smart Mining solutions. Combined with CENGN's services and expertise, these projects support innovation within the Canadian mining industry, ensuring Canadian SMEs gain a competitive advantage to address the efficiency, revenue, safety, and environmental challenges facing the mining sector.



Rural and Northern Broadband Connectivity

While large urban centres across Canada have the highest speed broadband access service offerings available, rural and northern communities often struggle to get basic high-speed connectivity. This lack of broadband high-speed internet connectivity strains communities in terms of economic growth, learning opportunities, and access to information or news. Broadband connectivity is a fundamental driver of economic and social prosperity for rural and remote communities and enables digital transformation for critical industries and services such as agriculture, mining, eHealth, and distance learning.

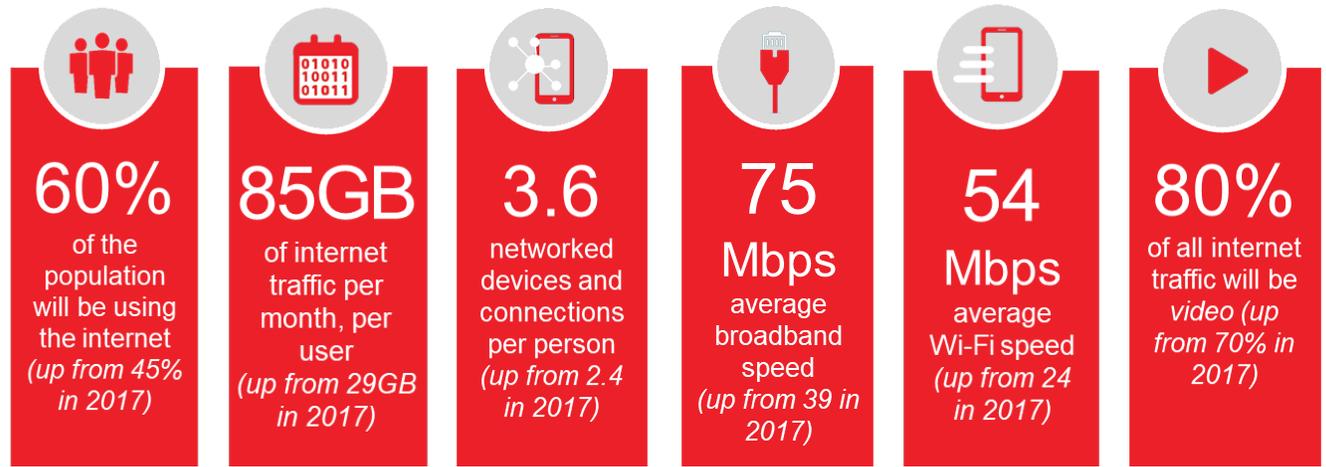
With the launch of NGNP's Northern Ontario Residential Broadband Program, CENGN is now working with technology vendors and Rural and Northern Ontario communities to improve residential broadband internet service. These advancements will be leveraged to optimize the sustainable economic growth of these regions.



Evolution of Mobile Connectivity

	1986	1991	1995	1998	2012	2020
						
	1G	2G	2½ G	3G	4G	5G
Devices per person	1	1	1	1 or 2	2-5	1000's

Global Connectivity Landscape by 2022

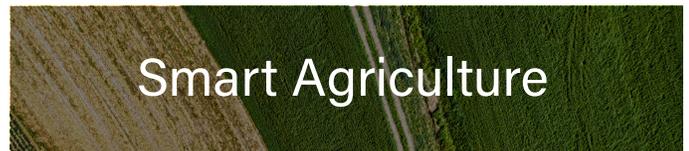


Smart Mining

Mining employs more than **632,000 workers** across Canada 

 **\$97 billion** of Canada's GDP is generated by the mining industry

Between 2018 and 2025, the global smart mining market is expected to increase from **\$8.6 B to \$22.2 B** 



