

USHERING
IN A NEW ERA
OF PAYMENTS

ANNUAL REPORT
2017



**PAYMENTS
CANADA**



WHO WE ARE

The Canadian economy depends on the exchange of billions of dollars each day. Payments Canada is responsible for the clearing and settlement infrastructure, processes and rules essential to those transactions.

We are entrusted by the Government of Canada to support a vibrant economy by helping to meet the payment needs of consumers and business, and empowering a new era of modern payments.

Our team of approximately 250 is headquartered in Ottawa with a satellite office in Toronto. We are a public purpose, non-profit organization fully funded by the financial institutions that participate in our systems and we operate under a board of directors.

ESSENTIAL PAYMENTS INFRASTRUCTURE

We provide Canada's national payments systems. Our Large Value Transfer System lets financial institutions and their customers send large, critical payments securely and our retail system is where the vast majority of day-to-day Canadian commerce is cleared by our financial institutions. In 2017, we cleared and settled more than 7.5 billion transactions totalling \$50.45 trillion, averaging \$199 billion each business day.

CONNECTING A FLUID AND VIBRANT ECONOMY

Canadians are demanding better technology and a better user experience across all industries, including from their payments providers. That's

why we collaborate with stakeholders across the payments ecosystem to create the necessary balance of rules and standards, with efficient infrastructure to achieve optimized, low-friction value flow.

MEETING THE NEEDS OF CANADIANS

We have a long history of providing the payments infrastructure that has allowed Canadians, their businesses and their institutions to exchange value. But the world is changing fast, and so are payments. New technology is transforming the way we pay. We are working to provide a platform that allows those in the payments ecosystem to innovate and provide Canadians with convenient, safe, and efficient payment options.



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2017 AT A GLANCE



KEY ACHIEVEMENTS



Improved resilience with a major Disaster Recovery Enhancement initiative



Achieved industry alignment for Project Management Office for Modernization



Added the expertise required to support Modernization



Onboarded Accenture to help establish an industry PMO



Completed Project Jasper blockchain initiative Phase II

» IN 2017, PAYMENTS CANADA:

Cleared and settled

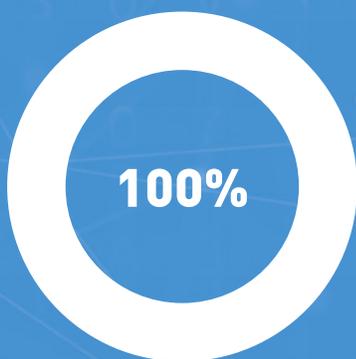
7.5 billion

transactions totalling

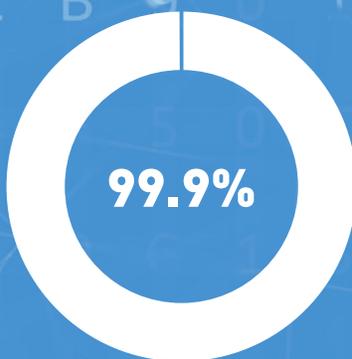
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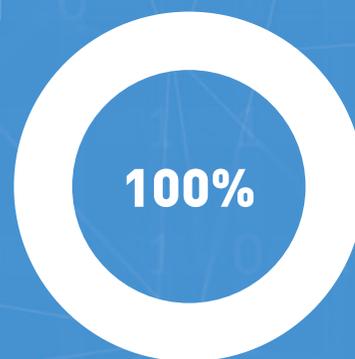
Systems availability:



ACSS
AVAILABILITY
RATE



LVTS
AVAILABILITY
RATE



CSN
AVAILABILITY
RATE



Briefed more than
400 corporate stakeholders
about Modernization



Hired
75 NEW PEOPLE



53 million
MEDIA IMPRESSIONS



The SUMMIT payments conference:



1,200
ATTENDEES



150
SPEAKERS



MESSAGES



EILEEN MERCIER
Payments Canada Chair, Board of Directors

A MESSAGE FROM PAYMENTS CANADA BOARD OF DIRECTORS CHAIR, EILEEN MERCIER

Payments Canada has much to be proud of in 2017. The organization built internal capabilities by growing its workforce and improving the resiliency of its systems, made great strides on its mission to facilitate payments innovation and set the stage to usher in a new era of modern payments.

The payments modernization journey in 2017 is marked with a long list of accomplishments. Most notable was the clear convergence of the payments community on the path to Modernization. Important connections were established to facilitate a successful Modernization program. In addition to senior payment committees at the Canadian Bankers Association, the Chief Information and Chief Risk Officers of Canada's major financial institutions have formed networks to support payments modernization. The thought leadership in these consultative groups ensures consensus and engagement on the path forward as we work together for the benefit of Canada as a whole.

There are two particular groups that consistently contribute to Payments Canada's success: the Member and Stakeholder Advisory Councils. When the Member Advisory Council was established in 2015 to advise the new majority independent board, we could hardly have imagined how important it would be to the support of Modernization. The group's reach across all aspects of the Modernization program has been paramount to its success to date.

The Stakeholder Advisory Council has, for many years, been an important voice in decision making both at the management and at the board level at Payments Canada. As payments transform around the world and become a major focus for business leaders, this group continues to evolve. It is vital that we have the voice of senior, experienced practitioners who will be active users of the new systems.

The board also appreciates the active support of our regulators, the Department of Finance and the Bank of Canada. They work closely with the board and Payments Canada management to ensure that the entire ecosystem continues to move forward together. We also began to work more closely with the Office of the Superintendent of Financial Institutions in 2017, a welcome development.

I would like to personally thank the members of the board of directors for their deep commitment to and support of this important program. The work required to govern the Modernization program is substantial now, and will only become more so during the next few years. The collective wisdom of this group is greatly appreciated.

In 2017, the board bid adieu to outgoing independent director Stewart MacKinnon and institutional members Brenda Clark and MarieLynne Desrochers, whose dedicated service contributed to moving the organization forward over the last several years. We welcomed

back Doug Steiner for a second term as an independent director, as well as new independent director Garry Foster and institutional directors Carolyn Burke, François Desjardins and Ernie Johannson. All in all, we have a diverse board of directors whose dedication to Payments Canada and the Modernization initiative assure that we are well positioned as we move into 2018.

We would not have come as far as we have without the vision, dedication and commitment to execution of Payments Canada management and staff. The success of their efforts is particularly impressive given the growth of the Payments Canada team since the inception of Modernization. This has necessitated the effective onboarding and integration of numerous contractors and consultants to form one unified team. Profound challenges lie ahead, however, as we round the bend towards critical Modernization deliverables that will require even greater devotion, energy and hard work for all involved, we know that they are up to the task.

With a view to 2018, I look forward to progressing on this journey together as an industry. While we spend a great deal of time on the details of implementing the Modernization program, it is important for all of us to sit back and remember that the reason we are doing this is to unlock significant potential for the Canadian economy. I feel strongly that we share a common vision as an industry, and I trust that the leadership team at Payments Canada will guide us forward into another successful year.



**A MESSAGE FROM PAYMENTS
CANADA PRESIDENT AND CEO,
GERRY GAETZ**

2017 was a dynamic year in payments. Never before has the industry attracted so much attention and interest. With new technologies and payment solutions arriving on the scene daily and enhancements to underlying payment systems taking place around the world, businesses began to see the impact that a strategic focus on payments could have on their bottom line. For some, that meant exploring options to offer a more friction-free payment experience for their customers and, for others, it centred on understanding how reductions in the time and effort required to process payments could result in significant cost savings over time.



GERRY GAETZ
Payments Canada President and CEO

»» **What propels us forward is the collective ambition to deliver a fast, flexible and secure payments system that promotes innovation and strengthens Canada's competitive position.**

Like our many global counterparts, Payments Canada continues to undergo a significant transformation to support these advancements for both businesses and consumers. In 2017, transformation centred on our major payments Modernization initiative, considered to be one of the most ambitious in the world. We made great strides on the Modernization journey, with participants from across the industry coming together to support the revised roadmap and plan and align in preparation for program execution.

In 2017, we built the capacity of our team with the expertise required to support Modernization and onboarded Accenture as the partner that would help us establish the industry program management office. We also secured financing for the program, began the procurement process for both high-value and real-time payment systems, finalized new rules for automated funds transfer enhancements, developed and consulted on an interim credit risk model for the Automated Clearing Settlement System, and released detailed plans for the future in an industry paper, the Modernization Target State.

We have also been busy restructuring the IT group for the future. We took critical steps to improve the safety, resiliency and reliability of our current systems, notably by implementing major enhancements to our payment system operating environment. This involved the migration of our payment systems to a new and improved data and network infrastructure.

Alongside this work, the role that Payments Canada plays in the changing payments landscape continued to evolve. Increased focus and interest in payments from a variety of new ecosystem participants – from FinTechs and PayTechs to corporate Canada and the small business community – has created a greater need to support payments education, engagement and innovation. We saw this first-hand at our annual conference, the Payments Canada SUMMIT, with more than double the number of registrants from the year prior.

In response to this growing need, Payments Canada became more deeply engaged in the stakeholder community in 2017, helping all parties to understand and navigate the coming changes that will affect their businesses, organizations or households and increasingly acting as a voice for the payments industry in the media and at industry events.

We also continued to participate in exploratory research concerning the future of payments. The successful Project Jasper blockchain initiative undertaken with the Bank of Canada is in its third phase, and we kicked off a series of proof-of-concept ventures, such as an ISO 20022 file validation service, that are intended to support the industry as a whole as we move forward

into unchartered territory in payments.

We could not have achieved any of this without the active support of our member financial institutions, the Bank of Canada and the Department of Finance, whose commitment and investment have helped to drive much of this work forward. Our members' representation at the Member Advisory Council and our many working groups have proven to be invaluable.

Likewise, the engagement of our Stakeholder Advisory Council – representing a variety of perspectives across the payments ecosystem – continued to help shape our decision making. We see the voice of this group becoming even more important as the Modernization journey continues.

The guidance of our board of directors cannot be overstated. This knowledgeable, experienced and engaged board continued to provide Payments Canada management with support and direction critical to our success. I would also like to thank the Executive Leadership Team and the incredible staff at Payments Canada whose hard work and dedication contributed vastly to what was another monumental year.

As we look ahead to 2018, I am confident that we have the team, the industry support and the external engagement required to deliver on the increasingly challenging goals of Modernization. What propels us forward is the collective ambition to deliver a fast, flexible and secure payments system that promotes innovation and strengthens Canada's competitive position. I look forward to another exciting and productive year.

REPORT FROM THE CHAIR OF THE MEMBER ADVISORY COUNCIL



TODD ROBERTS
MEMBER ADVISORY
COUNCIL CHAIR

The Member Advisory Council is a 20-person council that is codified in the Canadian Payments Act. It serves as a consultative and engagement forum for system participants who are also members of Payments Canada. The members are pleased with the effectiveness, over the past year, of the Member Advisory Council as a forum to drive collaboration, provide advice and deliver productive outcomes.

Modernization is a multi-year initiative to modernize the systems and rules that are essential to Canada's payments ecosystem. This industry-wide journey includes an ongoing dialogue with the members. In fact, consultation is key to the program's success. Members have worked closely with Payments Canada and provided feedback on the Modernization Target State. We are pleased with the consultation process and are supportive of the overall Modernization Target State. Members are making very significant investments behind this program and have shifted out other

commercially important projects to create the capacity to execute against this program. We have done so given the critical importance of this program to our customers, our industry and the complex range of stakeholders involved in ensuring our payments system remains both effective and secure.

There remains much work ahead for all parties to deliver against this ambitious plan, which is well aligned with the goals that all parties are committed to: the creation of a fast, flexible, secure, innovative and competitive payments system. As members, we remain focused to ensure that we can collectively proceed with Payments Canada in a prudent manner that balances the risks of execution and changes to the existing system while making clear gains against the objectives as noted. We would reiterate the need for all parties to continue to work in an open, collaborative and agile manner to adapt our plans and sequencing of activities as we make progress through the implementation of the Modernization Target State. As key decisions are made, business models are confirmed and solution designs are secured, we fully expect that the specifics of the implementation plan, particularly timing, cost and scope, will adjust as required. Our collective success will be dependent on our effectiveness in adapting our plans to changing conditions while remaining focused on the objectives of the program.

The Members remain highly engaged in the governance model that has been put in place. Members continue to actively support governance by providing

access to business, operational and technical expertise to Payments Canada. As we move into execution, we will need to collectively manage the delivery risks, understanding and mitigating risks associated with new operating models and staging change where risks are significant or unclear in our view. This will require a good balance of optimistic objective setting and realistic course correcting along with a deliberately risk averse approach to testing in order to ensure that we do not subject Canadians to unintended / negative outcomes as we modernize the payments rails on which we all rely.

Members are making very significant investments behind this program and have shifted out other commercially important projects to create the capacity to execute against this program.

As we continue to support Payments Canada in its initiatives to underpin the Canadian financial system and economy, we look forward to another year of providing counsel and advice to the board on the rapidly changing needs and expectations of the Canadian marketplace and the requirements for the successful execution of the activities required to achieve the Modernization Target State.

