

An illustration of two hikers in a stylized landscape. One hiker, wearing a blue shirt and dark pants, stands on the left, pointing towards a mountain. The other hiker, wearing a pink shirt and dark pants, stands on the right, holding a white document. They are surrounded by stylized mountains in shades of purple and blue, and a large red rock formation on the left. The background is a light yellow and white gradient.

A BEGINNER'S GUIDE TO OPEN BANKING FOR CANADIANS

EXPLORING THE SHORT HISTORY OF OPEN BANKING
& THE BASICS OF CONSUMER-DIRECTED FINANCE



Visit portfolioplus.com to download our two-part ebook mini-series on GICs.

“I’ll try to keep this interesting and spare you from another boring definitive guide to something.”

— A Definitive (& Not Super Boring) Guide to GICs in Canada



CONTENTS

<i>A Bland</i> Introduction to Banking in Canada	4
The Origins of Open Banking.....	6
What Is Open Banking?	6
Is Open Banking Coming to Canada?	7
Exploring Open Banking Systems Around the World	8
The Role of Regulators in an Open Banking System.....	9
How Does Open Banking Work?	12
The Elements of an Open Banking System	12
Regulators	12
Consumers	12
Financial Institutions	13
Third-Party Service Providers: AISPs & PISPs.....	13
The Importance of Application Programming Interfaces (APIs)	14
About Portfolio+	15

Part 1

A BLAND INTRODUCTION TO BANKING IN CANADA

BANKING HASN'T CHANGED ALL THAT MUCH...

IT'S NO SECRET THAT TRADITIONAL
BANKING IS A LITTLE, WELL *BLAND*.

Now, sure, *bland* isn't the most flattering term for something that some of us commit a significant portion of our lives pursuing in our professional careers—but it's not always bad, either! It's hard to draw a meaningful comparison here, but let's try this: If banking was a certain type of food, what food would it be? Well, you might argue that banking is most like *bread*. Why bread? Think about it: Bread is a staple in our nutritional lives, a timeless foodstuff that dates back literally thousands of years. In fact, it's considered the most widely consumed food in the world. Bread is so important that it's even credited with aiding in the formation of early modern societies, playing a vital role in turning our nomadic, wandering ancestors into social agrarian townfolk. Don't underestimate the importance of being *bland*!

If we look at any given point throughout our own individual lives, it's easy to see that bread just always seemed to be there—a convenient, mobile source of nutrition that we've relied on without much admiration since childhood. Good old bread! The one thing about bread, though, is that it always kind of just tastes like bread, doesn't it? There's nothing particularly exciting about it. Most of us would rather not eat it, but most of us still do. Why? Because it's reliable? Because it's a safe bet? Sure. Without a doubt, those wheat-based loaves of bland-blandness play an enduring, unwavering, and foundational role in our lives and our collective existence.

It sure feels like we need bread now, doesn't it?

Here's the thing: The bread we eat today is the same kind of bread we've been eating for centuries. It really hasn't changed all that much, especially when we look at the last hundred years. Sure, there were some incremental advancements—the introduction of mechanized slicing in the 20th century—but odds are your grandparents ate the same type of bread you eat today. Maybe it had a different brand name. Maybe it looked a little different. But it's always been the same old bread.

*“Now, isn't
banking just
like that?”*

A Beginner's Guide to Open Banking for Canadians

Now, isn't banking just like that?

The banks we use today are the same banks we've been using for centuries. Sound familiar? Banking really hasn't changed all that much either, especially when we look at the last hundred years. Sure, there were some incremental advancements—instead of mechanized slicing, we have technological innovations like credit cards, ATMs, integrated circuit chips, and online payments—but there's a good chance your grandparents used the same bank you use today, too. Why? Because it's reliable? Because it's a safe bet? Sure.