Smart Agriculture

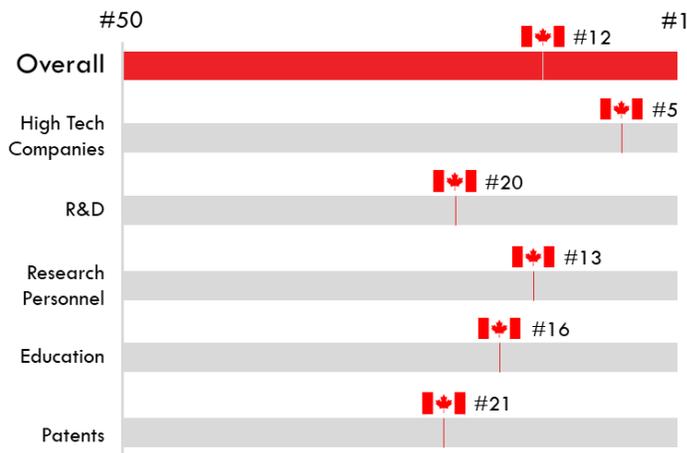
2.3 million Canadians employed in the agriculture industry 

 **\$111.9 billion** of Canada's GDP is generated by the agriculture industry

Between 2015 and 2020, IoT installations in agriculture will increase from **\$30 M to \$75 M**

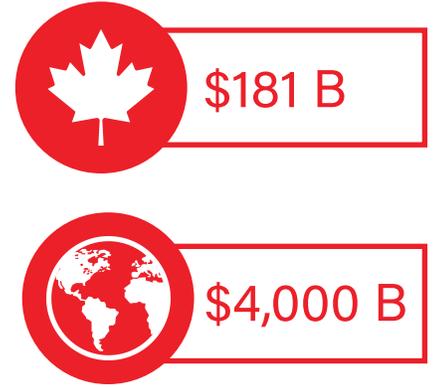


Canada's Innovative Performance

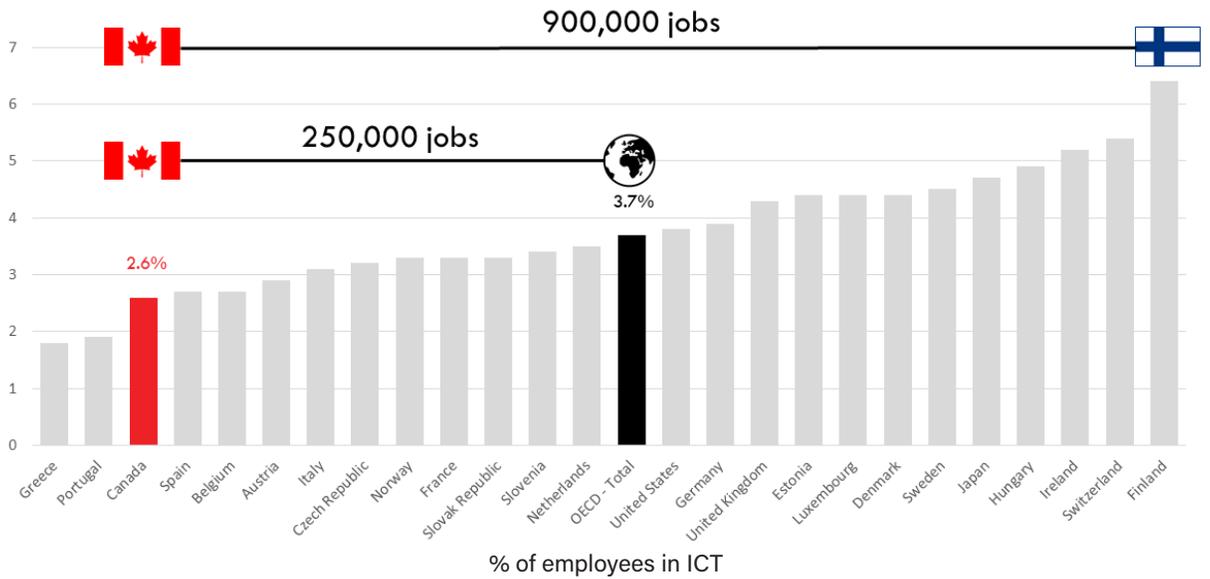


*based on Bloomberg's 2015 ranking of the world's 50 most innovative countries

ICT Market



ICT Job Opportunity in Canada



Smart Health

1,970,297 employees in health care and social assistance across Canada



\$226 billion spent on healthcare in Canada

\$158.1 billion value of connected healthcare market by 2022



Smart City

Between 2017 and 2022, the global smart building market is projected to grow from

\$7.4 billion to \$31.7 billion



Between 2019 and 2026, the autonomous vehicle market is expected to increase from

\$54.2 billion to \$556.7 billion

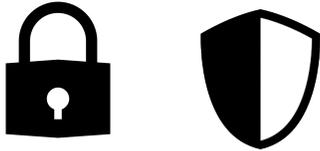


Between 2018 and 2025, the global traffic management market is expected to increase from

\$29.7 billion to \$71.9 billion

CENGN Infrastructure

All CENGN projects are carried out through the CENGN Infrastructure. This testbed employs interoperability between software, hardware, and a multitude of products from CENGN's many vendors. The unique multi-vendor physical and virtualized lab enables companies to test and validate new and emerging SDN and NFV technologies, applications, and IoT deployments and services before moving them to production.



