

# **Fintech Innovation: A Digital Opportunity Beyond Finance for Canada**

Creating Digital Opportunity Partnership

Jennifer Jeffs with Brittney Dudar and Meredith Williams

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## **I. Introduction: Fintech in a Global Context**

Financial technology - more commonly known as fintech - is one of the world's fastest-growing economic sectors. According to the April 2017 *Global Fintech Hubs Federation Report*, 2016 saw over US\$17.4 billion invested in fintech globally across 1,436 deals that year with China and the US leading as the largest markets.<sup>1</sup> Fintech encompasses a variety of technologies that enable access to financial services in new and arguably more efficient and secure ways. TransferWise, the peer-to-peer money transfer service headquartered in London, UK, for example, allows individuals and businesses to execute cross-border money transfers at a fraction of the cost of a user would incur going through the traditional intermediary – a bank.<sup>2</sup> London-based, Everledger uses distributed ledger technology (DLT) and smart contracts to reduce risk and fraud by tracking a wide variety of valuable assets as well as money such as fine wines and diamonds through their lifetime exchange journey.<sup>3</sup> Unlike traditional financial services, DLT companies can have significant socio-economic ambitions and implications. Diamond-tracking by DLT, for example, identifies precious stones sourced from war zones, an objective that Everledger has striven to achieve since its establishment in 2015.<sup>4</sup>

As Everledger demonstrates, fintech innovation is particularly interesting for its potential to revolutionize industrial and social sectors and processes far beyond and/or removed from the financial services sector that spawned it. Given that the financial services industry is generally considered one of the most centralized, and by extension least innovative economic sectors, fintech innovations fascinate observers not only of financial services, but also of the innovation file more

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<sup>1</sup> Global Fintech Hubs Federation Report 2017. <http://thegfhhf.org/wp-content/uploads/2017/04/J11481-Global-Fintech-WEB.pdf>

<sup>2</sup> <https://transferwise.com/ca/business>

<sup>3</sup> Everledger. <https://www.everledger.io/>

<sup>4</sup> Volpicelli, Gian. "How the blockchain is helping stop the spread of conflict diamonds." *Wired*. February 15, 2017. <http://www.wired.co.uk/article/blockchain-conflict-diamonds-everledger>

generally. Blockchain's, distributed ledger technology- DLT - is the most striking example of an application originally designed for financial services that is usefully adaptable for other activities. DLTs' creation of irrefutable, tamper-proof and decentralized records to transfer value is revolutionary for sectors and areas of human life far beyond finance. This is technology with the capacity to record innumerable facts and aspects of human economic and social life - birth and death certificates; education and employment records; land ownership rights and property records; insurance claims; votes, and almost any other transfers of value.<sup>5</sup> Don Tapscott – co-author of *Blockchain Revolution* - suggests that what the internet did for the storage and transfer of information, blockchain technology is now doing for the storage and transfer of value. He and his son confidently declare that this makes blockchain into possibly the biggest economic innovation in living memory, ushering in the second generation of the digital revolution.<sup>6</sup>

Globally, governments and central banks have been working to understand and experiment with various aspects of fintech in order not to miss out on potentially important, even transformative opportunities. Central Banks, such as the Bank of England, the Bank of Canada, the US Federal Reserve Bank, and the People's Bank of China are all experimenting with developing Central Bank Digital Currencies (CBDCs) for use by the general public to make payments. The Bank of Canada recently completed an assessment that investigated how and why CBDCs could be advantageous.<sup>7</sup> Carolyn Wilkins, deputy Governor of the Bank of Canada, asserts that a CBDC would empower central banks to respond more quickly to systemic shock; to gauge the efficacy of monetary decisions better while increasing transparency in financial markets.<sup>8</sup>

The People's Bank of China (PBC) completed a trial run of its own digital currency-based on blockchain technology in December 2016. The trial took place on a shared distributed ledger platform that included several

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<sup>5</sup> Don & Alex Tapscott. The Blockchain Corridor Report. February 7, 2017. <http://dontapscott.com/BlockchainCorridorReport.pdf>

<sup>6</sup> Don and Alex Tapscott, *Blockchain Revolution*, PenguinRandomHouse, 2015

<sup>7</sup> <http://www.bankofcanada.ca/wp-content/uploads/2016/11/sdp2016-22.pdf>

<sup>8</sup> <http://www.theglobeandmail.com/report-on-business/rob-commentary/mark-carney-has-seeded-a-revolution-by-embracing-fintech/article31059215/>

major commercial banks as participants. The world's largest bank by assets, the Industrial and Commercial Bank of China along with the Bank of China, both government-owned banks, participated in the trial along with privately-owned WeBank. The PBC is also planning to create a Digital Currency Research Institute. China's central bank assembled a specialist research team in 2014, including engaging experts from Citibank and Deloitte in discussions regarding the regulatory frameworks required for a national digital currency.<sup>9</sup> The Bank of England has also been investigating the benefits of a CBDC and has estimated that CBDC issuance of 30% of GDP, against government bonds, could permanently raise GDP by as much as 3% due to reductions in real interest rates, distortionary taxes, and monetary transaction costs.<sup>10</sup>

Other governments have been experimenting with applications of fintech innovations that both include and reach beyond the financial services sector. Financial IT systems and services in Estonia, for example, are highly innovative and user-friendly because this country had to establish a high-level and functional financial system completely from scratch relatively recently. The Estonian government has been experimenting with distributed ledger technology for a number of years using a form of DLT known as "keyless signature infrastructure" (KSI), developed by Estonian company Guardtime.<sup>11</sup> KSI allows citizens to verify the integrity of their records on government databases, and makes it impossible for privileged insiders to perform illegal acts inside the government networks. This ability to assure citizens that their data is held securely and accurately has helped Estonia to launch digital services such as e-Business Register and e-Tax. These innovations

