

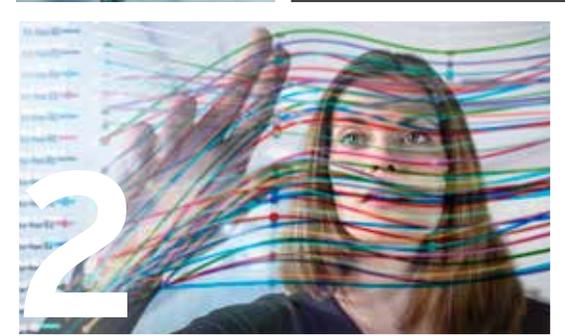
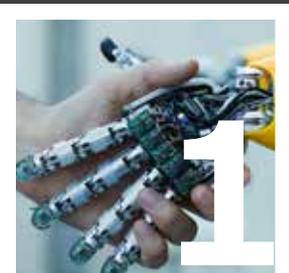
Accelerating development in Montréal's FinTech ecosystem

Findings and recommendations



Building a better
working world

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Foreword



EY is proud to associate with Finance Montréal in producing this report on how Montréal's financial services technology innovation (FinTech) sector stacks up against global financial centres. As EY's UK and Swiss studies, we strove to identify the key characteristics of Montréal's FinTech ecosystem and make recommendations to accelerate growth and differentiate Montréal from other leading FinTech centres.

Globally, EY actively supports FinTech players – financial institutions, governments and FinTech entrepreneurs, in particular. We surveyed more than 10,000 digitally active people around the world, including more than 2,000 in Canada, to better understand the overall rate of FinTech adoption and the outlook for future usage. We then leveraged these findings to produce the EY FinTech Adoption Index, the first global index of its kind.

Above all, making the FinTech ecosystem in Montréal and across Québec successful means creating an environment for Québec's energetic, creative and innovative entrepreneurs to thrive in. Based on our numerous interviews in producing this report, we are convinced Montréal has what it takes to nurture the FinTech ecosystem and continue carving out a spot among global financial centres.

Sébastien René

Partner, Québec IT Advisory Leader



1

EXECUTIVE SUMMARY

Canada's FinTech market is expanding fast and has the potential to play a more influential role among global financial centres

Over 44 FinTech firms attracted investment in Canada in 2015, totalling just shy of \$695 million, nearly matching investment in the United Kingdom.

In Canada, from 2012 to 2014, FinTech investment grew at an annual pace of 35%. From 2014 to 2015, investment growth soared by approximately 300%.

In spite of solid performance, Canada lags well behind the United States, with New York City and the State of California alone garnering nearly C\$6 billion in investment for the same period.

Montréal has what it takes to nurture growth in its FinTech ecosystem

In the coming years, Montréal is well-positioned to transition into Canada's FinTech hub, driving continued investment growth. For 2014 and 2015, investments totalled C\$152 million, short of the C\$684 million recorded by Ontario for the same period.

Montréal is one of the financial centres whose ranking on the Global Financial Centres Index (GFCI) by Z/Yen improved the most from 2008 to 2016, climbing from the 31st to 15th globally.

Montréal is even included among a select group of cities considered "dynamic" by Z/Yen.



Talent

Montréal compares favourably with other FinTech ecosystems for IT and finance talent. Universities, large tech firms and the financial services (FS) sector form a high-quality pool of bilingual students and employees in a market where salaries are competitive relative to the rest of the world.

While tech students have yet to fully appreciate FS needs and opportunities, they remain a talent pipeline for the future.



Capital

Montréal ranks favourably for entrepreneur support tools, such as incubators. While there are few FinTech investment funds per se, entrepreneurs have access to a number of IT investment funds and VC firms. A relatively low overall cost of living, a qualified workforce and rental space make Montréal very accessible relative to other large financial centres. As a result, the investment required to start up a business is smaller.



Policy

Québec government programs and tax incentives to support innovation are among the most competitive in the world, a major draw for FinTech development.

However, sector players agree that although stable and predictable, current government regulations and policies, and regulatory guidelines are prudent, potentially a barrier to entry for FinTech entrepreneurs. Yet action taken by the Autorité des Marchés Financiers (AMF) to set up a regulatory advisory committee for FinTechs should allow the Québec regulatory system to rapidly adapt their reality.



Demand

Québec lags behind in adoption of FinTech services and solutions, in part because consumers are unaware that solutions exist, and due to the limited range of products available.

Financial institutions have varying degrees of involvement with FinTechs, and numerous Québec financial institutions believe they could do more in future to further integrate the use of local FinTech technologies.

Much like FinTech centres that depend on exports to grow their ecosystem, such as Israel, Québec has the strengths to assume its place among global financial centres.

Four ways to accelerate FinTech development in Montréal

Based on our interviews with Montréal FinTech players and analysis of best practices in place at leading global financial centres, we have prepared a series of recommendations to help accelerate FinTech ecosystem development in Montréal and Québec as a whole.





- 1** Develop a FinTech hub. The purpose of this hub would be to develop Québec's FinTech ecosystem based on a shared vision among sector stakeholders and adequately supporting existing or development-stage sector firms. The hub would be specifically mandated to:
 - 1.1 Develop a distinctive trademark for the Québec FinTech sector to create a sense of belonging and instant recognition
 - 1.2 Focus on key subsectors (data science, artificial intelligence (AI), gamification, the Internet of things) that draw on Québec's distinctive strengths to differentiate from other financial centres
 - 1.3 Implement an integrated network of complementary rental and work spaces exclusive to Québec FinTech entrepreneurs for the support they need throughout the development cycle, from the development stage to the export market
 - 1.4 Create a one-stop FinTech entrepreneur portal with relevant information on starting up and developing a tech firm and, in particular, a marketplace offering various professional services to ensure supply meets demand

- 2** Implement a formal mentoring program for FinTech entrepreneurs supported by all Québec FIs

- 3** Work with regulatory authorities (AMF, OSFI and FINTRAC) particularly with a view to implementing a sandbox environment to promote experimenting with new technologies

- 4** Develop a standardized university curriculum in several Québec universities to promote the various professional tech and financial services career paths

A woman with long brown hair is looking at a screen. The screen displays a complex network of colorful lines (red, green, blue, purple) that appear to be data or connections. A large, bold number '2' is overlaid on the left side of the image. The background is a light blue color.

2

DEFINITIONS AND METHODOLOGY

“FinTech” is a new term referring to companies which leverage technology to offer innovative solutions across the financial industry.

The industry is made up of companies specializing in a particular financial services sector (payments, insurance, investing, etc.) and using technology in innovative ways to improve and disrupt the delivery of products and services in that sector. Applied not only to startup businesses, although startups abound, the term also refers to more mature businesses.

FinTech has experienced unprecedented growth over the last few years. For 2015, FinTech funding has been estimated at C\$26.4 billion worldwide, representing growth of 66% over 2014. A host of startups, along with the major financial institutions, have been attracted to the industry as FinTechs change the way financial services consumers transfer, borrow, protect and manage their money.

FinTechs operate across a variety of subsectors, such as:

- ▶ Banking and payments
- ▶ Credit and lending
- ▶ Insurance, or “InsurTech”
- ▶ Retail investments and pensions
- ▶ Investment management and capital markets

For the purposes of this report, we have used the broadest and most inclusive definition of FinTech.

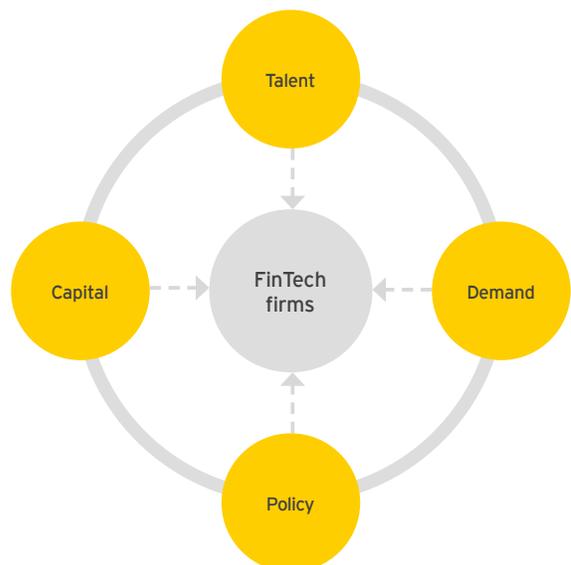


EY has developed a specific analysis model to study the FinTech ecosystem

To evaluate the strength of that ecosystem in Canada and Montréal, we have used the model developed by EY and applied across a range of studies worldwide. The model considers four attributes, namely: Talent, Capital, Policy and Demand.

To benchmark the findings of the Canadian and Montréal analysis against the findings from other countries, we evaluated the same attributes and comparative factors.

Table 1: FinTech Ecosystem



Obtaining accurate data on the FinTech sector is challenging

FinTech is emerging and has evolved rapidly over the last few years. So it includes many new companies which are not necessarily indexed in databases, and for which there is little background information.

The quantitative data presented in our report are based on the analysis of a variety of private and publicly available databases, as well as on EY's internal databases.

- ▶ **Private databases:** CB Insight, The Banker Database
- ▶ **Publicly available databases:** Statistics Canada, Institut de la statistique du Québec

We chose to use the CB Insight database to benchmark our data to data from the other countries studied by EY. It combines the different types of investments (VC, Angels, Series A, B) made in FinTechs. It did not include initial public offerings (IPO) except for Shopify, which raised C\$130 million in 2015. Because Shopify is not considered a FinTech and represents the only IPO, we did not include it in our report.

In all, the Canadian CB Insight database has tracked more than 125 different FinTechs that have received investments totalling nearly C\$1.6 billion since 2004.

To drive our report deeper, we organized interviews with more than 50 Québec FinTech ecosystem players to gather qualitative data on the ecosystem's four attributes.



These interviews were held between June and October 2016 and provided us with the perspectives of a variety of actors from the following domains:



Universities et
research centres



Financial institutions and
tech companies



FinTech firms



Government and
regulatory authorities



Investment companies

The list of organizations interviewed is enclosed.





3

CANADA'S FINTECH MARKET IS EXPANDING

The financial services sector of Canada's FinTechs is stable, predictable and prudent

