TD - Preparing for the future of banking[1]

In fall of 2018, Tim Hogarth, Vice President (VP) of Innovation Framework and Strategies at Toronto-Dominion Bank Group (TD), looked at the team of senior leaders assembled around the boardroom table. The monthly meeting of the TD Innovation Council was under way.

The main agenda item was the changing landscape of financial services. “Fintech” (financial technology) entrants were appearing everywhere, often getting between the banks and their customers. It wasn’t just start-ups either, the biggest American tech giants were slowly gaining ground with services like Apple Pay and Google Pay.

Wendy Arnott, VP Customer Experience & Innovation, started the discussion, "Customers continue to express that they want to bank with us through their channel of choice. They are increasingly comparing their experiences with us to those that they're receiving from all companies they do business with, not just banks."

“Exactly, and as our customers' lives become increasingly digital, exploring technologies is critical if we want to shape the future of banking”, added Rizwan Khalfan, Executive VP (EVP) and Chief Digital and Payments Officer.

Jeff Henderson, EVP and Chief Information Officer, pointed out that they had to prioritize areas that were most important to focus on and protect from disruption, and ensure the solution could be implemented within a year. He added, “TD has invested a great deal in updating its technology infrastructure, so new additions have to be aligned with the digital ecosystem, while also maintaining cyber security.”

As the meeting concluded, Hogarth summarized what was being asked.

> This is about bringing the bank to fintech. We have to embrace technology and find pragmatic solutions, and it won't be replicating what we've done in the branches and moving it to the screen. It’s about evolving the nature of the relationship with the customer.

All the heads around the room nodded in agreement, and the Council disbanded as the workday ended. Hogarth made his way down to the parking garage, thinking about the challenge he and his Innovation Centre of Excellence team had in front of them.

New technologies and the entrance of large and small technology firms into retail banking activities were changing the landscape of the industry. At the same time, banks were highly regulated, large and established, all of which challenged their abilities to respond. Hogarth knew that he would have to first prioritize the areas that the bank should safeguard and then recommend a solution for doing so, all while ensuring that customers remained top-of-mind. The

[1] This case was written by Sofy Carayannopoulos, Matthew Donovan and Michael Ross. The authors gratefully acknowledge the support and assistance of TD.

broadness of the decision-makers on the Innovation Council also meant that he had to keep all areas in mind when his team pitched its recommendation.

As he reviewed these thoughts he realized he was standing on the passenger side of his car. It had been four years since TD had hired him away from the Commonwealth Bank and he had moved to Canada from Australia, but from time to time his Australian roots still showed.

INDUSTRY PROFILE

The operations of banks in Canada and the United States could largely be divided into three business lines: i) consumer/business banking, ii) wealth management, and iii) investment banking and capital markets. Consumer banking consisted of all activities related to daily banking needs of individual and business customers such as chequing, savings, loans, credit cards, insurance. Wealth management involved all advice-based wealth and asset management activities and wealth products such as mutual funds. Both of these business lines served a wide range of customers from children, to high net worth individuals, small businesses to large corporations and were often referred to as "retail" or "commercial" lines. Investment banking provided companies, institutional investors and governments with products and services such as distribution of debt and equity issues, and advice on acquisition and divestitures.

In 2017 the U.S. accounted for 38.4% of global and 79.3% of North American retail banking savings and investments market value (Marketline, 2018b). See Exhibit 1 for Global Retail Banking Segments. The personal and business banking industry was highly competitive and included several very large financial institutions as well as regional banks, small community and savings banks, finance companies, credit unions, and other providers of financial services. Wealth management included national and regional banks, insurance companies, independent mutual fund companies, brokers, and independent asset management companies. The top four banks accounted for 31.9% of total industry revenue in 2018 (Gambardella, 2018).

Canada accounted for 2.6% of the global and 19.2% of North American retail savings and investments market value (Marketline, 2018b). In the 1980s and 1990s two significant events were the launch of ING Bank of Canada (branchless banking model), and the emergence of non-bank mortgage origination companies. Since 2016, several new domestic Schedule 1[2] banks had begun operating in Canada. The newest entrants — Street Capital Bank of Canada, Uni Financial Cooperation, Wealth One Bank of Canada Inc., Exchange Bank of Canada and Concentra Bank — were focusing on a particular niche or service or using technology to connect with customers online or on their mobile phones. For example, Wealth One was targeting the Chinese Canadian population with full Mandarin and Cantonese supported speakers. In 2017 there were 32 Schedule 1 banks in Canada.

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[2] Schedule I banks are permitted to accept deposits and are not subsidiaries of foreign banks, which makes them eligible to receive, hold and enforce a special security interest. Schedule II banks are also permitted to accept deposits and are subsidiaries of foreign banks. Both Schedule I and II banks are incorporated under the Bank Act. Schedule III banks are often foreign banks permitted to operate in Canada but are not incorporated under the Bank Act, which limits their range of banking activities. Examples of Schedule III banks include Capital One, Bank of America.

The top four commercial banks in Canada accounted for an estimated 75.9% of industry revenue in 2017 (Ismailanji, 2017). The “Big Six” banks: Royal Bank of Canada, Toronto-Dominion Bank, Canadian Imperial Bank of Commerce, Scotiabank, Bank of Montreal and National Bank of Canada held over 90.0% of the industry's total assets. These banks were also expanding into the U.S. and beyond. In 2022, the Canadian retail savings and investments market was forecast to have a value of $3,680.7 billion, an increase of 25.3% since 2017 (Marketline, 2018a).

The most important components of competition were price and range of service offerings. Providing a diverse range of product and service offerings also tended to increase a bank's retention rate. Mobile payment systems and other new offerings permitted industry operators to raise revenue from additional sources. This flexibility provided commercial banks with the opportunity to offset low interest income. In the consumer banking and wealth management businesses, banks earned revenues primarily through lending and providing advisory services. The keys to profitability were attracting and retaining customer relationships with legendary service and convenience, offering products and services through an array of distribution channels that met customers’ evolving needs, making strategic investments while maintaining disciplined expense management over operating costs, and prudent risk management.

Key statistics of the Canadian and U.S. banking industries are provided in Exhibit 2.

Banking in the digital age

The digital landscape in banking was changing rapidly. Artificial intelligence, predictive intelligence and using data analytics to create customized experiences for customers, as well as virtual reality and smart devices were appearing in banking around the world (Finnegan, 2016). New entrants, large and small, had begun entering retail banking as stand-alone businesses, valuable partners and important elements of financial value chains (McWaters & Galaski, 2017) and were reshaping and setting a higher bar for customer expectations and experience. Customers, small fintechs and large tech giants were all creating concerns over disruption (Bean, 2018). Banks that didn’t successfully use digital technologies to automate processes, create new products and improve their customer experiences would see revenues migrate toward their competitors (see Exhibit 3).

