Greater Montréal’s Surging Cybersecurity Sector
Content

01. A Surging Business Environment  
   p.3

02. A Deep and Growing Pool of Highly Qualified Talent  
   p.15

03. Attractive Operating Costs and Incentives  
   p.23

04. Montréal International’s Personalized, Free and Confidential Services  
   p.27
01
A Surging Business Environment
A stable and thriving country

One of the soundest banking systems in the world: first in the G7 and second among 140 countries
*Economist Intelligence Unit, 2018*

Ranks second in the G20 for doing business over 2019-2023
*Economist Intelligence Unit, 2018*

Tops the G20 with Germany and Australia for its sound fiscal soundness, with a triple A credit rating
*Standard & Poor’s, Moody’s and Fitch*

Best country in the Americas and 6th in the world to attract top talent
*World Talent Ranking 2018, International Institute for Management Development*

The easiest place to start a business in the G20
*World Bank, Doing Business, 2019*

The most educated talent pool in the OECD, with more than half of its population aged 25 to 64 having a tertiary level education
*OECD, Education at a Glance, 2018*

One the leading countries in cybersecurity

- **4th in cybersecurity venture capital deals in the world** behind the USA, Israel and the UK, 2012-2016. *Deloitte, 2016*

- **One of the Top 10 most committed countries in cybersecurity**. *2017 Global Cybersecurity Index*

- Home to 15 companies that made the **Cybersecurity Ventures 500**, including **Go Secure**

- **A signatory of the Paris Call for Trust and Security in Cyberspace**, pledging to do more to fight criminal activity on the internet, including interference in elections and hate speech.*

- **$500 M** over five years invested to battle cyber crime and create the **Canadian Centre for Cyber Security**

---

*On November 12, 2018 at the UNESCO Internet Governance Forum (IGF) Source: Deloitte, Harnessing the cybersecurity opportunity for growth, 2016; 2017 Global Cybersecurity Index; 2018 Federal Budget.*
Canada conducted a three-month public consultation to shape Canada’s renewed approach on cybersecurity and capitalize on the advantages of new technology and the digital economy.

The ministry published the 2018 Cyber Strategy which focuses on three key goals:
1. Secure and resilient Canadian systems
2. An innovative and adaptative Cyber ecosystem
3. Effective leadership, governance and collaboration

Canada’s cybersecurity ecosystem

Public organizations

- Canadian Security Intelligence Service
- Communications Security Establishment
- Public Safety Canada
- Cyber Security Canada

Private organizations

- Serene RISC
- CICC
- ASIMM
- ASIQ

Major private certification agencies

- ISACA
- (ISC)²
- SANS

A dynamic cybersecurity ecosystem in Greater Montréal

The cybersecurity ecosystem in Montréal is booming, thanks to its close ties to clients such as the provincial and federal governments in Québec City and Ottawa, as well as the presence of many global leaders in the aerospace, e-commerce, finance and retail industries.
Examples of Leaders in Cybersecurity

In Greater Montréal, there are 50 companies providing professional consulting services, including security audits.

- **Bell**: Security consulting; Managed security; Network and cloud security
- **CGI**: Full IT outsourcing
- **TERRANOVA**: Global leader in cybersecurity awareness
- **RHEA**: Bespoke engineering solutions, system development and security services
- **OKIO**: Secure files transfer and storage business process automation services
- **EY**: Integrated perspective on all aspects of organizational risk and key focus on cybersecurity
- **PwC**: Cybersecurity and privacy consulting services
- **Hitachi**: Global IT security service provider delivering cybersecurity services
- **Desjardins**: Desjardins’ cybersecurity kit is protecting businesses against cyberattacks
- **KPMG**: Strategy and governance, cyber defense, cyber response
- **Deloitte**: Cybersecurity consulting services
- **Delve Labs**: Provides a leading, autonomous, security vulnerability intelligence platform
- **Kereon**: Cybersecurity consulting services and solutions focused on changing human behaviors
The most notable Centres of excellence in cybersecurity in Montréal

**cyber eco**
Organization that leads the establishing of Québec talent and expertise collective in cybersecurity, created by **Desjardins Group, National Bank, Deloitte and RHEA Group**

**catallaxy**
Centre of excellence and expertise in blockchain technologies powered by **Raymond Chabot Grant Thornton**

**IN-SEC-M**
Non-profit industry cluster that aims to increase the cohesion and competitiveness of the Canadian cybersecurity industry

**Catalyst for the growth of FinTech start-ups and the acceleration of digital transformation for major financial institutions**
Fighting crime with AI

Montréal is a hub for AI-powered cybersecurity tools

- Nearly $2 billion in AI investments announced in Greater Montréal since 2016
- The Canadian government chose Montréal as the headquarters for SCALE AI, Canada’s AI supply chain super cluster
- All major players present and a thriving community aiming for a better world