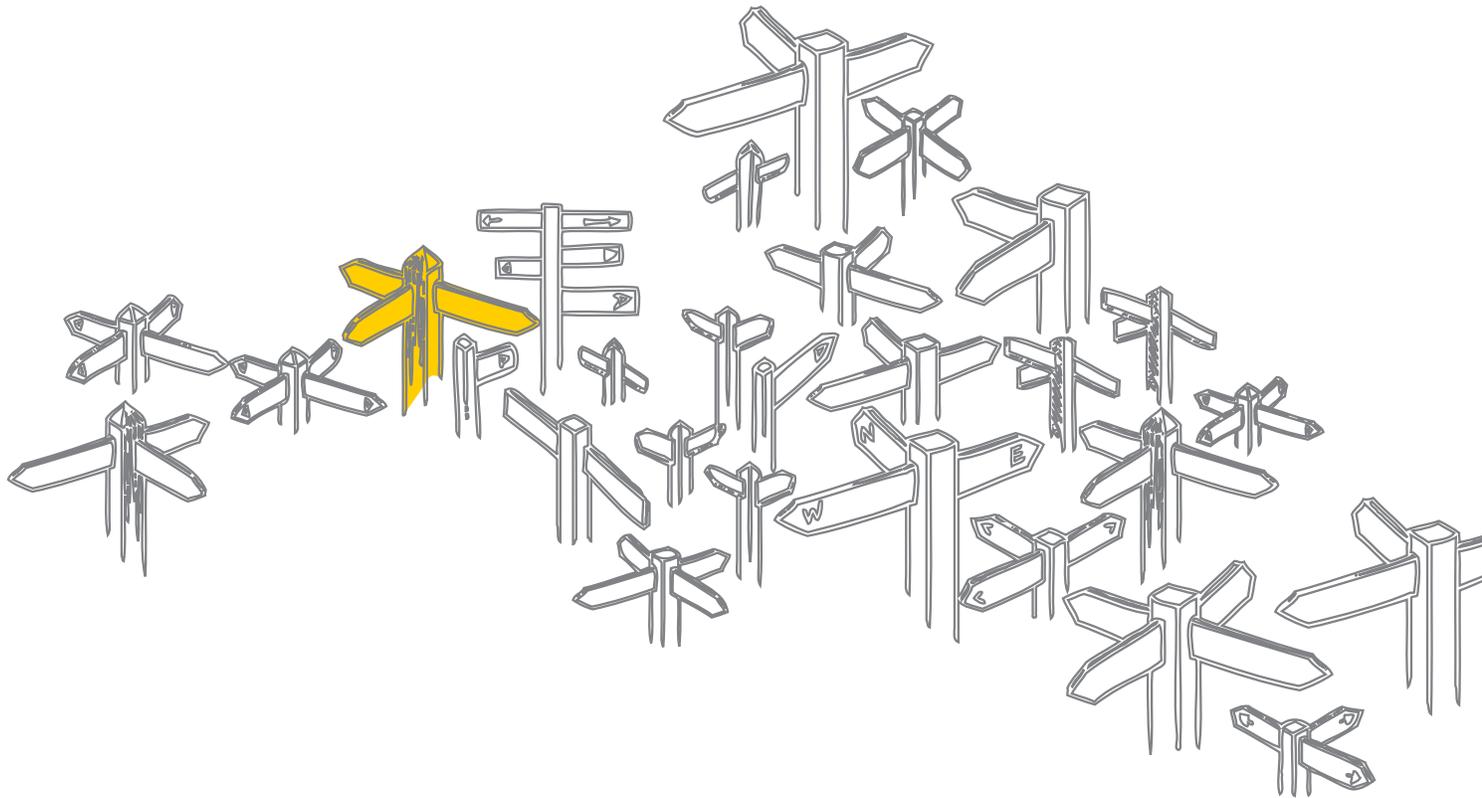
To understand Montréal and Québec City's FinTechs, it's important to understand the Canadian market overall, and dive deep into the financial services sector it operates in.

1. Concentration and size of the banking sector

The Canadian banking sector boasts a higher concentration than other countries, with seven major financial institutions managing a combined C\$4.739 trillion in assets. The UK's 14 major banks manage C\$12.393 trillion, and major US counterparts over C\$25.022 trillion.

2. The stability of the Canadian banking system

Although Canadian banks weathered the 2008 financial crisis relatively well, due in large part to the country's rigorous regulation, financial innovation in Canada hasn't enjoyed the same levels as other countries. In London, England, for example, numerous layoffs following the 2008 crisis gave former employees who understood the financial sector's challenges and issues the chance to innovate, giving way to the emergence of FinTech.



3. Financial technology use currently weak among Canadian consumers

According to an EY survey, in Canada only 8.2% of digitally active consumers have used at least two FinTech products in the last six months, in the form of money transfers and payments, and savings and investments, compared with 15.5% globally. However, if awareness about available products and services increases, adoption rates could triple within the year, to reach over 40%.

4. The importance of the insurance sector

The Canadian financial sector includes a highly competitive insurance sector: there are over 200 insurance companies in Canada.¹ Insurers are looking to innovate to add to their distribution channel mix, to optimize growth and meet customer demands.

Table 2: Snapshot of banking systems

	Number of major banking institutions	Assets C\$B
Australia	6	3,704
Canada	7	4,739
Germany	21	8,685
Hong Kong	5	2,111
Singapore	3	1,090
UK	14	12,393
US	43	25,022

Source: The Banker Database, September 2016, Banks with assets of over US\$100B

1. Insurance Bureau of Canada, 2016

FinTech investments comparable to global leaders

Table 3: Market overview



*For 2015: C\$695M

Source: CB Insight, EY Analysis

Comparative snapshot of FinTech investments, September 2014 to October 2015

Germany

Large but complex

Investment: C\$625M

Characteristics

- Significant investment in credit and lending FinTech (approx. C\$437M); growing focus on B2B FinTech
- Complex startup environment, with efforts underway to better integrate Berlin, Frankfurt and Munich

Hong Kong

Potential

Investment: C\$74M

Characteristics

- Relatively nascent, merging market
- Emerging community of FinTechs focused on capital markets

Singapore

Increasingly progressive regulatory regime

Investment: C\$70M

Characteristics

- Preferred gateway into Asian market, given ease of doing business and English language proficiency
- Dedicated FinTech team in the Monetary Authority of Singapore (MAS) focusing on establishing public/private partnerships for FinTech growth

Australia

Up and coming

Investment: C\$319M

Characteristics

- Emerging FinTech ecosystem with high level of collaboration and recent government interest
- Recent federal government commitment to innovation highlights growing prioritization of agenda

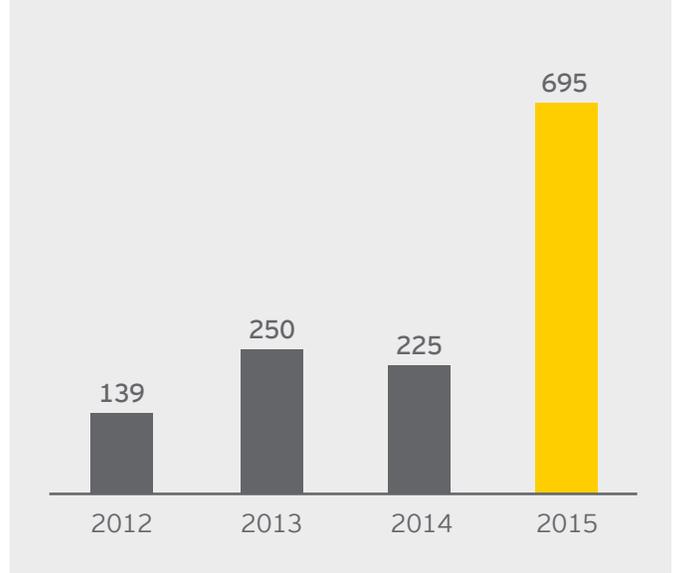
High-growth Canadian ecosystem includes Montréal and Québec City FinTechs

In Canada, between October 2014 and September 2015, investments in FinTech totalled C\$715 million, similar in scale to the UK.

Nearly 50% of the Canadian investments are concentrated in loans and deposits.

In 2015, FinTechs such as Mogo, Ethocas and Payfirma were successful at raising significant capital. After a number of years of limited growth compared with other major financial centres such as the UK, the US and Singapore, Canada's FinTechs are expanding fast.

Table 4: Investment in Canadian FinTechs (C\$M)



Source : CB Insight, Analyse EY

Table 5: Snapshot of sectors in which Canada's FinTechs operate



Canadian and other global leaders' FinTech ecosystems have a lot in common

Below, we compare Canada's FinTech ecosystem with major global financial centres. The comparison combines perspectives on the Montréal, Toronto and Vancouver ecosystems (see Schedules 6.1 and 6.2)

The dynamism of this ecosystem is highlighted in our results.



Talent

- ▶ Sizeable pipeline of tech and finance employees
- ▶ Higher proportion of STEM and finance students
- ▶ Attractive immigration policies
- ▶ Solid entrepreneurial network



Capital

- ▶ Incubator and accelerator funds specializing in FinTech
- ▶ Strong network to support company startup
- ▶ Less capital invested in FinTechs than in major financial hubs
- ▶ Only four FinTech IPOs in the last ten years



Policy

- ▶ Some of the world's most attractive government tax programs (tax credits, etc.)
- ▶ Policies are stable and predictable, but very limited and rigid
- ▶ Regulators' recent interest in FinTechs



Demand

- ▶ Major financial sector
- ▶ Proximity to US market
- ▶ Final consumer demand still weak compared with other countries
- ▶ Relatively weak company and financial institution demand (current, but changing)
- ▶ Maintaining consumer confidence through financial institutions

Transposing our qualitative analysis into a quantitative result shows that Canada's position is comparable to a similar group of financial centres including Germany, Hong Kong and Australia.

Singapore, New York, California and UK centres stand out as FinTech pioneers, and are home to a critical mass of major financial institutions.

In spite of Canada's slower start, the country's tremendous growth is encouraging for future FinTech development.

We believe Canada can set its sights on reaching the same level as Singapore and achieving its own mature FinTech ecosystem in the near future.

Table 6: Our study's FinTech ecosystem ranking

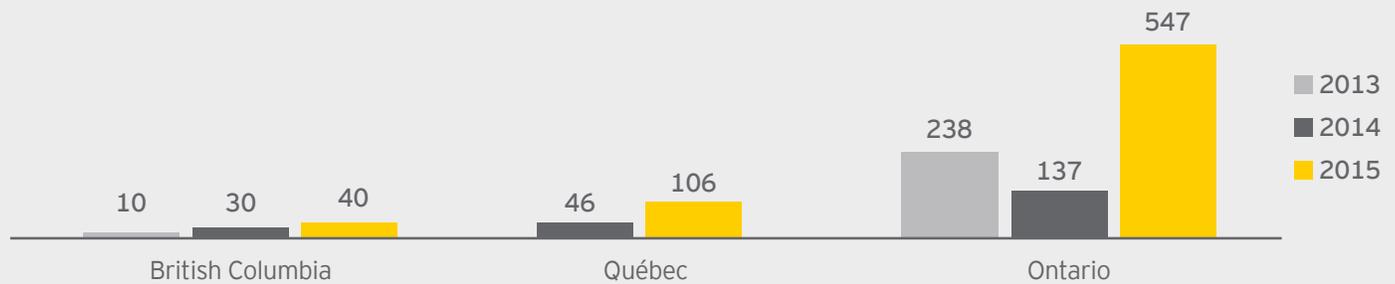
Ranking based on various attributes in 2015					
Global FinTech leaders	Talent ▸ Talent availability ▸ Talent pipeline	Capital ▸ Seed ▸ Growth ▸ Listed	Policy ▸ Regulatory regimes ▸ Government programs ▸ Taxation policy	Demand ▸ Consumer ▸ Corporate ▸ Financial institutions	Total points (the lower the score, the higher the ranking)
United Kingdom (UK)	2	3	1	3	9
California (USA)	1	1	7	2	11
New York (USA)	3	2	8	1	14
Singapore (SG)	5	8	2	5	20
Germany (DE)	7	4	5	6	22
Australia (AU)	6	5	3	8	22
Hong Kong (HK)	8	6	4	4	22
Canada (CA)	4	7	6	7	24

Source: EY Analysis, based on UK report, *On the cutting edge*



Québec investment in FinTech seeing steady growth

Table 7: Investment by province from 2013 to 2015 (C\$M)



Source: CB Insights, EY Analysis

Note: Extreme data points have been removed, excluding IPOs

Between 2013 and 2015, investment in Québec's FinTechs totalled C\$152 million, with growth of close to 50% from 2014 to 2015. Ontario received the lion's share of investment, but Québec and British Columbia grew consistently from year to year.

Montréal's current FinTech offering is still relatively limited. It focuses primarily on B2B (financial institutions and SMEs) and payment and investment solutions. Very few Montréal FinTechs provide services directly to individuals (B2C), which is why awareness of these services is limited.

Montréal is already a FinTech hub, hosting Canada's largest FinTech Forum since 2014 and drawing 1,200 attendees in 2016, tripling 2013's inaugural attendance.



FinTech insurance wins in Québec

In recent years, the Québec insurance industry has adopted innovative solutions in partnership with local FinTechs. A number of Québec insurance companies are taking a leadership role in FinTech integration, particularly in property and casualty (P&C) insurance. This FinTech niche is also known as InsurTech.

This enthusiasm stems in part from the following:

- ▶ Competition appears to be more intense in insurance than in banking. Over 171 insurance companies have received AMF approval to operate in Québec as P&C insurers, and approximately 96 as life and health (L&H) insurers.
- ▶ Québec is home to several major P&C and L&H insurers.