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<sup>9</sup> <https://www.cryptocoinsnews.com/chinas-central-bank-completes-digital-currency-trial-blockchain/>

<sup>10</sup> <http://www.bankofengland.co.uk/research/Documents/workingpapers/2016/wp605.pdf>

<sup>11</sup> Interestingly, Estonia has been a pioneering leader in the fintech space, largely due to the great interest of its former president Toomas Hendrik Ilves in it while his government was eagerly working on establishing a highly functional, technologically advanced and modern payment system, as it ascended to European Union membership in 2004.

significantly reduce the administrative burden on both state and citizen.<sup>12</sup>

In the UAE, the Dubai Blockchain Strategy, launched by His Highness Sheikh Hamdan, is a result of a collaboration between the Smart Dubai Office and the Dubai Future Foundation to continually explore and evaluate the latest technology innovations, demonstrating the opportunity to deliver more seamless, safe, efficient, and impactful city experiences. The new strategy will digitally transact required documentation, such as visa applications, bill payments and license renewals, which account for over 100 million documents each year.<sup>13</sup> The World Bank has estimated that over 2 billion adults currently remain excluded from the formal financial system.<sup>14</sup> Fintech is increasingly recognized as an enabler of economic and financial inclusion, capturing the world's attention with its global implications and scalability.

Last year Mark Carney, Governor of the Bank of England and chair of the Financial Stability Board at the Bank of International Settlements stated:

*“To its advocates, Fintech will democratize financial services. Consumers will get more choice and keener pricing. SMEs will get access to new credit. Banks will become more productive, with lower transaction costs, greater capital efficiency and stronger operational resilience. Financial services will be more inclusive; with people better connected, more informed and increasingly empowered. And tantalizingly, Fintech could help make the system itself more resilient with greater diversity, redundancy and depth.”* (April, 2017)

The economic advantages of fintech and the efficiencies it brings to existing industries are significant. With all its advantages, goodwill and feminist foreign policy and international development focus on improving the lives of girls and women, Canada could and arguably

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<sup>12</sup>

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/492972/gs-16-1-distributed-ledger-technology.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf)

<sup>13</sup> [http://www.smartdubai.ae/dubai\\_blockchain.php](http://www.smartdubai.ae/dubai_blockchain.php)

<sup>14</sup> <http://www.worldbank.org/en/topic/financialinclusion>

should take a leading role in an economic and financial innovation that has such great potential for its international development goals.

## II. Fintech in Canada

A healthy and vibrant breeding ground for fintech exists in Canada. According to Deloitte's recent *Global Fintech Hub Federation* report, \$183 million was invested in Fintech in Canada in 2016. Meanwhile more than 80 FinTech companies across Canada have attracted nearly \$1 billion in investments since 2010 according to Payments Canada.<sup>15</sup> It is an important and unfortunate fact to note that most of this investment has come from outside of Canada. Canadian fintech start-ups have been forced to leave their home country in order to find the financing opportunities that would allow them to grow. When Canadian entrepreneurs have come up with exciting and disruptive ideas by establishing innovative startups, they have struggled to expand these ventures even to begin to aspire to a global scale. From a global perspective, Canada is a relatively small market for fintech startup development but it is one of the best markets in which to build a company around innovation because Canada, particularly Ontario, offers a strong incubator test market, as well as excellent – indeed, an internationally-renowned - infrastructures for the financial service sector.

There comes a point in the fintech lifecycle, where many Canadian startups do not receive enough funding from Canadian investors to allow them to grow and scale up, forcing them to seek foreign – usually US – investment funding. Canadian fintech startups raised a record amount of venture capital funding in first quarter of 2016. Private startups in Canada raised over \$881 Million across 103 rounds of funding in early 2016, however this funding was supplied primarily by it large US venture capital companies.<sup>16</sup>

Canadian retail investors are legally forbidden to invest in Initial Coin Offerings (ICOs) for cryptocurrency start-ups, forcing Canadian fintech

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<sup>15</sup> <https://www.payments.ca/summit/event/fintechs-taking-deep-dive-canadian-payments-ecosystem>

<sup>16</sup> <http://business.financialpost.com/entrepreneur/small-business/canadian-vc-funding-for-startups-hits-record-as-u-s-investors-tighten-their-wallets>

start-ups to seek funding outside the country. In this respect like Singapore, where regulators have not supported the ICO funding and testing landscape, Canadian cryptocurrency fintechs trying to grow and scale have been forced to seek funding and ICO investment from large, usually US-based investors. The Canadian Securities Administration treats ICOs like securities or digital currency offerings, ensuring that cryptocurrencies receive the same strict regulations, and that investors are subject to the same rules as any currency. Canadian regulators also warn investors of the high risks associated with untraceable and unregulated digital currency offerings, cautioning of fraud and credit card exploitation, thereby deterring investors from taking investment risk.

In an era that values collaborative clusters, we still see too little coordination between key players in the digital revolution in Canada, specifically amongst the enduring silos of business, education and research institutions, and government departments and agencies to help fintech startups grow and scale. Fintech ventures are more successful selling to investors outside Canada because the Canadian sale cycle is too slow, and technology development and adoption processes are faster and less cumbersome outside Canada. Canadians simply do not have the ability to act with the same urgency exhibited by international investors when it comes to the opportunities offered by new financial technologies.