Nontraditional competitors included some of the world’s largest corporations and the best-funded venture-backed start-ups. These companies used new technology and the shift to online banking as platforms to enter the industry and attract customers with new methods and business models. For example, large companies like Walmart offered microfinance loans and prepaid debit cards, enabling customers to engage in banking activities outside of the traditional banking network (Gambardella, 2018).

Fintech start-ups, unencumbered by legacy systems were able to quickly develop and bring innovations to market, often partnering with large banks (McWaters & Galaski, 2017). For example, Kabbage partnered with Scotiabank in Canada. Kabbage used big data analytics for loan underwriting by utilizing data sources like social media profiles and QuickBook accounts and an online platform that allowed customers to apply for and receive a response on a small business loan application in six minutes (Dahl, 2015).

The world's leading big technology firms were also jumping into the fintech world, and this threat was viewed by some as more worrisome than the smaller fintech entrants (McWaters & Galaski, 2017). For example, Google Pay and Apple Pay were just two of a plethora of digital wallets being developed by technology giants (Savvides & Hand Orellana, 2018). In 2017 it had even been rumoured that Amazon was considering purchasing Capital One Bank. Many of the features in these new fintech offerings allowed consumers to bypass banks altogether with activities such as peer-to-peer payments, although most still relied on linking to bank accounts and credit cards for now. The double-edged sword for financial institutions was that they needed to find ways to partner with technology giants who were rapidly innovating with new products and could provide critical infrastructure and differentiating technologies, but not become so dependent on them that they could lose control in the long-run (McWaters & Galanski, 2017).

The rapid growth of the fintech ecosystem was both a challenge and an opportunity. The increasing speed and direction of innovation meant that financial institutions had to increase their agility and build the ability to quickly and successfully create partnerships. At the same time, it offered a wide range of companies with which a bank could partner or could acquire for innovative solutions and quick access to new capabilities.

Challenger banks

In addition to fintechs that provided components of a bank's services, a recent report by KPMG (Caplain, 2018) highlighted the increasing number of challenger and neobanks. Challenger banks could be established firms or brand new banks with licenses that sought to compete with larger institutions. Neobanks such as Monzo, Starling and Atom Bank were newer, completely digital mobile outfits that were focused on a completely new banking experience. A lot of the neobanking activity was being driven by open banking, a concept that allowed banks to securely and in real time share customer data with a third-party developer and "bolt" that developer's capabilities onto their own. The implication was that it made it easier for customers to manage different services across different providers, but this also made it easier to switch providers. A substantial concern for these digital players was cyber security.

Challenger banks and neobanks weren't burdened by legacy systems and cumbersome organizational structures such as major branch operations. Because most didn't offer a full suite of services, they were also less hampered by regulatory requirements. All of this meant that they were moving ahead faster in developing countries such as China and India, where established brick-and-mortar banks were relatively rare.

So far, most challenger banks had focused on niche products rather than the entire retail banking value chain. Customers could open a checking account or borrow money, but they had to go elsewhere for services such as credit cards, mortgages and wealth management.

Caplain (2018) noted that most challenger and neobanks were in the United Kingdom, however, they were popping up worldwide. Challenger banks now numbered more than 100, everywhere from South America to continental Europe to Asia. Brazil has Banco Original and Nubank. Germany was home to SolarisBank and N26; in 2017 the former announced plans to expand into Asia, while the latter is preparing for a 2018 launch in the U.S., where growth of challengers had been sluggish to date. Asian players included China's MyBank, backed by e-commerce titan Alibaba Group, and WeBank, launched by conglomerate Tencent Holding; Digibank of India; Vietnam's Timo; Japanese outfit Jibun Bank; and South Korea's K Bank and Kakao Bank.

Some legacy firms were launching digital banks of their own. Goldman Sachs rolled out a challenger bank in 2016 called Marcus by Goldman Sachs. JPMorgan recently unveiled Finn by Chase, a completely digital entity targeting younger customers and areas of the U.S. with a shortage of brick-and-mortar banks.

As Hogarth had pointed out at the Innovation Council, "Our size and the banking regulations pose some challenges, but our stability and experience are also advantages. Safety and security are primary concerns for customers, and we have far more and valuable experience navigating the complex regulatory environment. Regulations still mean that new entrants have to meet standards that ensure customers aren't exposed to unnecessary risk. A newcomer can't simply access systems to process payments - they need banking partners like us".

Customer information

Customers increasingly wanted to be able to do their banking without having to wait or be moved into multiple channels to have their needs met. Thirty-nine percent wanted to be able to acquire bank products without going to a branch ("Bank on it", 2017). In general, customers wanted greater customization and personalization from their financial services (Bean, 2018).

Although saving money mattered to banking customers, convenience and personalized service and advice mattered a great deal as well. For example, assistance with buying a car or home that was quick and easy to access was a top consumer concern (Edmondson et al., 2016). Wealthsimple and Questrade were examples of two new online investment management services focused on making investing easier for millennials. The way consumers interacted with their banks was also evolving. Robo-advice was gaining traction among many consumers, and particularly among millennials (Edmondson et al., 2016) which is why TD was developing and testing roboadvisor solutions. See Exhibit 4 for additional information on what consumers value, what services they engage with digitally and what influences their loyalty.

Trust and reputation were still very important factors in influencing who customers used for financial services and would continue to be important even in the digital age. The bank branch had also not lost its importance – 24% of consumers still preferred to use the branch and 86% of consumers including millennials reported they would use their branches at some point in the future, attributable at least in part to the fact that speaking to a person was more trusted and was perceived to provide greater value than other channels (Edmondson et al., 2016).

Banking regulations and risk

Banks operating in Canada required permission of the Finance Minister and the Office of Superintendent of Financial Institutions (OSFI) and were regulated under the Bank Act. Canadian-owned banks were incorporated under Schedule I of the Bank Act; foreign-owned banks were incorporated under Schedule II. Foreign-owned banks could be authorised under Schedule III to operate a branch in Canada. In addition to the Bank Act, provincial governments had the power to enforce some regulations on banks if deemed necessary to provide stability.