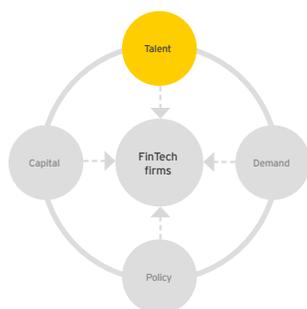
- ▶ Emerging technologies allow insurers to reduce their risks. Statistical analyses based on the use of clients' personal data helps them better assess risks and offer advantages to less "risky" clients. There have been instances of this for both P&C (see p. 40) and L&H insurers.

Québec companies such as Baseline Telematics support insurance companies, develop and implement new technologies in their business models and make Québec a telematics hub.

They're exporting this know-how around the world.

4

DOES MONTRÉAL HAVE WHAT IT TAKES TO NURTURE FINTECH ECOSYSTEM GROWTH?



4.1 Talent

Montréal compares favourably with other FinTech ecosystems for talent availability

FinTech requires access to a deep pool of expert talent in order to support growth. Entrepreneurial talent in particular is a catalyst to draw capital and businesses.

In this section, we discuss the two factors that influence talent:

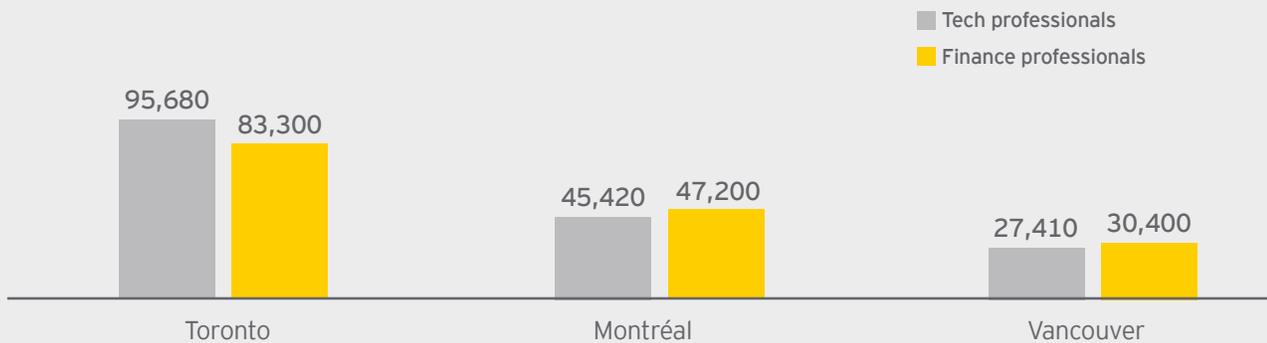
1. **Talent availability:** The availability of talent with the right skillsets to meet current FinTech requirements.
2. **Talent pipeline:** The health of the talent pipeline to meet future demand through quality education and an infrastructure in place to maintain it.

We consider talent to cover three main types of skills critical to the success of a FinTech: (1) technical programming and IT development talent, (2) finance talent, and (3) entrepreneurial talent.

We assessed domestic talent against these three skillsets as well as the immigration potential for accessing foreign talent to augment domestic skill shortages.

4.1.1 Montréal has abundant high-quality tech and finance talent available

Table 8: Tech and finance professionals



Source: Statistics Canada, 2011

Tech talent

Tech talent consists of the engineers, software developers and programmers required to build and implement FinTech solutions. A driver of the availability of technical talent is proximity to tech giants. For some time, Montréal has been attracting significant technical talent drawn by two industries: aerospace (Bombardier, Pratt & Whitney, CAE, etc.) and multimedia and gaming (Ubisoft, Electronic Arts, Gameloft, etc.).

Also a draw, CGI, a global leader in financial services technology, is headquartered in Montréal, employing over 7,000 people in Québec and creating a significant pool of finance talent.

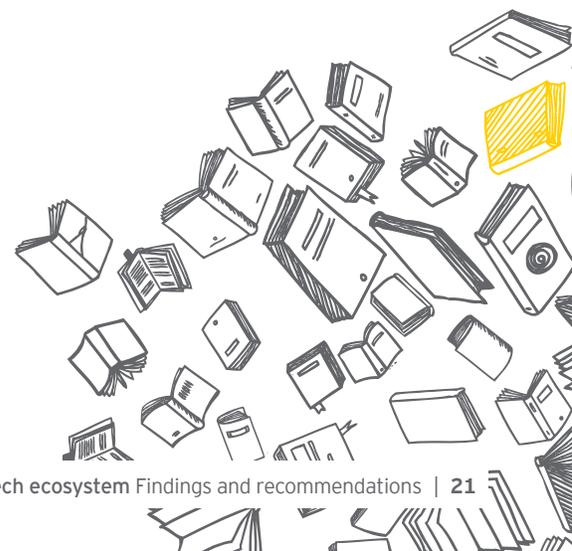
All in all, Québec boasts over 32,000 developers and programmers,¹ which is comparable to cities like Paris and Tel Aviv.

Finance talent

Expertise in finance includes the skills of people working in big financial institutions, insurance, investment management and any other finance-related industry.

Montréal is home to three large Canadian financial institutions (Desjardins, National Bank of Canada, Laurentian Bank of Canada), as well as major institutions such as the Caisse de dépôt et placement du Québec (CDPQ) and PSP Investments. Having these institutions located in Montréal means that there are a considerable number of professionals with experience in the financial services industry, which is required to understand industry needs and practices.

1. *Emploi Avenir Québec*, 2013



Montréal is a city that fosters entrepreneurship and innovation

Entrepreneurship is the ability to generate new ideas, build businesses from scratch, and identify and acquire customers. It requires creativity, self-belief, leadership and risk-taking.

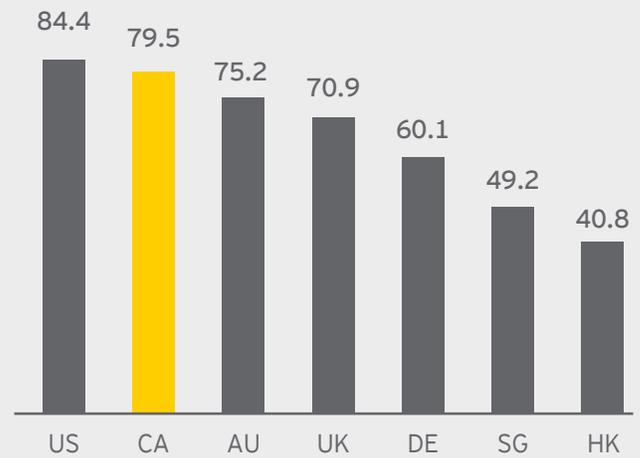
According to the Global Entrepreneurship Development Institute (GEDI) which ranks countries based on their ability to develop entrepreneurship, Canada is second worldwide after the US. In a ranking of the world's great cities, **Montréal places 20th for entrepreneurship.**¹

In fact, a number of initiatives have been launched by the city itself and by local universities:

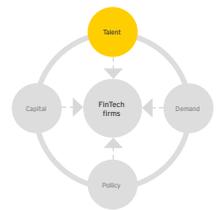
- ▶ Universities play an important role in putting students on the road to entrepreneurship. The four major Montréal-based universities each have an incubator to support students in developing their ideas and creating startups at the end of their academic studies.
- ▶ The City of Montréal has in place a host of initiatives to support entrepreneurship and local economic development. For instance, in March 2016, the City appointed its first entrepreneurship director to implement an action plan for driving entrepreneurship in Montréal.

1. Compass, 2015

Table 9: Global Entrepreneurship Index (GEDI)



Source : Global Entrepreneurship Development Institute, 2016



4.1.2 Montréal is a world leader in science, technology, engineering and mathematics graduates

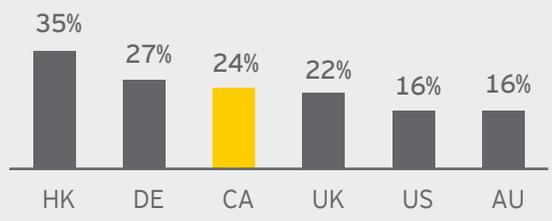


Three of Montréal's universities rank among the world's 500 largest: McGill (63rd), Université de Montréal (150th) and Université du Québec à Montréal (300th).

Placing 1st in North America and 7th worldwide, Montréal is a destination of choice for international students, recognized for its quality education and employment opportunities.

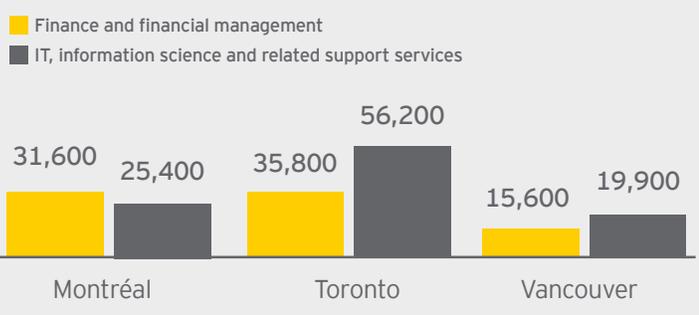
Out of all graduates, 24% earn degrees in STEM (Science, Technology, Engineering, Mathematics) programs, placing Canada ahead of the UK and the US.

Table 10: Percentage of STEM program graduates (across all university graduates)

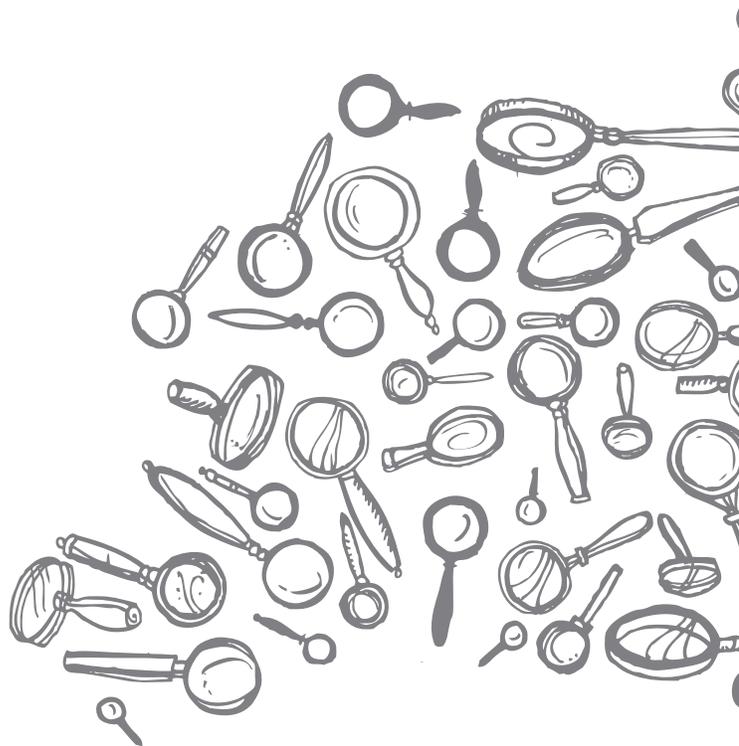


Source: Statistics Canada, 2011

Table 11: Number of finance and tech students



Source: Statistics Canada, 2011

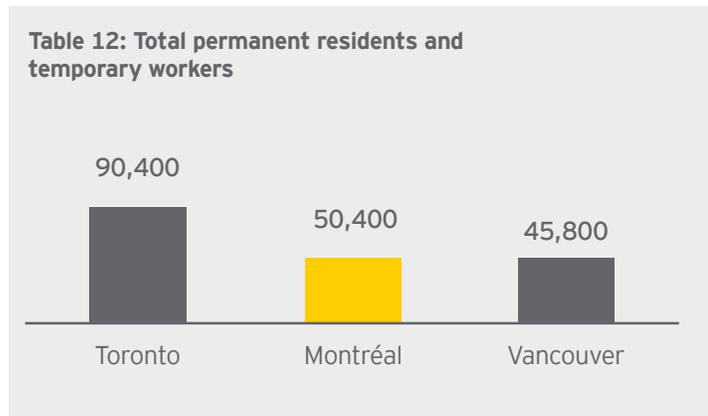


Québec offers a variety of attractive programs to draw foreign talent

The talent pipeline also draws on foreign talent. Canada and Québec immigration programs attract foreign talent through valuable incentives. Under these programs, Québec and Montréal are seeing some of Canada's highest immigration numbers.