A recent Accenture report tells us that Canada is home to over 140 fintech companies.<sup>17</sup> More than 80% of Canadian fintechs are Toronto-based, with hubs at Ryerson University's Digital Media Zone; One Eleven; the Creative Destruction Lab at Rotman; and at the MaRS Discovery District, adjacent to the heart of the financial sector, which houses robo-advisor firm Wealthsimple which recently raised \$50 million from Canadian investors Power Financial<sup>18</sup> and Borrowell, a p2p lending fintech company. Numerous notable fintech companies operate in Vancouver on the west coast of the country such as the payments

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<sup>17</sup> Toronto Region Fintech Ecosystem. Accenture. 2017.

[http://www.tfsa.ca/infographics/Infographic\\_Creative\\_A4.pdf](http://www.tfsa.ca/infographics/Infographic_Creative_A4.pdf)

<sup>18</sup> <https://www.theglobeandmail.com/globe-investor/funds-and-etfs/etfs/robo-adviser-wealthsimple-gets-50-million-boost-from-power-financial/article34957668/>

company Payfirma and blockchain applications provider Bluzelle, and in Quebec, Montreal-based Blockstream successfully raised \$55 million in Series A funding last year.<sup>19</sup>

A variety of reports in recent years analyzing the Canadian fintech ecosystem highlight both the ingredients that position Canada well for the development of a thriving fintech sector, as well as the challenges that it faces in this regard. Canada's strengths include its stable and secure financial system; access to a large and relevant talent pool; and a thriving technology sector.<sup>20</sup> The Toronto region in particular is globally recognized for its strong and healthy financial services sector, ranked second in North America after New York City, as well as its technology sector also ranked second largest in North America, following Silicon Valley.<sup>21</sup>

At a Blockchain Canada MeetUp at MaRS in May 2017, Perianne Boring, Founder and President of the Washington-based Chamber of Digital Commerce identified three factors that position Canada well to be a leader in the blockchain space:

1. A consolidated and healthy financial system;
2. A relatively streamlined regulatory environment (compared to the US) with strong support from government;
3. An advanced technology ecosystem paired with a strong economy.

To date, it seems that in Canada we mainly see fintech innovations and start-ups in the payments and lending space and many of them have been started and led by former executives in the Canadian financial services industry.<sup>22</sup>

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<sup>19</sup> <http://betakit.com/blockstream-raises-55-million-series-a/>

<sup>20</sup> King, Michael. "As countries develop strategies, we need a fintech champion." <http://www.theglobeandmail.com/report-on-business/rob-commentary/as-countries-develop-strategies-we-need-a-fintech-champion/article34983568/>

<sup>21</sup> Toronto Region Fintech Ecosystem.

[http://www.tfsa.ca/infographics/Infographic\\_Creative\\_A4.pdf](http://www.tfsa.ca/infographics/Infographic_Creative_A4.pdf)

<sup>22</sup>

<http://tfsa.ca/storage/reports/BuildingTheTorontoRegionIntoAGlobalFintechLeader.pdf>

*“It’s hard not to be fascinated by something so transformative. This technology is being used in ways that have implications for central banking that span all the functions that we have.”*

– Carolyn Wilkins, Senior Deputy Governor of the Bank of Canada

*“We believe that the economy works best when it works for everyone, and this new platform (blockchain) is an engine of inclusion.”*

– Don & Alex Tapscott, *Blockchain Revolution* (2016)

Much of our research has confirmed the findings of the 2015 Innovation Policy Lab report for the TFSA on the GTA’s fintech ecosystem, *COLLABORATING FOR INVESTMENT ATTRACTION IN THE TORONTO REGION*,<sup>23</sup> which found that while the GTA has all of the necessary components for a successful fintech sector, these components are weakly connected. Financial services institutions continue to struggle to work closely and effectively with fintech start-ups, and the regulatory landscape has been difficult for innovators to navigate. In times of innovation and change, governments can help to provide vision and leadership by addressing gaps in legislative or regulatory frameworks in order to enable nascent sectors to flourish. Canada currently lacks sufficient and appropriate government leadership to drive the fintech sector’s growth, and would benefit from both a national fintech strategy and a fintech advisory board. In the UK for example, the Treasury has appointed fintech investor Eileen Burbidge as “special envoy” for fintech, and serial entrepreneur Eric van der Kleij as fintech and blockchain advisor for the Department of International Trade, in addition to launching industry-led fintech advisory panel “FinTech Bridges.”<sup>24</sup> These appointments and initiatives are a strong testament to the UK government’s commitment to growing the fintech sector at home and abroad, and serve as a replicable blueprint for other aspiring fintech hubs and/or leaders.

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<sup>23</sup> [https://munkschool.utoronto.ca/ipf/files/2018/02/TORG002-Research-Paper-Interior\\_Online-PDF.pdf](https://munkschool.utoronto.ca/ipf/files/2018/02/TORG002-Research-Paper-Interior_Online-PDF.pdf)

<sup>24</sup> <https://www.gov.uk/government/news/uks-world-leading-fintech-industry-to-be-given-new-government-boost>;  
<http://www.fintechconnectglobal.com/2017/11/global-fintech-bridges-many/>

Despite Canada's slower pace of getting its fintech sector up and running, recent momentum injects optimism regarding the state of Canada's fintech ecosystem. Most noteworthy updates include increased governmental attention to understanding important aspects and the operationalization of fintech and blockchain; the creation of new provincial fintech working groups and committees in both Quebec and Ontario; and above all the establishment of regulatory sandboxes by both the OSC and CSA. More detailed descriptions of positive momentum are enumerated below.