Chartered banks in Canada faced significant regulations designed to protect consumer wealth and privacy. Most relevant to Hogarth's team were the fact that under the Bank Act a bank or branch could not carry on a business other than the business of banking or generally relating to banking, i.e. his team couldn't create a technology business, it could only harness technology or partner with/acquire other organizations to provide banking services. Of particular concern with digital activities were the privacy and security of consumer data and how the bank was allowed to reach out to customers to provide information or try to market or suggest products. Banks had to be careful to comply with Canada's Anti-Spam Legislation[3]. The federal government recently passed legislation that "modernized" the Bank Act. The updates allowed lenders more opportunities to collaborate and partner with new entrants.

Certain regulatory requirements for capital and other consumer protection standards set a high bar for any potential newcomers As Sue Britton, chief executive and founder of the FinTech Growth Syndicate Inc. stated in a Financial Post article (Zochodne, 2018), "We have organizations, policies and regulations designed to reduce risk and, therefore, access to consumers by new competitors in financial services — for example, new start-ups cannot access the systems to process payments without having a bank partner — and that is the big discussion right now….Trying to determine who to even talk to in order to assess what regulations apply to your product as a start-up is almost impossible."

The process of opening a bank branch in Canada was also a gradual one, as realized by Silicon Valley Bank. The lender applied in May 2017 to establish a branch in Canada. It received an order from Canada's finance minister authorizing that branch in March 2018, but said it was still subject to further approval from the Office of the Superintendent of Financial Institutions, Canada's banking regulator (Zochodne, 2018).

The Federal Reserve was the federal supervisor and regulator for all U.S. banks and bank holding companies. In overseeing these organizations, the Federal Reserve sought to promote the organizations' sound operation and compliance with laws and regulations.

The Federal Reserve exercised important regulatory influence over entry into the U.S. banking system and the structure of the system through its administration of the Bank Holding Company Act, the Bank Merger Act (with regard to state member banks), the Change in Bank Control Act (with regard to bank holding companies and state member banks) and the International Banking

[3] For an outline of this legislation go here: http://crtc.gc.ca/eng/internet/anti.htm

Act. An organization had to receive prior approval from the Board of Governors of the Federal Reserve System to operate as a commercial bank in the United States. It was then subject to the supervision of and regular inspections by the Board, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation and other federal and state regulatory agencies. Banks were restricted in their range of activities, including in acquisitions of other banks and in interstate banking activities. Furthermore, commercial banks were subject to capital and operational requirements based on risk and leverage.

Finally, the Consumer Finance Protection Bureau, a U.S. government agency, was mandated with enforcing federal commercial financial laws. It protected consumers by investigating and acting against financial services that engaged in predatory practices or violated the law.

TORONTO-DOMINION BANK GROUP

Toronto-Dominion Bank was founded in 1852 and headquartered in Toronto. TD was divided into three areas: Canadian retail, U.S. retail and Wholesale. It served over 25 million customers worldwide. In 2018 it had over 2,400 retail locations and over 5,100 ATMs in North America.

TD's market share in Canada was roughly 21% and it was ranked number one or two in market share for most retail products. It had top three investment dealer status in Canada and had roughly 38,800 employees in 2018.

In the United States TD operated under the brand name, TD Bank, America's Most Convenient Bank. It operated in seven of the ten wealthiest states and its footprint gave it access to nearly 82 million people. The U.S. Retail Bank offered a full range of financial products and services to over nine million customers in the bank's U.S. personal and business banking operations, including wealth management. U.S. Retail included an equity investment in TD Ameritrade; it also referred mass affluent clients to TD Ameritrade for their direct investing needs. It was expanding its U.S. Wholesale franchise with presence in New York and Houston. See Exhibit 5 for further details on TD's operations.

The third quarter results of 2018 showed that Canadian retail contributed roughly 60% of earnings, up 7% year-over-year. U.S. retail contributed 26% and Ameritrade 4% and were up roughly 27% year-over-year, and Wholesale was roughly 10%, down roughly 24% year-over-year. Of the Canadian operations, roughly half of its total revenue was generated by personal banking, 13% by business banking, 18% wealth management and another 18% insurance.

In U.S. retail personal banking also accounted for roughly 50% of revenue, business banking roughly 33%, wealth 5% and 7% from other investing activities. See Exhibit 6 for financial reports from the third quarter of 2018.

TD had a wide range of retail customers and functions. At one end of the spectrum were governments and large corporations, at the other were young children opening their first bank account to put their birthday money into. In between there were high net worth individuals and institutions seeking wealth management services and small businesses who had varying needs.

Brand promise and customer approach

TD's brand promise focused on enriching the lives of customers and making them more confident in their financial futures and financial decisions. TD wanted to be more than just a place to go for savings, payments and loans; it wanted to help customers achieve life goals that had financial implications, and help their customers make their financial and everyday lives better. The pillars of its brand promise were: a) personal human experiences b) proactive advice and solutions, and c) convenient, simple and timely interactions.

TD was viewed as an industry leader in customer service excellence. Its focus on confident banking was designed to further enhance the value TD provided to customers. The EVP/CMO Theresa McLaughlin told employees when the branding was revealed,

> Our customers want the comfort we've always provided through convenient service, 79% of Canadians also don't feel confident about their financial future. This was a startling fact and offered a compelling role for TD in helping build confidence and shift our focus beyond convenience.

Digital activities

TD was a leader among the big five Canadian banks for customer service, online banking, and mobile banking. It had over 12 million digital customers, within which there were 4.5 million Canadian and 2.9 million U.S. mobile users, and phone and online support available 24 hours a day. It had a long history of being willing to push boundaries and be innovative to deliver customers digitally-enabled experiences.

In 1996 it established WebBroker, the first Internet brokerage service in Canada. Self-directed, online trading was also pioneered in the U.S. in the 1990s through TD Ameritrade. The continued improvement in online trading experience for self-directed investors made Ameritrade a leader in a booming industry.

In 2011 the TD app was launched, allowing users to perform all mainstream banking activities such as viewing account activity, paying for bills, sending money and depositing cheques. It was named the number one Canadian mobile banking app by Silicon Valley's App Annie.

In 2015 TD formed an exclusive partnership with Flybits to build TD for Me into its TD app. Customers opting in to the TD for Me feature would have a digital concierge that provided listings for music and community events, special offers and discounts at points of interest, enhanced TD branch information and special services offered, and send reminders about TD products or services based on user interests and location. Similarly, TD formed an exclusive partnership with Moven to provide a mobile money-management app called TD MySpend. This companion to the TD app tracked and categorized spending, compared it with past spending patterns and savings goals, and notified the user so that he could make informed spending decisions and improve spending habits in real time. One quarter of users were between the ages of 18 to 25 while 30% were between 25 and 35 and TD's research had shown that users of this app spent 8% less than those that did not.