In Québec, 57.6% of immigrants are qualified workers and half of them have more than 17 years of education. Of that half, 24% plan to work in the natural and applied sciences and 16% in business, finance and administration. It is clear that Québec is successful in attracting quality foreign talent, offering new potential for FinTech.

Of Québec's 50,000 permanent residents, 42,000 live in Montréal, attracted primarily by the job market and quality of life. In its global survey, Mercer ranked Montréal's quality of life the highest in North America, ahead of any US city.



Source : Statistics Canada, 2011

SPOTLIGHT ON TWO SUCCESSFUL INITIATIVES

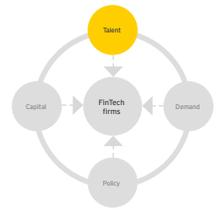
International Experience Canada: Allows foreign nationals to travel to Canada without a job offer and then become a permanent resident with a job.

Startup Visa: Enables entrepreneurs to build businesses in Canada without linking permanent resident status to failure of the business.

Table 13: Factors influencing Canadian immigration

	CA	UK	US ¹	DE	AU	HK	SG
No quota system	✓	✗	✗	✓	✓	✓	✓
Long-term path option	✓	✓	✓	✓	✓	✓	✓
Spousal visa	✓	✓	✗	✗	✓	✓	✗
Average waiting time for a temporary work permit (weeks)	5	20	12	9	8	5	2

1. Even if obtaining permanent resident status in the US is possible, the process may be complex and the outcome uncertain.



4.1.3 Montréal stakes its claim as a world-renowned artificial intelligence and Big Data hub

Developing FinTech solutions requires leading-edge technologies in artificial intelligence (AI) and Big Data. Over the past several years, the Montréal academic community has launched a raft of projects with government support at various levels, establishing Montréal's reputation as a leader in these two key areas. In fact, Montréal is home to a number of AI and Big Data organizations, attracting professionals

with international profiles. These include the Computer Research Institute of Montréal (CRIM) and the Institute for Data Valorization (IVADO).

The linkages between FinTech and AI/Big Data represent a unique opportunity to drive growth and burnish Montréal's global profile.



CRIM is a centre for applied research in information technology that works with clients and partners to develop innovative technologies and leading-edge expertise for transfer to Québec businesses and organizations to spur improved productivity and their ability to compete both at home and globally. CRIM also helps research fellows and interns hone their IT qualifications through positions on a range of applied research projects.

Over the past five years, CRIM has:

Conducted
465
R&D
projects



Authored
& released
150
publications



Held
60
networking
events



Helped train
over
120 university
students



IVADO is an umbrella organization for industry professionals and academic researchers whose mission is to develop leading-edge expertise in data science, optimization (operational research) and AI. IVADO members propose methods for processing information and supporting decisions that optimize resource utilization. IVADO promotes knowledge exchanges and sharing by the specialists, partners, researchers and students across its network. IVADO recently launched the Element AI platform as an incubator for AI-First leading edge solutions in partnership with large corporations.

150 researchers
850 students
in graduate
programs



No.1
worldwide

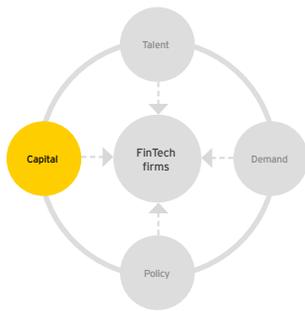


In 2016, the Canadian
government
awarded IVADO
a \$93M grant



Dozens
of partners
in the financial sector





4.2 Capital

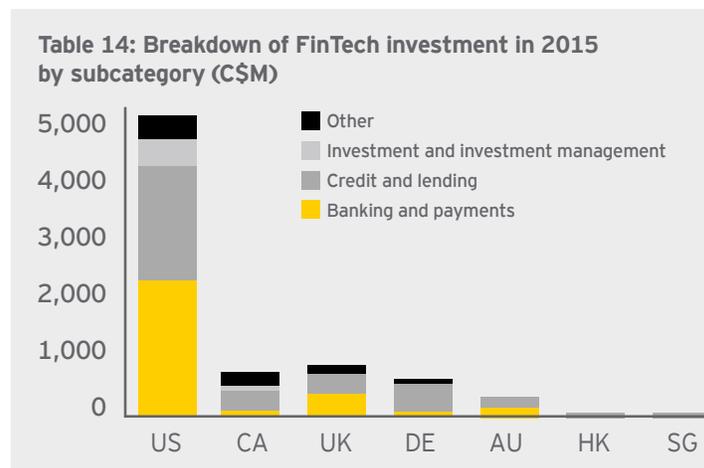
Montréal and Québec entrepreneurs have access to a number of incubators and a variety of funding sources

To develop effectively, Québec's FinTech entrepreneurs need to have access to a range of support tools and funding sources.

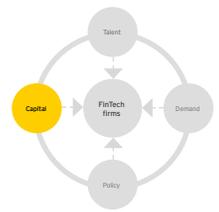
In this section, we discuss the three factors that influence capital:

1. **Support:** Access to incubators and accelerators
2. **Availability of funding:** Availability of a variety of funding sources throughout the entrepreneurial development cycle
3. **Resources:** Access to affordable resources (space and workforce) to lessen the impact on the required funding

FinTech investments totalled C\$695 million in 2015, placing Canada just behind the US and the UK. Note that the majority of investments were made in the credit and lending sector (for example, Thinking Capital), which appears to be the strongest. Canada ranks first for its investment ratio in investment and investment management (Wealthica, for example) and could play a strong hand in this sector. The solid share of investments in all of the other sectors shows the scatter of ecosystem players' efforts.



Source: CB Insights



4.2.1 Montréal has a portfolio of support programs for entrepreneurs

Montréal boasts numerous incubators, accelerators and programs to nurture startups. Many of them target technology, such as the CEIM and TandemLaunch. Only one, however, is dedicated to FinTech. Ferst Capital Partners provides capital and support to FinTech startups, and won the Jury Prize at the 2016 Canadian FinTech Awards. Some are partners of public institutions (Espace CDPQ, InnoCité MTL), while others are associated with financial institutions or investors (National Bank, FounderFuel). There are also university accelerator programs such as District 3 at Concordia, and Centech at École de technologie supérieure, which provide coaching for startups to create and develop their products.

With their number on the rise, Montréal's incubators and accelerators are known as a collaborative community. They partner for events and demonstrations that provide opportunities to showcase the City's entrepreneurial talent. Initiatives such as Demo Day and Startup & Croissance cocktails give entrepreneurs the chance to rub shoulders with key developers in Montréal's startup ecosystem.



“In Montréal, accelerators are well organized and stakeholders are motivated to grow the startup ecosystem together, especially by teaming to organize special events.”
 – Richard Chenier, Centech

Table 15: Key technology incubators and accelerators in Montréal

Key incubators/accelerators	
Name	Description
National Bank Accelerators	Université de Montréal (Polytechnique, HEC, UdeM) accelerator
Centre d'entreprises et d'innovation de Montréal (CEIM)	Specialized services for startup and development-stage tech companies
Centech	École de technologie supérieure accelerator
District 3	Concordia University accelerator
Element AI	Incubates advanced artificial intelligence solutions
Espace CDPQ	Investment and development hub serving organizations but not startups
FCP FinTech Studio	Accelerator/platform which provides capital to support FinTech startups
FounderFuel	Acceleration program focused on the pre-seed to seed stage
Founder Institute	Startup launch program for talented entrepreneurs
InnoCité MTL	Montréal's accelerator for a smarter city
Notman House	A physical campus dedicated to supporting the Montréal Startup ecosystem
TandemLaunch	Emerging technologies accelerator
X-1	McGill University accelerator

Source: Analyse EY

4.2.2 Capital is available in Montréal to support tech company startups and development

Montréal has a host of investors, particularly in the tech industry

Québec’s worldwide standing for a number of VC-financed companies between 2011 and 2013 is high – VC investments in Québec represented a much higher percentage of GDP than in the other countries or US states analyzed.¹

That being said, there are a number of Montréal investment funds targeting IT, but only two which focus on the FinTech industry (Ferst Capital, M2S Capital). Tech investors have no special affinity for the financial industry, and FinTech projects have to compete with a variety of different businesses that align more closely with investors’ expertise. In addition, most funds tend to invest in companies set to begin generating profits in the near future, with a minimum viable product (MVP). This can be a challenge for FinTechs versus other tech firms because developing an MVP that takes longer and involves greater risks can put a company out of sync with regulators’ approval cycles.

Montréal is also home to big businesses which make strategic investments in startups. Currently, this is occurring in a range of sectors, but not in the financial industry. Encouraging such initiatives could well provide a lever for supporting the FinTech ecosystem.

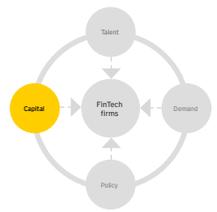
Table 16: Specialized tech funds in Montréal

Name	Description
Ferst Capital	FinTech startup investment firm. Also provides strategic business support.
iNovia	Tech firm specialty investment fund.
M2S Capital	Investment fund with a focus on FinTech. Invests in Series A startups.
Novacap	Young tech firm specialty investment fund.
Real Ventures	Young tech firm specialty investment fund.
Rho Canada Ventures	Young tech firm specialty investment fund.

Source: EY analysis

Angés Québec FondAction CSN Teralys Capital
 Tandem Expansion Fund Indicator Ventures CAFA
 Kilmer Capital Partners Desjardins Venture Capital
 BDC BrightSpark Ventures M2S Capital
 Novacap Yolo Ventures Caisse de dépôt et placement du Québec
 Celtis Capital Fonds de solidarité FTQ Real Ventures
 Rho Canada Ventures White Star Capital Investissement Québec

¹ Source: stat.gouv.qc.ca



The challenge for Montréal FinTechs is locating funding to support expansion

While capital is available in Québec, its total average investment per company falls short of that in the other financial centres analyzed.

That said, success for Québec FinTechs means exporting products internationally to markets where the demand for financial products is stronger, such as the United States or Europe, thanks to the new free trade agreement in the works. Significant funding is required to tap into these international markets.

However, compared with the US, Québec – like the rest of Canada – lacks investors that can mobilize funding in the tens of millions of dollars to allow businesses to move on to the next stage in their development.

Because Canada’s IPO market is limited, it is harder for entrepreneurs to raise significant funds to finance expansion. Only four FinTech IPOs have taken place over the last few years.



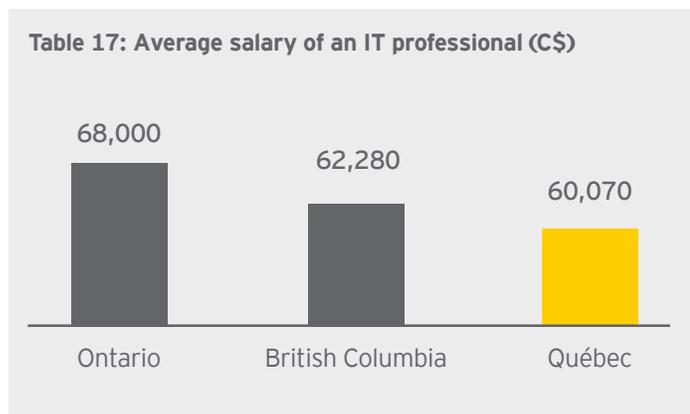
In 2015, two Montréal companies welcomed major investments.