REPORT FROM THE CHAIR OF THE STAKEHOLDER ADVISORY COUNCIL



BRENT MIZZEN
STAKEHOLDER ADVISORY
COUNCIL CHAIR

OVERVIEW

Throughout 2017 the Stakeholder Advisory Council continued to focus its work efforts on Payments Canada's initiative to modernize its payments systems. In this regard, the Stakeholder Advisory Council has advocated for and supported development of a more competitive and innovative payments system that delivers timely benefits to users.

While Modernization is a long-term initiative, there have been some important developments that the Stakeholder Advisory Council has been pleased with in 2017 and that will have nearer term benefits. This has included a move to improve the Automated Funds Transfer (AFT) batch system that will see a third daily exchange added and two-hour funds availability effective October 2018. These changes will allow transactions to be cleared faster and more frequently. This will enable new features such as same-day payroll, expedited bill payments, faster settlement of invoices and more uniform service across the country in various time zones.

As in previous years, ISO 20022 has been a focus for the Stakeholder Advisory Council, and it has continued to advocate for moving forward in a timely manner. The ability to move data with electronic transactions brings about the opportunity to eliminate paper cheques, which will lead to significant efficiencies for the payments system and its users. The Stakeholder Advisory Council has continued to advocate for a firm deadline as to when ISO 20022 will be required for financial institutions.

There were two key issues—the real-time rail and Lynx (to replace the Large Value Transfer System)—that were less of a focus in 2017 for the Stakeholder Advisory Council relative to 2016. This does not reflect that the real-time rail and Lynx are viewed by the Stakeholder Advisory Council as being less important relative to other issues. Rather, Lynx has been a focus more for financial institutions as it is a designated systemically important payment system. As a result, it must meet the Bank of Canada's risk

➤ **SAC has also been pleased that Payments Canada is examining how to expand connections to the payments system to corporates, small businesses and retailers. We believe this will lead to a more competitive system, which will benefit users through a greater level of choice.**

This is based on the fact that the full benefits of ISO 20022 will not be realized until it is in broad use. As a means to support the initiative, the Council has identified corporates that could be early adopters of ISO 20022 and is committed to supporting communications of the benefits, including use cases, for ISO 20022.

The Stakeholder Advisory Council has also been pleased that Payments Canada is examining how to expand connections to the payments system to corporates, small businesses and retailers. We believe this will lead to a more competitive system, which will benefit users through a greater level of choice.

standards for systemically important financial market infrastructures that are based on the Bank of International Settlements Principles for Financial Market Infrastructures. The Stakeholder Advisory Council recognizes the importance of Lynx to the ecosystem and supports changes that will enhance its reliability and robustness for users.

In 2017, Payments Canada undertook a review of the incumbent retail payments provider to assess its potential as the provider for the real-time-rail. This was followed by a period of confidential negotiation. While this limited the discussions on the real-time rail for the Stakeholder Advisory Council during much of



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payments reforms
for Canada to date.**

2017, these discussions have now concluded and the Stakeholder Advisory Council is keen to re-engage to ensure that the real-time rail is a platform for innovation in Canada.

In December 2017, Payments Canada released a document that sets out the target end state for payments modernization in Canada, including the infrastructure, rules and standards that will benefit Canadians and businesses. This document reflects views that Payments Canada has heard from many different parties. For its part, the Stakeholder Advisory Council has

actively provided its advice regarding how the payments system can improve the way Canadians pay for goods and services, transfer money and exchange data about their payments.

Over the course of 2017, the Payments Canada Board of Directors has demonstrated an active interest in the views and perspectives of stakeholders. In addition, the Stakeholder Advisory Council has had the opportunity to engage with the board, which has provided the opportunity to discuss the views of stakeholders on modernizing the payments system. The Stakeholder Advisory Council looks forward to having similar opportunities in 2018, which are of great benefit.

Modernization is one of the most, if not the most, significant payments reforms for Canada to date. It is comprised of a number of initiatives and will touch on all segments of the payments ecosystem. As a result, there has been collaboration and input from many different parties on Modernization. This has included the work being led by

Payments Canada with collaboration from financial institutions, users, potential providers, governments and independent experts, among others. There has been increasing collaboration as Payments Canada has conducted its work, which SAC supports and would like to see grow even further. The Stakeholder Advisory Council believes that bringing parties together will lead to the best solutions possible and the Council looks forward to being an active contributor in effective collaboration in 2018.

In 2017, there was also collaboration between the Stakeholder Advisory Council and the Member Advisory Council. The Stakeholder Advisory Council has found this collaboration to be highly beneficial in terms of sharing information on perspectives to issues and discussing possible solutions. As Payments Canada continues its work on Modernization, the Stakeholder Advisory Council will look to build on this positive collaboration in 2018.

CONCLUSION

While Modernization is a long-term initiative, we are reaching the point where benefits will begin to be realized. The Stakeholder Advisory Council will continue to be active and constructive in providing counsel and advice to the Payments Canada Board of Directors as well as collaborating with interested parties with the objective of supporting a payments system that will serve Canadians well into the future.





PAYMENTS
CANADA
MANDATE &
STRATEGY

PAYMENTS CANADA MANDATE AND STRATEGY

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We are responsible for supporting a vibrant economy by helping to meet the payment needs of consumers and business, and by empowering a new era of modern payments.

We provide Canada's national payments systems. Our Large Value Transfer System enables financial institutions and their customers to send large payments securely, and

our Automated Clearing Settlement System is where the vast majority of day-to-day Canadian commerce is cleared by financial institution participants.

In 2017, Payments Canada cleared and settled transactions totalling \$50.45 trillion, averaging \$199.39 billion each business day.

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OUR MANDATE

Our legislated mandate, as set out in the Canadian Payments Act, includes the following objectives:

- A.** Establish and operate national systems for the clearing and settlement of payments and other arrangements for the making or exchange of payments.
- B.** Facilitate the interaction of its clearing and settlement systems and related arrangements with other systems or arrangements involved in the exchange, clearing or settlement of payments.
- C.** Facilitate the development of new payment methods and technologies.

In fulfilling its mandate, Payments Canada has the public policy objective to promote the efficiency, safety and soundness of its clearing and settlement systems and take into account the interests of users.

OUR STRATEGY

We are well on our way to realizing our vision of a thoroughly modernized payments infrastructure that will benefit all Canadians. To fulfill our vision and deliver on our mandate, Payments Canada follows and implements an annual Corporate Plan. In 2017, this included three long-term desired outcomes:

1. MODERNIZE

Modernize the core payments systems, including the policies, rules, standards and technology infrastructure.

2. OPERATE & ENHANCE

Strengthen management and overall performance in the key areas of payment systems resiliency, addressing regulatory requirements, and operational excellence.

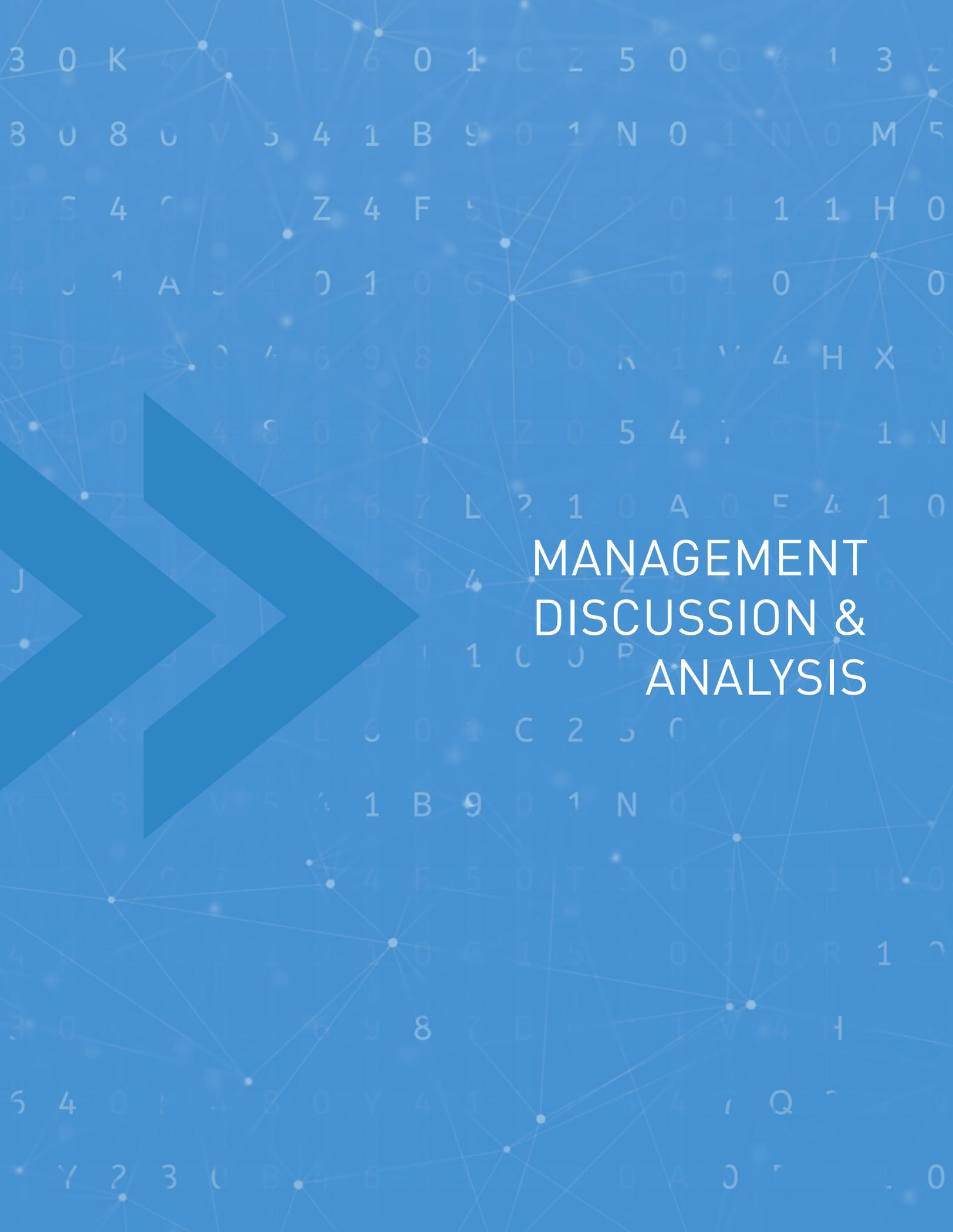
3. CREATE NEW OPPORTUNITIES

Explore and develop non-competitive offerings that provide value to our members, stakeholders and users.

MEMBERSHIP

Membership in Payments Canada includes the Bank of Canada, domestic banks, and authorized foreign banks. Other deposit-taking institutions (credit union centrals, trust and loan companies, and provincial savings offices) have been eligible for membership since 1980. The amendments to the CP Act in 2001 opened membership to life insurance companies, securities dealers, and money market mutual funds, among others. Payments Canada is funded by its membership, which stood at 110 at the end of 2017.





MANAGEMENT DISCUSSION & ANALYSIS



KEY ACCOMPLISHMENTS

MODERNIZE

OPERATE & ENHANCE

CREATE NEW OPPORTUNITIES

ENTERPRISE RISK MANAGEMENT

OUR PEOPLE

SUMMARY OF FINANCIAL OPERATIONS

2017 PERFORMANCE AT A GLANCE

CORPORATE PLAN FOR 2018

MODERNIZE

In 2017, our major payments Modernization initiative kicked into high gear. The most important milestones included aligning the industry on the revised roadmap and target state for Modernization, building capacity on the team and securing funding for the program. Details of these 2017 achievements—which could not have been accomplished without the dedicated engagement and participation of a multitude of representatives from our member financial institutions and key stakeholder groups—are outlined below:

SELECTING AND ONBOARDING INDUSTRY PARTNER

To better manage the scope of the Modernization program and the number of participants involved, Payments Canada chose to partner with global consulting firm Accenture. In 2017, Accenture was selected for their excellent track record of supporting payments modernization initiatives around the world and their in-depth payments expertise. Together, we established the Industry Program Management Office in 2017 that will help to support financial institution participants throughout the transition over the next three to four years.

This selection process also involved the onboarding of more than 50 new team members, including consultants and contractors, the expansion of our Toronto office; and the reorganization of our new headquarters in Ottawa to support the growth.

DEFINING NEW SYSTEMS AND ENGAGING SUPPLIERS

Payments Canada invited a short list of suppliers to participate in a competitive procurement process for the country's new high-value payment system, Lynx. This followed a Request for Information, research and analysis of payments system modernization initiatives around the world and consultation with other international market infrastructure providers. The competitive dialogue procurement process set in motion detailed work on requirements, proof-of-concepts, alternative design solutions and testing throughout the year and will result in a final vendor selection in 2018.

After defining requirements for a new real-time / faster payments capability in Canada, we also began a rigorous assessment of Interac to better understand its core utility platform and whether it had the potential to address the real-time needs identified in the Vision for the Canadian Payments Ecosystem. That assessment led to a design services agreement to support the creation of detailed specifications and blueprint for real-time payments in Canada. Following completion of this exercise, we will move to decide on the approach for building the solution.