In 2017 TD introduced voice banking "skills" on Alexa. It was the first financial institution in Canada to offer Facebook Messenger and Twitter chatbots to give customers instant help on select general inquiries, such as how to report a lost or stolen card, or chat with a specialist if needed. TD also formed an agreement with conversational artificial intelligence (AI) provider, Kasisto to integrate the company's KAI Banking platform into the TD app to allow users to check account information and perform many functions through an AI-powered interactive chat interface. Customers could get instant answers about specific spending-related questions including how much they spent on a recent weekend getaway, what their largest transaction was last week, or what they spent on categories like groceries or coffee last month. TD also opened an office in Tel Aviv in 2017 with the aim of bolstering the company's cybersecurity programs and research and development capabilities. As Henderson said, "To fuel our innovation, TD is in search of diverse skills and perspectives from a wide range of fields, including cyber".

Finally, in 2018 TD acquired Layer 6, a leader in the use of machine learning, in order to enhance its capabilities in the delivery of responsive, personalized and insight-driven experiences for the financial services industry. It also announced a collaboration with the Vector Institute for Artificial Intelligence to harness data and top talent to change how customers thought about banking. See Exhibit 7 for an overview of TD's evolution.

Most recently, banks had begun re-organizing internally around End-to-End Customer Journeys, rather than Product Lines. TD also started on that path with the Homeowners' Journey. Recognizing that homebuying made over 56% of Canadians anxious, TD collaborated with Flybits and signed an exclusive contract with the Canadian Real Estate Association in 2018 to add a mortgage concierge to its TD app. Within this app customers could calculate how much they could afford by inputting their financial information into a mortgage affordability calculator and seek active real estate listings that matched their budget and desired neighbourhood. They could also receive digital mortgage pre-approval and hold the rate for 120 days. Finally, using geolocation technology, customers could quickly and easily connect with local mortgage specialists to receive advice as well as help with the home-buying process.

Rather than viewing fintechs as threat, TD viewed them as opportunities for mutually beneficial collaborations. Hogarth was often heard making statements such as, "Partnering with fintechs enables us to harness their creativity and implement innovations faster while the fintechs benefit from our large customer base and brand reputation. It should be a win-win." TD had spent the last four years modernizing its architecture, investing in application programming interfaces[4] (API)s and externalizing those APIs so that outside organizations could develop programs and services that connected with TD technology. It was looking at proof of concepts in everything from virtual and augmented to blockchain, predictive technologies, and the Internet of things. In May 2018, TD took part in a "reverse pitch" event at the Canadian Fintech 2.0 Summit aimed at bringing financial institutions and fintechs together. This event featured financial institution executives pitching fintechs on the merits of working with banks. An important component was

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[4] application programming interfaces make it easier for developers to use certain technologies in building applications

the patents for start-ups program where TD provided the start-ups with the resources to navigate the patent filing process so that start-ups retained control over their innovations.

CONCLUSION

The next morning as Hogarth drank his coffee he quickly browsed through stories on the financial services industry and disruption. A video by Clay Christensen popped up and Hogarth caught himself nodding in agreement with everything that was said[5]. Technically savvy consumers and aggressive market entrants demanded a swift and impactful response. Coffee and video done, Hogarth drafted an email to his team.

> Subject: Meeting, 9 am October 10
>
> Team,
>
> Met with the Innovation Council yesterday. They want us to bring recommendations for dealing with fintech. Please think about the following key questions:
> 1. What are the fintechs doing well that banks aren't?
> 2. What areas should we prioritize to enhance and protect from fintech disruption?
> 3. What actions should we take?
>
> Other items to note:
> - The Innovation Council wants us to focus on North American retail banking - personal and wealth in areas and products where TD is already competing.
> - New services or tools for delivering financial services are welcome; financial products and services such as a new asset classes, business sales or spinoffs are off limits.
> - Timeline for implementation: one year.
>
> Look forward to hearing your thoughts.
> Tim

He knew the Innovation Council was looking for solutions that were pragmatic and aligned with TD's brand and customer approach. TD's resources gave it lots of options, and the leadership was open to innovation and new technologies. But the recommendation would have to demonstrate the strategic and financial returns from the investment were worthwhile and that the risks were manageable and wouldn't put the organization in harm's way.

Hogarth hit "send" and started preparing for the meeting.

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[5] Watch Clay Christensen discusses disruption in financial services: https://www.youtube.com/watch?v=X8usMUG7I8A

EXHIBIT 1 – GLOBAL RETAIL BANKING MARKET SEGMENTS

Global market values

Geography	CAD$ (billions)	%
United States	43,300.3	38.4
China	21,105.0	18.7
Germany	3,691.3	3.3
Canada	2,938.4	2.6
United Kingdom	2,796.8	2.5
Rest of the World	38,909.1	34.5
Total	112,740.9	100.0

North American market values

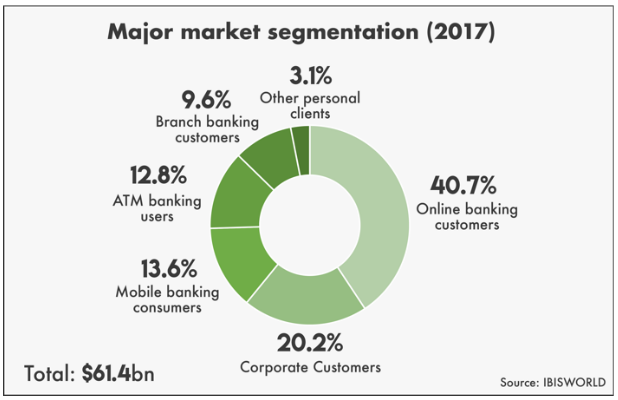
Geography	%
United States	79.3
Canada	19.2
Mexico	1.5
Total	100.0

Sources: Marketline (2018a and 2018b)

