Opportunities in Open Banking

Prepared by
FDATA North America

fdata north america
Financial Data and Technology Association

Foreword

The Financial Data and Technology Association ("FDATA"), headquartered in Edinburgh, Scotland, is the leading global trade association advocating for open banking.

FDATA was formed in the United Kingdom during the negotiations to add account data access to the Second Payments Services Directive ("PSD2") in 2013. In addition to working with European Union policymakers, FDATA was heavily involved in the UK Open Banking Working Group in 2015. In 2016, the working group's output was published by Her Majesty's Treasury as the Open Banking Standard.

Having helped UK regulators to shape the agenda that led to the formation of UK Open Banking Implementation Entity ("OBIE"), FDATA was asked to serve on the Entity's Steering Group and played a significant role in helping OBIE in the drive for high-quality standards and in ensuring that regulators and policymakers have been kept fully involved in addressing the most challenging areas.

FDATA North America was founded in early 2018 by several firms whose technology-based products and services allow consumers and small businesses to improve their financial wellbeing. The group counts innovative leaders such as Cardlytics, Envestnet Yodlee, Flinks, Intuit, Kabbage, Lendified, Moven, Morningstsar, MX, Onist, Questrade, Quicken Loans, Quovo, Plaid, and others, as its members.

FDATA North America's members provide approximately 3.5 million Canadians, or roughly 15 per cent of Canada's adult population, with aggregation-based tools to better manage their finances.

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Executive Summary

CHAPTER 1: WHAT IS OPEN BANKING?

- Open banking is the structured sharing of data by consumers with (and between) their financial service providers, based on the needs of and consent by consumers. The sharing of data is discrete and reversible.
- There are three types of financial data involved:
  - Customer data
  - Transaction data
  - Value-added customer data
- Open banking recognizes that consumer demand and needs make it necessary to share financial data – today, it happens without comprehensive oversight, putting customers, banks and service providers at unnecessary risk
- Executed properly, open banking can preserve the security and stability of the financial system while empowering customers and accelerating opportunities for innovation

CHAPTER 2: BENEFITS OF OPEN BANKING

- Empowering customer chose, ensuring customer protection and enabling industry innovation are the hallmarks for open banking
- Empowering customer choice – both individuals and businesses – is the heart; it is designed to improve customer service, satisfaction and choice
- All stakeholders in the financial services industry will benefit from open banking
  - **Consumers** will receive better customer service, personalized and intuitive financial products at lower prices and improved financial health
  - **Businesses** will be able use technology to streamline financial operations, improve cash flow and financial management and gain better insight into their customers by understanding how, when and where they spend their money
  - **FinTechs and innovators** will revolutionize how people and businesses spend, manage and understand their finances
  - **Banks** will reimagine their business model to generate new revenue, provide a broader suite of products and services without the burden of building and maintaining proprietary solutions, and deliver better customer service by leveraging data insights
  - **Regulators** will leverage technology and innovation to improve effectiveness through tools like automation, artificial intelligence and predictive analytics

CHAPTER 3: CONSENT & CONSUMER PROTECTION

- The first, critical step to open banking is the assertion of the customer's legal right to access, use and share their data held by the financial institutions with whom they have accounts.
- The next step, consent, is crucial. To ensure consumers and small business owners are protected, open banking must require any service provider to obtain explicit consent by using disclosures that are plainly understood so customers are completely aware of:
    - What data they are consenting to share (and how it will be accessed);
    - How long access is permitted (defined terms);
    - How to opt-out, and
    - Who will hold the records (and for what duration)
- Banks must respect the consent provided by the consumer that allows a FinTech to act as the agent of the consumer
- Executed properly, open banking mitigates risks and protects consumers by ensuring that providers are appropriately regulated and that there are recourse mechanisms to make consumers whole if something goes wrong
- There are four key principles to establishing clear and understandable consent:
    1. Consent must be affirmative and explicit.
    2. Consumers should be able to amend their consent, including to 'opt-out' of using a service (and revoke access to their data) at any time
    3. All parties seeking consent should be appropriately regulated
    4. No financial institution should restrict a consumer's ability to share data with third party providers absent a clear and objective risk factor – which should be part of the regulation.
- The basic structure of the liability model for effective open banking ensures there is:
    - A method to make the customer whole if, through no fault of their own, they suffer a loss
    - An accurate, fair and reasonable methodology to allocate liability and cost between firms
    - A system to protect authorized open banking participants from customers making fraudulent claims

CHAPTER 4: DATA, TECHNOLOGY & OPEN BANKING

- Ultimately, open banking is the modern equivalent of processes that have existed in financial services for years – advances in data and technology have merely made these processes more efficient, acceptable and accessible
- Today, data is primarily shared through screen scraping and private APIs (Application Programming Interface), which requires a FinTech to record a customer's login credentials for their online banking platform and then use these details to log-in on behalf of the user to extract the desired data

- Screen scraping, when practiced by responsible parties, is a viable mechanism for data access with good control for security and operational risk; however, there are limitations:
  - Screen scraping doesn't allow customers to control the scope and duration of access
  - Screen scraping may be perceived to violate the terms and conditions of customer accounts at financial institutions
  - Screen scraping can be resource-intensive

- Bilateral agreements lack visibility and threaten to eradicate efficiency, restrict market competition, stifle innovation, reduce competition and increase costs – all of which erode consumer value
- There is tremendous value in establishing technical standards that enable an API-based environment as a preferred method of sharing data (over screen scraping and bilateral agreements)

CHAPTER 5: EFFECTIVE POLICY & OVERSIGHT RECOMMENDATIONS

- An appropriate open banking framework requires regulatory oversight and standardization, including investment to support such activities
- FinTechs should be regulated in a manner proportional to the risk they pose to consumers and the financial system
- Canada's federal government must play a proactive role in a new financial system framework by taking steps that
  - Define the scope of account types that will be included in Canada's open banking regime, understanding that a broader deployment at the outset will provide greater benefits more quickly to Canadians
  - Ensure, where appropriate, that new market entrants are registered, approved and overseen by an appropriate centralized authority to provide oversight
  - Ensure security measures that are appropriate to the inherent risk of regulated activities
  - Establish a federal directory of registered providers and encourage provincial regulators to adopt the same approach where required
- The introduction of an implementation entity can establish a level playing field in which all stakeholders can offer their perspectives regarding policies, standardization, and security measures for market participants, and which is empowered to, with the consumer experience squarely in mind, resolve areas of disagreement among different stakeholders.
  - This entity can also provide a consistent measuring of outcomes, over time, that are aligned with objectives of ensuring consumer interests such as data ownership, transparency, safety, privacy, and financial system stability.

Chapter 1: What is Open Banking?

The 'data revolution' is reshaping nearly every element of our lives – how we connect, communicate, travel and work. It's also fuelling a fundamental shift in how people and businesses spend, save and manage money.

Open Banking is *the structured sharing of data between financial service providers, based on the needs of and consent by their mutual customers*. With their consent, consumers and business clients can affirmatively grant access to a trusted third party financial provider of their choice to receive a product or service of their choosing.

The banking and financial services industry is experiencing unprecedented change. Historically, geographic proximity was the primary driver of customer attraction, retention and profitability. Customers predominately chose banks based on which was closest; the goal was ease and convenience to run in and conduct banking during lunch breaks or as they ran other errands.

Open Banking is the structured sharing of data between financial service providers, based on the needs of and consent by consumers.

For banks, the number of physical branches and front offices dictated how many customers could be reached. Most banks were essentially a "one-stop shop" for financial services. Once a customer opened chequing or savings accounts, it was a

natural progression to provide mortgages, investments and wealth management products and services.