DEFINING INTERIM CREDIT RISK MODEL FOR THE AUTOMATED CLEARING SETTLEMENT SYSTEM

Following the designation of Canada's retail payment system, the Automated Clearing Settlement System, as a prominent payment system, we began preparations to align with international best practices and risk management standards. This started with deep credit risk research to determine sufficient collateral for the system. That work informed the development of an Interim Credit Risk Model, which was supported through consultation with our member financial institutions in 2017. Following approval of by-law amendments, the model is being implemented in 2018 and will enhance the safety and soundness of the retail payment system.

NEW RULES TO ENHANCE AUTOMATED FUNDS TRANSFER

Automated Funds Transfers—also known as batch payments—move roughly 1.7 billion payments in Canada every year and represent the greatest value of payments in Canada's retail payments system. Around the world, batch payments remain a staple of most payments systems because they are cost effective and efficient.

ATFs represent the greatest value of payments in Canada's retail payments system.

Much progress was made on this pillar of Canada's Modernization program in 2017, including aligning member financial institutions on requirements and rules for a third time-of-day for financial institutions to exchange batch payments and new obligations to provide funds availability within two hours. Combined with infrastructure enhancements made within financial institutions, these changes, which come into effect in the fall of 2018, will enable new features like same-day payroll, expedited bill payments, faster settlement of invoices, a move away from paper and cheques and more uniform service across the country in all time zones.

DETAILING THE MODERNIZATION TARGET STATE

Together with our member financial institutions, we provided a more detailed view of the Modernization program with the *Modernization Target State* paper, which includes comprehensive descriptions of modernized systems and their fundamental support structures such as risk and regulatory considerations, access models, and technology platforms. It gives a view to the target end state for Modernization, the way modern systems will integrate, the expected migration of payment types and the anticipated benefits for Canadian businesses and households.

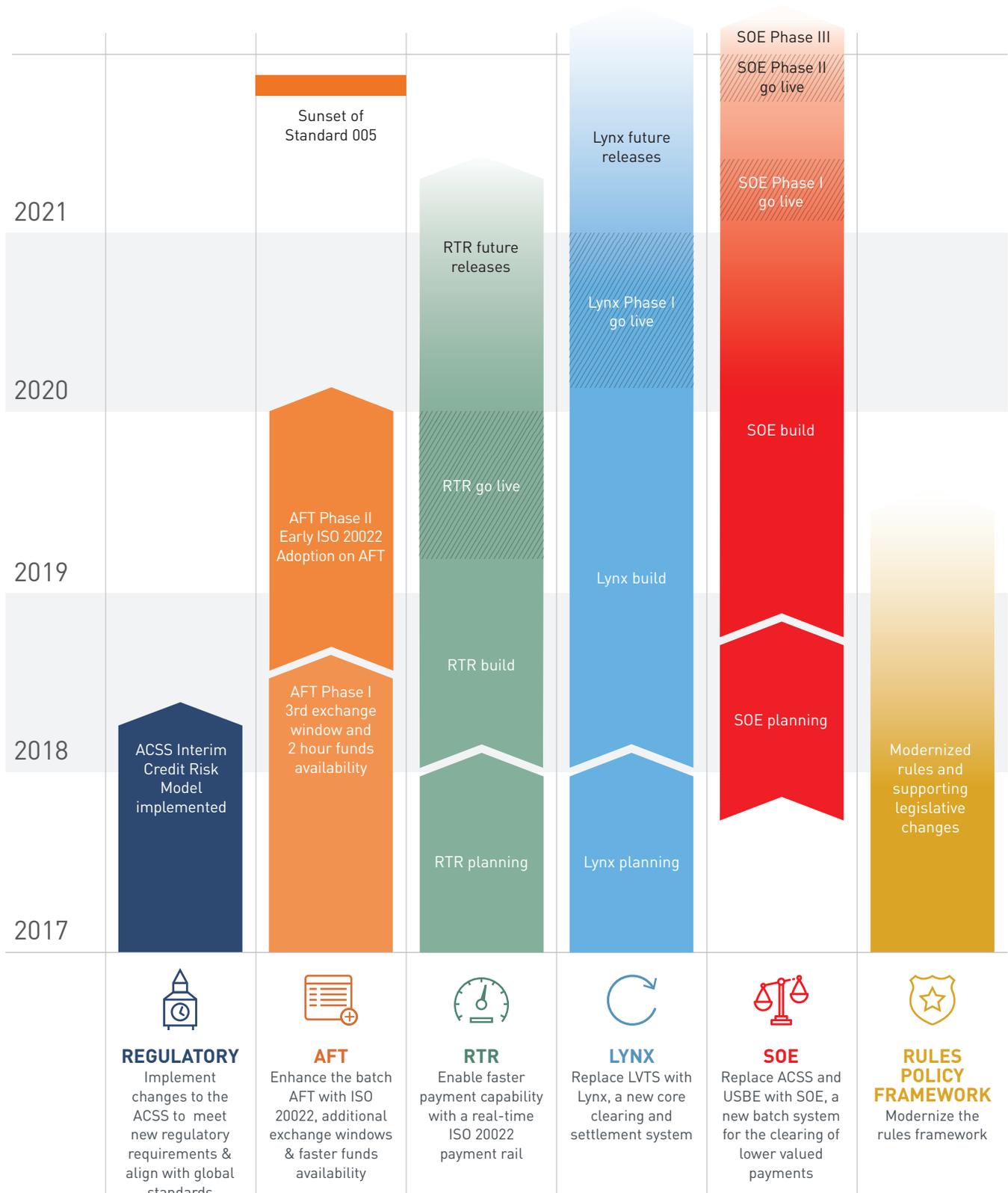
The document was informed by the significant work undertaken in 2017 to define and refine requirements for modern systems alongside our member financial institutions and key stakeholders across business and government.

SECURING MODERNIZATION FINANCING

A borrowing plan was arranged in 2017 to fund the costs of Modernization. The loan was established in consultation with our member financial institutions in order to minimize large fluctuations in member fees during the Modernization program. The plan includes a reasonable timeframe for repayment of debt incurred by the program, commencing in a staggered manner as payment systems are completed and brought online in 2019 and beyond.



Figure 1: Modernization Timeline



OPERATE & ENHANCE

In a year dedicated to bringing our payments Modernization initiative into sharper focus, we remained diligent and dedicated in ensuring the safety, resiliency and reliability of our current systems.

We exceeded all availability targets throughout 2017—a key goal for the year. Availability scores for the Large Value Transfer System, Automated Clearing Settlement System and CPA Services Network (CSN) were 99.9%, 100% and 100% respectively.

ENHANCING DISASTER RECOVERY CAPABILITIES

One of our greatest successes in 2017, and perhaps one of the most monumental undertakings in recent Payments Canada history, was the successful completion of the Disaster Recovery Enhancement project.

This project involved the successful migration of all three critical payment systems – the Automated Clearing Settlement System, U.S. Bulk Exchange and Large Value Transfer System – to a new and improved network infrastructure.

The success of the Disaster Recovery Enhancement project resulted in enhanced near-continuous operations, increased disaster recovery capabilities and improved resiliency for our organization. Not only were the key objectives and deliverables met, but this project also resulted in additional benefits being realized for our organization, from reduced operational risk and increased automation to faster execution of the

Large Value Transfer System's batch cycle and elimination of operational interdependencies.

This is no small feat. Over the course of the year, the project required the support of member financial institutions, the Bank of Canada and vendor partners, not to mention every Payments Canada business unit, during the long journey from contract negotiations through to go-live. This is a true organizational success that clearly demonstrated the effectiveness of meaningful industry collaboration.

ADDRESSING THE CYBER THREAT

Payments Canada's highest priority is the safety and soundness of our systems. As cyber threats are increasing in frequency and severity, Payments Canada has raised its defences in return. In 2017, we established a cyber security action plan based on secure design principles and industry standards. We invested heavily in increasing our capabilities and capacity in security services. We remain in a constant state of vigilance, continuously monitoring, testing and updating our technology infrastructure to increase the resiliency of our systems and to ensure a rapid response to any vulnerability.

MONITORING LIQUIDITY IN THE HIGH-VALUE PAYMENT SYSTEM

In line with the Bank of Canada's requirements for Financial Market Infrastructures, we completed an audit of the Large Value Transfer System, established a tiered monitoring framework and conducted an integrated default simulation. Another key deliverable in our core operations were enhancements to processes for monitoring liquidity in the high-value payment system.

IMPROVING DATA AND INFORMATION MANAGEMENT

Other systemic improvements in 2017 included a comprehensive data strategy that provides a detailed roadmap for data management. We formed an enterprise architecture group responsible for centralizing all information management policies and processes as well as developing standards for architecture. In the same vein, we formed an Information Governance Council to oversee the management of all corporate information and payment system data. We also implemented Google G Suite for increased corporate productivity and collaboration and a more robust, agile document management capability.

CREATE NEW OPPORTUNITIES

In line with Payments Canada's leadership role in modernizing the payments landscape in Canada, in 2017 we expanded our reach, giving a stronger voice to the financial industry as a whole, with a broad spectrum of stakeholder engagement initiatives. These included the most impactful Payments Canada conference to date and an assortment of other stakeholder engagement initiatives.

We also completed Phase II of our headline-making distributed ledger experiment, Project Jasper, and began to experiment in other areas, developing proof-of-concept ventures, such as an ISO 20022 file validation service designed to support industry players as we move forward with Modernization.

STAKEHOLDER ENGAGEMENT

As in years past, our banner stakeholder engagement activity for 2017 was the annual Payments Canada conference. Formerly Payments Panorama, The SUMMIT has become Canada's premiere payments conference where the payments ecosystem comes to connect.

The 2017 SUMMIT was like no other, with more than double the number of registrants from the year prior. The SUMMIT featured 150 speakers, including some of the biggest names in payments, covering hot topics from artificial intelligence and quantum computing to cyber security and regulatory reform. The SUMMIT stimulated increased focus and interest in payments from a variety of new ecosystem participants, from FinTechs and PayTechs to corporate Canada and the small business

community. At 1,200 delegates, it left one and all with a better understanding of the opportunities for an aligned payments ecosystem in Canada.

Other engagement activities for 2017 included the implementation of a stakeholder engagement plan, which involved engaging the business community, consumer groups, universities, hospitals and other organizations with a series of stakeholder forums to clarify the opportunities and advantages that Modernization will realize.

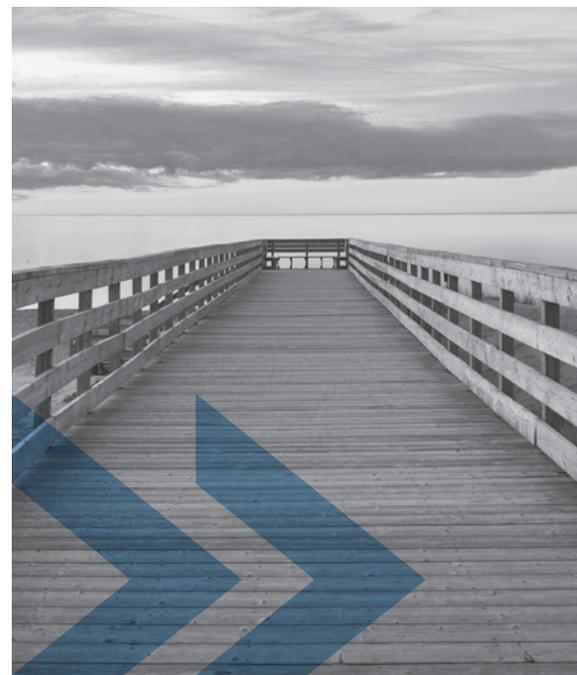
BREAKING NEW GROUND

In 2017 we released new results from our work on blockchain technology, alongside the Bank of Canada, financial innovation firm R3 Lab and Research Centre, and seven financial institutions. This marked the completion of Phase II for Project Jasper, an experimental wholesale interbank payment system based on distributed ledger technology – a shared database that forms the backbone of crypto currencies like Bitcoin. Phase II results indicate the fundamental inconsistency between a centralized wholesale interbank payment system and the decentralization inherent in distributed ledger

technology, pointing towards a host of areas for future research.

We also kicked off Phase III of the program, which involves new collaboration with TMX Group: an experiment involving an integrated securities and payment settlement platform based on distributed ledger technology.

Other experiments saw us completing the pilot phase of a new service that will allow member financial institutions to more efficiently onboard corporate clients to ISO 20022. To do this, we leveraged XMLdata, the file validation service used during the Single Euro Payments Area (SEPA) transition. RBC and TD collaborated with us on this proof-of-concept exercise.



ENTERPRISE RISK MANAGEMENT

RISK MANAGEMENT PRIORITIES

Risk management plays a critical role in assuring the safety and reliability of payments systems in Canada. Payments Canada maintains a robust Enterprise Risk Management program that identifies and manages key risks that could prevent the organization from achieving its objectives and mandate.

Payments Canada's key risk management objectives for 2017 included:

- Continuing to strengthen our three lines of defense approach to risk management
- Enhancing operational risk management framework
- Maintaining the rigorous processes involved in identifying and assessing risks throughout the organization

These objectives will extend into 2018, with an additional focus on strengthening engagement in identifying and addressing new and emerging risks.