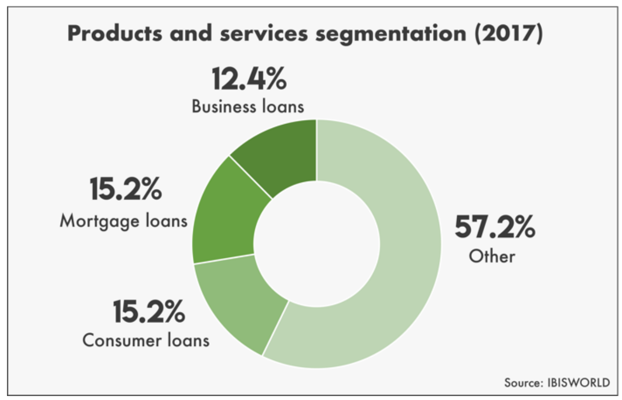
EXHIBIT 2 – CANADA & U.S. COMMERCIAL BANKING OVERVIEW

Canada

Major players (Market share)	Royal Bank of Canada	24.1%
	TD	21.6%
	Scotiabank	15.3%
	Canadian Imperial Bank of Commerce	14.9%
	Bank of Montreal	12.4%
	Other	11.7%
Annual industry growth	4.4% (2017-2022)	
Businesses	87	



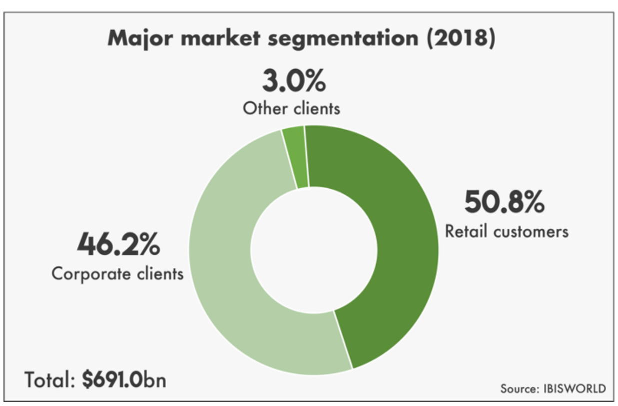
% of revenues



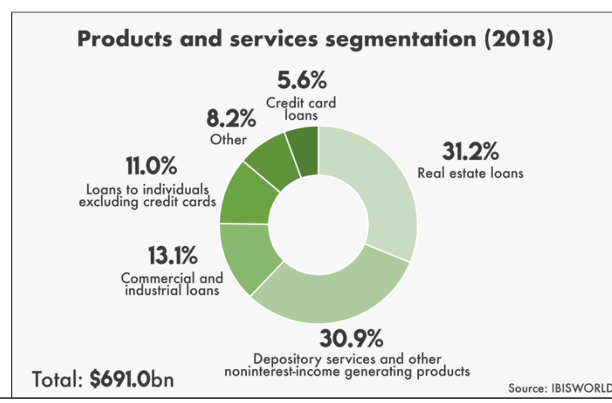
Source: Ismailanji (2017)

United States

Major players (Market share)	Wells Fargo & Company	12.6%
	JPMorgan Chase & Co.	9.1%
	Bank of America Corporation	7.1%
	Other	71.2%
Annual industry growth	3.1% (2018-2023)	
Businesses	5,069	



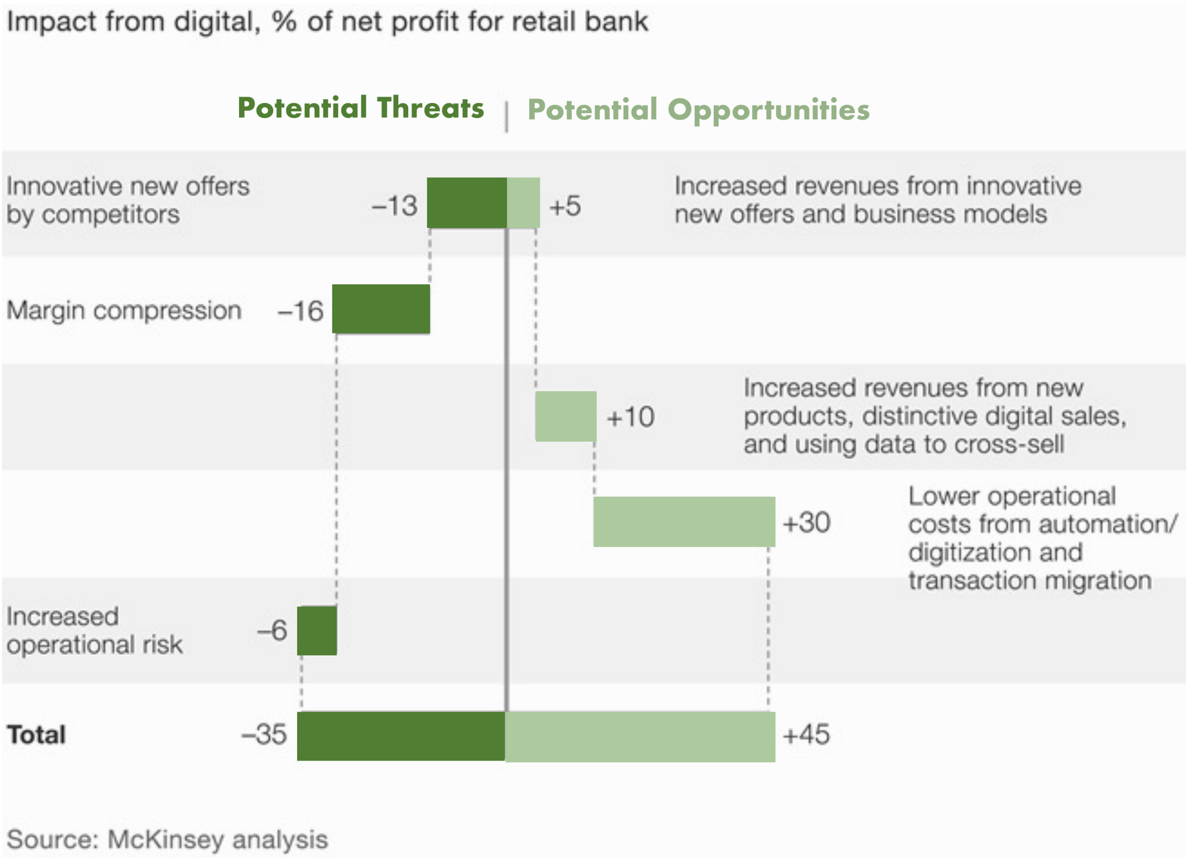
% of revenues



Source: Gambardella (2018)

Depository products include traditional savings accounts, money market deposit accounts, certificates of deposit, individual retirement accounts and regular and interest-accumulating checking accounts.