This has changed. Physical branches are no longer the key driver of competitive differentiation for banks. In 2010, an examination of differences in the valuations of banks found that 74 percent of the difference was due to geography: banks with operations in hot markets were simply valued more highly. In 2017, this view was starkly different – the location of banking operations accounted for just 39 percent of the difference. The rest was due to the business model and its execution, strategy, well-aligned initiatives and the other levers that banks command.[1]

Most importantly, consumers no longer depend on a single bank for all their financial needs. Many use several service providers, such as financial planners, mortgage brokers, portfolio managers, and third party insurance – all of whom require some level of access to financial information. So, while the term 'open banking' is relatively new, the underlying need to share financial information is not. Consider the following:

- Consumers and small businesses take paper statements, receipts and financial information to advisers, accountants and service providers to prepare taxes, manage investments or file loan applications
- Companies access banking information for automated payroll deposits
- Financial planners review a family's entire financial portfolio to recommend retirement planning strategies

Ultimately, open banking is the modern equivalent of processes that have existed in financial services for years – advances in data and technology have merely made these processes more efficient, acceptable and accessible. Imagine an accountant's relief when, instead of receiving the dreaded shoebox haphazardly filled with crumpled receipts and various account statements at tax time, they could access electronic files. Productivity increases while cost of reporting decreases.

Open banking is a natural evolution as the world becomes more digitally competent. The financial services industry is uniquely positioned to be affected by these changing behaviours; even today, there are no tangible goods that need to be physically transported between parties – just data flowing between the various agents and stakeholders.

[1] McKinsey & Company (2017): *Remaking the bank for an ecosystem world* (mckinsey.com/industries/financial-services/our-insights/remaking-the-bank-for-an-ecosystem-world)

A short history of open banking

The 'open banking movement' is the result of advocacy by consumer champions, FinTechs and engaged stakeholders campaigning for the right of customers to share financial data, while stressing the importance of protecting customer interests and ensuring a secure and safe financial system.

The potential of new business models prompted the EU-wide Second Payments Services Directive (PSD2) in 2013, which focused on providing third party access to payments data through a clear liability model and regulatory framework. The directive went 'live' in January 2018. Advocates of open banking continue to campaign for the inclusion of non-payments data in the scope of regulation.

In the UK, several independent venture-backed personal financial managers sprang up between 2005 and 2010, leading to a reasonably public exchange of views about customer data. Market participants began negotiating the Open Banking Standard in 2015, which included the definition of technical standards (launched in 2018).

The push for open banking standards continues across the globe, in markets such as India, China, Japan, Australia, USA, Mexico, Singapore, Hong Kong, Malaya, Russia, Europe, Nigeria and others.

Understanding financial data

Traditionally, banks have been the primary custodian of their clients' financial data. Access to this data has been controlled, due to the regulatory oversight of banks and financial institutions. What kind of data do banks hold? It's simple to consider data in three categories:[2]

(1) **Customer data** provided directly to a bank, including contact or employment information, financial history and payee lists for bill payments.

(2) **Transaction data**, including payments, withdrawals, transfers, balances (real-time and historical) and interest earned or charged.

(3) **Value-added customer data** that banks or other data holders generate to gain insights about a customer, including credit scores, verification of income and asset valuation, or the aggregation of standardised, cleansed or reformatted data across customer accounts.

If a customer wants or needs to move information, there are often limitations that require the customer to resort to outdated, cumbersome methods.

Open banking recognizes that consumer demand makes it necessary to share financial data. Today, data sharing happens without oversight, putting customers, banks and service providers at unnecessary risk. Executed properly, open banking can preserve the security and stability of the financial system while empowering customers and accelerating opportunities for innovation.

Only 18 percent of Canadians use at least two FinTech services, behind the global average adoption rate of 33 percent.

EY FinTech Adoption Index 2017

Shifting the competitive landscape

In the years after the chaos of the global financial crisis, banks and regulators focused on the foundational building blocks required to get the industry back on solid ground.

Today, banks are in the centre of a complex financial intermediation system that stores, transfers, lends, invests and manages risk for over $260 trillion in global funds, generating about $5 trillion in revenue.[3] While banks currently capture most of this revenue, their position is being challenged by new competitors.

Changing customer expectations, rapid technological advances, renewed customer-centricity and evolving regulatory requirements all contribute to this shifting landscape.

As the industry was rebuilding post-crisis, rapid advances in technology and data innovation began changing the world. Platform companies like Google, Apple, Facebook and Amazon began to blur the lines between industries by connecting the value chains of multiple sectors; the market continues to speculate about the next moves into the financial services sector. Apple Pay, Samsung Pay and Google Pay are starting points; Facebook (and its subsidiary WhatsApp) have implemented person-to-person (P2P) payments in their messaging apps.

[2] Recommendations with respect to data will be explored in Chapter

[3] McKinsey & Company (2018): *Banks in the changing world of financial intermediation*

Consider Amazon: the e-commerce giant offers cloud computing, distribution and logistics, media content generation, consumer electronics and now, financial services. Amazon offers payments services like lending, insurance and chequing accounts, all without becoming a conventional, regulated bank.

Customers are responding to this shift. Nearly 75 percent of U.S. millennials would be more excited about new financial services from Google, Amazon, PayPal or Square than from their banks.[4]

Simultaneously, financial technology firms ("FinTechs") began leveraging data and technology to digitize specific services. FinTechs are not burdened by expensive legacy infrastructure and systems or the obligation to deliver an entire suite of financial services. Because they focus on delivering one aspect of the value chain, they can provide a better customer experience (likely at a lower cost) than incumbents.

One example is Onist, a platform that securely provides families and their existing financial advisors a complete view of their net worth, including important financial documents, which increases financial literacy and empowers people to make better financial decisions. Onist's platform can help spouses coordinate financial decisions, aid in the management and oversight of an aging parent's finances, or help a small business owner simplify their finances.

Another example is Kabbage, a FinTech providing small businesses with a line of credit up to US$250,000 within 10 minutes of applying. Kabbage leverages data generated through business activity such as accounting data, online sales, shipping and dozens of other sources to understand performance and deliver fast, flexible funding in real time. By the end of 2018, Kabbage's automated lending platform was providing more than $10 million per day to small businesses.[5]

Nearly 75 percent of U.S. millennials would be more excited about new financial services from Google, Amazon, PayPal or Square than from their banks.

McKinsey & Co Annual Global Banking Review

FinTechs like Onist and Kabbage are responding to consumer demands for more flexible, intuitive, 'on-demand' financial services that banks are unable (or unwilling) to provide.

Overview of banking in Canada

Canadian banks are generally regarded as some of the safest and most stable in the world, as demonstrated by the relatively strong performance during the global financial crisis. There are 86 banks in Canada;[6,7] however, the six largest banks account for approximately 90 percent of total assets among Canada's federally regulated deposit-taking institutions (DTIs).[8] Although this concentration enables strong regulatory oversight, observers are concerned this tightly-held market stifles innovation, inhibits competition and protects the interests of incumbent institutions.