If you live in Canada, the probability that you bank with the Big Five is very high. Often just hearing the word “bank” conjures feelings of your experiences with one or more of their pervasive brands: Bank of Montreal (BMO), Canadian Imperial Bank of Commerce (CIBC), Royal Bank of Canada (RBC), Scotiabank, and Toronto-Dominion Bank (TD). As a Canadian, you probably stood in line and opened your first bank account with one of them at your parents' local branch way back when. If you're reading this, there's even a good chance you work for one of them today—not because most people work for them, but it's safe to say *most people in the banking industry in Canada* work for them.

That's the thing! Their presence in the industry is enduring, unwavering, and foundational.

These are the same institutions we've relied on just short of forever, with the earliest of which—the Bank of Montreal—opening its first operations in 1817, issuing its own bank notes as currency, and ultimately playing a vital role in the formation of our country. Over the next 60 years, by 1875, the foundations of the four other major banks would be established (the Canadian Bank of Commerce and the Imperial Bank of Canada would merge in 1961 to form Canadian Imperial Bank of Commerce). Since then, these banks have been the cornerstones of our financial industry, and they have built a reputation of being some of the safest places for Canadians to put their money.

Maybe they had different brand names. Maybe they looked a little different. But they've always been the same old banks.

So, it's OK to acknowledge that banking is bland—as long as we also acknowledge that bland can have the characteristics and the unexpected potential of laying the foundation for how we exist together.

And that blandness is about to take us somewhere entirely new.

“The banks we use today are the same banks we've been using for centuries.”

Part 1

THE ORIGINS OF OPEN BANKING

WHAT IS OPEN BANKING?

Open banking is an emerging framework in financial services that puts consumers in control of their financial data, allowing them to securely share financial transaction data that's traditionally held at financial institutions with authorized third-party providers (TPPs). With consumer consent and secure authorized access to financial data from banks, third-party providers can communicate with a financial institution's pre-existing infrastructure in order to leverage data and offer customers entirely new financial services and banking experiences that can help consumers better manage their personal finances.

In addition to putting consumers in control of their financial data, open banking also creates opportunities for businesses by encouraging competition in the financial services marketplace and promoting the development of new and innovative applications and

services. The framework not only makes it easier for consumers to move their money between financial institutions, but it also gives them more options as the system evolves. It lowers the barrier to entry for many would-be providers and provides emerging fintechs with the data they need to create innovative new financial service applications and banking experiences.

While open banking frameworks provide many opportunities for consumers, fintechs, and financial institutions, the framework understandably comes with its inherent risks. As such, government policy and industry cooperation are imperative in order to ensure data remains secure, the risks of unintentional data exposure are mitigated, and the financial system itself remains strong and stable.



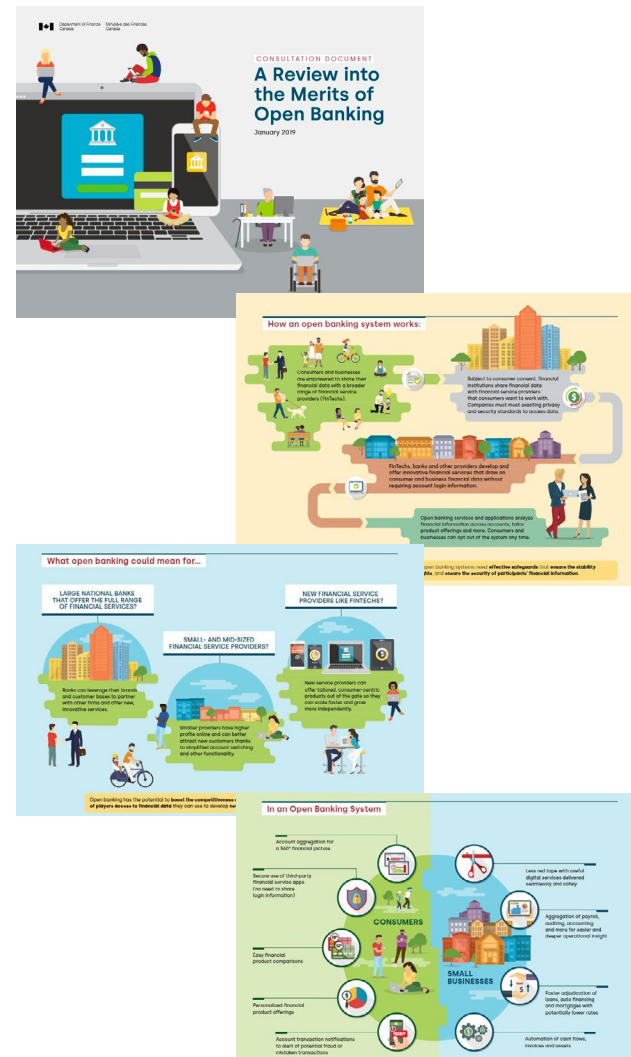
A Beginner's Guide to Open Banking for Canadians