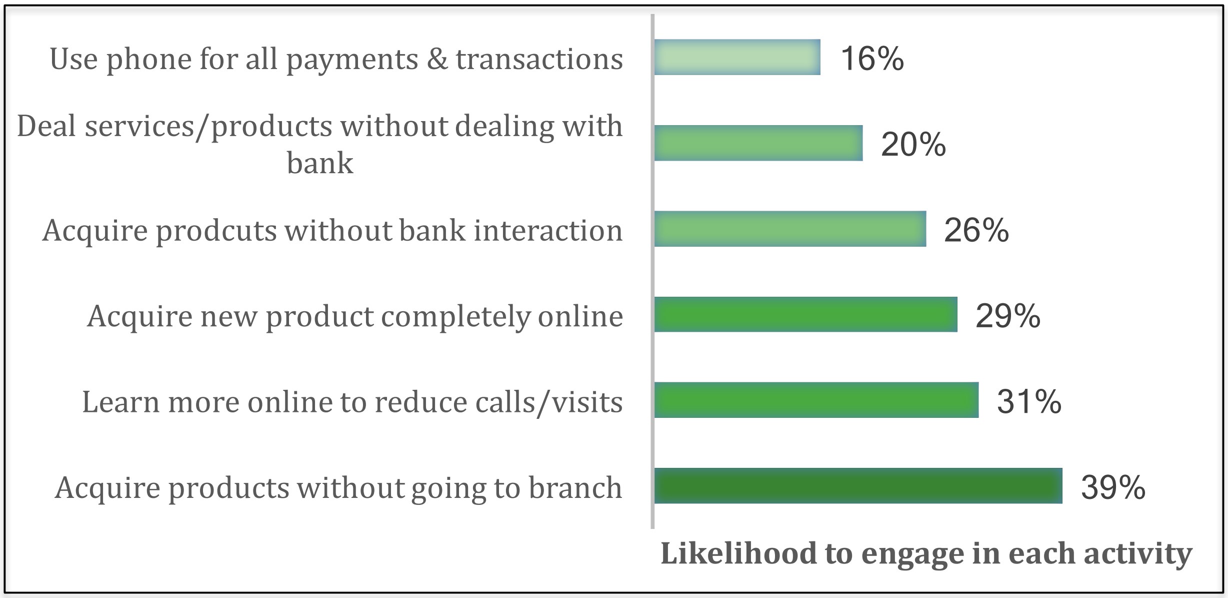
EXHIBIT 3 – THE IMPACT OF DIGITAL ON BANKING REVENUES



Source: Broeders, H., & Khanna, S. (2015). *Strategic choices for banks in the digital age*. Retrieved from McKinsey & Company Financial Services: http://www.mckinsey.com/industries/financial-services/our-insights/strategic-choices-for-banks-in-the-digital-age#0