“With its high concentration of companies and researchers in AI, Montreal is “The place to set up a world-class center that combines cybersecurity and artificial intelligence”, thanks to the presence of several universities, start-ups and a skilled workforce.”
- CyberEco

Source: MILA; Montréal International Analysis.
Montréal’s funding environment

- **More than $1 billion** raised in VC by Québec firms in 2017 (a growth of 102% since 2014)

- **Montréal Ranked 1st in Canada** for venture capital investments dollars in 2017 with $800 M (+ 64% since 2016)

A home to many innovative industry gatherings

Networking events and major cybersecurity shows, such as:

**GOSEC**
Cybersecurity conference

**Coopérathon**
The largest open innovation challenge in the world!

**Cyber Security Training in Montréal**
By Mangates

**NorthSec**
Applied Security Event 2019

**Hacketons**
Upcoming community events in cybersecurity in Montréal
“Greater Montreal’s reputation, in terms of creativity and innovation, is well-established on the global scene. These unique qualities, in addition to the high concentration of renowned post-secondary institutions, make Montreal the ideal destination for the development of cutting-edge solutions in the field of cybersecurity.”

– Béatrice Couture et Sébastien Demers, Presidents, CyberEco

“Montreal possesses all of the elements necessary for the success of a cybersecurity organization. The presence of six universities contributes to a strong spirit of innovation within the city and guarantees a steady stream of talented graduates from a multitude of cybersecurity-related programs. Moreover, in Montreal, we find an active cybersecurity ecosystem, supported by both a talented pool of students and by a variety of organizations—startups and established companies—all working together to organize and support a wide range of activities, from monthly technical workshops to major international conferences.”

– Alexis Dorais-Joncas, Director, ESET Montreal

“Greater Montreal has a strong and active community in all facets of cybersecurity, in particular, cybercrime, information security, industrial security, and embedded computing applications. Its expertise relates to all sectors and industries of the economy, including higher education, the financial and banking sector, aeronautics, the video game industry, as well as the development of cybersecurity solutions using artificial and digital intelligence.”

– Vincent Milette, Senior Vice-president, ISACA - Montreal Chapter

“We chose Montreal as the global headquarter for our cyber security R&D and operations centers because it offers us a unique opportunity to easily recruit and attract the best minds in the field from anywhere in the world. In addition to its steady stream of new cybersecurity specialists, its vibrant local cybersecurity ecosystem, and AI talent pool, Montreal unmatched diversity allows us to develop locally solutions that address the global cybersecurity challenges of today and tomorrow.”

– Fadi Albatal, Chief Strategy Officer, Hitachi Systems Security

“Montreal has all of the elements necessary for the success of a cybersecurity organization. The presence of six universities contributes to a strong spirit of innovation within the city and guarantees a steady stream of talented graduates from a multitude of cybersecurity-related programs. Moreover, in Montreal, we find an active cybersecurity ecosystem, supported by both a talented pool of students and by a variety of organizations—startups and established companies—all working together to organize and support a wide range of activities, from monthly technical workshops to major international conferences.”

– Alexis Dorais-Joncas, Director, ESET Montreal

“Greater Montreal has a strong and active community in all facets of cybersecurity, in particular, cybercrime, information security, industrial security, and embedded computing applications. Its expertise relates to all sectors and industries of the economy, including higher education, the financial and banking sector, aeronautics, the video game industry, as well as the development of cybersecurity solutions using artificial and digital intelligence.”

– Vincent Milette, Senior Vice-president, ISACA - Montreal Chapter

“Montreal possesses all of the elements necessary for the success of a cybersecurity organization. The presence of six universities contributes to a strong spirit of innovation within the city and guarantees a steady stream of talented graduates from a multitude of cybersecurity-related programs. Moreover, in Montreal, we find an active cybersecurity ecosystem, supported by both a talented pool of students and by a variety of organizations—startups and established companies—all working together to organize and support a wide range of activities, from monthly technical workshops to major international conferences.”

– Alexis Dorais-Joncas, Director, ESET Montreal
02

A Deep and Growing Pool of Highly Qualified Talent
5,000 cybersecurity experts in Greater Montréal

There are nearly 3,000 cyber security specialists in the IT sector in Greater Montréal, and another 2,000 in related disciplines such as criminologist, compliance officer, etc.