### **1. Bank of Canada initiative**

Federal departments working to understand the concept of distributed ledger systems such as blockchain are still in the early stages of creating policies around it, particularly regarding privacy and cybersecurity. The Bank of Canada, Payments Canada and R3 Consortium Lab and Research Centre have a joint distributed ledger technology experiment they call Project Jasper, examining how to put fiat (government-backed) currency on blockchain. Project Jasper is a simulated wholesale payment system using a DLT-based settlement asset "CADcoin." The purpose is two-fold: to see how the test system could meet international standards for systemically important payments infrastructure that would be set if the system were to go live, and also to collaborate with the private sector on a concrete DLT application. So far, the project has produced important insights that have helped the Bank of Canada better understand the business imperative of those who provide and access financial services.<sup>25</sup>

Central Bank Digital Currencies: One key policy question for public authorities such as a central bank is whether or not to issue its own digital currency that can be used by the general public to make payments. First, a central bank may explore whether issuing a Central Bank Digital Currency (CBDC) would improve the efficiency of its currency function. Second, a CBDC could improve the efficiency and

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<sup>25</sup> <http://www.coindesk.com/project-jasper-lessons-bank-of-canada-blockchain-project/>

safety of both retail and large-value payment systems. Third, a CBDC could be an appropriate policy response to payment innovations such as privately issued e-money and digital currency that might impair the central bank's ability to achieve its monetary policy goals and to implement policies promoting financial stability.<sup>26</sup>

## 2. Fintech Advisory Committees

In the fall of 2016, Quebec's financial regulator, the AMF (*Autorité des marchés financiers*) announced the creation of a Technological Innovation Advisory Committee, which is meant to support the Fintech Working Group of the *Autorité des marchés financiers (AMF)*.<sup>27</sup> While these are healthy and encouraging developments at the provincial level, Canada still lacks a coherent fintech strategy and voice at the federal level, to support the industry and act as the bridge between the provincial efforts to avoid operating in silos across the country, rather than building a national fintech sector such as the UK, the US, South Korea and Australia are doing.

In early 2017, the Ontario Securities Council (OSC) followed suit, announcing the creation of the Fintech Advisory Committee in Ontario. Comprised of financial services industry representatives and fintech entrepreneurs, the committee's responsibility is to keep the OSC apprised of developments in the fintech sector and provide feedback on challenges faced by fintech firms.<sup>28</sup>

## 3. Regulation

Regulation must remain relevant to new emerging business models in order to avoid stifling innovation while maintaining consumer protection. Unlike Airbnb or Uber where users are taking on the local taxi authority or hotel industry, fintech takes on the Central Banks and

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<sup>26</sup> <http://www.bankofcanada.ca/wp-content/uploads/2016/11/sdp2016-22.pdf>

<sup>27</sup> <http://insurance-journal.ca/article/quebec-regulator-creates-fintech-advisory-committee/>

<sup>28</sup> [http://www.osc.gov.on.ca/en/NewsEvents\\_nr\\_20170126\\_fintech-advisory-committee-members.htm](http://www.osc.gov.on.ca/en/NewsEvents_nr_20170126_fintech-advisory-committee-members.htm)

national financial authorities where there are serious federal criminal and civil consequences for challenging or violating regulation. Because some aspects of financial technology are still nascent, like blockchain for example, where no one owns or controls bitcoin, for the main use case of Blockchain to date, practical regulation has proven to be both problematic and elusive.

While Canada has seen fintech success in the peer-to-peer (P2P) lending space, regulatory barriers and government policies continue to be an impediment to its development into a leadership position in the blockchain space. Furthermore, as outlined in the recent Tapscott report, *there has been no systematic study of the do's and don'ts of regulation of blockchain technology yet.*<sup>29</sup>

It is widely acknowledged and often decried that Canada's financial regulatory system is fragmented, with no single securities regulator underpinning strong national capital markets. National and provincial regulators have so far been unable or unwilling to present a coherent approach towards blockchain and its regulation. Blockchain enthusiasts in Canada have joined the chorus calling for a national regulator for finance and securities in order to make Canada more globally competitive in the financial services sector.

The UK, one of the leading global fintech centres and generally acknowledged fintech hub blueprint for the rest of the world, has spurred fintech innovation through the Financial Conduct Authority (FCA) creating industry sandboxes for the fintech sector. A sandbox is a testing environment that isolates new code or experimentation from a production environment.<sup>30</sup> Interestingly, the FCA has a dual mandate, combining financial regulation with economic development. This seems like a very productive combination for fintech and financial services evolution in the digital age. The Toronto Financial Services Authority (TFSA) TFSA defines a regulatory sandbox as “a safe space in which businesses can test innovative products, services, business models and delivery mechanisms without immediately incurring all the normal

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<sup>29</sup> <http://dontapscott.com/BlockchainCorridorReport.pdf>

<sup>30</sup> <http://industrysandbox.org/report-view/>

regulatory consequences of pilot activities.”<sup>31</sup>A recent consultation by the UK’s FCA has found that industry sandboxes can help advance innovation and accelerate and promote collaboration in the fintech ecosystem.<sup>32</sup> Canadian regulators have recently launched similar sandbox initiatives, both at the federal and provincial levels. An interesting note on the UK’s FCA is the fact that it carries the double mandate, for both regulation *and* economic development of the UK’s FCA is in sharp contrast to the Canadian system where provincial regulators in contrast, are focused only on regulation not on the economic development to which fintech start-ups can contribute,

#### **4. Global Engagement**

Last year, the OSC signed a fintech agreement with the FCA in the UK in order to support one another in referring innovative fintechs to the other’s markets to accelerate market entry.<sup>33</sup> The OSC has signed a similar agreement with the Australian regulators as well. Canada should be engaging in such agreements at the national level, however, to support fintech growth across the country.

In recent years, Canada has been sending fintech delegations to the UK to create opportunities for networking with fintech peers and investors and to explore possible expansion into new markets by Canadian firms. We have repeatedly sent delegation to Canada has repeatedly sent a delegation to London Tech Week every June.