IS OPEN BANKING COMING TO CANADA?

The Government of Canada announced its intention to explore the merits of an open banking system in Canada as part of Budget 2018. As a first step in September 2018, the federal government appointed the Advisory Committee on Open Banking and announced that the advisory committee would engage with Canadians in two phases: the first phase would explore the merits of an open banking system, while the second would look at implementation considerations with a focus on privacy and security.

The committee released its first consultation paper to the public in January 2019. That consultation paper, entitled *A Review into the Merits of Open Banking*, explored the benefits and risks of an open banking system and sought feedback from Canadian stakeholders regarding risk management, federal government participation, and ultimately whether an open banking system in Canada would provide meaningful benefits to Canadians (4).

Over a hundred written submissions were received in response to the consultation paper, and the final results of phase one were shared a full year later, in January 2020. As part of the final report from the phase one initiative, the



4. This series of images was included in [A Review into the Merits of Open Banking](#). The consultation document was created by the Department of Finance Canada in 2019 as a first step to engaging with Canadians on the topic of consumer-directed finance ([source](#)).

advisory committee proposed a new term in place of open banking that the committee felt more accurately captured the system that was being proposed: consumer-directed finance.

According to the advisory committee's report, "Consumer-directed finance is consumer-controlled, secure, and protects privacy. It allows a consumer to give instructions to a financial institution to share their transaction information with an accredited third party of their choosing" (4). The report goes on to capture another important aspect of open banking that would require further

"Consumer-directed finance is consumer-controlled, secure, and protects privacy."

consideration should the federal government proceed with consumer-directed finance, stating, "In some models, consumer-directed finance also includes the ability for the consumer to direct third parties to initiate payments on their behalf."

We'll explore payment initiation services a little later, but first let's look at open banking systems around the world.

EXPLORING OPEN BANKING SYSTEMS AROUND THE WORLD

When you compare the short history of open banking to the two hundred years of banking that preceded it in Canada, there's really not much history there at all. Open banking is new, especially to the majority of Canadians that have yet to even hear about open banking, let alone understand how this framework will directly impact their personal finances and the way they experience banking and payments in their day-to-day lives. But open banking isn't entirely new, either. There is some history behind it, and the history that is there is important to understand in order to really grasp how open banking frameworks and technologies are shaping the future of finance and influencing the banking products and

services that we use today.

Canada is fortunate. As the federal government begins to take steps toward an open banking framework, it's not the first to do so. There are a number of jurisdictions around the world that have already implemented open banking frameworks, and that means there are a number of jurisdictions that have already experienced the challenges associated with implementing open banking frameworks.

A Beginner's Guide to Open Banking for Canadians

Since it's not the first jurisdiction to explore open banking, Canada has the unique opportunity to examine the effectiveness and successes of pre-existing systems and engage with international policy makers to better understand how to tackle the inherent challenges associated with them. It also means Canada has an opportunity to gather information and advice on best practices related to account information services, payment initiation services, and regulation and policy.