	<p>Blockstream</p>	<p>Blockstream raised C\$55 million from international investors such as Horizons Ventures, AXA and Digital Garage.</p>
	<p>lightspeed</p>	<p>LightSpeed raised C\$80 million from the Caisse de dépôt et placement du Québec, Investissement Québec, iNovia and Accel Partners.</p>

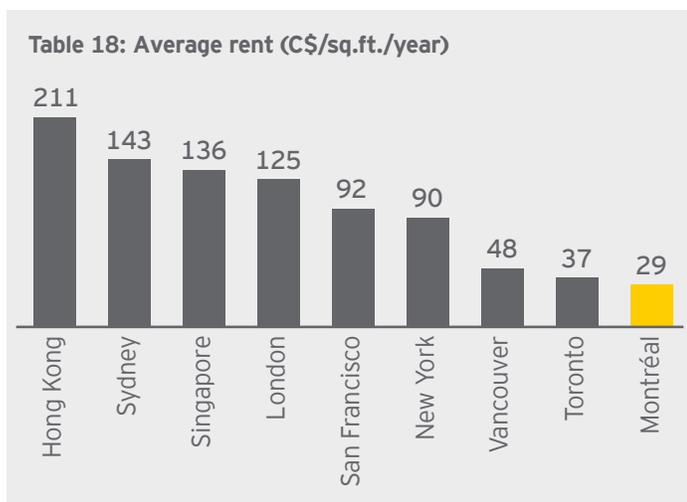
¹ Source: stat.gouv.qc.ca

4.2.3 Competitively priced resources are available

Low-cost key resources are also a major factor in FinTech development. Space in Montréal is not only less costly than in Canada's other large cities, it's up to three times less expensive than space in New York, San Francisco and London, the main FinTech centres. And IT professionals' salaries are lower in Québec than in Canada's other provinces and up to 30 % less than in the US. So given the costs, the funding needed to start up a business in Montréal is lower than for comparable cities.



Source: Statistics Canada, 2011



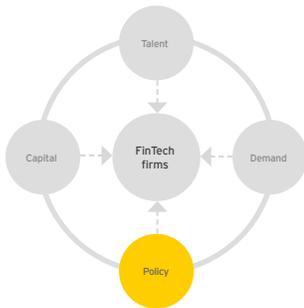
Source: Cushman & Wakefield

Since 2008, a number of foreign financial institutions have chosen to set up their tech development centres in Montréal. This indicates that Montréal is recognized as a location of choice by businesses attracted by a significant pool of tech talent, lower salaries than in the rest of North America and exceptionally advantageous real estate costs.

Table 19: Key companies with technology development centres in Montréal

Year	Company	Number of employees
2016	Square Point	N/A
2014	BNP Paribas	225
2011	Société Générale	300
2009	Maples Fund Services	50
2008	Morgan Stanley	900

Source: EY analysis



4.3 Policy

Tax programs supporting innovation and startups represent a competitive edge for Montréal, but a more innovation-friendly policy environment could accelerate FinTech development

In this section, we discuss the two factors that influence policy:

1. **Regulatory regimes:** Regulator support for new entrants and innovative business models
2. **Government and taxation programs:** Programs to reduce barriers to entry and tax incentives to encourage competition and innovation in the local market.

We assess regulatory regimes from the perspective of navigating regulatory complexity.

We also assess the different government and tax incentive programs which could apply to FinTech based on their number, as well as what they can offer businesses.

4.3.1 Policy should be better adapted to foster FinTechs and innovation

Canada's regulatory system is one of the most stringent, which offers significant stability, and was credited with mitigating the impacts of the 2008 economic crisis on the Canadian economy. On the other hand, this prudent approach puts a damper on financial industry innovation.

Note that at this time, Canada has no FinTech-specific regulatory framework on either the federal or provincial level. However, regulators all agree it should be broached both federally and provincially. Active involvement by the regulatory authorities could greatly encourage innovation.

FinTechs currently operate within a regulatory framework which is not necessarily adapted to this new sector of finance or to its innovative business models. Implementing progressive measures to reshape regulatory policy would enable it to better support innovation within the financial industry not only for financial institutions, but also for FinTechs themselves.

Beyond policy, FinTechs are subject to the Québec and Canadian standards and legislative frameworks that apply to their markets. These government regulations and policies are put in place to protect consumers, but they can also present barriers to entry for young FinTech businesses.

Lastly, navigating all the regulatory and policy landscapes can be extremely difficult for a new business, as regulations are complex, and coaching is limited.

Regulators are sensitive to the issues facing FinTechs and are starting to line up:

- ▶ The federal government has implemented an action plan to ease administrative policy in spite of the fact that the current environment (terrorism, economic crisis, etc.) is not particularly conducive to reducing the regulatory burden.
- ▶ Provincially, the AMF¹ has set up a targeted FinTech working group made up of several of its experts. This working group plans to assess the ability of the current regulatory framework to accept the changing business practices, business models and technology within the finance industry and continue to maintain an appropriate balance between consumer protection and market efficiency. Its work will include discussions with the industry and consumer groups around these issues, not only to arrive at a better understanding of their concerns, but also how to suitably support involved stakeholders in developing their business models.

Table 20: Regulatory best practices around the world

Spotlight on global best practices



United Kingdom Project Innovate (2014)

- ▶ Innovation hubs: The Financial Conduct Authority provides a team of experts to support startups by guiding them through the different regulations and assisting them in preparing their applications for authorization.
- ▶ Regulatory Sandbox: Created to enable businesses to test out new products and services for a given period in an environment exempt from standard regulations.



Singapore FTIG (2015)

- ▶ A technology innovation lab that works closely with industry and FinTechs to create and test strategies and regulatory policies regarding technology innovation.

Source: EY analysis

1. Autorité des marchés financiers, 2016

4.3.2 Québec FinTechs have access to some of Canada’s most competitive pro-innovation tax programs

In Canada, as part of a concerted attempt to encourage and develop entrepreneurship and innovation, the federal and provincial governments offer a range of tax incentives to startups and R&D firms. Despite reducing amounts in recent years, Canada remains very competitive compared to the other countries studied, due to its attractive scientific research and experimental development (SR&ED) tax credits. While such government programs do not target FinTechs in particular, the industry enjoys the full benefits available to the broader tech sector.

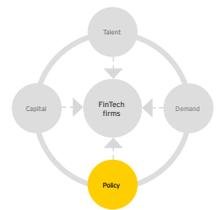
Québec offers some of the highest SR&ED tax credits in Canada. Canada’s federal government offers a refundable tax credit of 35% to Canadian-controlled private corporations. Québec grants one of the best provincial tax credit rates (30%) which is 100% refundable, even if the corporation does not turn a profit. In other provinces, the rates range from 3.5% to 30%.

For FinTechs, SR&ED is a core activity, particularly in the development stage.

Table 21: SR&ED rates in Canada

Jurisdiction	Rate (private corporations)	Refundable
Federal	35%	0 or 100%
Québec	30%	100%
Ontario (depending on the program)	3.5% to 20%	0 or 100%
British Columbia	10%	0 or 100%

Source: EY analysis
See: Schedule 3 Comparison of SR&ED credits by province



Other programs are available to FinTechs

A number of other programs are also available to FinTechs operating in Québec. They do not target FinTechs specifically but are typically used by growth companies. Our interviews revealed that government authorities are aware that the current programs on offer do not fully meet the needs of FinTechs and intend to analyze the sector and its needs in detail. However, they are awaiting representations from other stakeholders (such as the AMF and private corporations) before beginning their analysis.

Québec's digital economy action plan to nurture FinTech development

The Québec government has launched a \$200 million action plan for the digital economy to support tech and data innovation, encourage firms to digitize and drive e-commerce adoption.

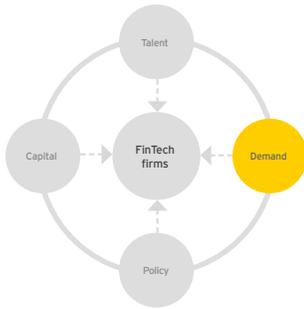
It also seeks to bolster Québec's position as a global IT and communications leader by creating a local environment conducive to FinTech development.

Table 22: Key federal and Québec programs for Québec businesses

Program
Scientific Research & Experimental Development (SR&ED) Refundable Tax Credit programs (Québec and federal)
Tax Credit for the Development of e-Business (TCDE) (Québec)
Industrial Research Assistance Program (IRAP) (federal)
Capital Gains Deduction (federal and Québec)
Claimed Allowable Business Investment Loss (ABIL) (federal and Québec)
Apprenticeship Training Tax Credit (Québec)

Source: EY analysis
See detail in Schedule 4.





4.4 Demand

Demand for FinTech solutions and services is still emerging in Canada, but experiencing constant growth. It is expected to triple over the next 12 months

Sustained, strong demand is critical for successful development in any industry, but particularly for FinTechs.

Driving demand for FinTech services in Canada relies heavily on:

1. **Consumers**
2. **Businesses**, especially SMEs
3. **Financial institutions** and their pursuit of FinTech partnerships

EY developed the EY FinTech Adoption Index, the first of its kind to measure the level of adoption of technologies developed by FinTechs worldwide. We surveyed over 10,000 consumers in Australia, Canada, Honk Kong, Singapore, the United Kingdom and the United States to better understand the products they use and identify future trends.

Our survey showed that 15.5% of digitally active consumers have used at least two FinTech services in the past six months. With growing awareness and access to FinTech products and services, adoption could triple from 8.2% to 24.1% in the next 12 months in Canada.

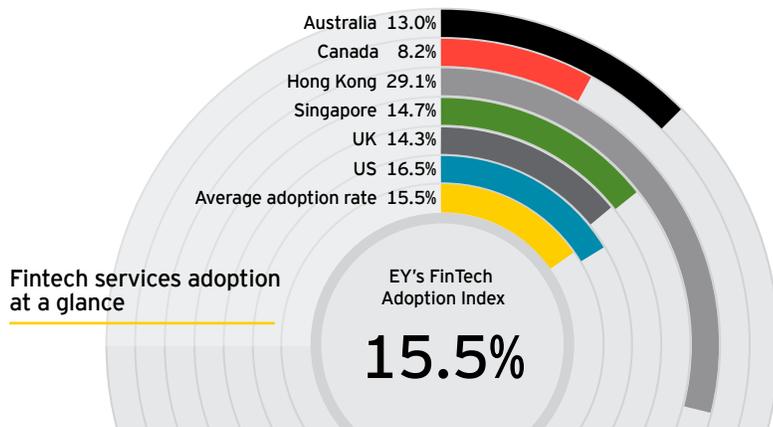
4.4.1 Moderate growth in FinTech use by Canadian consumers

Compared to various other global regions, Canadian consumer demand for FinTech products and services is moderate, but growing. In Canada, the FinTech movement lags Western Europe by three to four years, and the United States by two to three years. Adoption of financial technologies is still emerging in Canada with a rate of 8.2% compared with an average rate of 15.5% internationally.

Cautious adoption by Canadian consumers is explained in part by the strong reputations enjoyed by Canada's major financial institutions. These financial institutions have acquired and maintained consumer confidence, particularly during the economic crisis of 2008. When Canada's strict regulatory environment is added to the mix, it's challenging for FinTech entrepreneurs to break through in the Canadian market and raise consumer awareness of their products and services.

Canadian and Québec consumers are notably among the most avid web and social media users in the world, with some of the highest adoption rates for electronic banking services. A sharp increase in access to a broad range of high-quality services would result in adoption rates akin to those in other geographic areas.

Table 23: EY FinTech Adoption Index



Source: EY analysis

Key reasons cited by the Canadian consumers

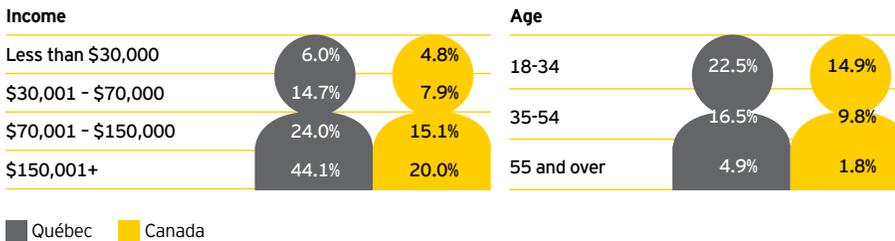
Reasons for using FinTech services	Reasons for not using FinTech services
1. Easy to set up account (43.8%)	1. Was not aware (57.2%)
2. More attractive rates/fees (20.4%)	2. Did not have a need to use them (33.7%)
3. Access to different products and services (12.4%)	3. Prefer to use a traditional financial services provider (33.6%)
4. Better quality of service (9.9%)	4. Don't understand how they work (22.4%)



Snapshot of Québec and Canadian consumers

Who are they?