[4] McKinsey & Company (2017): *Remaking the bank for an ecosystem world* (mckinsey.com/industries/financial-services/our-insights/remaking-the-bank-for-an-ecosystem-world)

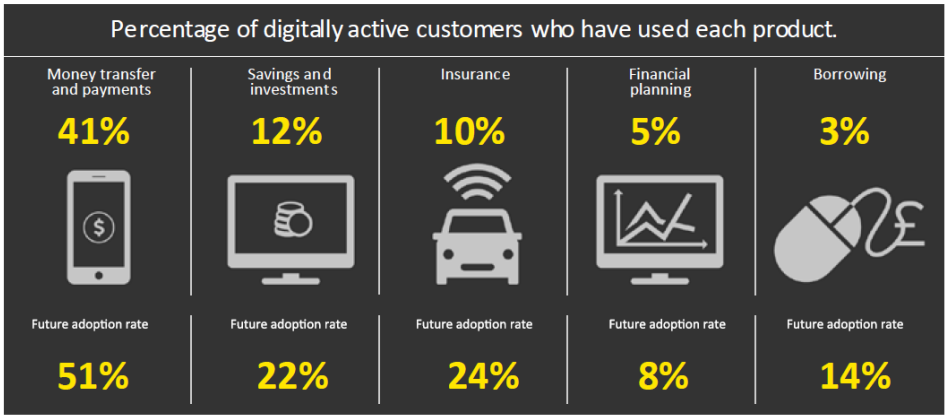
[5] Kabbage (2018): Small Businesses Access More Than $10 Million Per Day with Kabbage (https://www.kabbage.com/pdfs/pressreleases/Press%20Release%20-%20$10M%20Day%20-%2010_24_18%208am.pdf)

[6] Canadian Bankers Association (2018): *Focus: fast facts about the Canadian banking system* (https://www.cba.ca/fast-facts-the-canadian-banking-system)

[7] Does not include credit unions or co-operatives; there are over 250 credit unions operating in Canada, according to the Canadian Credit Union Association

[8] OSFI (2018): *Financial Institutions (http://www.osfi-bsif.gc.ca/Eng/fi-if/Pages/default.aspx)*

FIGURE 1: MOST-USED FINTECH SERVICES IN CANADA



Source: EY FinTech Adoption Index 2017 – Canadian findings

Due to the lack of choice, nearly 65 percent of Canadians have been with their current bank for at least a decade, which is higher than other markets – in the U.S., the 10-year retention ratio is 40 percent. [9]

In retail banking, the lack of competition also has contributed to an increase of predatory sales practices. The Financial Consumer Agency of Canada reported increased risks of mis-selling and breaching market conduct obligations and indicated that the controls put in place to monitor, identify and mitigate these risks are insufficient.[10]

Canada's banks have greater influence in the FinTech space when compared to other countries. More than 60 percent of Canadian financial institutions are currently partnering with FinTech companies (about 15 percent higher than the global average) and 82 percent expect the number of partnerships to increase in the next three to five years. [11]

However, more than 60 percent of FinTech founders indicated that they had experienced significant challenges pursuing partnerships, including navigating lengthy procurement processes, difficulty in identifying decision-makers, and prospective partners who demanded one-sided contractual terms and were reluctant to balance risk mitigation. [12]

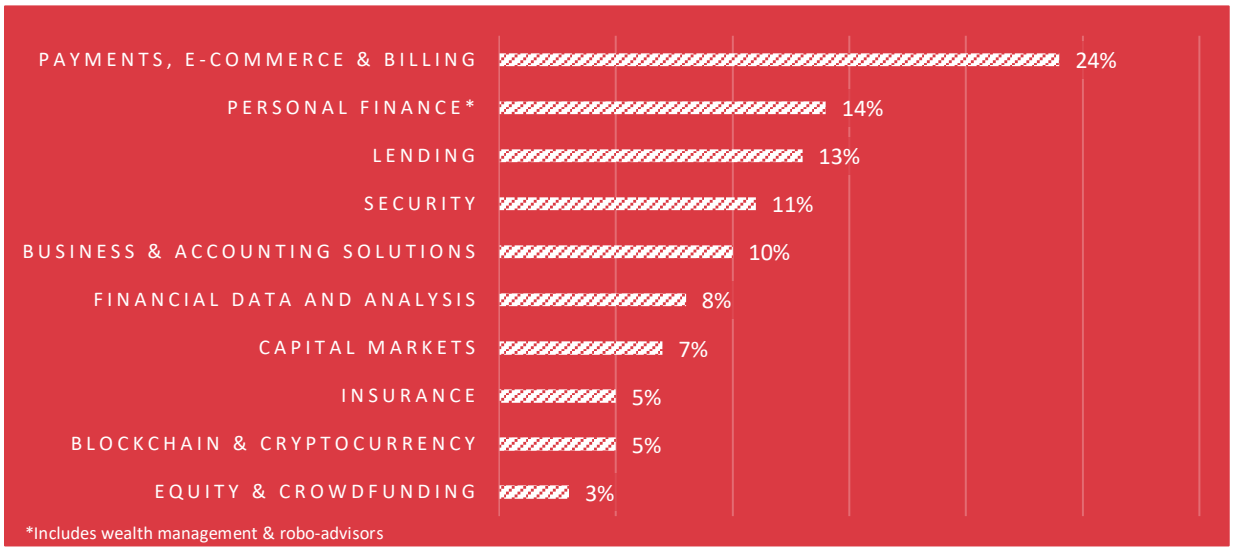
Adoption remains relatively low. Only 18 percent of Canadians use at least two FinTech services, compared with an average of 33 percent across 20 surveyed market.[13] China has an adoption rate of 69 percent, followed by India (52 percent) and the UK (42 percent). The U.S. matched the global average.

A FinTech adoption study, conducted by Ernst & Young (EY), found that money transfer and payments products are the most used.

[9] Global Risk Institute (2018): *An overview of FinTech in Canada* (https://globalriskinstitute.org/publications/an-overview-of-fintech-in-canada/)
[10] Financial Consumer Agency of Canada (2018): *Backgrounder: Domestic bank retail sales practices review* (https://www.canada.ca/en/financial-consumer-agency/news/2018/03/domestic-bank-retail-sales-practices-review-backgrounder.html)
[11] PwC (2017): *Redrawing the lines: FinTech's growing influence on financial services* (*https://www.pwc.com/jg/en/publications/pwc-global-fintech-report-17.3.17-final.pdf*)

[12] Toronto Financial Services Alliance (2017). Seizing the Opportunity: Building the Toronto Region into a Global Fintech Leader http://tfsa.ca/storage/reports/BuildingTheTorontoRegionIntoAGlobalFintechLeader.pdf)
[13] Ernst & Young (2017): EY FinTech Adoption Index 2017 - Canadian findings (https://www.ey.com/ca/en/industries/financial-services/ey-2017-fintech-adoption-index-canadian-findings)

FIGURE 2: CATEGORY BREAKDOWN OF CANADA'S TOP 150 FINTECHS



Source: Global Risk Institute – Overview of FinTech in Canada

More than 40 percent of 'digitally active' customers have used these products. Only 12 percent have used savings and investment products and the number drops even lower for financial planning and borrowing. See Figure 1 for the breakdown.

Lack of awareness may help to explain the low adoption rates. However, a lack of supply is the more substantial issue – the number of FinTech services available to consumers is still relatively low and, due to their market control, FinTechs are highly dependent on incumbent support.

In a review of the top 150 FinTech firms in Canada, the Global Risk Institute found that nearly 25 percent are focused on payments, e-commerc,e and billing services. Only 14 percent of Canadian FinTechs are pursuing personal finance, which includes wealth management and robo-advising. [14]

In recent years there have been several government- and regulator-led industry consultations, which focus on identifying challenges facing Fintechs in the Canadian ecosystem. These discussions are taking place with recognition of the importance of financial services for the economy and the financial well-being of Canadians. The same key issues prevail in every discussion:

- access to talent
- access to venture capital
- understanding and navigating regulation
- access to data
- need for regulatory reform to accommodate new business models

Understanding and traversing regulation can be made easier for new entrants with the help of regulatory sandboxes and concierge services; some steps are being taken in this direction.