Although this is not an exhaustive list, jurisdictions that have begun to introduce open banking frameworks include the European Union, the United Kingdom, Australia, New Zealand, Singapore, and Japan. Whether these open banking systems were driven by regulation, industry cooperation, or a combination of the two, they are all contributing to a paradigmatic shift in financial services that has banks, fintechs, and other financial industry players leveraging technologies—specifically Application Programming Interfaces (APIs)—for their ability to securely access and process financial data. That shift is unequivocally opening up the market to competition, cooperation, and innovation, and it's creating an opportunity for entirely new data-driven customer-centric banking experiences.

THE ROLE OF REGULATORS IN AN OPEN BANKING SYSTEM

Regulators play an important role in open banking by mandating access to consumer financial data held at financial institutions, ensuring consumer data rights are protected, and setting industry guidelines that make cooperation and participation among authorized third parties and financial institutions possible. After all, regulators are tasked with ensuring the stability and resilience of a financial system—laying out the rules of that system is the first step to ensuring it's soundness. Just as the Canadian federal government is leading the initiative to explore the merits of open banking in Canada, regulators and policy makers in jurisdictions around the world with active open banking frameworks are also guiding the way forward, creating policies and regulations that are effectively laying the foundation for a secure open banking ecosystem.

In Europe, a primary driver of open banking is an amendment to a regulatory directive that was focused on developing a single payments market in the European Union (7). The Revised Payment Services Directive—known as the PSD2—was a direct response to innovation in payment

“The PSD2 mandated that banks and financial institutions must share consumer financial data with authorized third-party service providers (...).”

A Beginner's Guide to Open Banking for Canadians

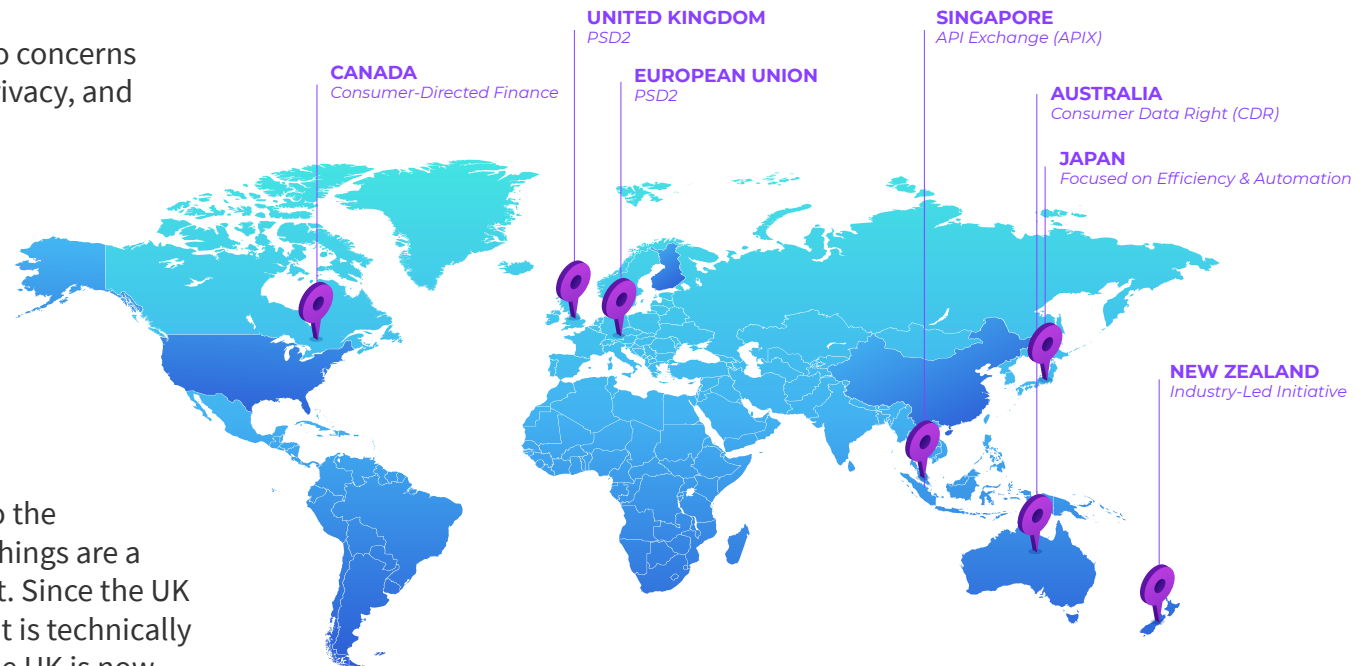
services in Europe that contributed to concerns around consumer data protection, privacy, and security. The PSD2 mandated that banks and financial institutions must share consumer financial data with authorized third-party service providers, a move that ultimately laid the groundwork for that jurisdiction's open banking framework.