Our priority is your privacy and security

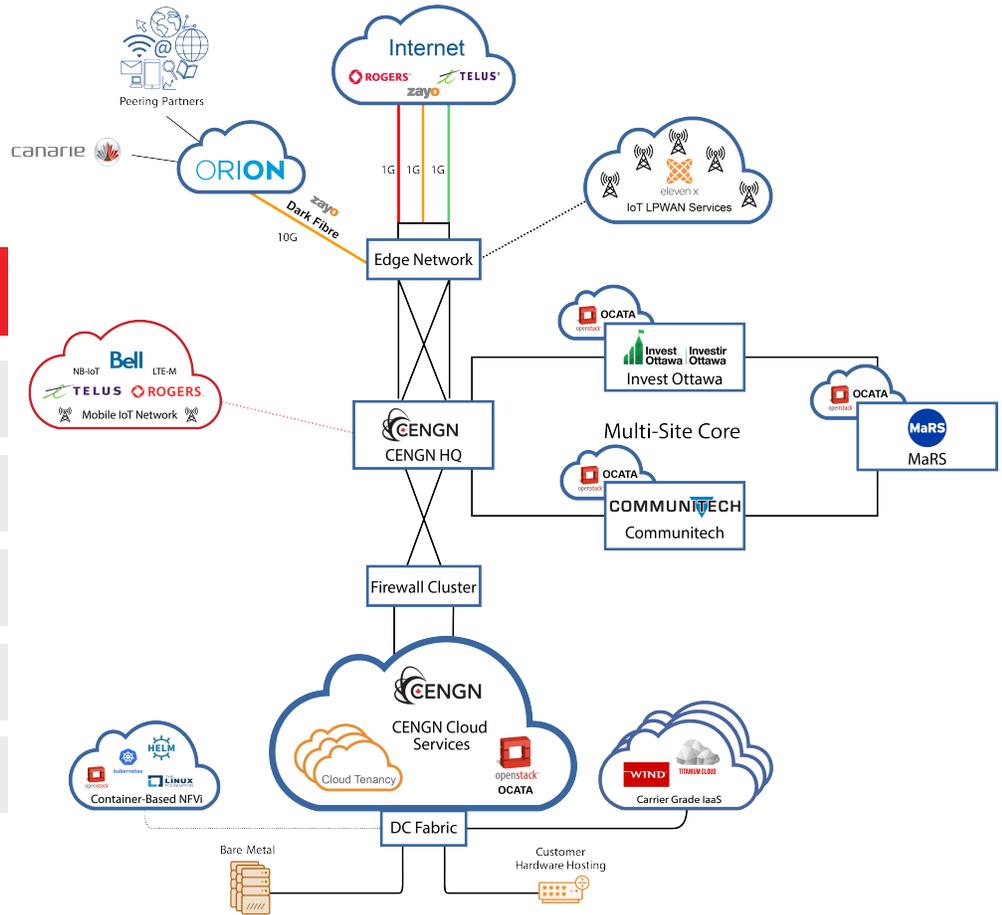
All infrastructure within Canada, no data leaves national borders

Mutual non-disclosure agreement

Intellectual property protection

Secure Infrastructure

Isolated project space, secure from other projects, Members, and partners



CENGN Partners

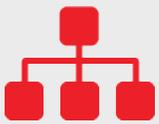


Project Offerings

CENGN is committed to removing barriers to commercialization, accelerating product introduction, as well as reducing product development time and costs for growing Canadian tech businesses. By working with CENGN's cutting edge Infrastructure and expert engineers, our clients are able to undertake high-value market readiness projects that would otherwise be out of reach.