Most popular security certifications

Source: Compilation Aviseo, Montréal International, ISACA – Chapter Montréal.
Highly qualified workforce

A great talent pool is also available in cybersecurity complimentary sectors

<table>
<thead>
<tr>
<th>Professions related to cybersecurity in Greater Montréal</th>
<th>Number of experts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer and Information Systems Managers</td>
<td>12,100</td>
</tr>
<tr>
<td>Electrical and electronics engineers</td>
<td>3,200</td>
</tr>
<tr>
<td>Information systems analysts and consultants</td>
<td>38,100</td>
</tr>
<tr>
<td>Database Analysts and Data Administrators</td>
<td>2,900</td>
</tr>
<tr>
<td>Software Engineers and Designers</td>
<td>5,900</td>
</tr>
<tr>
<td>Computer engineers (except software engineers and designers)</td>
<td>6,100</td>
</tr>
<tr>
<td>Computer network technicians</td>
<td>12,300</td>
</tr>
<tr>
<td>Lawyers</td>
<td>21,200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>101,800</strong></td>
</tr>
</tbody>
</table>

Research chairs in cybersecurity

- Canada Research Chair in Cybersecurity
- Canada Research Chair in Quantum Information Processing
- Research Chair in Cybercrime Prevention

- McGill
  - Canada Research Chair in Data Mining for Cybersecurity

- Concordia University Research Chair Tier I in Information Systems Security

- Polytechnique Montréal
  - Mobile Computing and Networking Research Laboratory (LARIM)
  - Mobile robotics and autonomous systems laboratory

- UQÀM
  - Canada Research Chair in Privacy-Preserving and Ethical Analysis of Big Data
University research expertise

**Mourad Debbabi**
Full Professor - Faculty of Engineering and Computer Science
*NSERC/Hydro-Québec Thales Senior Industrial Research Chair in Smart Grid Security*
*Concordia University Research Chair Tier I in Information Systems Security*
**Research themes**: Cyber Forensics, Network Security, Software Security, Malware Analysis

**Benoît Dupont**
Professor - Criminology department
Scientific Director of the Integrated Network on Cybersecurité (SERENE-RISC)
Member of International Centre for Comparative Criminology
*Canada Research Chair in Cybersecurity*
*Research Chair in Cybercrime Prevention*
**Research themes**: Identity theft, Bank fraud, Hacking, IT Fraud, Technological ecosystems, Cybersecurity, politics

**José Fernandez**
Associate Professor, Department of Computer Engineering and Software Engineering. Member of Ivado & GRIM.
**Research themes**: Computer security and artificial intelligence applied to cybersecurity

**Benjamin C.M. Fung**
Associate Professor, School of Information Studies: Associate Member, School of Computer Science
*Canada Research Chair in Data Mining for Cybersecurity*
**Research themes**: Data mining & databases, Deep learning, Data security & privacy, Authorship analysis

**Sébastien Gambs**
Professor - Computer Science
*Canada Research Chair in Privacy-Preserving and Ethical Analysis of Big Data*
**Research themes**: privacy and computer security, particularly for location-based services and the mobile context

**Gilles Brassard**
Professor - Department of computer science and operations research.
*Canada Research Chair in Quantum Computing*
Winner of the Wolf Prize 2018 for Physics
**Research themes**: Quantum computing cryptography, Protection of private life
A new generation ready to take over

In Greater Montréal, more than 15,000 students were enrolled in a university program related to IT in 2017-2018 as well as 1,600 students in criminology and 7,000 in law.

<table>
<thead>
<tr>
<th>University programs related to IT</th>
<th>Students enrolled 2017-2018</th>
<th>University graduates, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer sciences</td>
<td>8,104</td>
<td>1,558</td>
</tr>
<tr>
<td>Electric and electronic engineering</td>
<td>3,498</td>
<td>744</td>
</tr>
<tr>
<td>Computer engineering and computer science</td>
<td>2,002</td>
<td>374</td>
</tr>
<tr>
<td>Mathematics</td>
<td>1,438</td>
<td>262</td>
</tr>
<tr>
<td>Probabilities and statistics</td>
<td>190</td>
<td>35</td>
</tr>
<tr>
<td>Applied mathematics</td>
<td>130</td>
<td>27</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>15,362</strong></td>
<td><strong>3,000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>University programs related to criminology and law</th>
<th>Students enrolled 2017-2018</th>
<th>University graduates, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criminology</td>
<td>1,632</td>
<td>776</td>
</tr>
<tr>
<td>Law</td>
<td>7,171</td>
<td>1,530</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>8,803</strong></td>
<td><strong>2,306</strong></td>
</tr>
</tbody>
</table>

Cutting-edge undergraduate and graduate programs in cybersecurity

Department of Computer Engineering and Software Engineering
- Bachelor’s degree in cybersecurity: 3 certificate programs in cyber investigation, online fraud and IT network computer security

Faculty of Engineering & Computer Science
- Information Systems Security (MASc)
- Master of Engineering (MEng)
- Information & Systems Engineering (PhD)

Information Technologies
- Certificate Analysis of Information Security and Systems
A Unique Centre of Excellence: IVADO (Institute For Data Valorisation)

More than 1,000 scientists (professors, professionals and students) with complementary areas of expertise