### **Opportunities & Recommendations**

#### **1. A National Fintech Strategy for Canada.**

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[https://www.tfsa.ca/resources/pdf/TFSA\\_Submission\\_Financial\\_Framework\\_Review\\_Nov\\_2016.pdf](https://www.tfsa.ca/resources/pdf/TFSA_Submission_Financial_Framework_Review_Nov_2016.pdf)

<sup>32</sup> <http://new.innovatefinance.com/#!/about>

<sup>33</sup> <http://www.investmentexecutive.com/-/osc-fca-sign-fintech-agreement>

First and foremost, Canada needs a national fintech strategy, an important guiding tool to prioritize and identify potential technology niches and comparative advantages within its existing fintech ecosystem, and understand future opportunity areas. It would also align public sector support to incentivize innovation. In creating a national strategy, Canada should assemble a national fintech advisory committee, like the OSC and AMF have done in Ontario and Quebec. This will ensure the strategy will be well-informed by gathering information on trends, opportunity areas, challenges and investment priorities to feed into the national strategy to ensure it is appropriately aligned with existing fintech activity and opportunity areas Canada should focus on nurturing within the sector. Professor Michael R. King, Co-Director of the Scotiabank Digital Banking Lab at Ivey Business School recently drew attention to the fact that Canada's Budget 2017 only makes mention of fintech three times, despite the financial sector representing 7 per cent of GDP and 4.4 per cent of all jobs in Canada, and that this is indeed an oversight.<sup>34</sup> We need a distinct national fintech strategy with its own budget and mandate to drive forward this sector and leverage the opportunities before Canada falls behind.

## **2. A Voice for the Fintech Sector.**

In the Accenture report for the TFSA, one of the three key characteristics identified across successful global fintech hubs was government openness to creating a strong and collaborative environment that incentivizes innovation for fintechs and financial institutions, and that having a central fintech function or sector "champion" can be helpful in driving a national fintech strategy forward.<sup>35</sup> This echoes the findings of the University of Toronto's 2015 IPL Report and the recommendations of the Tapscott's around Canada's blockchain rhetoric. While Canada hosts many of the right ingredients for a thriving fintech ecosystem, the potential is not being realized.

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<sup>34</sup> <http://www.theglobeandmail.com/report-on-business/rob-commentary/as-countries-develop-strategies-we-need-a-fintech-champion/article34983568/>

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<http://tfsa.ca/storage/reports/BuildingTheTorontoRegionIntoAGlobalFintechLeader.pdf>

Canada needs a unifying voice for the fintech industry, acting as a single point of access and champion for the sector. This new industry body's role would include convening regulators, financial institutions, policymakers and fintechs to understand the needs of the nascent sector; advocating for policy and regulatory change; and promoting investment to drive domestic and global growth for Canadian fintech.

The 2016 EY report on the UK's Fintech ecosystem "UK FinTech: On the cutting edge – An evaluation of the international FinTech sector" identified talent, policy, capital, and demand as the four key ingredients to a successful fintech ecosystem. Within the policy realm, "sector growth initiatives" was highlighted as a key factor for a healthy fintech sector. Reports on Canada's Fintech sector to date have highlighted that we are lacking a single champion for the sector, and that Canada is at risk of pursuing a silo approach similar to the USA or China rather than a target approach like the UK, Australia, Hong Kong or Singapore.<sup>36</sup>

Thus, our key policy recommendation includes the creation of an industry or trade association for the Canadian Fintech sector, modeled after the UK's *Innovate Finance*. This initiative should be an independent nonprofit organization, backed by Innovation, Sciences and Economic Development Canada, the most appropriate branch of the federal government to engage with a nascent technology sector, and additional key stakeholders should include but are not limited to:

- Canadian Securities Administrators (CSA)
- Provincial Regulators
- Payments Canada
- All 5 Banks should have representation
- Representatives from the fintech sector (entrepreneurs)
- MaRS, Ryerson DMZ and other key representations from the innovation hub sector
- Academics (i.e. representation from the University of Toronto's Innovation Policy Lab, or from the university partner that the Blockchain Research Institute eventually identifies).

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<sup>36</sup> Towards a Fintech Strategy for Canada – Background Briefing.

The association should be a membership-based model, with tiered pricing to accommodate the early-stage fintech firms who would pay the lowest annual fees, to financial services institutions who would be required to pay the largest annual membership fees. These fees would give the association the funds needed to hire staff to be responsible for further membership growth, curating an annual Canadian Fintech Summit (this could move locations each year), advocate for policy and regulatory change, and act as points of contact for the single access point to Canada's fintech sector that this association would represent.

The establishment of a convening voice or trade association-type of body could provide the necessary bridges between the existing elements of a strong fintech sector. Vancouver's Digital Finance Institute appears to be working to create such a body, - the Fintech Association of Canada - but its traction to date is unclear and it appears to be housed in a law firm, therefore serving that firm's interests rather than the sector as a whole. Further, it is not clear what stakeholders are involved and whether the initiative is well-weighted in terms of cross-Canada representation, industry, regulators, innovators, and financial institutions, all of which need to be involved to appropriately represent the sector.