[14] Global Risk Institute (2018): *An overview of FinTech in Canada* (https://globalriskinstitute.org/publications/an-overview-of-fintech-in-canada/)

Talent and venture capital, which are both key to FinTech success, tend to follow opportunity. If there is a good business opportunity, the venture capitalists are ready to fund and participate.

Likewise, technical talent is attracted to challenging work that delivers meaningful value for companies embracing opportunity.

The implementation of an open banking framework is a catalyst for innovation, thereby attracting greater capital, retaining Canadian talent, and attracting foreign talent. The digital economy is a substantial driver for job creation and the retention/attraction of high-tech talent as well as overall economic growth. Once open banking is in place, regulatory reform will need to be an ongoing effort to allow technology-enabled business models to thrive while ensuring consumer protection.

In 2018, Canada hit a record of 119 FinTech deals, generating $1.18 billion in investment.

KPMG – The Pulse of FinTech 2018

CHAPTER 1: SUMMARY

- Open banking is the structured sharing of data by consumers with (and between) their financial service providers, based on the needs of and consent by consumers
- There are three types of financial data in scope:
  - Customer data
  - Transaction data
  - Value-added customer data
- Open banking recognizes that consumer demand and needs make it necessary to share financial data – today, it happens without comprehensive oversight, putting customers, banks and service providers at unnecessary risk
- Executed properly, open banking can preserve the security and stability of the financial system while empowering customers and accelerating opportunities for innovation

Chapter 2: Benefits of Open Banking

Empowering customers to own, control and share financial data creates opportunities and business models that do not exist in most banking and financial systems today but would be to the advantage of all stakeholders.

Recognizing and harnessing the power of data is driving a digital revolution, leaving virtually no industry untouched. Empowering customers to choose whatever service providers they like – both individuals and businesses – is the heart of open banking. At its highest level, open banking is designed to improve customer service, satisfaction and choice.

Banks have been the primary custodian of financial data, acting as regulated intermediaries between technology vendors and customers.

Unfortunately, the complexity of legacy banking systems makes it difficult to track customer journeys even within a single bank. While banks have been reluctant to provide access to data, they are feeling the pressure from customer demand. Two-thirds of U.S. banks say adopting open banking is critical to compete with FinTechs and other new market entrants, while more than half indicate they will be forced to implement some form of open banking to compete with other banks.[15]

> "From budgeting apps to personalised quotes and money advice, [open banking] is a new capability that can make the boring and anxiety-inducing task of managing money simpler, quicker and more convenient.
>
> Those benefits can only be realised if consumers are respected, protected and have real confidence that they can use Open Banking easily, safely and get help when things go wrong."
>
> FAITH REYNOLDS, UK OPEN BANKING IMPLEMENTATION ENTITY

There are several key benefactors of open banking: individual customers, businesses, FinTechs and innovators, banks and regulators.

[15] Accenture (2017) Open Banking Survey

For individual consumers

FinTechs, platform companies and other new market entrants are focused on customer experience and removing friction from the value chain of existing financial services. Allowing customers, at their discretion, to grant these parties access to their financial data will enable customers to receive better service, access personalized and intuitive financial products at lower prices, and attain better financial literacy

Financial priorities and requirements shift throughout a person's life. For most, a savings account is their introduction to banking: a place to put birthday or allowance money, or the paycheques from their first summer job. This milestone – outgrowing the piggybank – is the first of many that occur throughout one's lifetime. The savings account likely branches into a chequing account (or transfers to pre-paid credit cards).

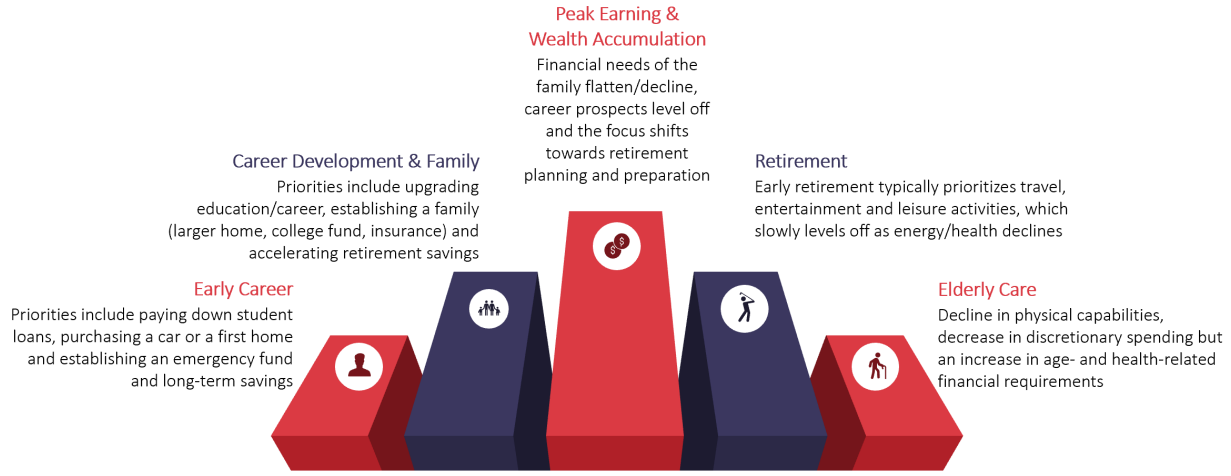
Eventually, as a person enters their ***early career***, priorities evolve to include paying down student loans, taking out loans and mortgages for a first car or house, and establishing a retirement savings plan and an emergency fund (and likely splitting a bar tab or two between friends).

Historically, all this would probably happen within one bank (and likely the same bank that holds that first savings account). But under an open banking framework, the scenario would different. Giving consumers the ability to share their data easily would enable and empower them to choose the best provider for their purpose.

Open banking can facilitate real-time credit monitoring to confirm eligibility and the best rates for a loan or mortgage; an app-based budgeting tool that allows someone to track their spending; and easy, no-fee P2P payment options for those bar tabs. For core banking functionality, people could easily monitor and switch between banks, depending on promotional offerings, lower transaction fees or higher interest savings accounts.

Customer service and satisfaction should improve with greater transparency and choice, while frustration with linking or switching providers should decrease.

FIGURE 3: UNDERSTANDING THE PERSONAL FINANCIAL LIFECYCLE



This continues as people ***develop their career*** and ***establish a family***. Priorities likely include enhancing their education or starting a small business, buying a bigger home to accommodate a growing family (and the financial complexities that come with raising children) and growing investments to accelerate retirement savings. Budgeting is critical because paying for a mortgage, school fees, and extracurriculars, while saving for rainy days, retirement, and post-secondary education, is onerous.

Technology helps people better understand and manage their finances. Mint, a money management tool offered by Intuit, brings all aspects of financial life together in one place; from balances and bills to credit scores and more. Mint aggregates all accounts and automatically updates and categorizes transaction information. This allows users to see where their money is going and get a single, comprehensive view of their family's financial health. Mint also analyzes spending patterns and makes recommendations on how users can save money.

"FDATA's members provide 3.5 million Canadians with technology and tools to better manage their finances. That's about 15 percent of Canada's adult population. For the 85 percent who aren't benefiting from this technology, it is well past time."