#1 for publications worldwide

Over 40 academic programs

Research centres

University departments

Academic partners

International partners

20+ research chairs & labs
Attractive Operating Costs and Incentives
## Competitive salaries

### Median annual salaries * (US$) for 9 typical professions in cybersecurity

<table>
<thead>
<tr>
<th>Profession</th>
<th>Montréal</th>
<th>Toronto</th>
<th>Atlanta</th>
<th>Washington</th>
<th>San Francisco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyber Security Engineer</td>
<td>$77,132</td>
<td>$81,618</td>
<td>$109,193</td>
<td>$122,352</td>
<td>$132,917</td>
</tr>
<tr>
<td>Information Systems Auditor</td>
<td>$57,077</td>
<td>$60,669</td>
<td>$78,663</td>
<td>$88,479</td>
<td>$96,190</td>
</tr>
<tr>
<td>Information Security Engineer</td>
<td>$66,335</td>
<td>$70,353</td>
<td>$94,365</td>
<td>$105,933</td>
<td>$115,097</td>
</tr>
<tr>
<td>Information Security Manager</td>
<td>$85,798</td>
<td>$91,559</td>
<td>$125,538</td>
<td>$140,700</td>
<td>$153,734</td>
</tr>
<tr>
<td>Criminalist</td>
<td>$46,431</td>
<td>$49,983</td>
<td>$59,516</td>
<td>$70,718</td>
<td>$73,319</td>
</tr>
<tr>
<td>Architect IT Solutions</td>
<td>$75,682</td>
<td>$80,106</td>
<td>$106,577</td>
<td>$119,482</td>
<td>$129,799</td>
</tr>
<tr>
<td>Cyber Security Specialist</td>
<td>$68,084</td>
<td>$72,180</td>
<td>$95,651</td>
<td>$107,365</td>
<td>$116,651</td>
</tr>
<tr>
<td>Security Consultant</td>
<td>$45,760</td>
<td>$48,184</td>
<td>$56,684</td>
<td>$72,715</td>
<td>$79,885</td>
</tr>
<tr>
<td>Information Security Specialist</td>
<td>$55,004</td>
<td>$58,496</td>
<td>$75,494</td>
<td>$84,997</td>
<td>$92,404</td>
</tr>
</tbody>
</table>

*Salaries based on 5 years of experience

Note: Exchange rate based on monthly average 2018-11-21 - 2018-12-20 – CA$1 = US$ 0.7503.

Very attractive operating costs

- Greater Montréal has the most competitive operating costs for the software development sector of all 5 North American cybersecurity hubs.
- 30% cost advantage compared to the study average.
- When factoring in the E-Business and Scientific Research and Experimental Development tax credits, that cost advantage is even greater.

Note: The annual operating cost calculations are based on labour and property costs in US$. Source: fDi Benchmark, 2018.
Tailor-made incentives available

Industry credits

Tax Credit for E-Business Development

The E-Business tax credit is unique in North America and aims to foster the development of information technologies. **Refundable tax credit equal to 30%** (24% refundable and 6% non-refundable) of eligible salaries, up to $25,000 per employee per year.

Major and innovative projects

ESSOR Fund for Major Projects

Provides support to major projects with refundable (interest-free & low interest loans) and non-refundable contributions, loan guarantees. Investment projects with eligible expenditures of $250,000 or more to start a new business or expand (including modernizing) an existing business.

Research and development

R&D tax credits

- Québec: **14% tax credit on salaries** and subcontractor fees paid in Québec. It is fully refundable, whether or not the business makes a profit.
- Canada: **15% federal tax credit on eligible activities and expenditures**.

Labour development

Financial Assistance for Job Creation and Training

25% of eligible costs for the implementation of a training program and 50% of costs incurred for the creation of a human resource department with the creation of 50 jobs or more on 2 years.

Tax Holiday for Foreign Researchers and Experts

Five-year Québec income tax exemption at the personal level: **100% of salary** for the 1st and 2nd year; **75%** for the 3rd year; **50%** for the 4th year; **25%** for the 5th year.
04

Montréal International’s Personalized, Free and Confidential Services
Montréal International, a single contact point for a series of personalized, free and confidential services

- Long-term strategic support
- Economic data and communications services
- Government relations facilitation
- Incentive programs assistance
- Foreign workers immigration assistance
- International recruiting missions
Contact us

Montréal International
380 Saint-Antoine Street West
Suite 8000
Montréal, Québec H2Y 3X7

t +1 514-987-8191
www.montrealinternational.com

This document is the property of Montreal International. You are authorized to reproduce this document, in whole or in part, provided that its content is not modified and that Montreal International is clearly identified as the originator of this material. You shall not, in any circumstances, use the material in a manner that could create a false or misleading impression with respect to the source of the material, including but without limitation, by means of a mark or mention that does not refer to Montreal International.