Project Areas

Companies carrying out a CENGN project typically specialize in one of seven networking areas:



SDN / NFV / SD-WAN



Internet of Things



Data Centre & Cloud



Security



Mobile Networks



Network Transport



Network Applications

Project Types

Projects are characterized by their objectives, including:

Interoperability Testing

Validating a product's ability to interoperate with new systems or components

Load and Stress Testing

Determining system performance and resource requirements at given levels of load and determining what happens when maximum loads are exceeded

Functionality Testing

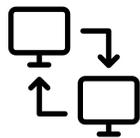
Validating a product or one of its features is operational for market introduction

Demonstration

Demonstrating key product capabilities in a customer-like environment for the benefit of a specific strategic customer or partner

Service Offerings

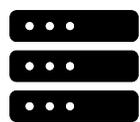
While every client project is unique, they are built up from a common set of CENGN service offerings. Beyond infrastructure offerings, CENGN works with each of its customers to provide technical expertise and business exposure to its ecosystem of multinationals.



Traffic Generation
Tools for generating system loads



Cloud Tenancy
Virtual machines on CENGN's OpenStack cloud



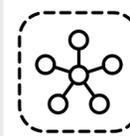
Bare Metal
Fully dedicated high-performance servers



Hardware Hosting
Hosting client hardware in CENGN's data centres



LoRaWAN Network
Access to a nation-wide LoRaWAN network



Virtual network functions
CENGN provides VNFs from Cisco, Juniper Networks and others



Custom OpenStack
A fully dedicated OpenStack cloud based on Wind River Titanium Edge or OpenStack-Helm

Project Highlights

WeTraq Successfully Completes Hosting Migration Project

WeTraq is a connected healthcare company helping ease the anxieties of families and caregivers by ensuring they can monitor the location of their loved ones anytime and anywhere. WeTraq provides its users with a small credit card sized device with a global tracking system that combines GPS technology with Wi-Fi and cellular radio connectivity to monitor a patient's location.

To have increased control on their data security, WeTraq needed to migrate their application from a data centre in the U.S. to a data centre in Canada. In order to ensure a successful migration, WeTraq completed a CENGN project to validate the operation of their product and the logistics of the migration in a controlled network environment. Upon completion of their project, WeTraq determined the optimal way to transfer their hosting without losing any service quality and was prepared for the upcoming move of their servers.



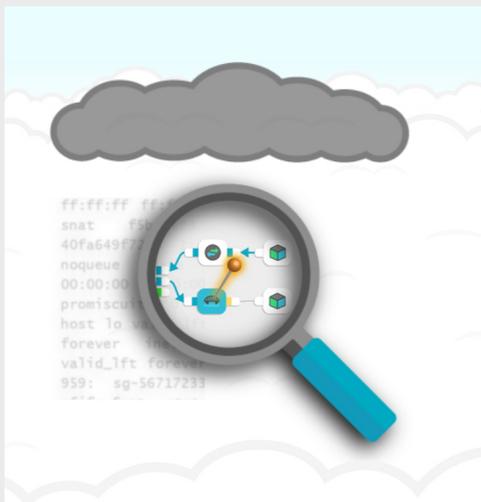
Internet of Things (IoT)



Toronto, Ontario

VirTool Networks Tests Scaling Capabilities of their VirTool Network Analyzer

VirTool Networks develops software tools for cloud network operations that simplify virtual network operations. Their flagship product, the VirTool Network Analyzer (VNA), provides deep insight into the operations of a cloud network, saving operators valuable time in manually identifying and trouble-shooting issues.



VirTool's CENGN project tested their VNA on CENGN's active OpenStack Infrastructure, validating their product on a commercial-like environment. With the completion of this project, VirTool was able to not only determine the scaling limits of their solution but also left with the proof that their solution fits the needs of prospective customers.



Network Applications



Kelowna, British Columbia

Scale Testing Crypto4A's Universal Cybersecurity Platform

Crypto4A specializes in next generation cybersecurity solutions designed to improve the security and protection of Cloud, IoT, Blockchain, V2X (Vehicle-to-Infrastructure), as well as government and military application deployments. This innovative company has developed its Universal Cyber-Security Appliance (UCSA) to eliminate the challenges of managing security Infrastructure. Their solution delivers quantum-safe and cryptographic agility that protects against the interception of sensitive information sent between IoT, mobile, and other Internet entities.