STEVE BOMS, EXECUTIVE DIRECTOR, FDATA NORTH AMERICA

As people get older, financial requirements start to diminish. This is the ***peak earning and wealth accumulation*** phase. Attention shifts towards ***retirement***, which may initially include travel. This activity also will slow down as energy and health declines.

Developing tools to manage multi-generational family finances is a growing area of focus for FinTechs. Onist, a household financial management app enables family members to securely hold and share important documents (wills, powers of attorney and DNRs) and to link accounts. Users can also add financial advisers and other professionals to the account.

Golden, an alumni of the Envestnet | Yodlee FinTech Incubator, has developed a financial caregiving assistant app and platform that connects children, caregivers and aging parents. In addition to connecting all accounts and bill payments, Golden also leverages artificial intelligence to suggest ways to save money and find government benefits and drug discounts. The app also includes alerts of potential fraud, and a family document vault.

Customer expectations are being shaped by experiences with intuitive, personalized platforms provided by companies such as Google, Apple, Facebook and Amazon. People want on-demand, personalized and predictive services. Open banking responds to that consumer demand by stimulating investment and innovation in products and services that will help consumers understand and manage their finances.

Consumers are already sharing data with service providers. Today that happens without oversight, putting customers, banks and others at unnecessary risk. While consumers may enjoy the value-added service, they are not necessarily protected.

Giving a third party service provider access to a bank account also could violate the terms and conditions the consumer originally signed with their bank; if the third party experiences a security breach, there may not be recourse to ensure the consumer is protected.

Executed properly, open banking mitigates risks and protects consumers by ensuring that providers are fully regulated and that there are recourse mechanisms to keep consumers whole if something goes wrong.

For businesses

Much like banks, businesses of all sizes are experiencing some degree of digital disruption in their own industries. Owners, executives and employees must focus on delivering value for their customers, not be buried in back-office administration.

However, open banking creates opportunities beyond streamlining financial operations. Understanding how, when and why people spend their money is infinitely valuable for businesses who seek insight into their customers.

Cardlytics is a FinTech that partners with more than 2,000 financial institutions to run online and mobile banking rewards programs. As a result, Cardlytics knows where and when consumers are spending their money – it has data from more than 20 billion annual debit, credit and bill payment transactions for tens of millions of individual consumers in the U.S. and U.K. (of course, without sharing any personally identifiable information).

Leveraging insights from this 'purchase intelligence' allows Cardlytics to work with businesses and marketers to identify and reach potential customers. This data also shapes rewards programs to ensure banks help their customers save (or earn cash back) on things they like to buy.

For small- to mid-sized business, open banking stimulates new opportunities for funding and capital. As discussed earlier, Kabbage provides small businesses with a line of credit up to US$250,000 within 10 minutes of applying. Kabbage leverages data generated through business activity such as accounting data, online sales, shipping and dozens of other sources to understand performance and deliver fast, flexible funding in real time.

Unlocking value for UK small businesses

The UK's Open Up Challenge funds FinTechs that help small businesses save time and money, find better services and use their financial data.

The latest funding recipients help business leverage open banking and technology to deliver better results:

Coconut, a current account with built-in accounting and tax capabilities (designed for freelancers, self-employed and small business owners)

Fluidly, a machine learning tool that plugs into bank accounts and accounting data to improve cash flow management

Funding Circle, a global small business loans platform

Funding Options, an online marketplace for business finance

OpenWrks, a toolkit that 'makes open banking work' by making it easy for people to share information securely with businesses

Swoop, a one-stop shop for businesses raising money, Swoop simplifies and speeds up access to loans, investment, grants and financial savings through a single automated process

Financial inclusion is another key benefit of open banking. Between 306,000 and 1.53 million Canadians do not have a bank account. [16] The unbanked rate for Indigenous Peoples in Canada is estimated to range from 4 percent to 15 percent. [17] Those who are most vulnerable include low-income households and Indigenous Peoples who, due to their lack of access to traditional providers, resort to more expensive services such as payday lenders. Financial exclusion leads to poor financial management and lack of access to services and tools to support personal financial prosperity.

A well-regulated and standardized open banking regime will provide tools that help consumers understand their financial habits and the full range of available services; identify ways to predict when an individual might struggle financially; and improve access to lower-cost services and financial advice. [18] These benefits will ultimately have a positive impact on the financial literacy and outcomes of many Canadians.

For FinTech & innovators

Open banking levels the playing field between FinTechs, other innovative new market entrants and incumbents. Empowering customers to own and share data that was previously only available within the tightly-held banking system stimulates innovation and investment, unlocking the ability for FinTechs and other providers to create services that are agile, intuitive and able to meet customer needs.

While the relationships between FinTechs and banks may be uncomfortable to start, both parties will quickly recognize that open banking creates opportunities for all players to work together and deliver better financial services to a wider range of people. Some call FinTech the 'democratization of financial services', indicating that the services provided by FinTech were once only available to people in a certain income bracket. For example, technology and data make it easier and less expensive to provide insightful investment advice, which has historically been focused on the wealthy. Questrade was the first to introduce robo-advising to Canada and remains Canada's fastest-growing online brokerage, with $8 billion in assets under administration. [19]

Another example is lending. Historically, traditional lenders have had a restrictive view on how to assess risk, which meant that many people, including small business owners, were either turned down or charged a higher interest rate. By taking a broader view of financial data, and leveraging the technology required to assess risk properly, FinTechs can include factors that traditional lenders have never considered and provide more people with access to capital.

Many FinTechs are customer-facing and were launched with the intent to remove friction or pain points from day-to-day financial services. However, open banking is also sparking new business models.

Having a robust FinTech system improves consumer choice and transparency, which leads to better customer service, lower costs and transaction fees and improved financial literacy. Open banking breaks down one of the barriers to FinTech innovation – access to financial data and customers. This is essential, particularly in a financial system

[16] Opening Remarks from Jerry Buckland, PhD to the Standing Committee on Banking Trade and Commerce, Feb. 1 2018

[17] Bowles, Paul, Keely Dempsey, and Trevor Shaw. 2010. Fringe Financial Institutions, the Unbanked and the Precariously Banked: Survey Results from Prince George, B.C.

[18] Marloes, N; Laycock, A; Styles, K., Briefing: Open Banking and Financial Health, The Finance Innovation Lab, 2018

[19] Questrade (https://www.questrade.com/about-us/who-we-are)

like Canada's, which is controlled by such a small number of monolithic incumbents.

However, enabling access to data and customers is just one aspect of growing a strong FinTech ecosystem. Ensuring access to talent and venture capital is essential. Regulatory concerns, including lack of certainty, duplication, and fragmentation across financial systems, also are barriers to FinTech investment. Opening access to data and removing regulatory barriers will improve access to talent and capital, both of which follow opportunity and innovation.

For banks

Open banking has the potential to ***add*** or ***erode*** retail banking revenues by 15 to 25 percent, depending on how banks choose to approach this new world. [20] It is both a bank's greatest threat and its greatest opportunity.

New competitors like FinTechs will exert downward pressure on margins because they can provide specialized products and services at a lower cost than banks, mainly because they do not shoulder the same burden of regulatory requirements and legacy systems. However, open banking creates an opportunity for banks to reimagine their business:

- Banks can establish a 'marketplace' of FinTech partners and charge a fee for curating these services on behalf of their members
- Banks can gain a deeper understanding of their customers' habits, lifestyles, goals and desires, and then predictively and proactively recommend new products and services in a personalized and intuitive way
- Banks can sell their own specialized services to other parties such as consumer credit check services to FinTechs, or identity management tools to smaller banks

More than 65 percent of bank executives believe that open banking will create new revenue streams. [21] A curated FinTech 'marketplace' can generate revenue and allow banks to broaden their service offerings without having to build and maintain proprietary products.