RISK MANAGEMENT: PROGRAM & GOVERNANCE

Payments Canada's Risk Management Program is overseen by the board of directors, implemented by management and executed throughout the organization. Risks are updated quarterly and reported to the board of directors' Risk Committee. Risk updates provide decision-makers with a comprehensive and integrated view of organizational risks and indicate the degree to which they align with the organization's risk appetite. A rigorous bottom-up and top-down process is used to identify and communicate corporate risks to the organization.

Risk governance is the foundation for effective risk management. While risk management governance starts with the board of directors, who are responsible for risk management oversight, day-to-day risk management falls to individual business units. Payments Canada's risk management governance structure follows a "three lines of defense" approach involving individual business units, CRO office oversight and independent validation of processes.

Risks are categorized into operational, strategic, financial and settlement risks. They are also evaluated in terms of their potential impact on Payments Canada's reputation, particularly with respect to our credibility in delivering on our plan and mandate. We pay special attention to potential risks affecting our largest initiative, the Modernization Program.

RISK MANAGEMENT ENHANCEMENTS

Payments Canada has a multi-year plan to enhance its risk management framework and position Payments Canada among the most resilient organizations within the global financial industry.

2017 risk management enhancement actions fall into three categories: strengthening resilience and security, improving operational risk management, and developing a new vendor risk management process.

Major enhancements for 2017 include:

RESILIENCE AND SECURITY ENHANCEMENTS

- Conducted an external evaluation of Payments Canada's cyber position using NIST Cyber Security Framework
- Integrated incident management business continuity and crisis management response plans
- Implemented a comprehensive disaster recovery exercise program, readiness plan and follow up procedures
- Enhanced member compliance programs



OPERATIONAL RISK MANAGEMENT ENHANCEMENTS

- Confirmed compliance with the Bank of Canada Standards for the Large Value Transfer System and pre-Modernization requirements for the Automated Clearing Settlement System. The Standards are based on the CPMI-IOSCO Principles for Financial Market Infrastructures. The Standards were amended to reflect the different risks posed by prominent payment systems compared to systems designated as systemically important.
- Implemented a business continuity/disaster recovery testing plan in the context of the Enterprise Risk Management policy. The objectives of this plan are to improve our readiness to manage operational disruptions to normal operations in an efficient and effective manner and to guide the integration of business continuity and disaster recovery testing into comprehensive plans that are executed according to scope, objectives and timelines in alignment with our strategic objectives.

VENDOR RISK MANAGEMENT ENHANCEMENTS

- Developed detailed vendor risk management procedures to assist in the process of identifying, monitoring and managing vendor risk
- Implemented the use of vendor risk management procedures in the Modernization vendor selection process

SIGNIFICANT RISKS IN 2017

After all mitigations are considered, the highest risks to Payments Canada in 2017 are as follows:

CORE OPERATIONAL RISKS

Cyber incident

Action: Payments Canada is improving its cyber-security stance through a new five-year Cyber Security Program.

Deterioration of critical service offerings

Action: Payments Canada put increased emphasis on organizational development, prioritization and monitoring for 2017 activities.

Major payment system outage

Action: Payments Canada enhanced its disaster recovery capability in 2017, with further risk reduction planned through the implementation of the Cyber Security Program.

Payments Canada loses long-term relevance

Action: Payments Canada is paving the way for long term relevance through enhanced research, the development of new services, evaluation and testing of emerging technologies, and facilitating connections in the marketplace further to a comprehensive stakeholder engagement plan.

MODERNIZATION RISKS

Scale, scope, complexity, timeline for Modernization Program exceeds industry ability to execute

Action: This risk is being mitigated by a strong governance structure, engagement with industry, and ongoing monitoring of Payments Canada's and financial institutions' progress and risk.

Inability to deliver a Payments Canada controlled Real Time Capability

Action: Payments Canada is engaging in an ongoing assessment process with the vendor and has identified potential alternative approaches.

Unsuccessful delivery of Lynx

Action: Payments Canada is mitigating the risk of problems occurring before, during or after implementation of Lynx through consultation with members and the Bank of Canada, and extensive testing of the new system.

Inability to align interests of regulators, financial institutions and other stakeholders

Action: Payments Canada is balancing expectations through a broad stakeholder engagement strategy and consultation process.

OUR PEOPLE

2017 was our most important year to date in building the depth of expertise that will help realize the success of Payments Canada's Modernization efforts. We are moving quickly towards our Modernization goals through the addition of specialized knowledge, resilience and depth.

Payments Canada is focusing on retaining superior talent, fostering engagement, and expanding our capabilities around personal leadership and creativity. Our growing team and an expanding array of skill sets are helping us to both mitigate operational risk and to position our organization as an influencer within the financial ecosystem.

Payments Canada has succeeded in attracting the talent we need. We started building expertise slowly in 2014. Our biggest talent acquisition push took place in 2017 when, with the addition of our Accenture colleagues, we reached nearly 250 people.

A FOCUS ON TALENT

Our talent drive is centred on three critical disciplines: payment policy, technical operations and security, and account management. We have brought on key people in all categories who are contributing to the breadth and depth of our expertise. They come from the Bank of Canada, other Canadian financial institutions, and government.

One important initiative in 2017 from a strategic standpoint was bringing on a new Chief Information Security Officer and working together to build up the payment security expertise within the security team. Acquiring cyber expertise was a critical priority in 2017 and will continue to be so in 2018.

BUILDING ENGAGEMENT

Engagement and commitment are as fundamental to our near and long-term success as adding the right mix of skills. 2017 saw the implementation of a two-year engagement strategy that includes delivery of a leadership program, as well as a competency-based learning module and career pathing for all employees.

We are building out different training offerings for each cohort including senior leaders, people managers and single contributors. The first of these is a custom 12 to 18 month leadership program for our most senior leaders. The goal is to help them become more influential within the payments ecosystem and to properly plan for succession. We expect that this training program, set to launch in 2018, will bolster retention, extend Payments Canada's influence and address operational risk and succession.

In 2017 we also ramped up social engagement. People who play more together work better together, so we scheduled a great number of high-impact, low-cost social events for employees, with excellent results. We are well on our way to building a closely knit, work-hard, play-hard environment.

A FOCUS ON SYSTEMS

Modernizing Payments Canada's systems offerings requires streamlining of internal systems as well. On that front, we moved forward with three important human resources-related systems enhancements in 2017. The first involved bolstering our electronic footprint from a recruiting perspective. Payments Canada now has an important, far-reaching LinkedIn presence that has measurably improved our recruiting efforts.

The second effort involves a people metrics implementation that has given the executive the tools they need to stay on top of key human resources metrics. It includes a dashboard of key data including average salary, turnover, performance management data, headcount, hires relative to our hiring goal and other metrics.

We matched efficiency on the front end with the implementation of a back end human resources system that will increase efficiencies by moving to a more automated self-service model. From a human resources perspective, 2017 was a busy year, an ambitious year. 2018 promises to be just as important; we are quickly moving forward with further hires and refinement as the year unfolds.

SUMMARY OF FINANCIAL OPERATIONS

SUMMARIZED STATEMENT OF OPERATIONS

	2017	2016
REVENUES		
Fees	54	48
Other revenues	4	3
TOTAL REVENUES	58	51
EXPENSES		
Core operations	40	34
Projects	3	2
Modernization	18	4
TOTAL EXPENSES	61	40
SURPLUS (DEFICIT)	(3)	11

As Payments Canada operates on a cost recovery basis, revenues from members' fees are closely correlated with the annual operating budget. 2017 fees from members were \$54 million, consistent with planned operating costs for the year as well as Principles for Financial Market Infrastructures reserve funding.

2017 total expenses were \$61 million compared to \$40 million in the previous year. Payments Canada's Core operations reflects those costs required for the day-to-day activities of the clearing and settlement systems and Modernization are those costs directly related to the Modernization program. 2017 Core operation cost (including projects) reflects the completion of the Disaster Recovery Project, additional technology costs

associated with hosting our core payment systems, and investment in people to deliver on our priorities.

With the completion of initial planning in 2016, the Modernization program ramped up in 2017 with program expenses of \$18 million. An additional \$11 million on the program is reflected in capital assets.

The 2017 deficit is a combination of the financial results associated with Payments Canada's core operations as well as the Modernization program. The Core operations generated a surplus of \$4M while the Modernization program incurred a deficit of \$7M, resulting in a year end deficit of \$3M. Day-to-day operating costs for the current systems are covered by transaction fees paid by members. However, the costs

associated with the Modernization program are being paid for through debt financing as opposed to fees charged to members. This method of financing will continue throughout the duration of the modernization program. Accordingly, an annual deficit is expected each year while the national payments infrastructure is being modernized. The Canadian Payments Act permits Payments Canada to charge members an appropriate amount of dues in order to payback the financing associated with the Modernization program. As a result, the deficit is temporal in nature and will reduce once the systems become operational and members are subsequently billed for their use.



SELECTED ELEMENTS FROM THE STATEMENT OF FINANCIAL POSITION ITEMS

	2017	2016
Cash & cash equivalents	32	27
Accounts receivable	13	1
Capital assets	20	8
Total assets	67	37
Liabilities	41	8
Net assets	26	29

Payments Canada's statement of financial position experienced significant growth in 2017 as a result of the Modernization program. Cash and cash equivalent balances increased as reserves required under the Principles for Financial Market Infrastructures were strengthened along with higher reserves for the Modernization program. Higher

accounts receivable balances stem from a new funding model and billing methodology where transaction fees are now billed quarterly in arrears, as opposed to previous years where members paid fees upfront semi-annually. The growth in capital assets relates to the development of modernized payment systems.

Liabilities also grew during the year reflecting higher general payables and a new demand loan facility, both attributed to the Modernization program. The decision to debt finance the Modernization program resulted in a demand loan of \$24.5M at the end of the year.

2017 PERFORMANCE AT A GLANCE

The 2017 scorecard is based on key targets and supporting initiatives as detailed at the end of 2016 in our *Priorities for 2017*. We made significant progress against all the corporate strategies and initiatives, with the following modifications:

- The procurement schedule for Lynx has been delayed to Q1 2018 as a result of scope changes to SOE and socialization of these changes with members.
 - While the Payments Canada SUMMIT was a success in rich content, positive feedback and double the attendance, it did not meet its profitability goal.
- The 2017 priorities and status chart below includes additional information on the stage of these and other key corporate targets and initiatives.

MODERNIZE ON TRACK

EXPECTED OUTCOMES:

| To Modernize the core payments systems, including the policies, rules, standards and technology infrastructure.

KEY INITIATIVES	STATUS	UPDATE
New core clearing and settlement system	▼	Requirements for Lynx and the SOE were defined, and vendor proof of concepts completed with member involvement. The procurement schedule for Lynx has been delayed to 2018 as a result of scope changes to SOE and socialization of these changes with members.
Real-Time Rail (RTR)	▲	The RTR strategy and requirements were defined with working group participation. An assessment was completed on the feasibility of enhancing the existing market offering.
Enhanced Batch Automated Funds Transfer	▲	The development of a third exchange with faster funds availability is on track for Q3 2018 implementation by financial institutions. The ISO 20022 migration strategy approval is scheduled for early 2018.
Regulatory changes to align Canada with global standards	▲	A new Interim Credit Risk Model was developed for ACSS, which is operationally ready for 2018 deployment. Risk monitoring, and enhanced recovery plans and testing plan were also completed.
Rules Modernization	▲	The new policy framework was completed and socialized with members.

- LEGEND**
- ▲ Planned progress on schedule and within budget
 - ▼ Delays in terms of time to completion, budget and/or target variances
 - Deferred or cancelled

OPERATE AND ENHANCE

ON TRACK

EXPECTED OUTCOMES:

| [Payments system resiliency](#) | [Regulatory requirements for LVTS](#) | [Operational excellence](#)

KEY INITIATIVES	STATUS	UPDATE
Resiliency improvements through disaster recovery enhancements	▲	The project completed in Q3 2017 delivering near-continuous operations, strengthening disaster recovery capabilities, and improving overall resiliency.
Resiliency improvements through Cyber Security project	▲	The project completed in 2017 improving the capacity to reduce time between awareness and mitigation of threats and reducing the insider threat risk.
Fully observe LVTS PFMI requirements	▲	All requirements have been met. Quarterly reporting of intra-day liquidity monitoring and bi-annual reporting of tiered participation in our systems has been implemented.
Payment Systems Availability	▲	Payment systems exceeded service availability targets.
Engagement and Influence	▲	Confidence measures with our councils, operational committees and employees exceeded targets. We continue to engage and grow our influence through the expanded Payments Canada SUMMIT, and the steady increase in research papers, working groups and speaker presentations.
Strengthening our employees	▲	Targeted training and development has been delivered to assist with integrating the skills, education and experience of our growing team.

- LEGEND**
- ▲ Planned progress on schedule and within budget
 - ▼ Delays in terms of time to completion, budget and/or target variances
 - Deferred or cancelled

CREATE NEW OPPORTUNITIES **ON TRACK**

EXPECTED OUTCOMES:

- | Foster an innovative culture
- | Grow non-transactional revenue
- | Identify and evaluate emerging technologies

KEY INITIATIVES	STATUS	UPDATE
Innovation foundation	▲	Foundational elements were completed including adding capacity, and developing a data strategy roadmap.
New revenue opportunities	▲	We are creating value for our members through a number of innovations in the proof of concept stage, including FIF API, and ISO 20022 payment file validation services. The 2017 Payments Canada SUMMIT had double the attendance, broader content, increased sponsorship and positive feedback from attendees but did not meet its profitability target.
Emerging technologies	▲	Project Jasper Phase II showcased at the SUMMIT the proof-of-concept creation of a liquidity savings mechanism on a distributed ledger technology platform with substantial support from R3, BMO, BNS and TD. A joint white paper publication was released with Bank of Canada in 2017.