Although the PSD2 initially applied to the open banking framework in the UK, things are a little ambiguous now thanks to Brexit. Since the UK withdrew from the European Union, it is technically no longer subject to the PSD2, and the UK is now left to outline its own way forward. Although, it's not entirely clear, it appears this pioneer of the open banking movement may still enact the PSD2 locally, but the withdrawal has ultimately introduced a number of complications between the two jurisdictions.

In Australia, legislation known as the Consumer Data Right (CDR) is driving the open banking movement. With a phased introduction starting with the banking sector and followed by the energy and telecommunications sectors, the CDR was developed and implemented in order to give consumers access to their data and the ability to easily switch between services and service providers. Enforced and regulated by the Australian Competition & Consumer Commission—a regulatory commission of the Australian government's treasury

department—the CDR effectively gives consumers ownership over their data, providing them with complete control and letting them decide how service providers access and use that data (8).

Japan and Singapore are taking slightly different approaches to their open banking systems. While European jurisdictions are leveraging open banking regulations in an effort to encourage competition in the marketplace and expand choice for consumers, regulators in Japan are pushing open banking in order to increase efficiency and automation in the industry (10). There are



A Beginner's Guide to Open Banking for Canadians



significant differences here. Japan is a known anomaly in online and electronic payments among developed economies, with a reported 80% of the population's transactions still cash-based (11). Part of the issue is the country's fragmented payment network. That dynamic poses very unique challenges in the country's open banking journey. Its regulator, the Financial Service Agency (FSA), has created an authorization process for third-party payment providers and is guiding the country's initiative—opposed to strictly enforcing it—by encouraging banks to publish their open API policies and engage with third-party providers (TPPs).

An early adopter of open banking, Singapore is often considered the leader in the open banking movement in Asia, having provided a framework for open banking and API guidance early on that helped to establish a diverse digital ecosystem among the jurisdiction's banks and emerging fintechs. Singapore's financial regulator and central bank, the Monetary Authority of Singapore (MAS), developed a collaborative API platform known as API Exchange (APIX) that has led to the city-state's largest banks embracing the use of APIs in order to build new partnerships that are continuing to lead to innovative consumer banking experiences. (12).

While regulatory enablement and industry cooperation have proven to be imperative in the paradigm shift in financial services, they aren't the only elements that are key in contributing to the development of a successful open banking system.

Part 2

HOW DOES OPEN BANKING WORK?

THE ELEMENTS OF AN OPEN BANKING SYSTEM

Taking a reductionist view of open banking in order to deconstruct the framework and understand its fundamental components, there are essentially four primary players in an open banking system: regulators, consumers, financial institutions, and third-party service providers. These players must integrate and communicate with one another through a variety of personal banking experiences, which means interoperability in the system is essential in order to ensure communication, security, and privacy between all parties.