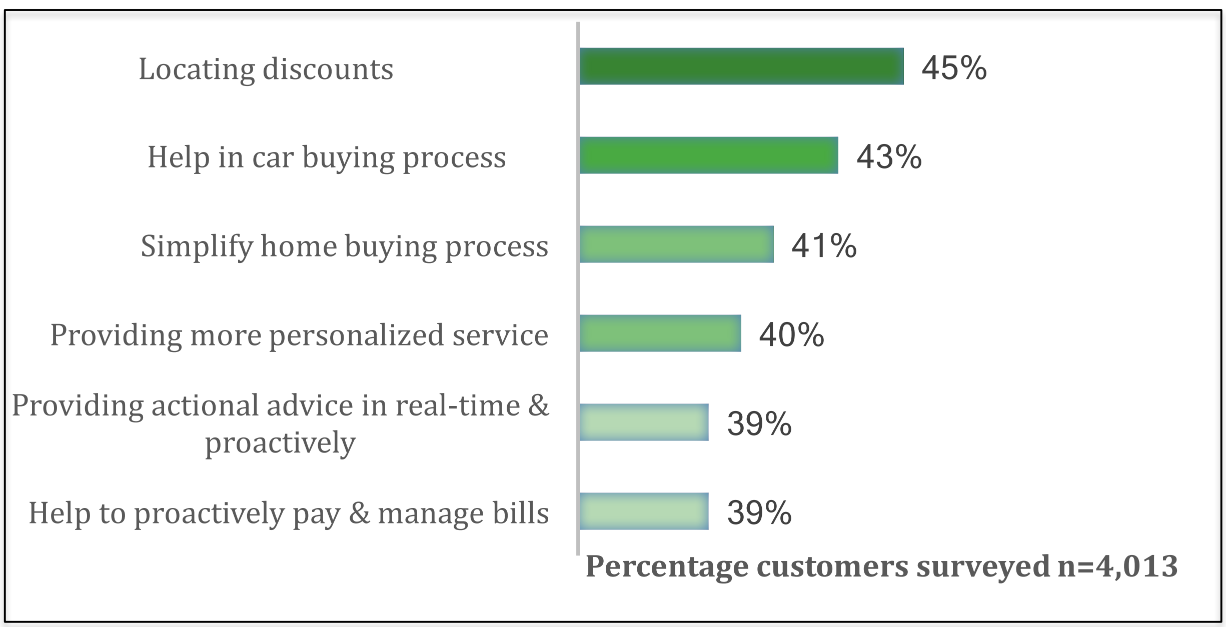
EXHIBIT 4 – CONSUMER INSIGHTS

How consumers engage digitally with financial services



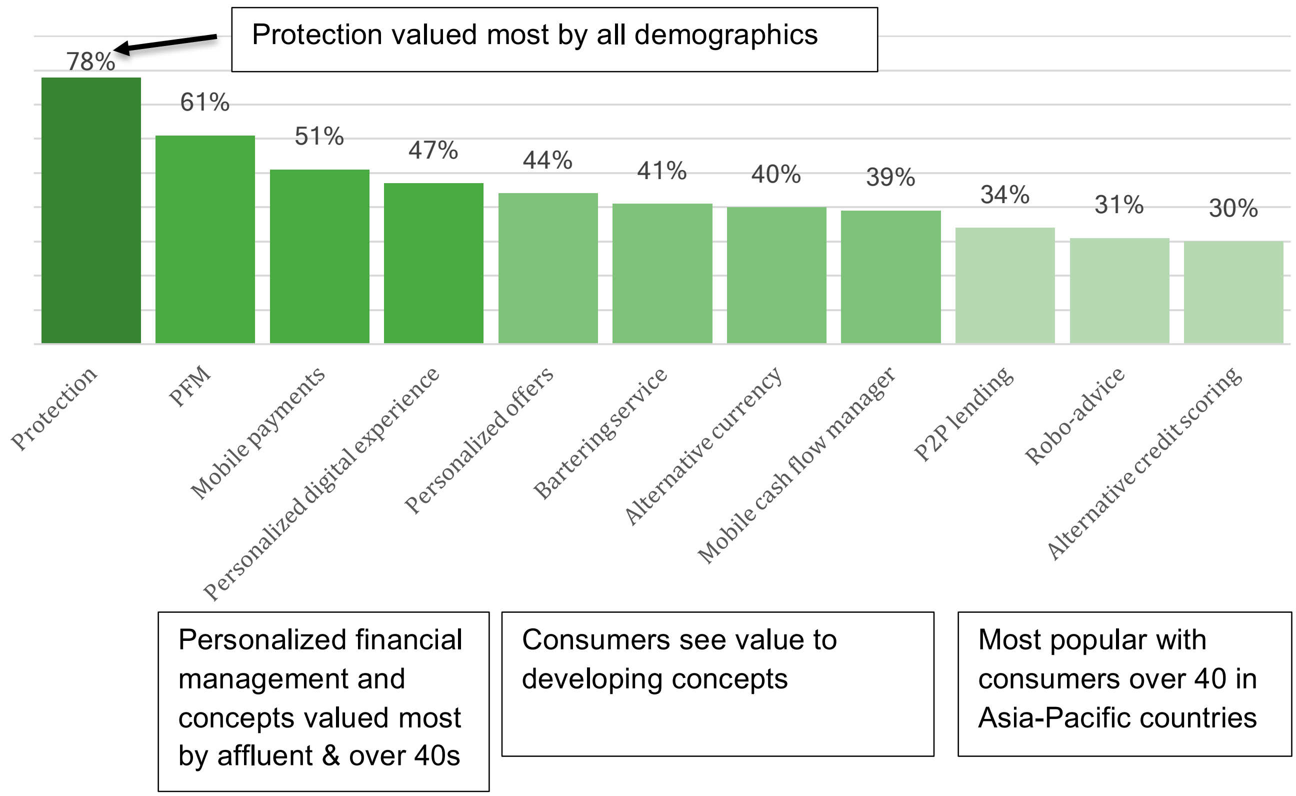
Source: “Bank on it” (2017).

What services would change loyalty to your primary bank?



Source: Edmondson, et al. (2016)

What consumers value the most



Source: CGI (2016). *FinTech disruption in financial services. A consumer perspective.* Retrieved from https://www.cgi.com/sites/default/files/pdf/fintech-disruption-in-financial-services.pdf

EXHIBIT 5 – TD OVERVIEW

	Canadian Retail	U.S. Retail	Wholesale
Business description	- Personal banking, credit cards & auto finance - Small business & commercial banking - Direct investing, advice-based wealth businesses and asset management - Property, casualty, life and health insurance	- Personal banking, credit cards & auto finance - Small business & commercial banking - Corporate & specialty banking - Wealth private client services - Strategic relationship with TD Ameritrade	- Research, investment banking and capital market services - Global transaction banking - Presence in key global financial centres including New York, London, Singapore
Operations & results			
Earnings (CAD$ MM Q3, 2018	$1,852	$1,143	$223
Customers	Over 15 million	Over 9 million	
Employees	Approx. 38,500	Approx.. 26,000	
Branches/ ATMs	1,154 branches; 3,172 ATMs	1, 244 stores; 2,399 ATMs	

YTD Earnings mix	Canadian Retail 60%		U.S. Retail 30%		Wholesale 7%
Business Segments	Canadian Personal & Commercial	Wealth Management & Insurance		US Personal & Commercial	Wholesale
		Wealth & Insurance	TD Ameritrade		
Sub-brands	TD Canada Trust TD Commercial Banking TD Auto Finance	TD Waterhouse TD Asset Management TD Wealth TD Insurance	TD Ameritrade	TD Bank TD Auto Finance	TD Securities

EXHIBIT 6 – TD FINANCIALS

		Canadian Retail		U.S. Retail		Wholesale	
($ millions CAD, except as noted)		**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
For the period ended		**Q3**	**Full year**	**Q3**	**Full year**	**Q3**	**Full year**
Net interest income	$	2,948	10,611	2,114	7,486	276	1,804
Non-interest income		2,851	10,451	698	2,735	519	1,467
Total revenue		5,799	21,062	2,812	10,221	795	3,271
Provision for credit losses[2]							
Impaired[3]		226	986	185	648	-	- 28
Performing[4]		20	-	37	144	- 14	-
Total provision for credit losses		246	986	222	792	- 14	- 28
Insurance claims and other related expenses		627	2,246				
Non-interest expenses		2,400	8,934	1,528	5,878	518	1,929
Income (loss) before income taxes		2,526	8,896	1,062	3,551	291	1,370
Provision for (recovery of) income taxes		674	2,371	144	671	68	331
Retail bank net income-reported	$	1,852	6,525	918	2,880		
Adjustments for items of note, net of income taxes[6]				-	16		
U.S. Retail Bank net income – adjusted				918	2,896		
Equity in net income of an investment in TD Ameritrade – adjusted				243	462		
Net income – adjusted				1,161	3,358		
Net income – reported				1,143	3,322		
Wholesale banking net income - reported	$					223	1,039

Balance Sheet

($ millions CAD)

As at August 31, 2018

ASSETS			**LIABILITIES**		
Cash and due from banks	$	5,541	Trading deposits	$	107,599
Interest-bearing deposits with banks		34,578	Derivatives		42,966
Trading loans, securities, and other		124,061	Securitization liabilities at fair value		12,018
Non-trading financial assets[1]		3,865			162,583
Derivatives		47,567	Deposits		
Financial assets[1]		3,246	Personal: Non-term		421,161
Financial assets[2]		130,152	Term		51,644
Available-for-sale securities		n/a	Banks		19,609
		308,891	Business and government		346,154
Held-to-maturity securities		n/a			838,568
Debt securities at amortized cost[3],		99,839	Other		
Securities purchased[4]		129,019	Acceptances		15,090
Loans			Obligations related to securities sold short		39,354
Residential mortgages		221,777	Obligations related to securities[5]		94,609
Consumer instalment and other personal:			Securitization liabilities at amortized cost		15,296
HELOC		95,615	Amounts pay'l to brokers, dealers and clients		14,756
Indirect auto		52,995	Insurance-related liabilities		6,643
Other		19,127	Other liabilities		20,895
Credit card		34,664			206,643
Business and government		214,585	Subordinated notes and debentures		7,023
Debt securities classified as loans		n/a	Total liabilities		1,214,817
		638,763			
Allowance for loan losses		(3,535)	EQUITY		
Loans, net of allowance for loan losses		635,228	Shareholders' Equity		
Other			Common shares		21,099
Customers' liability under acceptances		15,090	Preferred shares		4,850
Investment in TD Ameritrade		8,175	Treasury shares: Common		(168)
Goodwill		16,360	Preferred		-3
Other intangibles		2,483	Contributed surplus		195
Land, buildings & other depreciable assets		5,212	Retained earnings		44,223
Deferred tax assets		2,724	Accum. other comprehensive income (loss)		6,498
Amounts receivable from brokers, dealers & clients		14,322			76,694
Other assets		15,042	Non-controlling interests in subsidiaries		993
		79,408	Total equity		77,687
Total assets	$	1,292,504	Total liabilities and equity	$	1,292,504