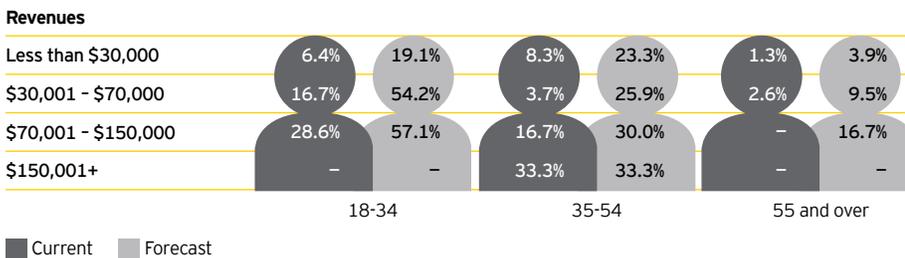
Breakdown of FinTech consumers by income and age group



Current and future adoption in Québec

FinTech adoption rates highest among younger and higher net worth consumers

Breakdown of Canadian FinTech consumers by income and age group, and current and future adoption rates



CEFRIO's 2015 NETendances survey

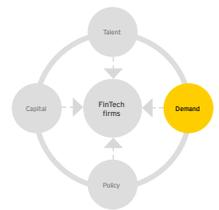
Online banking services: Quebecers go digital

According to CEFRIO's NETendances report surveying the use of digital financial services by Québec adults, Quebecers are clearly open to online-only banking.

In total, 37.4% of adults would like to bank online exclusively. Among Québec consumers aged 25 to 44, the rate climbs to 48.2%.

A considerable portion of Québec adults is open to doing business with organizations other than financial institutions for their banking needs. The most popular business among Québec adults is PayPal (24.5%).





4.4.2 B2B demand is expected to grow

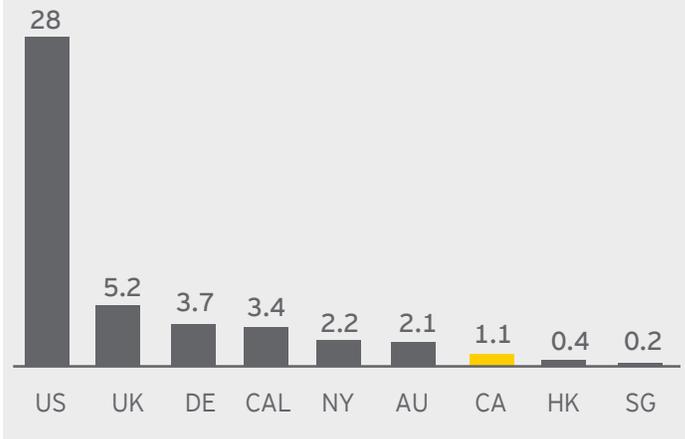
Excluding financial institutions, companies, particularly SMEs, are a significant source of demand for FinTech. *The Future of FinTech: A Paradigm Shift in Small Business Finance*, published in connection with the 2015 World Economic Forum (WEF), highlighted the difference between the needs of SMEs for financial services and the offerings of traditional financial institutions. FinTech has the potential to meet a significant portion of SME needs, particularly for financing.

In December 2015, the Canadian economy included a total of 1.17 million businesses with employees, of which 1.14 million (97.9%) were small businesses and 21,415 (1.8%) were medium-sized businesses, for a combined total of 1.165 million SMEs.

Québec has a total of 239,376 SMEs, accounting for 20.5% of the Canadian total, ranking second last for total SMEs per 1,000 inhabitants.

Québec SMEs have needs comparable to their counterparts' in other provinces, and their openness to adopting FinTech solutions is expected to continue growing alongside expansion in supply.

Table 24: Number of SMEs by country (December 2015) (in millions)



Source: National statistics authorities, Statistics Canada
 Note: The definition of a SME varies according to the region



MERIDEX

Meridex is an innovative Montréal company operating in the currency exchange and payment business.

The company offers currency exchange and payments services at real time exchange rates and fund transfers at low cost to small and medium-sized businesses.



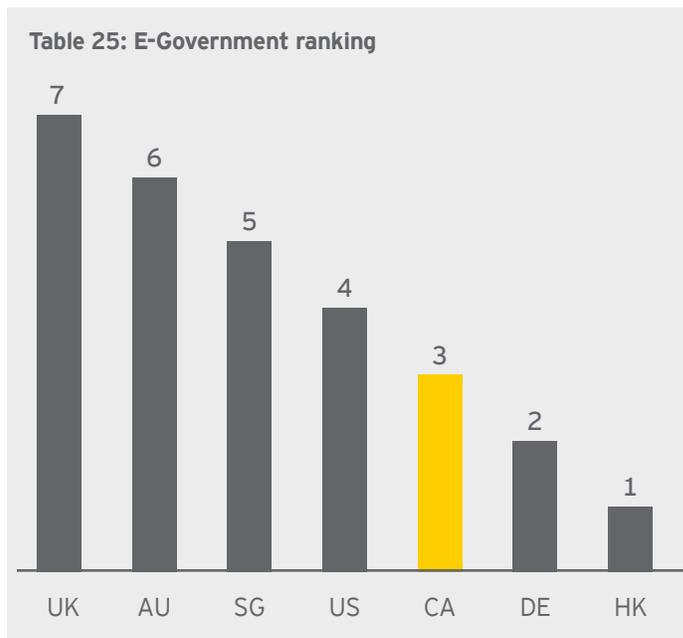
Founded in 2006, Thinking Capital is a Montréal business offering online financing to SMEs for amounts from C\$5,000 to C\$300,000. The company is also associated with CIBC.

What is the role of governments in developing FinTech?

Governments can play an important role by supporting FinTech adoption, that is, by using FinTech solutions themselves and by promoting FinTech among SMEs.

One of the indicators to watch is the rate of development and penetration of E-Government solutions in different countries across the world. Canada is ranked 14th worldwide on the E-Government Development Index (EGDI) in the United Nations E-Government Survey 2016. Compared to other countries that are part of our study, Canada is ranked 5th, just behind the United States.

Moreover, Canada is ranked 4th according to the Online Service Index (OSI), close on the heels of the United Kingdom, Australia and Singapore.



Source: United Nations E-Government survey, 2016
Ranking: 6 - High; 1 - Low

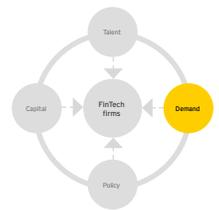
The level of FinTech adoption by governments is still relatively low, but here are a few examples:

 **Australia**

The Department of Community Services offers a range of mobile applications (Express Plus) which provides access to Medicare services, Centrelink and Child Support. These applications also include a digital wallet that provides real time access to concessions cards (e.g., health insurance cards and cards for retirees).

 **United Kingdom**

- ▶ The peer-to-peer Funding Circle platform has been used by numerous municipal councils (e.g., Lambeth Council) to grant loans to local businesses.
- ▶ HM Revenue & Customs (HMRC) is working on a digital taxation project, including an application programming interface strategy that allows companies to connect directly to the digital tax accounts via their accounting software.



4.4.3 As one of the world’s major financial centres, Montréal can expect to play a leading role in the FinTech sector

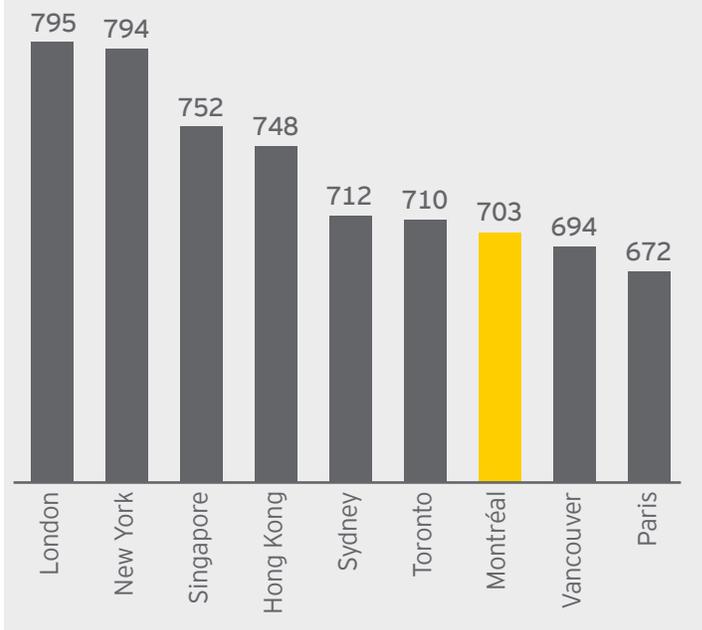
Montréal is ranked 15th in the world by Z/Yen in the Global Financial Centres Index (GFCI), close on the heels of Toronto and Sydney. Three leading Canadian financial institutions (National Bank, Desjardins and Laurentian Bank) are headquartered in Montréal. Several leading P&C insurers are also based in Québec. A high-quality IT workforce, a very competitive cost of living and Québec tax advantages have prompted a number of foreign financial institutions to set up service centres in Montréal.

Québec financial institutions are still in learning mode and are in the process of establishing themselves as FinTech players. However, all the financial institutions that we interviewed reported they had implemented a FinTech strategy and were closely monitoring partnership opportunities and potential competitors. Most of the time, the FinTech approach is a key element of a broader digital innovation strategy.

The degree of involvement between the financial institutions and FinTech entrepreneurs varies depending on the institution. Some entrepreneurs are evaluating investing opportunities in FinTech while others are exploring partnership opportunities.

While all have integrated some FinTech solutions, Québec financial institutions are even less keen than their Toronto counterparts to disclose their FinTech partnerships.

Table 26: Global Financial Centres Index (GFCI) Ratings and rankings



Source: Z/Yen



“Québec financial institutions must make greater use of services developed by Québec entrepreneurs.”

FinTech senior executive

“Financial institutions based in Québec must work together to help develop the emerging local FinTech sector.”

Financial institution senior executive

Examples of partnerships between financial institutions and FinTechs



National Bank has invested US\$300 million via Lending Club.

The agreement entered into with Lending Club allows the Québec financial institution to familiarize itself with FinTech.



In 2016, Desjardins launched the Coopérathon, a new generation Hackathon based on cooperation between different players. Supported by numerous professionals, this event had a component dedicated to FinTech innovation.



Baseline Telematics offers telematics solutions to insurance companies. Having enjoyed initial success with automobiles (“Pay As You Drive”), this Laval-based company now offers services in health insurance (“Pay As You Live”) and property insurance (“Pay As You Dwell”).



In 2011, in collaboration with Baseline Telematics, Industrial Alliance became the world’s first insurance company to implement a pricing system related to driving habits (which can increase or decrease pricing). This is the first major insurance success based on usage.



Since 2013, Desjardins has been working with iMetrik, a Montréal-based company, to implement the Ajusto program, which estimates a driving “score” that can translate into a discount at the time of the next insurance subscription. The program recently won a Celent Award for innovation and emerging technologies.

5

RECOMMENDATIONS

- 1 Create a FinTech hub to develop Québec's FinTech ecosystem based on a shared vision among sector stakeholders and adequately support existing or development stage sector firms.

For several years, various local sector players have discussed creating a FinTech hub.

We fully support this initiative and believe it to be a critical step in supporting the sector's growth in Québec. Following a high-level analysis of the various models around the world, we believe the Singapore FinTech Consortium (SFC) represents a model worth considering. The SFC expresses its mission as follows:

"The Singapore FinTech Consortium is a FinTech incubator and acts as a FinTech ecosystem builder that aims to further the development, interaction and acceleration of the FinTech ecosystem in Singapore and Southeast Asia. We foster synergies among market players, including government bodies, financial institutions, corporations, investors and innovators, who believe that technology can bring added value to the financial industry.