### **3. The Bank of Canada – Central Bank engagement**

Federal departments are in the process of working to understand the concept of blockchain and are at the early stages of creating policies around it, particularly in areas such as privacy, banking and cybersecurity. The Bank of Canada, Payments Canada and R3 Consortium Lab and Research Centre have a joint Dispersed Ledger System (DLS) experiment called Project Jasper examining how to put a government-backed, or fiat, currency on blockchain. Project Jasper is essentially a simulated wholesale payment system using DLT (Dispersed Ledger Technology)-based settlement asset called 'CADcoin'. The purpose of this experiment is two-fold: the first to see how the test system could meet international standards for systemically important payments infrastructure that would be set if the system were to go live, and secondly to collaborate with the private sector on a concrete DLT application. So far, the project has produced important insights that

have helped the Bank of Canada better understand the business imperative of those who provide and access financial services.<sup>37</sup>

A key policy question for public authorities such as a Central Bank is whether or not to issue its own digital currency that can be used by the general public to make payments. The Bank of China, followed by the Bank of England have both creating a centralized crypto currency system. In Canada, the SCC has recently decreed that institutional investors or regulated entities in the US are not able to participate in bitcoin or cryptocurrencies, as they are untraceable. According to a executive of a major Canadian bank, and now co-founder a P2P lending company, the future of any cryptocurrency is that it will have to be traceable.

The former banker turned entrepreneur suggests that Central Banks will explore whether issuing a Central Bank Digital Currency (CBDC) would improve the efficiency of their currency functions. He believes CBDCs could improve the efficiency and safety of both retail and large-value payment systems. Finally, a CBDC could be an appropriate policy response to payment innovations such as privately issued e-money and digital currency that might impair the central bank's ability to achieve its monetary policy goals and to implement policies promoting financial stability.<sup>38</sup> \*\*

All major Canadian financial institutions have set up digital innovation teams that are tackling technology as they understand that they need to make changes in their existing processes. The Big Five banks, each doing different things in this space, do not appear to have made substantive progress behind the scenes. Observation of the Canadian banking sector reveals that CIBC seems to be doing the most in terms of collaborating and partnering with fintechs, and will therefore likely

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<sup>37</sup> Wilkins, Carolyn. "Project Jasper: Lessons From Bank of Canada's First Blockchain Project." Coin Desk. February 10, 2017. Accessed March 25, 2017. <http://www.coindesk.com/project-jasper-lessons-bank-of-canada-blockchain-project/>

<sup>38</sup> Fung, Ben & Halaburda, Hannah. "Central Bank Digital Currencies: A Framework for Assessing Why and How." Bank of Canada. November 2016. Accessed December 15, 2016. <http://www.bankofcanada.ca/wp-content/uploads/2016/11/sdp2016-22.pdf>

never build their own fintechns. Their model is more about partnering with emerging and innovative startups. The CIBC partnership with Borrowell and Thinking Capital is a great example of this. Scotiabank on the other hand, is on the other end of the spectrum with their Digital Lab, working to create everything themselves internally. However, resource allocation processes within banks is counter-productive to the agile environment and innovation, so bank spending on technology is not going to go very far. The rest of the big five Canadian banks are somewhere in the middle ground. One is expected to accelerate from behind, as they build up their innovation team, working outside of the bank, pushing their small business collaboration platform. This bank takes the partner approach, moving an initiative from start to finish very quickly. Another is risk adverse and treading very carefully, and has not done much fintech or innovation, exhibiting more top-down caution about investing too much into innovation and potentially risky technology. The final Canadian bank is a reasonable risk-taker and implemented robo-advising services quickly and partnering with a large Canadian AI technology company to innovate further in this space.

It is difficult for Canadian financial services and fintech entrepreneurs to know exactly what others are doing globally with regard to digital bank currencies, and bitcoin and blockchain technologies, because their main source of information is the media meanwhile see that many countries are making moves forward to develop digital currencies, and legalize and regulate bitcoin and blockchain technologies.

#### **4. Fintech Advisory Committees**

In early 2016 Canada established a “super sandbox” initiative to foster and accelerate Canadian innovation. However, although the Canadian government has announced it is going to push to accelerate innovation in general, there is nobody at the federal level driving the bus on fintech innovation in Ottawa. Canada does not have one single unified regulator so the resulting accumulative regulatory burden is onerous. In this sense, we are similar to the US, in that we have federal regulatory system of municipal, provincial and national regulatory hurdles. Comparatively, other places that are leading the way in fintech innovation such as Singapore, Australia, and London, have one single

regulator jurisdiction, which is why they have been so successful in development, implementation, and acceleration.

In the fall of 2016, Quebec’s regulator, the AMF announced the creation of a Technological Innovation Advisory Committee (TIAC). In early 2017, the Ontario Securities Council (OSC) announced the creation of its new Fintech Advisory Committee. Comprised of financial services industry representatives and fintech entrepreneurs, the committee’s responsibility is to advise the OSC on developments in the fintech sector and feedback challenges faced by fintech firms.<sup>39</sup> While these are healthy and encouraging developments at the provincial level, Canada still lacks a coherent fintech strategy and voice at the national level to support the industry and act as the bridge between the provincial efforts in order for the Canadian fintech sector to live up to its potential to become more globally competitive.

Canada does not seem to have a clear path to accelerate innovation in the super sandbox initiative. It is a country that has a plethora of financial regulatory bodies, including OSSFI, FCAC, BOC, FINTRAC, and the federal innovation policy branch. Although Ottawa has stated that promoting and fostering Canadian innovation is a federal priority, fintech innovation is one priority amongst dozens of other ‘innovation priorities’ for the country. Thus we see many priorities coming out of Ottawa with regards to innovation that we want to focus on driving, but a lack of direction and leadership focusing specifically on fintech innovation. The special counsel for a Toronto innovation hub suggests that the financial sector policy branch in the Federal Department of Finance, and the Bank of Canada are the two regulatory and policy bodies best suited to lead the super sandbox initiative.