[1] at fair value through profit or loss

[2] at fair value through comprehensive income

[3] net of allowance for credit losses

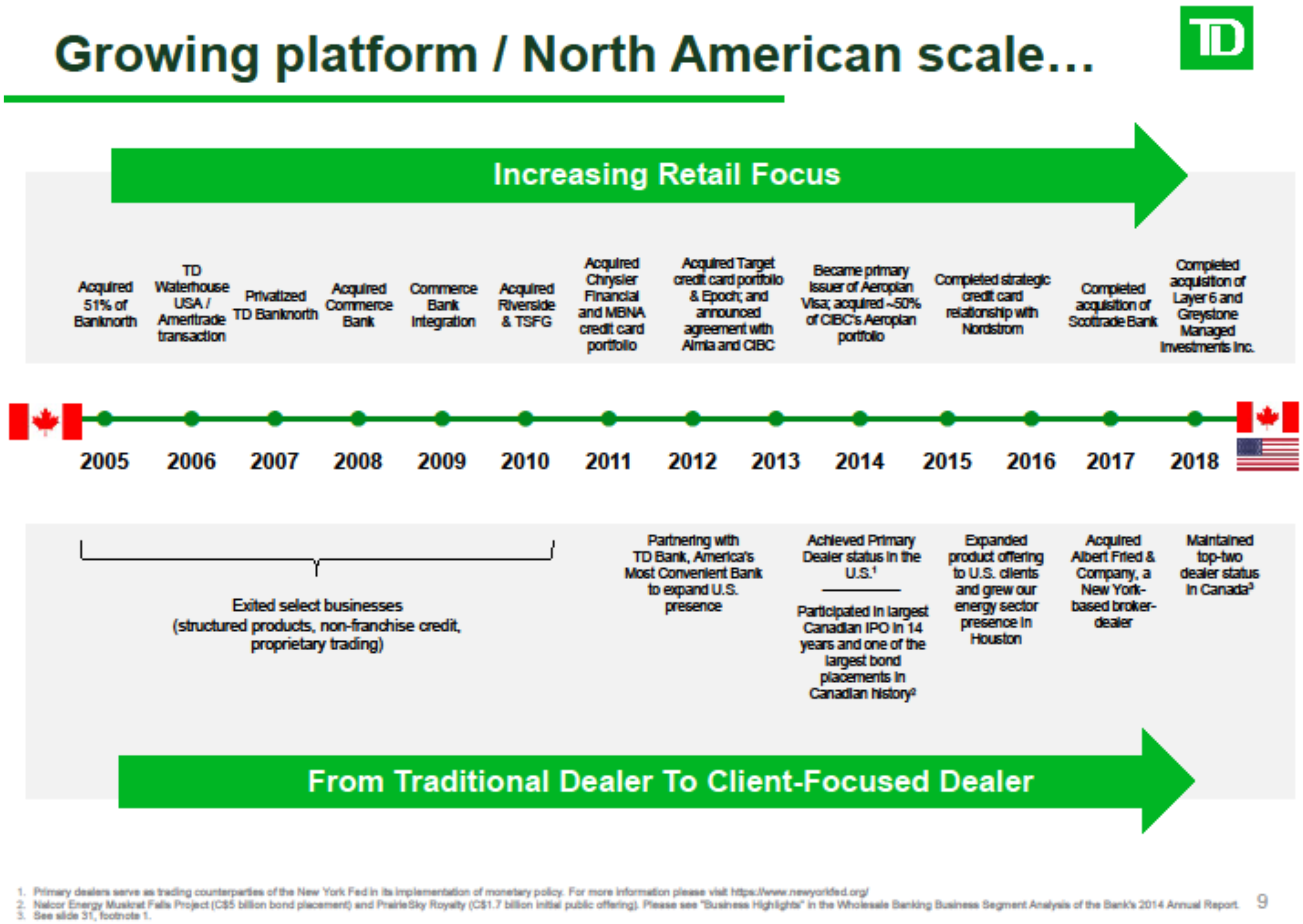
[4] under reverse repurchase agreement

[5] sold under repurcha

Gross Lending Portfolio Balances (C$B unless otherwise noted)

			Q2/18	Q3/18
Canadian Retail Portfolio			**401.3**	**409.1**
	Personal		**328.5**	**335.1**
	Residential mortgages	$	190.4	191.8
	Home Equity Line of Credit (HELOC)		79.5	83.4
	Indirect auto[6]		22.8	23.8
	Unsecured lines of credit		9.9	9.9
	Credit cards		18	17.9
	Other personal		7.9	8.3
	Commercial Banking (incl. small business)		**72.8**	**74**
U.S. Retail Portfolio (all amounts in US$)			**149.2**	**150.8**
	Personal		**67.1**	**68.5**
	Residential mortgages		22.4	23
	Home Equity Line of Credit (HELOC)		9.5	9.5
	Indirect auto		22.4	22.5
	Credit cards		12.2	12.9
	Other Personal		0.6	0.6
	Commercial Banking		**82.1**	**82.3**
	Non-residential real estate		17	16.8
	Residential real estate		5.8	5.9
	Commercial & Industrial		59.3	59.6
	FX on U.S. Personal & Commercial Portfolio		**42.6**	**45.2**
U.S. Retail Portfolio (C$)			**191.8**	**196**
Wholesale Portfolio			**49.2**	**51.1**
Other			**0.6**	**0.5**
Total		**$**	**642.9**	**656.7**

Exhibit 7 – Overview of TD Evolution



Source: TD (2018, July 31). *TD Bank group investor presentation.* Retrieved from td.com

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