Through our FinTech incubation platform, we offer corporate incubation, lab research and venture acceleration as well as provide access to analytical tools and FinTech related resources."

1.1 Develop a distinctive trademark for the Québec FinTech sector to create a sense of belonging and instant recognition

There are as many definitions of the term “FinTech” as there are stakeholders in this sector. In our opinion, there is nothing to be gained by limiting or defining overly narrow boundaries of FinTech. New business models or relevant technologies for the financial services sector need to be developed in an environment conducive to innovation.

As a result, we believe finding a way to forge a sense of belonging to bring the local FinTech stakeholders closer together is appropriate. We suggest an inclusive trademark and a distinctive logo be developed for easy recognition of firms identified as FinTechs. The goal is to boost the credibility and profile of small businesses in the sector in their dealings with larger peers.

We recommend implementing a quick and easy accreditation process to allow local FinTech entrepreneurs to display this trademark.

Here are some examples worldwide:

MaRS	MaRS is a business cluster bringing together financial services companies and FinTech startups
Frankfurt Main Finance	Based in Frankfurt, Germany, this association aims to promote the city’s financial businesses. It is supported by the city, the government and other financial industry players.

1.2 Focus on key subsectors (data science, artificial intelligence, gamification, the Internet of Things) that draw on Québec’s distinctive strengths to differentiate from other financial centres

As previously mentioned, a FinTech hub would have to be developed inclusively, supporting all ideas and types of innovation. However, key differentiators will be required for Québec to stand out rapidly among global FinTech centres. We recommend focusing initially on three to four promising subsectors leveraging the distinctive strengths of Québec tech firms. For instance, the following subsectors could be prioritized:

Data science and AI

Québec is internationally recognized for its operational research, Big Data, AI and deep learning research centres. The Institute for Data Valorization (IVADO) was recently formed to centralize this unique expertise. Financial institutions have a real need to use Big Data productively and innovatively, particularly in analyzing customer behaviour, generating customized offers and detecting fraud.

Mobile apps and gamification

Québec’s dynamic, creative and high-quality gaming sector has pride of place in any discussion about Québec. Consumers interact with digital channels, including financial services providers, constantly seeking an improved customer experience. Gamification, or applying gaming to the finance industry, would drive the acceptability and use of mobile financial services apps by tapping in to our gaming habit. Québec has the necessary talent to develop FinTech apps for mobile and other platforms, such as gaming consoles, which could revolutionize the financial services space.

Insurance

A number of insurance companies have head offices in Montréal and Québec City. According to a recent Forbes study, the insurance industry attracts the lion's share of capital investment in FinTechs. The insurance business is experiencing a transformation and rapid growth in the use of digital channels. As a result, we believe Québec insurers can generate fairly high demand to support the emergence of various FinTechs. For example, several Québec P&C insurers have been telematics pioneers.

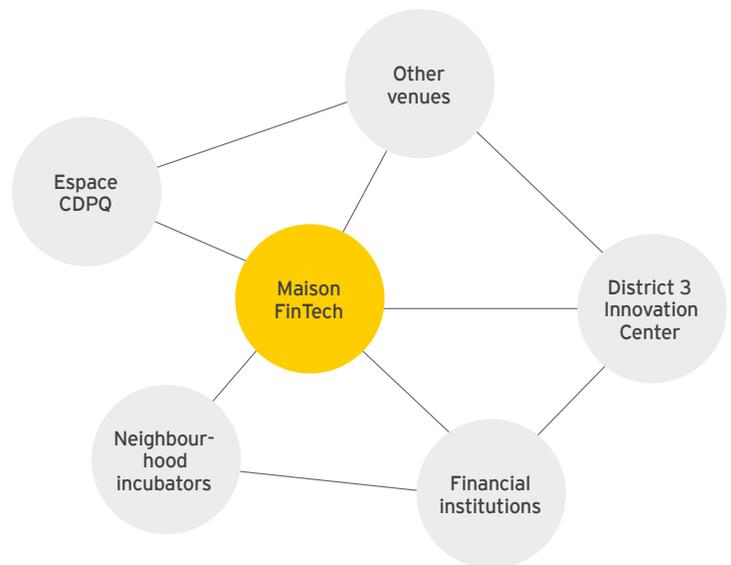
1.3 Implement an integrated network of complementary rental and work spaces exclusive to Québec FinTech entrepreneurs for the support they need throughout the development cycle, from the development stage to the export market

In terms of office space, FinTech entrepreneurs have similar needs. They seek:

- ▶ Affordable office space, in line with their ability to pay, specifically in the first few years of existence
- ▶ Access to financial institutions and other financial services players actively involved in business model and technology renewal
- ▶ A collaborative space for various FinTechs and access to the technologies developed by major equipment makers and tech solution publishers
- ▶ Quick access tailored to administrative, professional and regulatory compliance services

The MaRS Discovery District is a fine example of how those needs can be met. In launching the initiative, Toronto brought a range of stakeholders under a single roof, including professors, researchers, scientists and other experts, to better support the initial stages of the innovation cycle in the health care, cleantech and IT sectors.

Over the longer term, we therefore recommend setting up such an office space to support the emergence of the FinTech sector along the Montréal-Québec City corridor – a “FinTech Place” of sorts. However, in the near term, we believe it is possible to maximize the resources already available and in place in Québec to create a “constellation” of office spaces meeting FinTechs’ needs. Accordingly, we recommend creating an official network of the various venues with office space available for FinTechs and establishing a home base for the new FinTech hub development team. This will also mean assembling a portfolio of these disparate venues with space on offer to ensure the full range of entrepreneurial needs are being catered to in a complementary fashion.



1.4 Create a one-stop FinTech entrepreneur portal with relevant information on starting up and developing a tech firm and, in particular, a marketplace offering various professional services to ensure supply meets demand

In the digital era, we believe it is necessary to equip the FinTech sector with a modern platform to facilitate virtual exchanges between members and stakeholders.

The Singapore FinTech Consortium portal is an example of a model offering a range of services to sector stakeholders, such as:

- ▶ Members register
- ▶ Sharing and social networking community
- ▶ Analytical databases and tools
- ▶ Library of publications
- ▶ Transaction watch
- ▶ Information resources
- ▶ Online supply and demand market
- ▶ Event programming

We therefore recommend implementing this type of platform, which could also showcase the other available FinTech solutions. Once development gets underway, sector stakeholders will have to make adopting the new platform a priority. A dynamic platform securing community buy-in will be key to its success.

2 Implement a formal mentoring program for FinTech entrepreneurs supported by all Québec financial institutions

All the financial institutions we interviewed reported they were actively involved in and keen on further supporting the development of Québec FinTechs. Some financial institutions put forward the idea of establishing a formal mentoring program for FinTech entrepreneurs.

As a result, we recommend that, under a mentoring program, each financial institution be assigned a FinTech mentee regardless of where it stands in its lifecycle for a period of four to six months with no proviso for exclusivity. During the period, FinTech mentees would be given access to financial institution professionals and key resources (data, IT infrastructure, etc.) and a physical workplace. The program would strive to get financial institutions and FinTechs working closer together.

To forge a trustful and transparent environment, standard minimum requirements should be adopted for such a program (e.g., regarding confidentiality and information privacy).



3 Work with regulatory authorities (AMF, OSFI and FINTRAC) particularly with a view to implementing a sandbox environment to promote experimenting with new technologies

Following the example set by Singapore's regulatory authority, the Monetary Authority of Singapore, we suggest that Canadian and Québec regulatory authorities explore setting up a sandbox environment for testing and trials.

Compliance with an effective regulatory framework is key to smooth operations for various financial ecosystems. Yet, regulatory authorities agree that innovation results in customer service quality improvements, increased financial institution productivity and better managed risks.

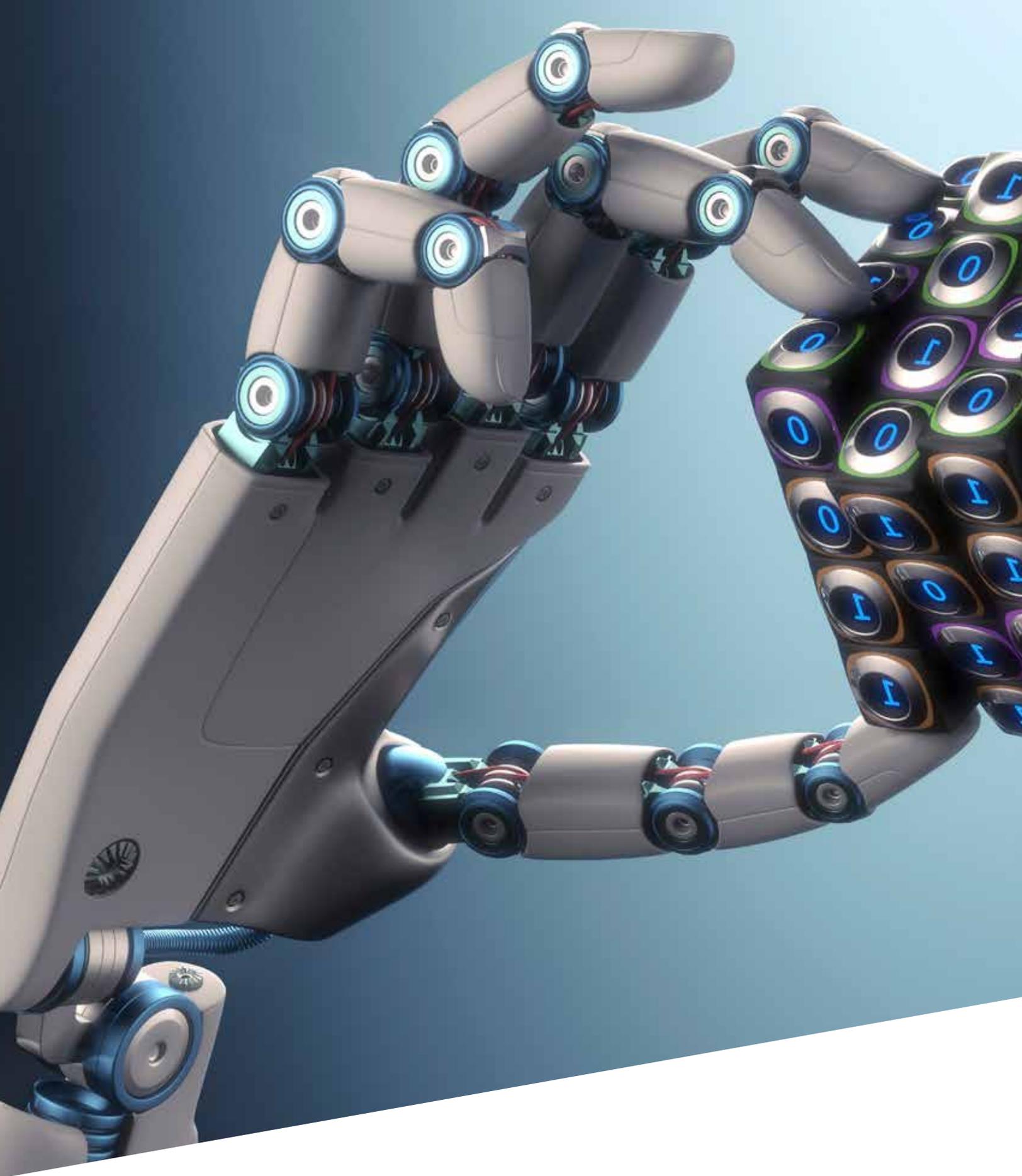
Accordingly, setting up such a sandbox environment would allow for testing and trials of new financial services technologies or business models in a controlled environment under rules tailored to development-stage FinTechs. This could help mitigate the financial risks related to the services offered by such firms while driving innovation.