REGULATORS

As we explored in the last section, regulators play a crucial role in open banking by laying out the rules and policies of the system—or, at the very least, providing oversight and guidance around how industry players contribute to the framework. As we see in Canada, the European Union, and the United Kingdom, regulators often lead the initiative into open banking, setting standards around mandated data access, integration, and authorization, while ensuring the protection of consumer privacy and security. Their goal may be to enforce consumer data rights, encourage competition in the marketplace, increase efficiency and automation, or simply provide consumers with more choice and

better ways to manage their money. Ultimately, the primary objective of a financial regulator is to ensure the stability and resilience of the financial system as a whole.

CONSUMERS

Whether it's the Consumer Data Right (CDR) or the Revised Payment Services Directive (PSD2), there is a growing understanding and acceptance around the world that consumers are generally considered the owners of their financial data—although that interpretation does vary in rare jurisdictions where financial institutions are still considered, at least for the time being, the owners of personal financial data.

What's the role of consumers? In an open banking system, consumers generate

A Beginner's Guide to Open Banking for Canadians

data in the form of financial transactions. They have the option to provide consent and authorize third-party service providers to use their financial data for services outside of the traditional financial system. By consenting to share their data with third-party service providers, consumers have the opportunity to explore innovative new products, services, and applications offered by service providers that are aimed at helping consumers process payments and make better financial decisions.

FINANCIAL INSTITUTIONS

This one is self-explanatory. These are the regulated banks and institutions of our traditional financial system. The big banks. The old guard. The bread! Financial institutions hold consumer data and act as the foundation of the open banking system by providing secure access to third-party providers, ensuring personal and private information remains protected, and maintaining regulatory compliance.

THIRD-PARTY SERVICE PROVIDERS: AISPS & PISPS

Third-party service providers (TPPs) are financial technology companies that generally require authorization by regulators in order to participate in the open banking system. These providers offer applications and financial services that leverage personal financial data in order to create data-driven, consumer-centric banking experiences. Third-party financial services can range from integrated point of sale payment experiences to personal budgeting and money management applications to data aggregation tools that allow consumers

to consolidate, view, and manage their financial accounts at multiple institutions from one single mobile or digital application. They can help consumers save and borrow money, and they integrate with online applications to create experiences that make payments seamless.

Although the types of experiences third-party service providers offer can range dramatically, there are generally just two types of third-party service providers that contribute to an open banking system: Account Information Service Providers (AISPs) and Payment Initiation Service Providers (PISPs).

AISPs access account data from a consumer's financial institution on behalf of the consumer. They typically collect data and use it to provide meaningful insight to help consumers better understand and make more informed decisions about their personal finances. Although data is collected from financial institutions in order to create meaningful data-driven experiences for consumers, AISPs are not authorized to process payments and move money—that task is for PISPs.

PISPs are third-party service providers that are authorized to initiate and process payments on behalf of consumers. They have the ability to not only access consumer financial data but to move it between bank accounts in order to process payments and transfers.



A Beginner's Guide to Open Banking for Canadians

Regulators, financial institutions, and third-party service providers must be able to integrate with a variety of legacy and modern systems in order to facilitate communication, securely process and transmit data, and ultimately make open banking possible. So, how do they do it? They leverage application programming interfaces (APIs).

THE IMPORTANCE OF APPLICATION PROGRAMMING INTERFACES (APIS)

Interoperability is imperative in open banking. In order for open banking to work, systems need to communicate. Emerging fintechs and third-party service providers need to communicate with traditional banking systems and infrastructure in order for the different applications and entities to securely connect, access, and process consumer financial data in meaningful ways. It requires a framework where all of the different elements are understood, securely connected, and simply work together.

APIs make that system possible.