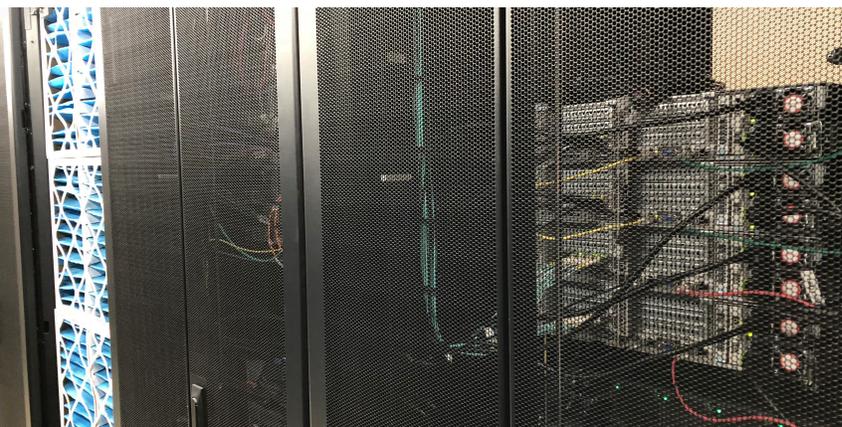
In their CENGN project, Crypto4A tested the performance and scalability of their solution and verified the network configurations required to deploy in a client's environment. Crypto4A worked with CENGN experts to define and set up a custom project space in the CENGN cloud enabling a unique and thorough validation methodology.



Security



Ottawa, Ontario



FY 2019 Projects



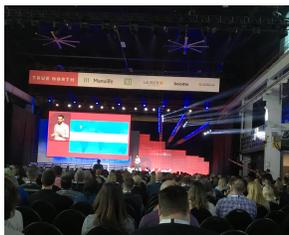
Connecting Ontario's Innovation Networking Ecosystem

NGNP saw the expansion of CENGN's Infrastructure to four data centres built within Ontario's key networking innovation ecosystem regions; Kanata, Ottawa, Waterloo, and Toronto. These data centres are housed in CENGN HQ and the major innovation hubs, Invest Ottawa, Communtech, and MaRS, connected through ORION's high speed network. NGNP has established a digital backbone for Ontario's innovation-driven economy that will promote future growth, create high-quality jobs, and enhance the province's global competitiveness.



CENGN partnered with the innovation community to promote its Infrastructure's new accessibility for businesses across Ontario. Below are some of the events that connected CENGN to Ontario's thriving networking-based startup ecosystem.

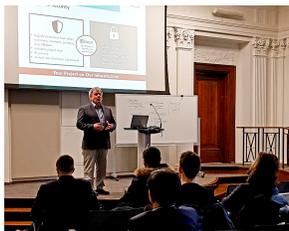
True North



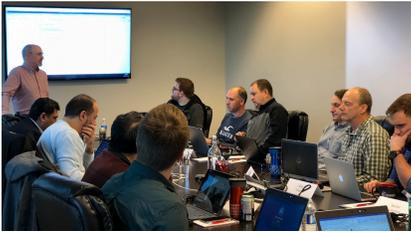
OCE Discovery



NGNP Info Sessions



Event Highlights



- April 3** OpenStack Meetup - Ottawa
- April 4** Autonomous Vehicle Summit - Ottawa
- April 18-20** IoT 613 Conference - Ottawa
- April 25 Start Ups and Hops - Ottawa
- May 1-2** ORION THINK - Toronto
- May 15** Kubernetes & Cloud Native Meetup - Ottawa
- May 21-24** OpenStack Summit - Vancouver
- June 6** Open Source Networking Meetup - Ottawa
- June 12** OpenStack Meetup - Ottawa
- June 13-14 Sudbury Mining Forum - Sudbury
- June 13 AccelerateOTT - Ottawa
- June 18 Google Cloud Platform Meetup - Ottawa
- June 19-21** Docker & Kubernetes Workshop - Ottawa
- June 28 Fundica Roadshow - Toronto
- July 12** Driving Dreams IoMe - Toronto
- Sept 20** CENGN AGM - Ottawa
- Sept 27 Canadians Connected (CIRA) - Ottawa
- Oct 2 Cisco Connect Ottawa - Ottawa
- Oct 2** McGill Engineering Info Session - Montreal
- Oct 2** Concordia Engineering Info Session - Montreal
- Oct 2-3** CANARIE Summit - Ottawa
- Oct 18 Start Up Day on the Hill - Ottawa
- Oct 22-26** Juniper Academic Training Carleton U - Ottawa
- Oct 24** OpenStack Meetup - Ottawa
- Oct 23-25** Docker & Kubernetes Training Session - Ottawa
- Oct 30** OSN Days Ottawa - Ottawa
- Nov 2 TiECon Canada - Ottawa
- Nov 5-7 Canadian ISP Summit - Toronto
- Nov 8 Broadband & Innovation Summit - Toronto
- Nov 26** Open Source Networking Meetup - Ottawa
- Nov 27** CENGN Summit - Ottawa
- Dec 4** Algonquin College Info Session - Ottawa
- Dec 11-13 KubeCon North America - Seattle, Washington
- Dec 12 Tech Talks - Ottawa
- Jan 23** 5G Canada Conference - Ottawa
- Jan 30-31** EDCO Conference (OCE Panel) - Toronto
- Feb 5-6 Precision Agriculture Conference - London
- Feb 6-7 BDT Mining Conference - Sudbury
- Feb 12** WELU - Winter Series Talk - Ottawa
- Feb 12-15 IBM Think - San Francisco, CA
- Feb 25-28** Mobile World Congress - Barcelona, Spain
- Feb 26 ITAC Smart City Summit - Brampton
- Mar 12** Open Source Networking Meetup - Ottawa
- Mar 12** Carleton Engineering Presentation - Ottawa
- Mar 19** NFV Foundations Beta - Ottawa