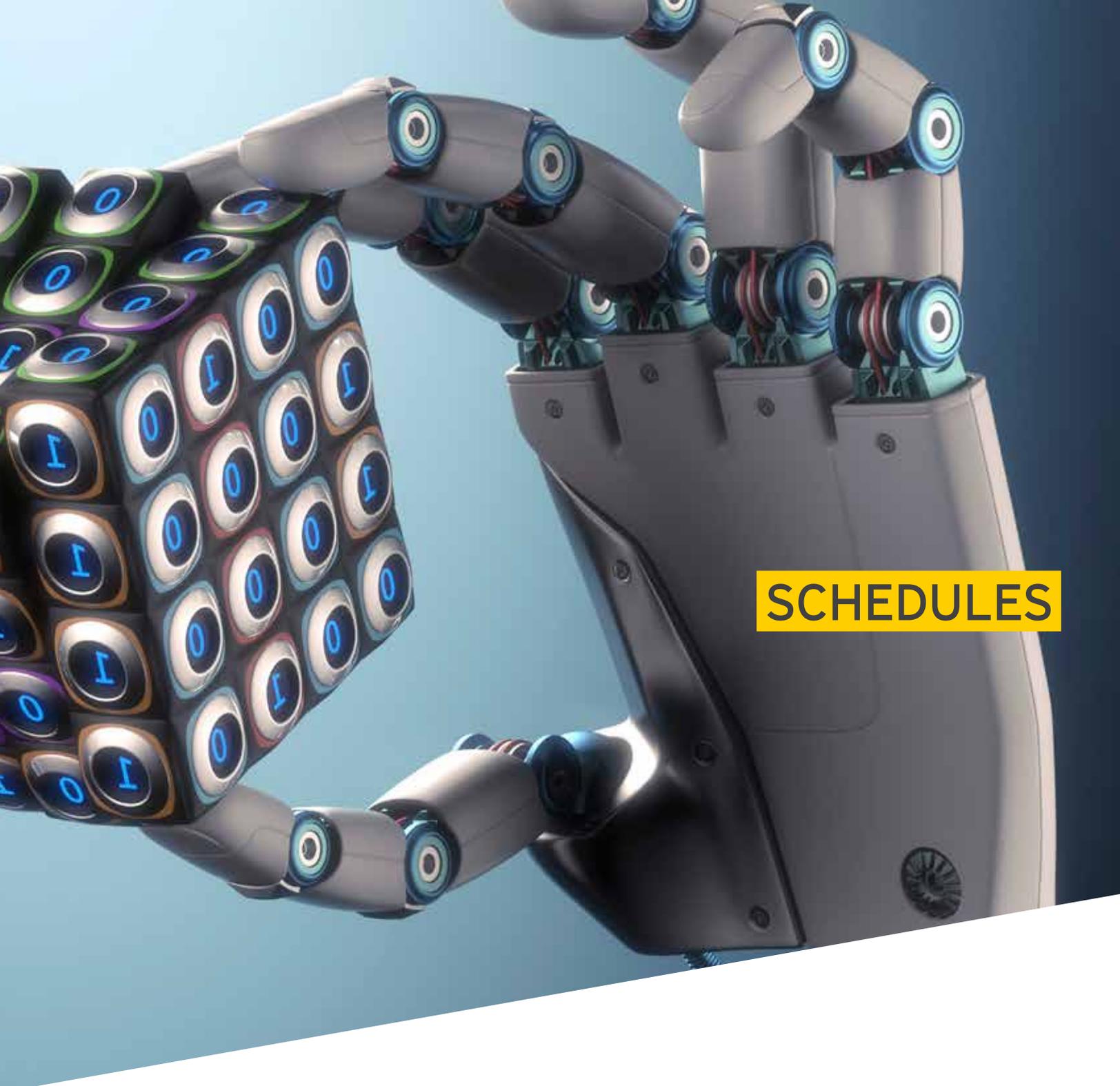
4 Develop a standardized university curriculum in several Québec universities to promote the various professional financial services and tech career options

Relative to other industries, the financial services sector is not engineering and tech grads' first choice. Apart from the professions normally associated with financial services firms, such as bankers, insurance brokers or financial planners, most students are unfamiliar with career options in the finance industry.

In addition, financial services players have begun transitioning to digital operating models, which is bound to cause a series of major transformations in how things are done. Many jobs will disappear, while others will be created requiring a range of expertise, including engineering, business and IT savvy, in demand at FinTechs coming to grips with combining finance expertise with tech talent.

As a result, we recommend that a work group be assembled with both financial institutions and academic stakeholders to tackle this issue and establish measures to modernize the multiple professional careers open to future graduates, standardize the terminology used in defining the jobs of the future and provide for promotion. The first measure could be to launch accredited interuniversity and interdisciplinary study projects related to cases of financial sector use.





SCHEDULES

Schedule 1

Overview of the Toronto FinTech ecosystem

Toronto benefits from its status as Canada's leading city with the largest population, the largest universities and the lion's share of financial institutions. Its FinTech ecosystem boasts the most favourable conditions in Canada.



Talent

As Canada's most populous urban centre, Toronto is home to a deep talent pool consisting of students, programmers, financial services professionals and immigrants.

- ▶ Several reputable universities, including: York, Ryerson and U of T
- ▶ 28% of university graduates hail from STEM programs
- ▶ Over 245,000 financial services employees, accounting for 30% of the financial sector workforce¹
- ▶ 24,000 programmers
- ▶ 90,400 permanent residents in the GTA



Capital

Toronto is a hotbed for tech firm or FinTech startups.

- ▶ From 2,500 to 4,100 tech startups in Toronto²
 - ▶ Canada's top city by FinTech investment: C\$715 million since 2013
 - ▶ Large investor community ensures well-structured access to seed capital
 - ▶ Existing quality FinTech hubs in Toronto, such as MaRS
- Nevertheless, Toronto faces challenges growing its FinTechs:
- ▶ Difficulty accessing growth capital, according to a Compass study in the Global Startup Ecosystem
 - ▶ Relatively high resource costs, such as real estate (C\$37/sq.ft./yr.) and its workforce (programmer's salary in Ontario: \$68,000)



Policy

The Ontario government's regulatory environment and programs are comparable to those in Québec

- ▶ The SME SR&ED credit rate is the second highest after Québec's (10%-20%, potentially refundable)
- ▶ Firms have access to specific innovation and technology credits, managed by Ontario centres of excellence that promote Ontario economic development by supporting the creation of new job, products, technologies and innovative companies



Demand

Toronto compares favourably in all three top demand categories for FinTechs:

- ▶ Its large population base of over 6 million³ comprises Canada's largest consumer market
- ▶ High SME density (approximately 400,000 firms) in Ontario makes for lively business demand
- ▶ Toronto is Canada's main financial centre with a high concentration of large-scale financial institutions. The Big Five Canadian banks are all have their operational head offices in Toronto, alongside no fewer than 469 financial services firms in the GTA⁴

¹ Invest Toronto, 2015
² Compass, 2015

³ Statistics Canada
⁴ Conference Board of Canada, 2012

Schedule 2

Overview of the Vancouver FinTech ecosystem

Vancouver's FinTech ecosystem benefits from its west-coast location and proximity to Silicon Valley



Talent

- ▶ Canada's largest west-coast city, Vancouver shares a similar mentality to other major centres along the Pacific coast. A raft of tech giants have offices in Vancouver, such as Facebook, Microsoft, EA, SAP and Amazon. The city has deep tech talent on hand, including over 7,200 programmers, and is successful in retaining students
- ▶ Vancouver is home to two leading universities, UBC and Simon Fraser, but also more specialized institutions, such as the British Columbia Institute of Technology and the Centre for Digital Media. Of all university graduates, 26% have STEM diplomas, near the Canadian average
- ▶ Immigrants find Vancouver very attractive, due in part to its reputation for high quality of life. The city has 45,800 Canadian permanent residents, or 5,000 fewer than Montréal, which is 1.6 times larger than Vancouver by population



Capital

While Vancouver is dynamic city in terms of SMEs (176,000¹) and job creation, it faces two challenges:

- ▶ Housing costs are a serious problem in Vancouver (C\$48/sq.ft./yr.) and are 1.6 times higher than in Montréal. A developer's salary is comparable in both cities: a BC-based programmer earns \$62,000

Financing is another big challenge:

- ▶ There has been a total of C\$80 million in FinTech investment since 2013
- ▶ Vancouver tech startups secure 50% less seed and Series A funding than the North American average²
- ▶ A large number of Vancouver startups are funded by US investors, such as in Silicon Valley, where there is more seed or growth capital available

Note that the B.C. Technology Industry Association (BCTIA) launched its first FinTech hub in October 2015.



Policy

The BC government's regulatory environment and programs are comparable to the rest of Canada.

- ▶ The SME SR&ED credit rate is the lowest in Canada (10% non-refundable)
- ▶ A tax credit program exists for venture capital investors that is unique in Canada. Under the Small Business Venture Capital Act (SBVCA), "an individual investor may claim a refundable tax credit for investments in the shares of a venture capital corporation (VCC) or an eligible business corporation (EBC). The base credit equals 30% of the amount received."

BC has one of the lowest combined federal and provincial statutory rates among G7 countries.³



Demand

Vancouver's key difficulty from a demand standpoint is that it has a relatively small financial sector market. No major Canadian bank is headquartered in Vancouver, which has only 59,300 financial sector employees.

Vancouver's location gives it privileged access to Silicon Valley or Seattle, as well as the Asian market, thanks to an international workforce.

¹ Statistics Canada, 2016

² Compass 2015

³ McCarthy Tétrault LLP, 2016

Schedule 3

Canadian R&D tax credit rates

Table 3.1: Comparative SR&ED rates in Canada

Input tax credit			
Jurisdiction	Rate (all companies)	Rate (private companies)	Refundable
Federal	15%	35%	0 or 100%
Québec	14%	30%	100%
Ontario			
– OITC	10%-8%	10%-8%	100%
– ORDTC	4.5%-3.5%	4.5%-3.5%	0%
– OBRITC	20%	20%	100%
Alberta	10%	10%	100%
British Columbia	10%	10%	0 ou 100%
Nova Scotia	15%	15%	100%
Newfoundland and Labrador	15%	15%	100%
Yukon	15%	15%	100%
Manitoba	20%	20%	0%
Saskatchewan	10%	10%	0%
New Brunswick	15%	15%	100%

Source: EY analysis

Note: A permanent facility in each province is required.

OITC: Ontario Innovation Tax Credit

ORDTC: Ontario Research and Development Tax Credit

OBRITC: Ontario Business Research Institute Tax Credit

Schedule 4

Québec tax programs for tech firms

Table 4.1: Main federal and Québec assistance programs for Québec businesses

Program	Description
Scientific Research and Experimental Development (SR&ED) Tax Credit (federal)	Designed to encourage Canadian businesses to conduct SR&ED in Canada (rate of 15% to 35%)
Refundable Tax Credit for Scientific Research and Experimental Development (SR&ED) (Québec)	For taxpayers conducting SR&ED in Québec. This credit applies to qualifying SR&ED salary and wage and/or subcontracting expenditures (rate of 14% to 30%)
Tax Credit for the Development of e-Business (TCDE) (Québec)	Designed to enable specialized corporations that carry on or integrate into their business processes innovative activities in the IT sector (refundable rate of 24% qualifying salaries and wages and a non-refundable rate of 6%)
Industrial Research Assistance Program (IRAP)	The National Research Council of Canada offers financing services tailored to SMEs with specific needs to help companies grow, including tech innovation projects
Capital Gains Deduction (Federal and Québec)	An investor that realizes a capital gain on the sale of shares of a Canadian-controlled private corporation may be entitled to a capital gains reduction to reduce its taxable income (deduction of \$824,000 in 2016)
Claimed Allowable Business Investment Loss (ABIL) (Federal and Québec)	An investor that has incurred a business investment loss in a Canadian-controlled private corporation may deduct, subject to certain conditions, half of such loss from income of any kind
Apprenticeship Training Tax Credit (Québec)	A tax credit for apprenticeship training offered by corporations that carry on a business in Québec and have paid a salary to an intern, apprentice or internship supervisor

Source: EY analysis

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For more information about this report, please contact:



Sébastien René

IT Advisory Partner
sebastien.rene@ca.ey.com



Caroline Colongo

Senior Manager,
Advisory Services
caroline.colongo@ca.ey.com

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