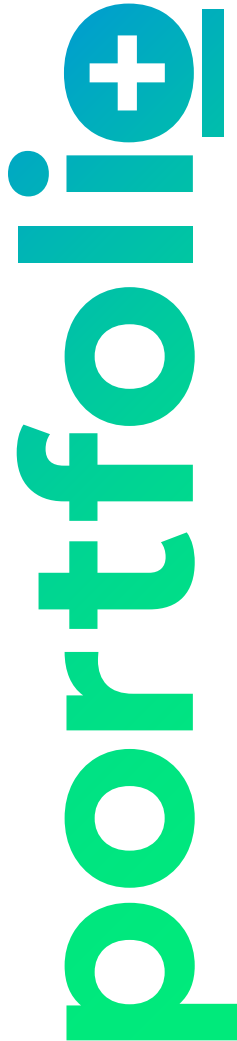
APIs act as digital messengers between financial software systems and third-party applications. Often referred to as the digital pipes of an open banking framework, APIs are the components that essentially facilitate connections from one system to another over a network, allowing financial data to flow securely and seamlessly between different financial systems while ensuring consumer information remains private.

With its ability to facilitate secure data-sharing, APIs also solve a growing problem with “screen-scraping” in the financial services industry—an inherently insecure data-exchange process where consumers share personal login and password details with apps in order to extract and share their financial data with a third-party. The process creates unnecessary risk for consumers by exposing personal details, and it is easily avoidable by the use of standardization and the adoption of APIs.

APIs play a fundamental role in an open banking eco-system. They not only connect third-party service providers with financial institutions, but they also enable opportunities for the development of new white-label banks and Banking as a Service (BaaS) solutions.

With Canada’s ongoing review into open banking moving into Phase 2, legislative guidelines and API standards will eventually emerge to support industry change that benefits consumers, while encouraging a unique balance of cooperation and competition as we design and build our open banking system here in Canada. As concluded by the Advisory Committee on Open Banking: *There is no going back.*





ABOUT PORTFOLIO+

Portfolio+ Inc. connects financial institutions with customers and partners using innovative technologies. Its core banking software solutions and open banking technology are used by financial institutions in Canada and the UK. With its powerful +Open Banking Platform and fully documented RESTful APIs, Portfolio+ has the power to connect banks, credit unions, and financial institutions with the evolving ecosystem of financial services technology that is putting everyday customers in control of their financial data.

Located in the Greater Toronto Area (GTA), Portfolio+ is used by 5 of the 7* largest financial institutions in Canada and is a part of Volaris Group Inc.

For more information, please visit portfolioplus.com.

*Based on TSE market capitalization figures retrieved in September 2020.

SOURCES

1. <https://www.history.com/news/a-brief-history-of-bread> (Retrieved February 11, 2021)
2. https://en.wikipedia.org/wiki/Banking_in_Canada (Retrieved February 11, 2021)
3. <https://www.pingidentity.com/en/company/blog/posts/2019/open-banking-around-the-world.html> (Retrieved February 12, 2021)
4. <https://www.canada.ca/en/department-finance/programs/consultations/2019/open-banking.html> (Retrieved March 3, 2021)
5. <https://www.canada.ca/en/department-finance/programs/consultations/2019/open-banking/report.html> (Retrieved March 7, 2021)
6. <https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/financial-services/ca-open-banking-aoda-en.pdf> (Retrieved March 3, 2021)
7. <https://www.zoho.com/books/guides/what-is-the-revised-payment-service-directive-psd2.html> (Retrieved February 4, 2021)
8. <https://www.accc.gov.au/focus-areas/consumer-data-right-cdr-0> (Retrieved March 5, 2021)
9. <https://www.businessinsider.com/uk-open-banking-regime-celebrating-three-years-2021-1> (Retrieved March 5, 2021)
10. <https://www.finextra.com/blogposting/17396/the-asia-pacific-way-of-open-banking-regulation> (Retrieved March 9, 2021)

portfolio⁺

37 Sandiford Drive, Suite 300, Stouffville, ON, L4A 3Z2