- LEGEND**
- ▲ Planned progress on schedule and within budget
 - ▼ Delays in terms of time to completion, budget and/or target variances
 - Deferred or cancelled

CORPORATE PLAN FOR 2018

“What propels us forward is the collective ambition to deliver a fast, flexible and secure payments system that promotes innovation and strengthens Canada’s competitive position.”

1. MODERNIZE

Modernize the core payment systems including the policies, rules, standards and technology infrastructure.

KEY 2018 INITIATIVES

Regulatory requirements. Meet near-term prominent payment system requirements with the implementation of the Automated Clearing Settlement System Interim Credit Risk Model.

Automated Funds Transfer enhancements. Phase I will deliver a third exchange and comply with two-hour funds availability following each exchange.

Real-Time Rail. Determine the phased approach for functionality delivery; finalize service provider arrangements and initiate design and development.

New high-value payment system. Finalize selection of the Lynx application provider, system integrator and infrastructure hosting partner selection; commence systems design and development.

Policy and Legal Framework. Review governing legislation and membership criteria; align with the new retail regulatory framework; determine how to better meet our facilitation mandate and refresh the appropriate use of policy tools.

2. OPERATE & ENHANCE

Strengthen management and overall performance in the key areas of payment systems resiliency and operational excellence.

KEY 2018 INITIATIVES

Payment system resiliency

Core Payment Systems. Support and provide regular releases to the Large Value Transfer System and Automated Clearing Settlement System as required, and conduct the first annual Automated Clearing Settlement System audit in compliance with the Prominent Payment System designation.

Cyber Security. Define the program and timeline to improve our cyber posture; close identified gaps and improve our security capacity, capability and maturity to operate 24X7 while maintaining above industry average security ratings.

Operational Excellence

Modernization Readiness. Migrate our internal structure to be more outward facing and product focused, so as to be agile in response to changes brought about by Modernization.

Organizational Development. Focus on employee development, delivering a leadership program for senior leaders as well as core employee competency improvements through enhancements to our career development process.

3. ADVANCE NEW OPPORTUNITIES

Develop offerings that provide value to our members, stakeholders and users.

KEY 2018 INITIATIVES

New service offerings. Deliver a new Payment File Validation Service to facilitate the member financial institution onboarding of corporate clients to ISO 20022 into production operations. Modify the FIF application to enable financial institutions to input and receive data through APIs.

Connections and collaboration. Increase the volume and quality of work in the research and academic community, extend the reach and quality of our annual Payments Canada SUMMIT conference, and engage the ecosystem in a more targeted way.

Emerging technologies. Collaborate with TMX and Bank of Canada on Project Jasper Phase III to build an integrated securities and payment financial market infrastructure proof-of-concept.



A large, stylized teal chevron graphic pointing to the right, composed of three nested arrow shapes. The background is a dark teal color with a network of white lines and dots, and faint, scattered alphanumeric characters.

CLEARING & SETTLEMENT SYSTEM STATISTICS



CLEARING AND SETTLEMENT SYSTEM STATISTICS

Payments Canada operates two national systems for the clearing and settlement of payments. The Automated Clearing Settlement System clears predominantly low-value retail payments, which represent the vast majority of payments cleared in Canada each year. The Large Value Transfer System is Canada's wire transfer system.¹ It supports settlement of time-sensitive economic transactions in Canada (e.g. house closings, corporate merger and acquisition payments). It is also integral to the smooth functioning of financial markets in Canada, as it facilitates Canadian-dollar (cash) settlement for Canada's other core financial market

infrastructures, including those settling securities, foreign exchange and derivatives transactions between counterparties.² The Large Value Transfer System also serves as the platform for the daily implementation of monetary policy in Canada.

While arrangements can vary by payment type, scheme and use case, it is reasonable to conjecture that every non-cash payment in Canada that entails a transfer of funds between accounts at different participating financial institutions will ultimately be settled through the Large Value Transfer System at some point along the payment value chain.

In 2017, Payments Canada systems cleared and settled approximately 7.68 billion payments worth a total of \$50.45 trillion. This represents an average of 30.37 million payments with a total value of \$199.39 billion per business day.

In 2017, the use of electronic payment methods in Canada grew by one per cent in both volume and value over the previous year. Paper payment methods – which are predominantly cheque payments – fell by one per cent in terms of both volume and value.³

¹ The term "retail" payments in context of the ACSS may be a bit of a misnomer, as these payments could be initiated by consumers, businesses, financial institutions, or governments in Canada, across a variety of use cases.

² The LARGE VALUE TRANSFER SYSTEM is also the platform used to transfer funds between ACSS Direct Clearers and the Bank of Canada to enable ACSS settlement. Settlement of the LARGE VALUE TRANSFER SYSTEM and the ACSS takes place over participating financial institutions' (i.e., LARGE VALUE TRANSFER SYSTEM Participants and ACSS Direct Clearers, respectively) settlement accounts maintained at the Bank of Canada.

³ Electronic and paper payment items include all streams in the ACSS and the MT 103 stream in the LARGE VALUE TRANSFER SYSTEM. The LARGE VALUE TRANSFER SYSTEM supports two SWIFT payment message types: MT 103 and MT 205. In 2017, 67 per cent of transactions by volume were MT 103, which include non-financial customer-initiated payments only. In contrast, 33 per cent of transfers were MT 205 transactions, which are predominantly transfers between financial institutions. In value terms, MT 103 transfers account for 22 per cent and MT 205 transfers account for 78 per cent of total LARGE VALUE TRANSFER SYSTEM value.



2017 TOTAL SYSTEM STATISTICS

Total volume:

**7.68
billion
items**

Total value:

**\$50.45
trillion**

Daily average volume:

**30.37
million**

Daily average value:

**\$199.39
billion**

AUTOMATED CLEARING SETTLEMENT SYSTEM VOLUME AND VALUE

The Automated Clearing Settlement System is the system through which the vast majority of non-cash Canadian-dollar payment items (both paper-based and electronic) are cleared, in accordance with their relevant payment “stream.”⁴ These are mainly low-value payments initiated by consumers, businesses, financial institutions, and governments in

Canada. Following the exchange of relevant information pertaining to these payments between financial institutions, a corresponding batch-based debit entry will be made to the Automated Clearing Settlement System by the Direct Clearer in the appropriate stream – where the batch entry reflects the aggregate value and volume of payments involved

in the exchange. A core aspect of Automated Clearing Settlement System clearing is a calculation of final multilateral net clearing balances for Direct Clearers based on these batch entries. These final clearing balances give rise to Automated Clearing Settlement System settlement.⁵



⁴ There are over 20 active payments streams supported by the ACSS at the current time. A couple of examples are that Canadian-dollar cheque payments not drawn on the Federal government will typically clear through ACSS Stream “E”, while non-government direct deposit payments (e.g., payroll and other recurring disbursements) will clear through ACSS Stream “C”.

⁵ For a more detailed description of the ACSS clearing and settlement process, please see N. Arjani. 2016. A Primer on credit risk in Canada’s Automated Clearing Settlement System. Payments Canada Discussion Paper No. 6.

TRENDING UPWARDS

Automated Clearing Settlement System volume and value continued to trend upward in 2017. As Figure 2 shows, volume increased by four per cent, and value by five per cent over 2016. Volume growth was slightly lower compared to the previous

year (six per cent in 2016), but value growth more than doubled from only two per cent in 2016. Automated Clearing Settlement System historical volume growth was on a downward trend until 2014 and has recently picked up pace. Historical value

growth has fluctuated in recent years, declining in 2013 and subsequently increasing in 2015. In 2016, value growth slowed down once again but gained momentum in 2017, rising to five per cent.

Figure 2: ACSS Volume and Value Growth Rates

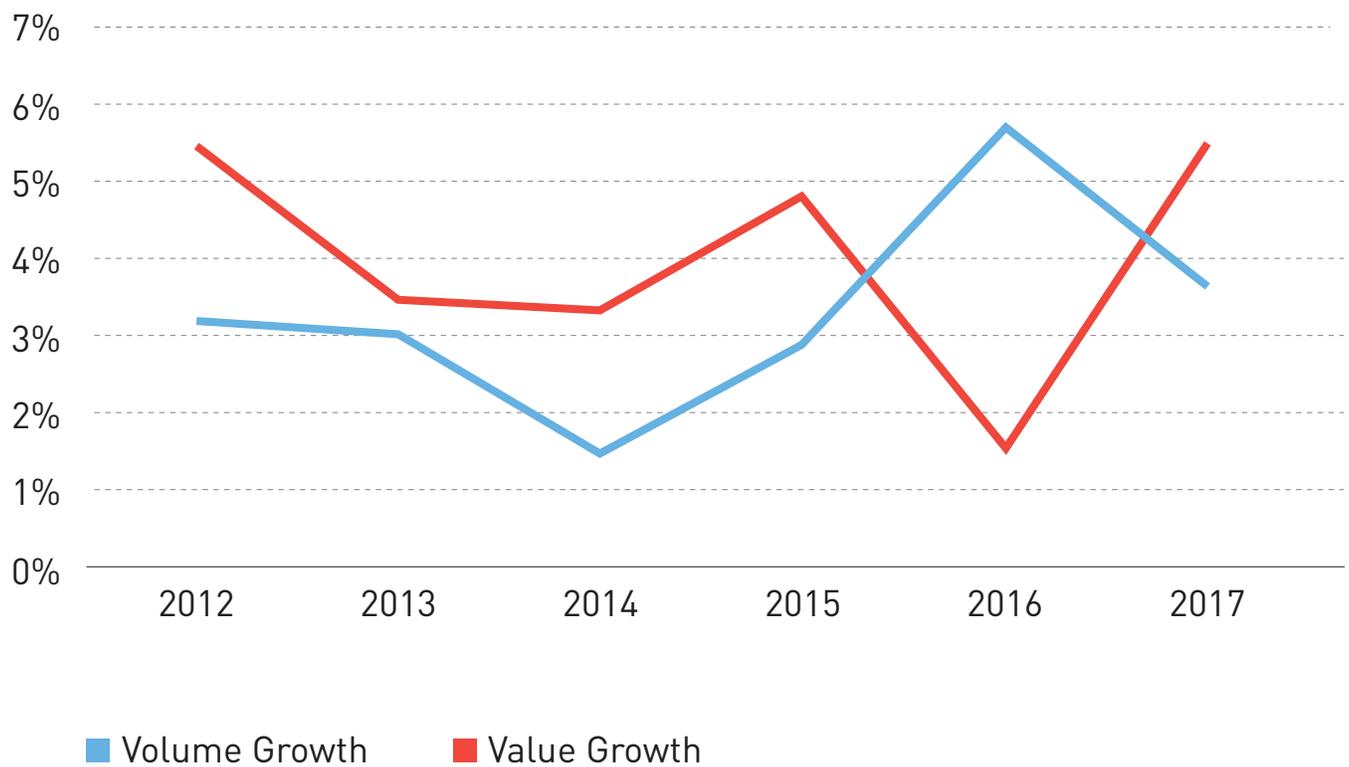


Figure 3 below illustrates the volume breakdown by stream in the Automated Clearing Settlement System. Point-of-Service debit transactions account for the majority of payments at 61 per cent, followed by Automated Funds Transfer credits—also known as direct deposits—which represent 12 per cent of system volume.

In 2017, total Automated Funds Transfer payments (pre-authorized debits and direct deposits) combined for the largest share of Automated Clearing Settlement System value at 47 per cent, followed by cheques at 44 per cent (Figure 4). The first time that Automated Funds Transfer payments surpassed cheques in terms of Automated Clearing

Settlement System value was in 2016 – this was a significant milestone for the Canadian payments ecosystem. This trend continued into 2017, with cheque and paper item volume and value falling and Automated Funds Transfer payment volume and value growing.