[20] Boston Consulting Group (2018): *Retail banks must embrace open banking or be sidelined* (https://www.bcg.com/en-ca/publications/2018/retail-banks-must-embrace-open-banking-sidelined.aspx)

[21] Accenture (2017) Open Banking Survey

In Canada, this approach would spark even greater investment in FinTech as banks would become meaningful distribution partners.

One benefit of open banking is speed. If banks are interested in building a 'digital' or challenger bank, they can fast-track development by combining services from several third party providers. However, to embrace speed, banks must be willing to engage the developer community and invest in technology capabilities.

Banks currently enjoy a role as trusted financial advisors, which is a key strategic advantage – if wielded properly. If not, banks risk becoming a back-office commodity, and third party platforms will own the customer relationship. Payments are a good example of this fate; transaction processing is buried under third party platforms like Apple Pay, Uber or Starbucks, rather than being presented directly to the end user by a financial institution.

For regulators

Like banks, regulators must be responsive to changing customer demands. As banking becomes 'unbundled', regulators must find a way to oversee a fragmented financial system while removing barriers to investment and innovation. However, regulators have the same opportunity to leverage technology and innovation to improve effectiveness through tools like automation, artificial intelligence and predictive analytics.

Open banking improves transparency and enables regulators to govern effectively participants and the movement of data to ensure all parties, including customers, remain protected.

CHAPTER 2: SUMMARY

- Empowering customer choice, ensuring customer protection and enabling industry innovation are the hallmarks of open banking
- Empowering customer choice – both individuals and businesses – is the heart; it is designed to improve customer service, satisfaction and choice
- All stakeholders in the financial services industry will benefit from open banking
- **Consumers** will receive better customer service, personalized and intuitive financial products at lower prices, and improved financial health
- **Businesses** will be able use technology to streamline financial operations, improve cash flow and financial management, and gain better insight into customer needs by understanding how, when and where they spend their money
- **FinTechs and innovators** will revolutionize how people and businesses spend, manage and understand their finances
- **Banks** will reimagine their business model to generate new revenue, provide a broader suite of products and services without the burden of building and maintaining proprietary solutions, and deliver better customer service by leveraging data insights
- **Regulators** will leverage technology and innovation to improve effectiveness through tools like automation, artificial intelligence and predictive analytics

Chapter 3: Consent & Consumer Protection

Assertion of the customer's legal right to their data is the first critical step to open banking. Ensuring clear, understandable and revocable consent to share data is the next. Designing a liability model that protects consumers is foundational to an effective open banking ecosystem.

The first, critical step to open banking is the assertion of the customer's legal right to their data. Many Canadians currently take paper statements and financial information to their advisers and accountants. At its most basic, open banking allows customers to digitize the act of bringing a shoebox filled with receipts and bank statements to their service providers.

As discussed in Chapter One, there are three types of data:

(1) **Customer data** provided directly to a bank, including contact or employment information, financial history and payee lists for bill payments.

(2) **Transaction data**, including payments, withdrawals, transfers, balances (real-time and historical) and interest earned or charged.

(3) **Value-added customer data** that banks or other data holders generate to gain insights about a customer, including credit scores, verification of income and asset valuation, or the aggregation of standardised, cleansed or reformatted data across customer accounts.

Customer and transaction data have both been included within the scope of open banking, but there are differences between jurisdictions. A system that is more inclusive at the outset will deliver greater consumer benefit and realize efficiencies of scale forfeited by an incremental approach.

Value-added customer data (or any information that could be reverse engineered to reveal a company's IP) is typically considered outside the scope of open banking. Sharing this data would likely represent a transfer of value from the data-holder to the customer (or a FinTech) and may breach intellectual property or commercial agreements. For similar reasons, aggregated data sets should also be considered outside the scope of open banking.

The Australian government, in its open banking review, concluded that transaction data should include products related to the conduct of banking business as defined in its Banking Act, but only for those products that are widely available to the public.

The UK covers only payments accounts; however, stakeholders are now considering an expansion to include pensions and other account types.

Clear & understandable consent

The next step, **consent**, is crucial. To ensure consumers and small business owners are protected, open banking must require any service provider to obtain explicit consent by using disclosures that are plainly understood so customers are completely aware of:

- What data they are consenting to share (and how it will be accessed)
- How long access is permitted (defined terms)
- How to opt-out
- Who will hold the records (and for how long)

Consumers and small businesses are already sharing their financial data with service providers. Although it generally takes place with consent, there are no clear regulatory provisions that protect the customer if something goes wrong. Today, giving a FinTech or other provider access to a bank account could violate the terms and conditions the consumer originally signed with their bank; if the third party experiences a security breach, there may not be recourse to ensure the consumer is protected.

Executed properly, open banking mitigates risks and protects consumers by ensuring providers are fully regulated and establishing recourse mechanisms to keep consumers whole if something goes wrong. There are three key principles to establishing clear and understandable consent:

The benefits of sharing data

More than 55 percent of consumers are willing to trade personal data in return for benefits, such as discounts or personalized services.

Not surprisingly, millennials are the most willing to share personal data – nearly 75 percent would share data with banks or insurance companies. They are also the most aware of their data; nearly 55 percent review privacy policies.

Baby boomers and the elderly have the highest levels of trust in their banks and insurers but are the least willing to share data.

Their reluctance to share data could be linked to their past experiences: 45 percent of consumers in the 55+ age group felt that their bank or insurer never took explicit consent from them while using data internally or when shared with third parties.

Not seeking explicit consent could be a potential deal breaker for this segment.

Statistics provided by Capgemini:

"The Currency of Trust: Why Banks and Insurers Must Make Customer Data Safer & More Secure"

1. **Consumers should be able to 'opt-out' of using a service and revoke access to their data at any time.**
   The process of how to opt-out should be clear in the initial disclosure. If a customer chooses to opt-out and revoke access to data, it is essential that the third-party provider be notified as the business model may depend on continuing access to data. For example, there may be a line of credit or another financial services provision that is effectively tethered to access. In this case, the customer must understand the consequences of revoking access to data.

   It is important for a financial institution to know which third party providers can access a customer's data; however, it should not know the details of the services offered. Specifically, the financial institution needs to be prohibited from using unique knowledge of this access to provide a competing service (or to compete in a way that is not open to other competitors).

2. **All parties seeking consent should be appropriately regulated proportional to the risk they pose to consumers and the financial system**
   Any FinTech or third-party provider should be subject to oversight from an appropriate centralized authority. In the UK, all market participants must enrol in the Open Banking Directory, which is a verified list of third-party providers (like FinTechs) and account providers (banks, building societies and payment companies) that operate in the open banking ecosystem.

   Only those regulated by the Financial Conduct Authority (or the European equivalent, for now) can provide open banking services. In order to be regulated, third party providers must provide information about their business model, show proof of indemnity insurance, provide copies of necessary policies and procedures and demonstrate how security, data storage, IT and policies comply with the relevant regulations.

3. **No financial institution should restrict a consumer's ability to share data with third party providers.**
   Financial institutions cannot dictate with whom their customers share paper statements; likewise, they also should not be allowed to restrict sharing of digital data.

Other countries are already taking this approach. Australia has elected to use open banking as a first step in a broader move to implement a Consumer Data Right intended to "give Australians grater control over their data, empowering customers to choose to share their data with trusted recipients."[22] Australia intends to implement this right in banking, energy and telecommunications sectors, then roll it out across the economy on a sector-by-sector basis.