## **5. Regulatory Sandboxes**

Regulation must remain relevant to new emerging business models in order to avoid stifling innovation while maintaining consumer protection. Unlike Airbnb or Uber where users are taking on the local taxi authority or hotel industry, fintech takes on the Central Banks and

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<sup>39</sup> “OSC Announces Fintech Advisory Committee Members.” Ontario Securities Commission. January 26, 2017. Accessed May 5, 2017.  
[http://www.osc.gov.on.ca/en/NewsEvents\\_nr\\_20170126\\_fintech-advisory-committee-members.htm](http://www.osc.gov.on.ca/en/NewsEvents_nr_20170126_fintech-advisory-committee-members.htm)

national financial authorities federal where there are serious criminal and civil consequences for challenging or violating regulation. Because some aspects of financial technology are very nascent, like blockchain for example, where no one owns or controls bitcoin, the main use case of Blockchain to date, regulation has proven elusive.

Legal counsels for fintech hubs insist that overcoming the complicated and extensive regulatory hurdles currently in place for fintech startups are overwhelming the largest challenge for fintech innovation in Canada. Regulation is challenging growth in Canadian fintechs. There are no one-off specific regulations that are the issue, the problem is the overall volume of regulations in the Canadian financial sector; the cost of complying with them all is crushing for fintechs, unless they are already a large-scale financial institution. Another regulatory hurdle noted by legal experts are the dynamic data requests that come from the federal government. When regulators ask for information, new smaller fintech start-ups have to set up their systems from scratch in order to comply with official requirements. This expensive and time-consuming work for small fintech start-ups often spells the demise of innovation due to resource shortages. Additionally, to be able to prove to the government that they are in compliance with every behavioral and governance financial rule, new fintech companies are required to have a 3-line defense system in place. Each of these lines of defense has to be trained, resourced, and qualified to get the job done. For small fintechs compliance with the convoluted and extensive regulatory requirements for the Canadian banking industry will likely kill their businesses.

While Canada has seen some fintech success in the peer-to-peer (P2P) lending space, regulatory barriers and government policies continue to be an impediment to Canada's development to a leadership position in the blockchain space. Furthermore, as outlined in the recent February Tapscott report, *there has been no systematic study of the do and don'ts of regulation of blockchain technology yet.*<sup>40</sup>

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<sup>40</sup> Tapscott, Don & Tapscott, Alex. "The Blockchain Corridor Report." February 7, 2017. Accessed February 20, 2017.

<http://dontapscott.com/BlockchainCorridorReport.pdf>  
<http://dontapscott.com/BlockchainCorridorReport.pdf>

The manager for fintech and commerce at a major start-up incubator in Ontario that innovates across all sectors of mobile payments innovation feels that on regulatory issues, many Canadian financial institutions have “weaponized” the regulatory environment, meaning that they use the requirement of compliance to regulations, as a rationale for not doing something, or doing something *their way*, relating to their interpretation and implementation of the regulation. This is not necessarily be what the regulation intended to accomplish. Requirements for know-your-customer (KYC) and Anti-money laundering (AML) reporting hold fintech partners to a much higher standard than traditional financial institutions uphold due to risk aversion, here the financial institutions do not seem to acknowledge their own weaknesses. Not surprisingly, many fintech entrepreneurs consider Canadian financial institutions to be some of the most risk-averse in the world.

Meanwhile Cryptocurrencies such as Bitcoin and Ethereum which add functional code within the blockchain to allow for smart contracts, will allow in the short term, for the real material use of blockchain technology in Financial Institutions to be in smart contract signing. Initial Coin Offerings (IOCs) for Bitcoin and crypto currencies are currently unregulated in Canada. One payments expert warns that investors should be weary of participating in initial coin offerings (ICOs) COs, because of the uncertainties around. The traditional banking ethos of KYC – know your client – holds particularly strong relevance in the fintech space.

Most of these warnings come for cryptocurrencies traded on the blockchain in particular, being largely untraceable and unregulated. The main issue that faces this Canadian regulatory space is the acceptance and further implementation in Canadian financial services industry are AML and counter terrorism financing, as well as KYC; where the existing regulatory standard to uphold is very high.

The distributed ledger community wants to be able to have the freedom to have financial privacy in their daily transactions, and don’t want their financial transactions to be open or accessible by anyone but themselves; two requirements that aren’t typically coupled in Canada. However, in order to make distributed ledger transactions in the

financial services industry truly end-to-end private, this needs to be done on blockchain technology. This solution secures financial transactions within this distributed ledger technology, has only increased the sentiment of the distributed ledger community of innovators to push for blockchain technology development in the financial services industry.

This is a double-edged sword for regulators. It makes it more difficult to conduct data analysis in order to best figure out the data points that enables you to detect criminal activity and prosecute it. With cryptocurrency transactions made on the blockchain, we are left with no known address of the provider or the receiver, making it very difficult to execute meta data analysis with no customer or transactional data route. This is a double-edged sword because governments need the blockchain technology to assist with the development of privacy models; to avoid situations such as the Equifax breach where 50 million people had their identities, personal data, and financial information exposed, but at the same time are finding blockchain technology hard to regulate the uncertainty of not having the ability to access data points or track transactions. National security agencies need better ways for encrypting communications; financial communications between financial institutions, transactions, and peer to peer communications, for intelligent purposes that are secure and cannot be breached. Governments need to accept and promote the fact that there are ways of doing both; having digital identity and secured user control leveraging methodologies to develop better AML, counter terrorism financing, and KYC technology tools. This seems to be a matter of educating regulators on a self-sovereign identity to assist with closing these gaps. An example of a company leading the way in distributed ledger self-sovereign identify in the distributed identity foundation (DIF), is “Sovrin” on challenges faced by fintech firms.<sup>41</sup>

## **6. Global Engagement**

Canada is often criticized for the lack of global interest that its technology ecosystem generates. This is a weakness we need to address