AUTOMATED CLEARING SETTLEMENT SYSTEM STREAM BREAKDOWNS ⁶

Figure 3: Share of ACSS volume

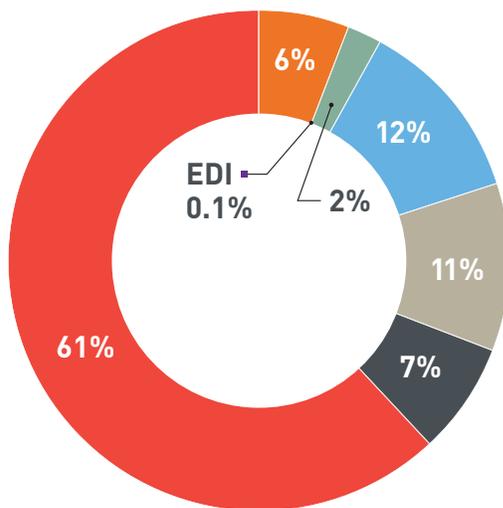
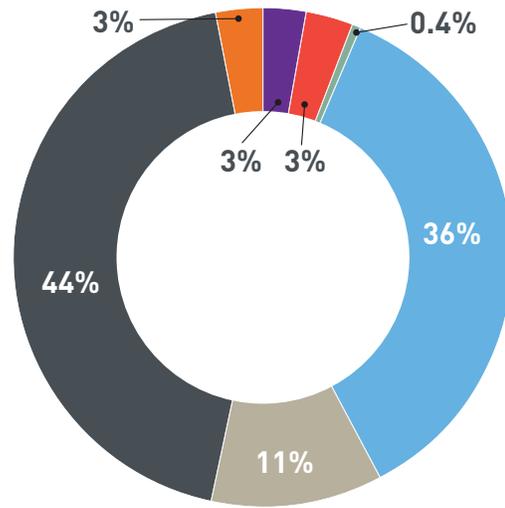


Figure 4: Share of ACSS value



- Shared ABM Networks
- Electronic Remittances
- AFT Credits
- Cheque and paper
- Point of Service - Debit
- AFT Debits
- EDI

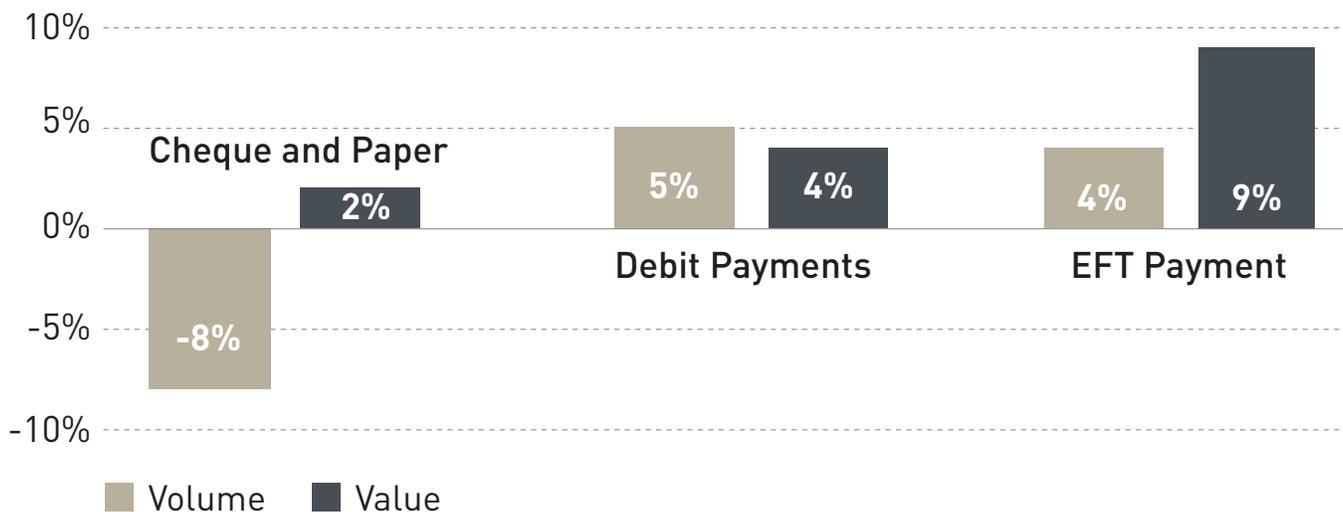
⁶ For additional information on what is included in these streams, please see <https://www.payments.ca/resources/payments-glossary>

Figure 5, below, shows that cheque and paper payment items decreased in volume in 2017—down eight per cent year-over-year. According to Payments Canada’s 2017 Canadian Payment Methods and Trends report⁷, out of the estimated 798.3 million cheques processed in Canada in 2016⁸ (worth an estimated \$3.99 trillion), 30 per cent were written by individuals. At \$99 billion, these represented only about 2.5 per cent of total value of cheques in Canada—indicating, not surprisingly, that consumers issue lower-value

cheques compared to businesses and governments in Canada. The majority of cheques in Canada were issued by businesses—small-to-medium sized enterprises in particular. In 2016, total commercial cheque and paper items⁹ in Canada combined for an estimated value of nearly \$3.89 trillion, which is approximately 97.5 per cent of the value of all cheques in Canada.¹⁰ A key reason why cheque and paper payment items continue to be used is a lack of capacity for rich remittance data to travel with payment using existing electronic

payment practices in Canada. This precludes straight-through-processing and automated reconciliation, adding to overall payment processing costs for Canadian businesses.¹¹ Increasing the capacity for remittance data to travel with a payment, through the implementation of ISO 20022-compliant payment messaging for Automated Funds Transfer payments in Canada, for example, is crucial to enabling business migration to e-payments, and is a focus of the Payments Canada Modernization strategy.¹²

Figure 5: ACSS General Payment Types Year-Over-Year Growth (2017)



⁷ *Canadian Payment Methods and Trends*, Payments Canada, December 2017.

⁸ In calculating the estimated number of cheques in Canada, assumptions were made for items not cleared through Payments Canada systems such as “on us” items, leading to a different total than is shown in other sections about items cleared through the ACSS. On-us items are payments between customers of the same financial institution, which are handled as book entries by financial institutions.

⁹ Commercial payments include transactions that originate from Canadian organizations, businesses and governments.

¹⁰ Adapted from *Canadian Payments Forecast 2016*, Technology Strategies International.

¹¹ *The Role of Automated Funds Transfer Payments in Canada’s Declining Use of Cheques*, Payments Canada, June 2015.

¹² Payments Canada’s “The economic benefit of adopting the ISO 20022 payment message standard in Canada” paper discusses the economic benefits of ISO 20022 that could stem from expedited cheque reduction in Canada. Please see https://www.payments.ca/sites/default/files/2016-economic-benefit-iso20022_1.pdf For additional information on how the Modernization project can benefit Canadian businesses, please see https://www.payments.ca/sites/default/files/report_costs_of_payments_processing_eng_final_2018.pdf



ACSS 2017 STATISTICS

Total volume:

**7.67
billion
items**

Total value:

**\$6.96
trillion**

Daily average volume:

**30.3
million**

Daily average value:

**\$27.51
billion**

LARGE VALUE TRANSFER SYSTEM VOLUME AND VALUE

The Large Value Transfer System is an electronic wire system that facilitates the irrevocable transfer of Canadian dollar wire payments between parties.¹³ Through the Large Value Transfer System, funds can be transferred between participating financial institutions virtually instantaneously without the risk of subsequently being unwound or reversed. The Large Value Transfer System plays a critical role in the Canadian financial system, and has been designated by the Bank of Canada as a systemically important payments system in accordance with the *Payments Clearing and Settlement Act*.¹⁴

LARGE VALUE TRANSFER SYSTEM VOLUME AND VALUE

Large Value Transfer System payment volume continued to increase in 2017, with a 3.5 per cent rise over 2016. The value of Large Value Transfer System payments actually decreased in 2017 by approximately -1.6 per cent, or \$0.7 trillion. This can be mostly attributed to a decrease in the number of financial institution-initiated transactions (MT 205s), which fell by about \$1 trillion. The value of customer-initiated transactions (MT 103s) rose by approximately \$394 billion in 2017 over 2016. This trend of positive year-on-year growth in Large Value Transfer System volume, combined with marginal or

below-zero growth in Large Value Transfer System value, has endured since the 2008-09 global financial crisis, though there is no compelling evidence of a causal relationship. Notably, this has resulted in the average value per payment cleared by the Large Value Transfer System falling by roughly half since 2007 to just under \$5 million in 2017.

Large Value Transfer System payment volume continued to increase in 2017

¹³ A detailed account of the LVTS model can be found in N. Arjani and D. McVanel. 2006. A Primer on Canada's Large Value Transfer System. Bank of Canada. Available at: https://www.bankofcanada.ca/wp-content/uploads/2010/05/lvts_neville.pdf

¹⁴ The PCSA is available from <http://laws-lois.justice.gc.ca/PDF/P-4.4.pdf>

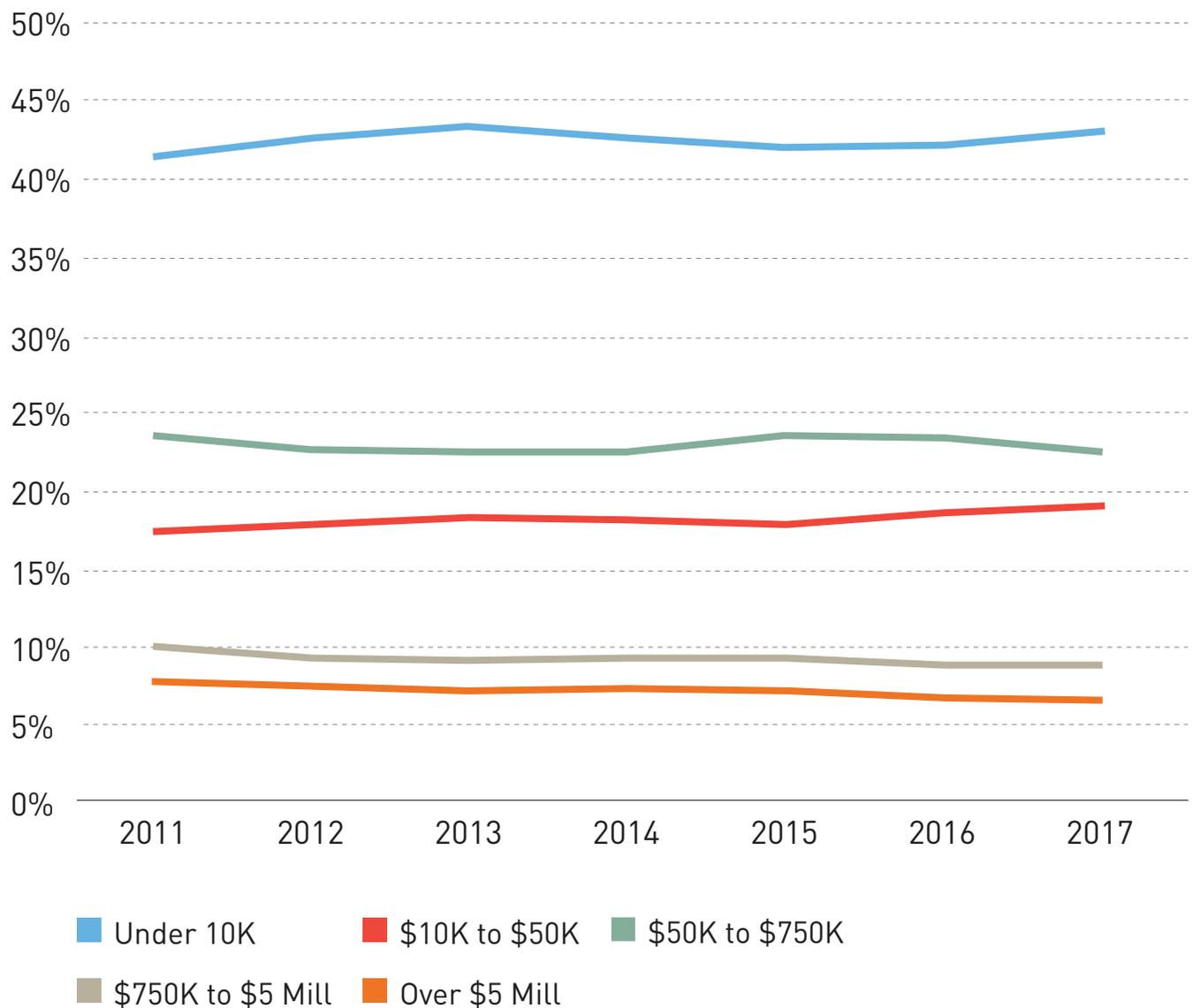
LARGE VALUE TRANSFER SYSTEM VOLUME GROUPED BY TRANSACTION SIZE

At eight per cent, payments with values of between \$10,000 and \$50,000 showed the strongest year-over-year growth in volume, followed by payments under \$10,000 at seven per cent. Over 60 per cent of Large Value Transfer System payments were for values under \$50,000 and only about

six per cent of Large Value Transfer System payments were for amounts greater than \$5 million. In 2017, the year-over-year growth for values over \$5 million decreased to -1 per cent and values of between \$50,000 and \$750,000 continued to grow in 2017. However, that growth occurred at a

much slower rate than in the past at only one per cent, compared to almost seven per cent growth in 2016 over the previous year. See **Figure 7**, below, for a historical overview of Large Value Transfer System volume grouped by transaction size as percentage shares of total annual volume.

Figure 7: LVTS volume statistics



» LVTS 2017 STATISTICS

Total volume:

**8.99
million**

Total value:

**\$43.49
trillion**

Daily average volume:

35,565

Daily average value:

**\$171.89
billion**



GOVERNANCE

THE BOARD OF DIRECTORS

Under the leadership of Eileen Mercier, the 13-director board is charged with directing and managing the affairs of the organization with a focus on strategic and policy matters.

The board welcomed four new directors with a diverse range of expertise in 2017: Garry Foster, CEO of Cortleigh Capital Inc., Carolyn Burke, Head of Enterprise Payments for Royal Bank of Canada, François Desjardins, President & CEO of Laurentian Bank and Chair of the Board of Directors

of B2B Trust, and Ernie Johannson, Head of North American Retail credit and CRO of P&C Banking and Wealth Management for Bank of Montreal. We also welcomed back Doug Steiner for a second term as an independent director.