[22] Australian Government: Consumer Data Right (https://treasury.gov.au/consumer-data-right/)

Designing a liability model

A fair, effective liability model is the foundation on which a stable, well-orchestrated open banking ecosystem must be built. From a process perspective, establishing the technology standards and the regulatory framework is substantially easier if participants build from the liability model, rather than trying to address it late in the process.

Fundamentally, the liability model identifies which party is responsible if something goes wrong and ensures the responsible party can make customers whole. For open banking architects, it is important to understand the possibilities of the market and build on certainties, rather than variables. For example, from a financial data perspective, there are two certainties of custodianship:

(1) The customer
(2) The account provider (likely the bank)

Many FinTechs or other service providers may have access to the same customer data. Starting from these certainties, it is possible to design the basic structure of the liability model for effective open banking. This structure should include:

(1) A method to make the customer whole if, through no fault of their own, they suffer a loss
(2) An accurate, fair and reasonable methodology to allocate blame and cost between firms
(3) A system to protect regulated open banking participants from customers making fraudulent claims.

Many FinTechs are new businesses with thin capital models and are often not regulated in the same way as banks, who hold significant balance sheet reserves to underpin the maturity transformation and risks associated with deposit banking and lending. It is not fair to allocate liability as a contingent risk on the balance sheet of the bank, just because they also had the customer data: if a FinTech is at fault, it should pay. However, if the FinTech is not able to pay, the market must protect the customer.

In the EU, if the third party provider cannot pay, the liability rests as a contingent liability on the balance sheet of the cyber-risk insurance market that has provided adequate cover the third party.

A directory of regulated marketing participants is critical to an effective open banking system. By creating the obligation to enrol in a directory, regulators can ensure that a FinTech, or any other technology provider, has suitable capabilities to protect customers and their data. These include:

- Secure architecture and systems
- Appropriate internal expertise
- Ongoing security audit and penetration testing
- Adequate insurance
- Mechanisms for periodically testing the adequacy of the points above

CHAPTER THREE: SUMMARY

- The first, critical step to open banking is the assertion of the customer's legal right to access, use and share their data held by the financial institutions with whom they have accounts.
- The next step, consent, is crucial. To ensure consumers and small business owners are protected, open banking must require any service provider to obtain explicit consent by using disclosures that are plainly understood so customers are completely aware of:
    - What data they are consenting to share (and how it will be accessed);
    - How long access is permitted (defined terms);
    - How to opt-out, and
    - Who will hold the records (and for what duration)
- Banks must respect the consent provided by the consumer that allows a FinTech to act as the agent of the consumer
- Executed properly, open banking mitigates risks and protects consumers by ensuring that providers are appropriately regulated and that there are recourse mechanisms to make consumers whole if something goes wrong
- There are four key principles to establishing clear and understandable consent:
    5. Consent must be affirmative and explicit.
    6. Consumers should be able to amend their consent, including the right to 'opt-out' of using a service (and revoke access to their data) at any time
    7. All parties seeking consent should be appropriately regulated
    8. No financial institution should restrict a consumer's ability to share data with third party providers absent a clear and objective risk factor – which should be part of the regulation.
- The basic structure of the liability model for effective open banking ensures there is:
    - A method to make the customer whole if, through no fault of their own, they suffer a loss
    - An accurate, fair and reasonable methodology to allocate liability and cost between firms
    - A system to protect authorized open banking participants from customers making fraudulent claims

Chapter 4: Data, Technology & Open Banking

Open banking is the modern-day process of sharing paper statements; however, it has the potential to transform how we manage our financials, for the better.

The underlying need to share financial data has existed for generations. Ultimately, open banking is the modern equivalent of processes that have existed in financial services for years – advances in data and technology have merely made these processes more efficient, acceptable and accessible.

Today's data sharing practices

We have moved on from printouts of transaction data and shoeboxes stuffed with receipts, to the relief of every accountant. Today, the most frequent way FinTechs and other third parties access data is through a process called **screen scraping**. The FinTech records a customer's login credentials for their online banking platform and then uses these details to log-in and 'impersonate' the user to extract the desired data.

In the absence of other options, screen scraping has been effective. However, there are several considerations:

- **Screen scraping does not allow customers to control the scope and duration of access**
  Customers provide login credentials, rather than time- or permission-bound access to accounts. The most common way to revoke this access is to change the account password, and there is no comprehensive list available to consumers of which providers have access to the account since most consumers use a variety of third-party tools and have banking relationships with several financial institutions.

- **Screen scraping may violate the terms and conditions of customer accounts**
  Violating the terms and conditions by providing login credentials to a third party may result in customer being liable if the credentials are leaked or stolen from the provider (or if the service provider makes a mistake). It may also compromise fraud protection.

- **Screen scraping can be resource-intensive for FinTechs**
  FinTechs are exposed to the risk that online banking systems could change, or the consumer could change their password. If things change or break, FinTechs may have to invest in substantial repair work to re-access the account.

Given the proliferation of screen scraping and the absence of open banking standards, migrating to APIs will take time. It is recommended that regulators across all jurisdictions appropriately balance the sunsetting of screen scraping for covered account types over a period. This will ensure the process does not hinder the urgent need to provide consumers with the benefits of open banking while perfecting the environment for APIs. It will also provide for the provision of a fall-back option in the event the open banking APIs are not operating reliably.

In addition to screen scraping (and in the absence of open banking), in some jurisdictions, financial institutions and FinTechs rely on bilateral agreements. These are typically for-profit agreements that banks sign with FinTechs, or with aggregation services that 'plug in' various FinTechs. However, FinTechs do not have much visibility into those contracts (nor the leverage to negotiate).

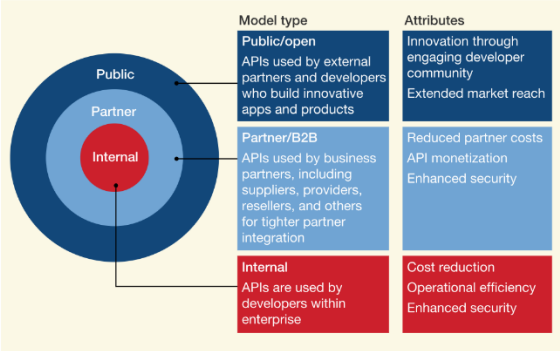
Long-term, bilateral agreements threaten to eradicate efficiency, restrict competition, stifle innovation, and drive up costs – all of which erode consumer value.

Next generation of data sharing

The next evolution of data sharing will utilize **Application Program Interfaces (APIs)** – a

Three types of APIs

API models



McKinsey&Company | Source: McKinsey Payments Practice

set of routines, protocols and tools for building software applications that specify how different software components should interact. APIs allow a software application to communicate in an easy and secure way with a remote application over the Internet.

In layman's terms, APIs allow apps to borrow functionality and data from one another.

For example, Uber uses an API from PayPal to process credit card payments securely. Many services use Google Maps API, which provides map functionality without having to build and maintain their own proprietary solution; on the flip side, Google Maps uses geo-location APIs on phones to track the location of its users.