Events in **BOLD** - CENGN presented at/sponsored/exhibited

Website & Social Media

CENGN's ecosystem of engaged innovators, professionals, and top talent continues to grow. CENGN has experienced a consistent increase in interactions with the Canadian tech community since inception.

In FY 2019, CENGN saw 1,176,923 Twitter impressions, 124,539 website visits, and an open rate of 26% from the 2,969 newsletter subscribers during the year.

All platforms saw significant growth in engagement:



+78%



+17%



+27%



+75%



+70%



Media Coverage

During FY 2019, CENGN appeared in the media 72 times, being featured in articles from a variety of provincial, national, and international sources.

"The federal government needs to continue and broaden its support for Canada's Centre of Excellence in Next Generation Networks (CENGN) testbed. We believe it would also be worthy to fund a long-term national NGN Testbeds and Trials Programme that brings together network researchers, network operators and ICT vendors with vertical industries to both explore future connectivity solutions and business models similar to the UK government's program."

- UK Department for Digital, Culture, Media & Sport / July 2018

"The crucial domain of cultivating and promoting IoT-based business and economic growth is addressed by public and private organizations such as Invest Ottawa, OCE, CENGN, L-SPARK, the Kanata North Business Association and others. These are key for ensuring that nascent IoT enterprises meet real market needs, have a path to capital and attract external investment into Ottawa."

- Ottawa Business Journal / July 2018

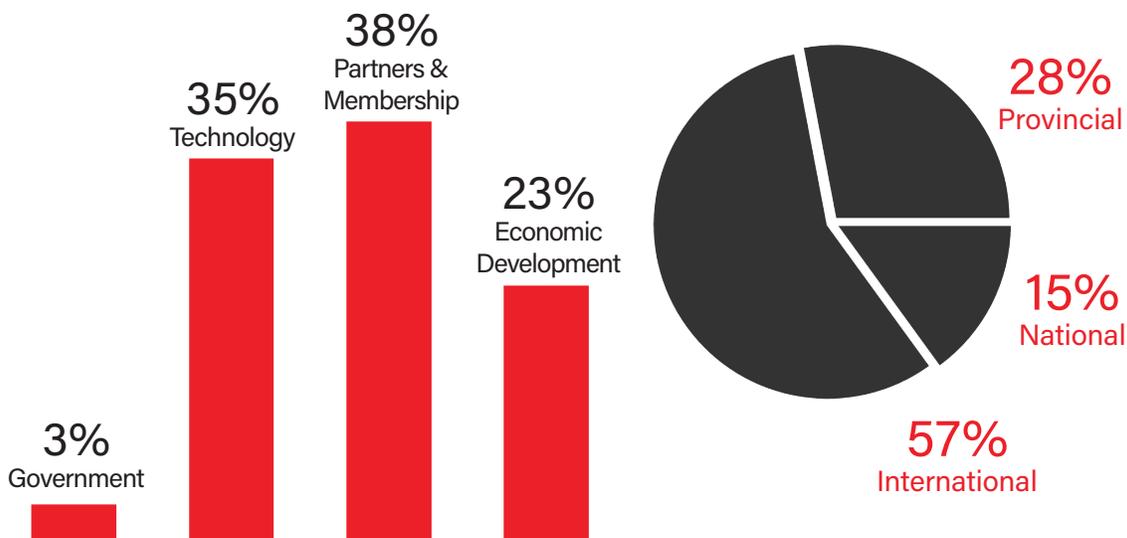
"CENGN accelerates the growth of the Canadian Information and Communications Technology (ICT) sector; enabling economic strength and prosperity, as well as innovation and competitiveness in this high-growth global multi-trillion dollar industry."