The board receives advice and counsel from the Payments Canada Stakeholder Advisory Council and the Member Advisory Council.



Board of Directors: Eileen Mercier (Chair), Gerry Gaetz (President and CEO), Malcolm Knight (Deputy Chair), David Barnard, Carolyn Burke, François Desjardins, Dan Dickinson, Susan Doniz, Garry Foster, Lib Gibson, Chuck Hounsell, Ernie Johannson, Doug Steiner





PAYMENTS CANADA BOARD OF DIRECTORS

ELECTED UNTIL ANNUAL MEETING OF MEMBERS 2020

Doug Steiner
Independent Director

Garry Foster
Independent Director

Carolyn Burke
Head, Enterprise Payments,
Royal Bank of Canada

François Desjardins
President & CEO, Laurentian Bank
and Chair of Board, B2B Bank

ELECTED UNTIL ANNUAL MEETING OF MEMBERS 2019

David Barnard
Independent Director

Susan Doniz
Independent Director

Dan Dickinson
Chief Digital Officer, Equitable Bank

Ernie Johannson
Head, North American Retail Credit
and CRO, P&C Banking and Wealth
Management, Bank of Montreal

ELECTED UNTIL ANNUAL MEETING OF MEMBERS 2018

Eileen Mercier (Chair)
Independent Director

Malcolm Knight (Deputy Chair)
Independent Director

Lib Gibson
Independent Director

Chuck Hounsell
Senior Vice President, Payments,
The Toronto-Dominion Bank

BOARD COMMITTEES

There are five board committees with mandates to carry out specific functions to support the Payments Canada Board of Directors.

1 RISK COMMITTEE OF THE WHOLE

The Risk Committee is a committee of the whole board and assists the board in fulfilling its responsibilities in relation to several crucial functions: risk management oversight, including oversight over Payments Canada's Enterprise Risk Management Policy and risk appetite statement.

2 AUDIT AND FINANCE COMMITTEE

The Audit and Finance Committee assists the board in fulfilling its responsibilities in relation to several crucial functions: financial monitoring and audits; and financial planning, including oversight of budget development. This committee may also oversee projects as delegated by the board.

2017 MEMBERSHIP¹⁵

Garry Foster - Chair
Ernie Johannson
Malcolm Knight
Eileen Mercier (ex officio)
Doug Steiner

3 GOVERNANCE AND NOMINATING COMMITTEE

The Governance and Nominating Committee assists the board in fulfilling its responsibilities in relation to governance (i.e. oversight of board performance effectiveness, governance policies and guidelines, and compliance); code of conduct and standards of behaviour for board and management; director nomination and qualification; board succession planning; board orientation and continuing education; and evaluation of board committees as a whole.

2017 MEMBERSHIP¹⁶

David Barnard – Chair
Carolyn Burke
François Desjardins
Garry Foster
Malcolm Knight
Eileen Mercier (ex officio)

4 HUMAN RESOURCES AND COMPENSATION COMMITTEE

The Human Resources and Compensation Committee assists the board in fulfilling its responsibilities in the evaluation and compensation of the president and CEO, review of the CEO's evaluation of senior management, employee benefits and pension plans, human resources policies, and management succession planning.

2017 MEMBERSHIP¹⁷

Chuck Hounsell – Chair
Dan Dickinson
Susan Doniz
Lib Gibson
Eileen Mercier (ex officio)

5 TECHNOLOGY AND MODERNIZATION COMMITTEE

The Technology and Modernization Committee assists the board in fulfilling its responsibilities in: reviewing strategies for technology and modernization and related areas, including resilience and cyber security; monitoring the performance of technology throughout Payments Canada and its contribution towards Payments Canada's business and strategic objectives; identifying, monitoring and evaluating existing and emerging technology issues and trends that may affect Payments Canada's strategic plan; and monitoring technology-related risks and Payments Canada's plans and efforts to manage those risks.

2017 MEMBERSHIP¹⁸

Lib Gibson – Chair
David Barnard
Carolyn Burke
Dan Dickinson
François Desjardins
Susan Doniz
Chuck Hounsell
Eileen Mercier (ex officio)
Doug Steiner

¹⁵ As at December 31, 2017.

¹⁶ As at December 31, 2017.

¹⁷ As at December 31, 2017.

¹⁸ As at December 31, 2017.

BOARD AND COMMITTEE ATTENDANCE

MEMBER	MEMBER SINCE	BOARD	AFC	GNC	HRCC	TMC
NUMBER OF MEETINGS		4	2	3	2	3
DIRECTOR ATTENDANCE						
E. Mercier – Chair	Jul 15	4	2	3	2	3
M. Knight – Deputy Chair	Jul 15	4	1	3	n/a	n/a
B. Clark	Mar 10	4	n/a	3	n/a	3
L. Gibson	Jul 15	4	n/a	2	n/a	3
C. Hounsell	Jul 15	4	n/a	n/a	2	3
S. Lesy	Jul 15	4	1	1	n/a	n/a
S. MacKinnon	Mar 11	3	n/a	2	2	n/a
D. Barnard	May 16	4	n/a	3	n/a	3
S. Doniz	May 16	3	n/a	n/a	2	3
D. Dickinson	May 16	4	n/a	n/a	2	3
D. Steiner	Jul 15	4	2	n/a	n/a	3
M.L. Desrochers	May 16	1 of 1 ¹	n/a	n/a	n/a	n/a
G. Gaetz	Jul 15	4	n/a	n/a	n/a	n/a

¹ Ms. Desrochers resigned after the first board meeting in January 2017.

² Ms. Burke, Ms. Johannson and Messrs. Foster and Desjardins, were elected to the board in June 2017.

Note: since board committees meet at least one day before the board meetings, the attendance is for meetings up to and including the June meeting.

BOARD AND COMMITTEE ATTENDANCE

June (following annual meeting of members) to December 2017

MEMBER	MEMBER SINCE	BOARD	AFC	GNC	HRCC	TMC	RISK COMMITTEE
NUMBER OF MEETINGS		3	2	2	2	3	2
DIRECTOR ATTENDANCE							
E. Mercier – Chair	Jul 15	3	2	2	2	2	2
M. Knight – Deputy Chair	Jul 15	3	2	2	n/a	n/a	2
L. Gibson	Jul 15	3	n/a	n/a	2	3	2
C. Hounsell	Jul 15	3	n/a	n/a	2	3	2
D. Barnard	May 16	3	n/a	2	n/a	3	2
S. Doniz	May 16	3	n/a	n/a	2	3	2
D. Dickinson	May 16	3	n/a	n/a	2	3	2
D. Steiner	Jul 15	3	2	n/a	n/a	3	2
C. Burke	Jun 17	3	n/a	1	n/a	2	2
E. Johannson	Jun 17	3	1	n/a	n/a	n/a	2
G. Foster	Jun 17	3	2	2	n/a	n/a	2
F. Desjardins	Jun 17	3	n/a	1	n/a	2	2
G. Gaetz	Jul 15	3	n/a	n/a	n/a	n/a	2

Note: since board committees meet at least one day before the board meetings, the attendance above is for meetings after June.

PAYMENTS CANADA EXECUTIVE LEADERSHIP TEAM

The Payments Canada Executive Leadership Team provides strategic direction, leadership and oversight to the organization.

Gerry Gaetz
President and Chief
Executive Officer

Justin Ferrabee
Chief Operating Officer

Sheila Vokey
Chief Financial Officer

Jan Pilbauer
Executive Director,
Modernization and Chief
Information Officer

Anne Butler
Vice President Policy,
Research,
Legal and General Counsel

Nora Cox
Chief Risk Officer



Executive Leadership Team:

Jan Pilbauer, Nora Cox, Anne Butler, Gerry Gaetz, Sheila Vokey, Justin Ferrabee

MEMBER ADVISORY COUNCIL

The Member Advisory Council provides counsel and advice to the board on our clearing and settlement systems, the interaction of those systems with other systems involved in the exchange, clearing or settlement of payments, and the development of new technologies.

The 20-person Member Advisory Council is codified in the Canadian Payments Act. It serves as a consultative and engagement forum for system participants who are members of Payments Canada.

APPOINTED UNTIL JULY 2020

Todd Roberts

Senior Vice President, Canadian Imperial Bank of Commerce

Sharon Haward-Laird

Senior Vice President, North American Treasury and Payment Solutions, Bank of Montreal

John Pals

Vice President Marketing & Innovation, Peoples Trust Company

Amy Altersohn

Executive Director, JPMorgan Chase, National Association

Vacant

Central 1 Credit Union

Steve Dunn

Chief Technology and Payments Officer, Credit Union Central of Alberta

Stephen Fitzpatrick

Chief Financial Officer, Exchange Bank of Canada

APPOINTED UNTIL JULY 2019

Christine Hunter

Vice President, Enterprise Payments, The Toronto-Dominion Bank

Rania Llewellyn

Senior Vice President, Cash Management & Payment Services, The Bank of Nova Scotia

Maureen Jarvis

Managing Director, Head of Global Transaction Services Canada, Bank of America, National Association

Brian Guillemin Executive Vice President, Corporate Services, Concentra Financial Services Association

Min (David) Zhang

Executive Vice President and Head of IT Department, Industrial and Commercial Bank of China (Canada)

John Landry

Managing Director, Head of Treasury and Trade Solutions, Citibank Canada

APPOINTED UNTIL JULY 2018

Lisa Lansdowne-Higgins

Vice President, Business Deposits & Treasury Solutions, Royal Bank of Canada

Stephen Lacelle

Vice-président Opérations, Activités de paiements et transactionnelles, Banque Nationale

Ed White

Senior Vice President & Head of Canada Operations, HSBC Operations, Services & Technology, HSBC Bank Canada

Keith Hughes

Senior Vice President, Sales & Marketing, Canadian Western Bank

Patrice Dagenais

Vice President, Payments Solutions, Desjardins Group

John Tarnowski

Senior Vice President and Head of Customer Experience, Alberta Treasury Branches

Grahame Johnson

Chief - Funds Management and Banking Department, Bank of Canada

2017 MAC MEMBERSHIP AND MEETING ATTENDANCE

COUNCIL MEMBER	ORGANIZATION REPRESENTED	MEMBER SINCE	MEETINGS ATTENDED (OR DELEGATE)
CURRENT MEMBERS			
Todd Roberts, Chair	Canadian Imperial Bank of Commerce	July 2015	8/8
Patrice Dagenais, Vice Chair	La Fédération des caisses Desjardins du Québec	July 2015	8/8
Amy Altersohn	JPMorgan Chase Bank, National Association	July 2015	7/8
Steve Dunn	Credit Union Central of Alberta	July 2017	3/3
Stephen Fitzpatrick	Exchange Bank of Canada	July 2017	3/3
Brian Guillemin	Concentra Financial Services Association	July 2015	3/5
Sharon Howard-Laird	Bank of Montreal	May 2017	4/5
Keith Hughes	Canadian Western Bank	Sept. 2017	2/2
Christine Hunter	The Toronto-Dominion Bank	May 2017	5/5
Maureen Jarvis	Bank of America, National Association	July 2015	7/8
Grahame Johnson	Bank of Canada	July 2015	7/8
Stephen Lacelle	National Bank of Canada	July 2015	8/8
John Landry	Citibank Canada	July 2016	7/8
Lisa Lansdowne-Higgins	Royal Bank of Canada	Sept. 2017	2/2
Rania Llewellyn	The Bank of Nova Scotia	July 2015	8/8
John Pals	Peoples Trust Company	July 2017	2/3
John Tarnowski	Alberta Treasury Branches	Dec. 2016	6/8
Ed White	HSBC Bank Canada	July 2015	7/8
Min (David) Zhang	Industrial and Commercial Bank of China (Canada)	July 2016	4/8
PAST MEMBERS			
Carolyn Burke – Chair	Royal Bank of Canada	July 2015	5/5
Diane Davies	Canadian Western Bank	July 2015	5/5
David O'Neill	B2B Bank (representing Laurentian Bank of Canada)	July 2016	4/5
Erminia (Ernie) Johannson	Bank of Montreal	July 2015	3/3
David Losier	La Fédération des caisses populaires Acadiennes Limitée	July 2015	3/3
Gilles Lanteigne	La Fédération des caisses populaires Acadiennes Limitée	May 2017	2/2
Rizwan Khalfan	The Toronto-Dominion Bank	July 2015	2/3
Oscar van der Meer	Central 1 Credit Union	July 2015	8/8

STAKEHOLDER ADVISORY COUNCIL

Payments Canada's 20-person Stakeholder Advisory Council was established in 1996 and was formalized in the Canadian Payments Act in 2001. The Stakeholder Advisory Council provides advice to the Payments Canada Board of Directors on payment, clearing and settlement matters and provides input on proposed initiatives. The council also identifies issues that might concern payments system users and service providers and suggests how they could be addressed.