APIs effectively mitigate the challenges related to screen scraping:

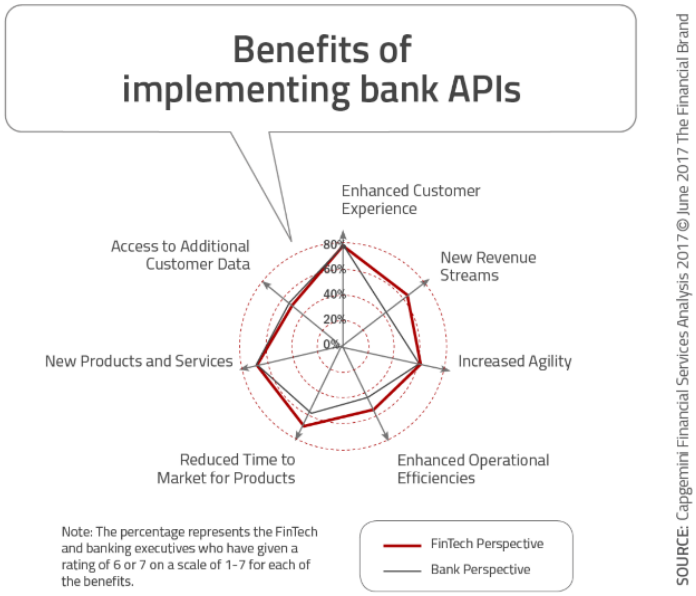
- Consumers can grant FinTechs and others time-bound access with limited permissions
- Regulators can establish technical standards with liability provisions for consumer protection
- FinTechs get more stable, consistent access to financial data, with less time spent reactively fixing access

There are three types of APIs. Private APIs are used within the bank, reducing friction and enhancing operational efficiency. Partner APIs are between a bank and specific third party partners, often to enable specialized products or service lines. Open APIs are accessible by developers to build new products.

Standardizing technical requirements

There is tremendous value in establishing technical standards, from both a technology and an implementation perspective. In addition to facilitating learning across jurisdictions, the benefits include:

- Protecting customers and all market participants by reducing risks and creating certainty that FinTechs and other providers can offer a complete service to all their customers
- Eliminating the customer burden of selecting banks and FinTechs based on connecting service
- Reducing building, operational and maintenance costs
- Reducing security costs by making it more efficient to meet testing and audit requirements
- Enabling investment in customer-facing innovation, rather than tying up resources in plumbing
- Making it easier for smaller firms to participate
- Simplifying the ability to trace breaches, assess fault and allocate loss, making it easier to establish a liability model and enabling cyber risk insurers to assess threats
- Creating clarity by providing consistent guidelines for compliance (and simplifying the process of adjusting market standards as time progresses)
- Reducing barriers to innovation by creating consistency and simplifying the development process



SOURCE: Capgemini Financial Services Analysis 2017 © June 2017 The Financial Brand

Standardization is not possible without both an implementation entity and a regulatory environment capable of providing effective oversight. Because the Canadian market is so tightly held, it stands to reason that establishing technical standards would be the best course of action. Of course, the law is not a great place to assert technical requirements. There needs to be enough flexibility for regulators and open banking participants to solve problems and adjust as required. Establishing a clear statement of principles and overarching objectives creates clarity for both regulators and market participants.

Managing historical data

There must also be clear standards around who stores historical data and for how long. In the case of transaction data, regulators need to consider the amount of historical data that may be required. An open-ended period would put an excessive burden on data holders. In many jurisdictions, regulators have determined that a pragmatic approach would oblige data holders to transfer data only for the same period during which they are required to hold it by existing regulatory obligations.

CHAPTER FOUR: SUMMARY

- Ultimately, open banking is the modern equivalent of processes that have existed in financial services for years – advances in data and technology have merely made these processes more efficient, acceptable and accessible

- Today, data is primarily shared through screen scraping and private APIs, which requires a FinTech to record a customer's login credentials for their online banking platform, and then use these details to log-in on behalf of the user to extract the desired data

- Screen scraping, when practiced by responsible parties, is a viable mechanism for data access with good control for security and operational risk; however, there are limitations:
    - Screen scraping does not allow customers to control the scope and duration of access
    - Screen scraping may be perceived to violate the terms and conditions of customer accounts at financial institutions
    - Screen scraping can be resource-intensive

- Bilateral agreements lack visibility and threaten to eradicate efficiency, restrict market competition, stifle innovation, reduce competition and increase costs – all of which erode consumer value

- There is tremendous value in establishing technical standards that enable an API-based environment as a preferred method of sharing data (over screen scraping and bilateral agreements)

Chapter 5: Effective Policy & Oversight

As the Canadian market embarks on its open banking journey, there are several key policy and regulatory considerations. Ultimately, open banking will add substantial value for consumers – but only if regulated effectively.

An appropriate open banking framework requires regulatory oversight and standardization, including investment to support such activities. Facilitating the sharing of data between consumers and FinTechs or other third parties should include appropriate oversight for fintechs entering the market and assurances that financial institutions cannot select what data can or cannot be shared with third parties with their consumers' consent. Such oversight must:

1. Ensure consumers are the owners of their data
2. Ensure clear consent agreements and the ability to revoke such consent
3. Ensure regulations are proportional to the risk the third party poses to consumers and the financial system
4. Ensure adherence to Canadian electronic privacy law, as well as standards and additional measures to mitigate cyber security threats

While different countries have taken different approaches to implementing open banking, lessons from the UK show the benefits that an open banking framework receives from appropriate regulatory oversight and standardization, including investment to support such activities. The introduction of an implementation entity can establish a level playing field in which all stakeholders can offer their perspectives regarding policies, standardization, and security measures for market participants, and which is empowered to, with the consumer experience squarely in mind, resolve areas of disagreement among different stakeholders. This entity can also provide a consistent measuring of outcomes, over time, that are aligned with objectives of ensuring consumer interests such as data ownership, transparency, safety, privacy, and financial system stability.

Facilitating the sharing of data between consumers and FinTechs or other third parties should include appropriate oversight for fintechs entering the market and assurances that financial institutions cannot select what data can or cannot be shared with third parties with their consumers' consent. Such oversight must:

Canada's federal government must play a proactive role in a new financial system framework by taking steps that:

- Define the scope of account types that will be included in Canada's open banking regime to provide for consumers to access through open banking any data that they are able to access through their online or mobile banking experiences, or that they receive from their financial institution through other means;

- Ensure, where appropriate, new market entrants register with and are approved by an entity to ensure oversight. This includes:

    - Provision of information on Canadian obligations such as complying with the Personal Information Protection and Electronic Documents Act ("PIPEDA")
    - Establishing a federal directory of registered providers

- Ensure that the registration process is clear for new entrants, including an appropriately balanced sunsetting of screen scraping for covered account types that does not hinder the urgent need to provide Canadians with the benefits of open banking, while also perfecting the environment for APIs providing for the provision of a fall-back option in the event that the open banking APIs are not operating reliably

- Include consistent measuring of outcomes, over time, that are aligned with objectives of ensuring consumer interests such as data ownership, transparency, safety, privacy and financial system stability

Glossary

Application Program Interface (API): A set of routines, protocols and tools for building software applications that specify how different software components should interact. APIs allow a software application to communicate in an easy and secure way with a remote application over the Internet.

Know Your Customer (KYC): A process by which banks collect, verify and continuously monitor information about the identity of their customers. The objective of KYC is to prevent banks, FinTechs and other financial services providers from being used, intentionally or unintentionally, for money-laundering or other criminal activities. KYC also helps firms better understand their customers.

Open banking: The structured sharing of data between financial service providers, based on the needs of and consent by customers.

Screen scraping: In banking, screen scraping usually involves collecting a user's banking credentials and then using those credentials to log-in and retrieve data from a bank's customer-facing website (or the API powering the bank's mobile app).