- Business Insider / November 2018

"CENGN definitely showed their depth of expertise in the international networking community in this project," said John Antonio, Chief Strategy Officer for IDX/IDX Labs. "They not only provided the underlying NFV Infrastructure, but also utilized their experience and global reach to help us navigate and leverage cutting edge work being done in telecommunications standards bodies."

- Interdynamics / February 2019

Media Coverage Breakdown



CENGN Summit 2018

CENGN Summit is an all-day event bringing together the innovation ecosystem of multinational companies, SMEs, industry accelerators, government, and academia to discuss the latest trends in the ICT sector. This successful event continues to grow with a record attendance of over 325 people in FY 2019. With the theme of Prosperity Through Connectivity, we explored how enhanced connectivity benefits all organizations, sectors, and citizens, as well as strengthens Canada's economy.



Summit 2018 Topics

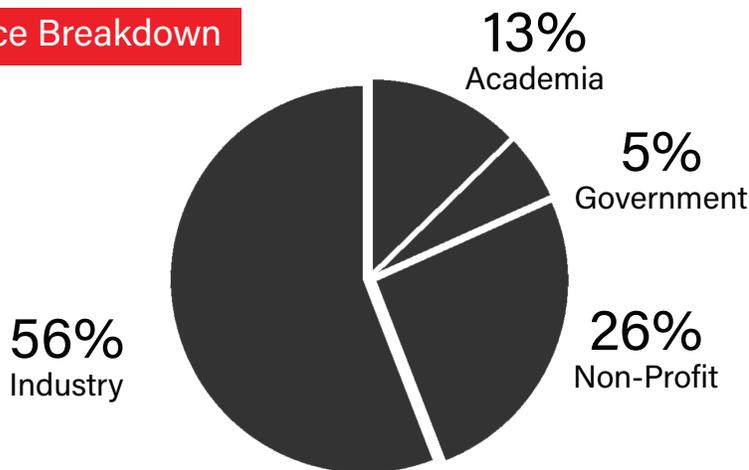
Business in a hyper-connected world

Connectivity beyond the smart city

Transforming vertical markets through connectivity



Attendance Breakdown



SUMMIT 2019

Join us November 13, 2019
cengnsummit.ca



Power Up with CENGN



Validate your products and solutions with a CENGN project

CENGN projects are designed to help Canadian businesses overcome commercialization barriers with their network-centric tech products and solutions. Leverage our services to accelerate your product's path to market or to validate your product for commercial growth.

Contact us to see if a CENGN project is right for you at cengn.ca/projects/

Up your skills in networking technology with CENGN Academy

Whether you are a student looking to enter the workforce with relevant experience or an industry professional seeking to remain on the cutting edge, CENGN Academy has training offerings that allow you to gain the most relevant skills and knowledge in the networking sector.

Visit cengn.ca/academy/ for details on our course offerings and additional training opportunities.



Make an impact on Canada's ICT sector

There is no shortage of interesting and impactful work CENGN is involved in. Our team can be found working directly with startups and scale-ups to strengthen their tech products, hosting or organizing events to level up Canada's tech talent, or working on initiatives with our Members and we are always on the lookout for top talent.

Interested in a career at CENGN?
Visit cengn.ca/careers/

```
14 # Default values for horizon.  
15 # This is a YAML-formatted file.  
16 # Declare name/value pairs to be passed into your templates.  
17 # name: value  
18  
19 images:  
20   tags:  
21     db_init: docker.io/openstackhe  
22     horizon_db_sync: docker.io/ope  
23     db_drop: docker.io/openstackhe  
24     horizon: docker.io/openstackhe  
25     dep_check: quay.io/stackanetes  
26     image_repo_sync: docker.io/dock  
27     pull_policy: "IfNotPresent"  
28     local_registry:  
29       active: false  
30       include: check sync
```



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Sources: cengn.ca/about-us/agm-directory

All information pertaining to CENGN as of March 31, 2019

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