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<sup>41</sup> [http://www.osc.gov.on.ca/en/NewsEvents\\_nr\\_20170126\\_fintech-advisory-committee-members.htm](http://www.osc.gov.on.ca/en/NewsEvents_nr_20170126_fintech-advisory-committee-members.htm)

in any effort to make Toronto and Canada an attractive fintech destination for global firms. Sibos – the world’s leading financial services industry conference – came to Toronto last October. Officially the largest Sibos conference to date with over 8,000 delegates, it presented a significant opportunity to shine the light on Canada, and specifically Toronto’s, fintech ecosystem, as well as generating investment interest and enabling conversations around prospective global collaboration and partnership possibilities. China, for example, had its largest bank representation at Sibos yet.<sup>42</sup> As the world’s largest fintech market and a nation with which Canada has been exploring opportunities for collaboration, Sibos provided a great meeting place for knowledge exchange yet nothing significant appears to have emerged from that event and opportunity. It is most unlikely that Australia, host of Sibos 2018 will make the same mistake as it is working hard to market itself as a significant global fintech hub.

Last year, the OSC signed a fintech agreement with UK regulator the FCA to support one another in referring innovative fintechs to the other’s markets to accelerate market entry.<sup>43</sup> The OSC has signed a similar agreement with the Australian regulators as well. Canada should be engaging in such agreements at the national level, however, to support fintech growth across the country.

In recent years, Canada has been sending fintech delegations to the UK to create opportunities for networking with fintech peers and investors and to explore possible expansion into new markets by Canadian firms. We have repeatedly sent delegation to Canada has repeatedly sent a delegation to London Tech Week every June.

## **7. The Blockchain Opportunity**

With significant recent international buzz around the Tapscott’s *Blockchain Revolution* book and the subsequent announcement of the

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<sup>42</sup> <https://www.sibos.com/media/news/sibos-draws-unprecedented-number-chinese-financial-institutions-toronto>

<sup>43</sup> <http://www.investmentexecutive.com/-/osc-fca-sign-fintech-agreement>

Blockchain Research Institute<sup>44</sup>, and Toronto’s Blockchain Meetup groups nearly outgrowing the MaRS space, with well over 1,000 attendees at meetups devoted to any and all fintech innovations, particularly blockchain it is clear that there is strong appetite in Toronto for blockchain technology. A CD Howe publication points out: “With Blockchains that ensure privacy, computers in a network compete for maintaining and updating the information contained in the ID system without having access to this information per se. Hence, no third party is necessary.” The downside of this model is that it is quite costly to implement since the security of such a Blockchain increases with the computer power sunk into it and such an ID system needs to be super safe. (Thorsten Koepl CD Howe, May 2017.

The Ivey and TFSA report “Towards a Fintech Strategy for Canada” recommended that Canada work to identify niche areas where it can develop specialization and comparative advantage. Blockchain seems to be emerging as such a niche.<sup>45</sup>

The 2016 report on the UK’s Fintech ecosystem “UK FinTech: On the cutting edge – An evaluation of the international FinTech sector” identified talent, policy, capital, and demand as the four key ingredients to a successful fintech ecosystem. Within the policy realm, “sector growth initiatives” was highlighted as a key factor for a healthy fintech sector. Reports on Canada’s Fintech sector to date have highlighted that we are lacking a single champion for the sector, and that Canada is at risk of pursuing a silo approach similar to the USA or China rather than a target approach like the UK, Australia, Hong Kong or Singapore.<sup>46</sup>

Thus, our **key policy recommendation** is the creation of an industry or trade association for the Canadian Fintech sector, modeled after the

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<sup>44</sup> <https://www.thestar.com/business/2017/03/17/toronto-based-blockchain-institute-launched.html>

<sup>45</sup>

[https://www.ivey.uwo.ca/cmsmedia/3775235/briefingnote\\_king\\_young\\_final\\_161\\_118.pdf](https://www.ivey.uwo.ca/cmsmedia/3775235/briefingnote_king_young_final_161_118.pdf);

<http://tfsa.ca/storage/reports/BuildingTheTorontoRegionIntoAGlobalFintechLeader.pdf>

<sup>46</sup> Towards a Fintech Strategy for Canada – Background Briefing.

UK's *Innovate Finance*. This initiative should be an independent nonprofit organization, backed by Innovation, Sciences and Economic Development Canada, the most appropriate branch of the federal government to engage with a nascent technology sector. Additional key stakeholders could include but are not limited to:

- Canadian Securities Administrators (CSA)
- Provincial Regulators
- Payments Canada
- All 5 Banks should have representation
- Representatives from the fintech sector (entrepreneurs)
- MaRS, Ryerson DMZ and other key representations from the innovation hub sector
- Academics (i.e. representation from the University of Toronto's Innovation Policy Lab, or from the university partner that the Blockchain Research Institute eventually identifies).

The association should be a membership-based model, with tiered membership-pricing to accommodate the earliest-stage fintech firms up to to financial services institutions who would be required to pay the largest annual membership fees, in return for getting a closer look at the activities of their fellow members, at least some of which would be start-ups. Fees would provide the funds needed to hire staff to be responsible for further membership growth, and to curate an annual Canadian Fintech Summit (to move locations each year); advocate for policy and regulatory change; and act as the access point to Canada's fintech sector that this association would represent.

The establishment of a convening voice or trade association-type of body could provide the necessary bridges between the existing elements of a potentially strong fintech sector. Vancouver's Digital Finance Institute appears to be working to create such a body, - the Fintech Association of Canada - but traction to date is unclear and it appears to be housed in a law firm, therefore serving that firm's interests rather than the sector as a whole. Further, it is not clear what stakeholders are involved and whether the initiative is well-weighted in terms of cross-Canada representation, industry, regulators, innovators, and financial institutions, all of which need to be involved to appropriately represent the sector.