APPOINTED UNTIL MARCH 31, 2020

Doug Bruce

Vice President, Research Canadian Federation of Independent Business User (Retail)

Jean Hope

Director, Financial & Banking Relations, Banking & Cash Management Branch, Ministry of Finance, Province of British Columbia, User (Government)

Don Mercer

President & CEO Consumers Council of Canada, User (Consumers)

Juan Blanco

Vice-President and GM, Western Union Canada, SP

Ritu Khanna

Head, Global Core Payments PayPal Canada, User / SP

Bill Piggot

Vice President, International Money Movement, ADP Canada, User / SP

APPOINTED UNTIL MARCH 31, 2019

Donna Kinoshita

Senior Vice President, Global Products and Solutions, MasterCard Canada, User / SP

Laurence Cooke

Founder & CEO, nanoPay Corporation, User / SP

Brenda Gibson

Vice President, British Columbia Region, Wawanesa Insurance, User

Karl Littler, Vice President, Public Affairs, Retail Council of Canada, User (Retail)

Lisa Shields

Founder and CEO, FI.SPAN Services Inc., User / SP

Brent Mizzen

Director, Policy Development Canadian Life and Health Insurance Association, User

APPOINTED UNTIL MARCH 31, 2018

Vacant

Public Interest Advocacy Centre, User (Consumers)

Celine Chartier

Director General, Banking and Cash Management, Receiver General for Canada, PSPC, User (Government)

John McKenzie

Chief Operating Officer & Chief Financial Officer Canadian Depository for Securities Ltd., User

Peter Thom

Director, Treasury Operations & Assistant Treasurer, Bell Canada User (Treasury)

Vacant

User / SP

Heather MacMillan

Head, Product Management Finastra SP

CPA BOARD OF DIRECTORS REPRESENTATIVES

Ernie Johannson

Head, North American Retail Credit and CRO P&C Banking and Wealth Management, Payments Canada Board of Directors, n/a

FINANCE CANADA OBSERVER

Hugues Vaillancourt, Chief, Financial Sector Policy Branch, Finance Canada n/a

2017 SAC MEMBERSHIP AND MEETING ATTENDANCE

COUNCIL MEMBER	ORGANIZATION REPRESENTED	MEMBER SINCE	MEETINGS ATTENDED (OR DELEGATE)
CURRENT MEMBERS			
Brent Mizzen (Chair)	Canadian Life and Health Insurance Association	November 2012	5/5
Bill Piggot (Vice Chair)	ADP Canada	April 2014	4/5
Juan Blanco	Western Union Canada	April 2017	3/4
Doug Bruce	Canadian Federation of Independent Business	April 2014	5/5
Céline Chartier	Receiver General (Federal Government)	September 2016	5/5
Laurence Cooke	nanoPay Corporation	April 2016	4/5
Brenda Gibson	Wawanesa Insurance	April 2015	3/5
Jean Hope	Province of British Columbia	April 2014	5/5
Ernie Johannson (Payments Canada Board)	Bank of Montreal	June 2017	1/2
Ritu Khanna	PayPal Canada	April 2014	2/3
Donna Kinoshita	MasterCard Canada	December 2016	5/5
Heather MacMillan	Finastra	November 2017	1/1
John McKenzie	Canadian Depository for Securities Ltd.	April 2015	4/5
Don Mercer	Consumers Council of Canada	April 2014	5/5
Karl Littler	Retail Council of Canada	April 2016	5/5
Lisa Shields	FI.SPAN Services Inc.	April 2017	4/4
PAST MEMBERS			
Caroline Hubberstey	Interac Association	April 2012	0/1
Sue Hutchison	D+H Canada	April 2015	2/4
Susan Doniz (Payments Canada Board)	Quantas Airlines	May 2016	3/3
Katja Lehr	PayPal	April 2017	2/2
Tom Morrison	Association for Financial Professionals of Canada (Suncor Energy)	April 2014	0/1
Jacques St Amant	Public Interest Advocacy Centre	April 2011	4/4
Peter Thom	Bell Canada	October 2004	4/5
MarieLynne Desrochers (Payments Canada Board)	National Bank of Canada	May 2016	1/1



FINANCIAL STATEMENTS

Payments Canada
Financial Statements
For the year ended December 31, 2017

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BDO Canada s.r.l./LLP
1730 St-Laurent Boulevard, Suite 100
Ottawa ON K1G 5L1 Canada

Independent Auditor's Report

To the members of Payments Canada

We have audited the accompanying financial statements of Payments Canada, which comprise the statement of financial position as at December 31, 2017, and the statements of operations, changes in net assets and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Payments Canada as at December 31, 2017, and the results of its operations, changes in net assets and cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

BDO Canada LLP

Chartered Professional Accountants, Licensed Public Accountants

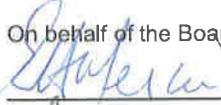
Ottawa, Ontario
February 22, 2018

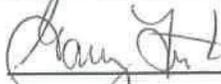
Payments Canada
Statement of Financial Position
(in thousands of dollars)

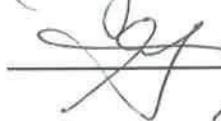
As at December 31	2017	2016
Assets		
Current		
Cash and cash equivalents	\$ 31,621	\$ 27,441
Accounts receivable	13,498	556
Prepaid expenses	2,048	1,582
	<u>47,167</u>	<u>29,579</u>
Capital assets (Note 3)	19,787	7,604
Total Assets	\$ 66,954	\$ 37,183
Liabilities and Net Assets		
Liabilities		
Current		
Accounts payable and accrued liabilities	\$ 13,324	\$ 5,105
Demand loan (Note 6)	24,500	-
Deferred revenue	793	337
	<u>38,617</u>	<u>5,442</u>
Tenant inducement (Note 4)	1,489	1,683
Accrued benefit liability (Note 5)	1,249	747
Total Liabilities	41,355	7,872
Commitments (Note 8)		
Net Assets		
Restricted (Note 7)	22,318	16,624
Unrestricted	3,281	12,687
	<u>25,599</u>	<u>29,311</u>
Total Liabilities and Net Assets	\$ 66,954	\$ 37,183

See accompanying notes to the financial statements.

On behalf of the Board:







Payments Canada
Statement of Operations
(in thousands of dollars)

For the year ended December 31	2017	2016
Revenues		
Fees	\$ 53,935	\$ 47,730
Costs recovered from members	1,603	1,579
Conference and other revenues	1,944	1,534
	57,482	50,843
Expenses		
Modernization program	17,890	3,975
Salaries and benefits	17,405	15,280
Technology and telecommunications	7,752	7,076
Projects	5,044	2,544
General administration	4,722	4,094
Amortization of capital assets	2,937	2,018
Professional Services	2,539	1,898
Costs incurred for members	1,595	1,595
Bank of Canada Settlement Services Fee	900	900
	60,784	39,380
(Deficiency) excess of revenues over expenses	\$ (3,302)	\$ 11,463

Payments Canada
Statement of Changes in Net Assets
(in thousands of dollars)

For the year ended December 31	Restricted		Unrestricted		2016
	Core Ops	Modernization	Core Ops	Modernization	
Balance, beginning of the year	\$ 12,150	\$ 4,474	\$ 12,687	\$ -	17,824
(Deficiency) excess of revenues over expenses	-	-	4,151	(7,453)	11,463
Employee future benefit remeasurements	-	-	(410)	-	24
Transfer to restricted net assets (Note 7)	3,247	10,573	(3,247)	(10,573)	-
Transfer to unrestricted net assets (Note 7)	(3,652)	(4,474)	3,652	4,474	-
Balance, end of the year	\$ 11,745	\$ 10,573	\$ 16,833	\$ (13,552)	29,311
Combined, end of the year	\$ 22,318	\$ 3,281	\$ 25,599	\$ 25,599	

Payments Canada
Statement of Cash Flows
(in thousands of dollars)

For the year ended December 31	2017	2016
Cash flows from operating activities		
(Deficiency) excess of revenues over expenses	\$ (3,302)	\$ 11,463
Items not affecting cash:		
Amortization of capital assets	2,937	2,018
Employee future benefit remeasurements	(410)	24
Amortization of tenant inducement	(194)	(185)
Change in accrued benefit liability	502	64
	<u>(467)</u>	<u>13,384</u>
Changes in non-cash working capital:		
Accounts receivable	(12,942)	286
Prepaid expenses	(466)	(581)
Accounts payable and accrued liabilities	8,219	1,495
Deferred revenue	456	(663)
Tenant inducement	-	121
	<u>(5,200)</u>	<u>14,042</u>
Cash flows from investing activities		
Acquisition and development of capital and intangible assets	<u>(15,120)</u>	<u>(3,096)</u>
Cash flows from financing activities		
Proceeds from demand loan	<u>24,500</u>	<u>-</u>
Net increase in cash and cash equivalent	4,180	10,946
Cash and cash equivalent, beginning of the year	<u>27,441</u>	<u>16,495</u>
Cash and cash equivalent, end of the year	<u>\$ 31,621</u>	<u>\$ 27,441</u>
Represented by:		
Cash	\$ 8,483	\$ 13,599
Term deposits	<u>23,138</u>	<u>13,842</u>
	<u>\$ 31,621</u>	<u>\$ 27,441</u>

Payments Canada

Notes to Financial Statements

(in thousands of dollars)

December 31, 2017

General Information

Canadian Payments Association doing business as Payments Canada (the "Company") was incorporated in 1980 by an Act of Parliament of Canada. The objects of the Company are to:

- (a) establish and operate national systems for the clearing and settlement of payments and other arrangements for the making or exchange of payments;
- (b) facilitate the interaction of its clearing and settlement systems and related arrangements with other systems or arrangements involved in the exchange, clearing or settlement of payments; and
- (c) facilitate the development of new payment methods and technologies.

The costs associated with Canada's central automated facilities and telecommunications facilities of the national clearing and settlement systems are the responsibility of the Company. All other significant operating costs in relation to the information technology infrastructure relative to the actual clearing process are the responsibility of the member institutions.

The Company is funding the Modernization Program by way of bank financing as opposed to annual dues and fees from members. As a result, the Company is expected to operate in a deficit position over the period of time in which national payments infrastructure is being modernized. The Canadian Payments Act (the "Act") and Finance By-Law made under the Act provide the Company with the authority to require its members to pay dues and fees. Accordingly, the statutory authority and funding structure provides assurances that the Company has the ability to repay the debt. It is the Company's intention to recover the debt through dues and transaction fees charged to members when the new systems are operational.

The Company has elected to operate as a non-profit organization, under paragraph 149(1)(l) of the Income Tax Act and, as such, is not subject to income taxes.

1. Basis of preparation

a) Basis of Accounting

The financial statements have been prepared in accordance with Canadian accounting standards for not-for-profit organizations.

b) Use of Estimates

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the reported amounts of revenues and expenses for the year covered. The main estimates relate to useful lives of capital and intangible assets and accrued benefit liability associated with post-employment life and health insurance plan.

Payments Canada
Notes to Financial Statements
(in thousands of dollars)

December 31, 2017

2. Significant Accounting Policies

a) Revenue Recognition

Fees are recognized as revenue proportionately over the year to which they relate. Fees received in advance of the related fiscal year are recorded as deferred revenue.

Costs recovered from members are recognized as revenue in the year in which the related service is performed.

Revenues from conferences are recognized in the year that the conference takes place.

b) Cash and Cash Equivalents

Cash and cash equivalents includes bank balances and short-term deposits, which are highly liquid investments with a maturity period of twelve months or less from the date of acquisition.

c) Financial Instruments

Initial and subsequent measurement

The Company initially measures its financial assets and liabilities at fair value. The Company subsequently measures all its financial assets and liabilities at amortized cost.

Impairment

Financial assets measured at amortized cost are tested for impairment when there are indicators of impairment.

Transaction costs

Transaction costs related to financial instruments subsequently measured at amortized cost are recognized in the statement of operations over the life of the instrument.

Payments Canada
Notes to Financial Statements
(in thousands of dollars)

December 31, 2017

2. Significant Accounting Policies (Continued)

d) Capital Assets

Capital assets comprise both tangible and intangible assets and are stated at cost less accumulated amortization. Amortization is provided on the basis of their useful lives using the straight-line method over the following durations:

Leasehold improvements	over the term of the lease
Office furniture	5 years
Technology	5 years

Modernization systems under development will not be amortized until substantially available for use.

e) Impairment of Capital Assets

Capital assets subject to amortization are tested for recoverability whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. An impairment loss is recognized when the carrying amount of the asset exceeds the sum of the undiscounted cash flows resulting from its use and eventual disposition. The impairment loss is measured as the amount by which the carrying amount of the long-lived asset exceeds its fair value.

f) Employee Future Benefits

The Company provides non-pension defined benefits consisting of a post-employment life and health insurance plan to its employees.

The Company accrues its obligations and related costs for employee future benefits as the employees render the service necessary to earn retirement benefits. The actuarial determination of the accrued benefit obligations employee future benefits uses the projected benefit method pro rated on service which incorporates management's assumptions used for cost escalation, average ages of employees and other actuarial factors. The actuarial valuation is performed at least every three years. In the years between valuations, plan results are prepared based on extrapolations of the latest available funding valuation results.

The benefit plan expense for the year consists of the current service and interest costs. Remeasurements are recorded directly on the statement of changes in net assets.

Payments Canada
Notes to Financial Statements
(in thousands of dollars)

December 31, 2017

3. Capital Assets

	2017			2016	
	Cost	Accumulated Amortization	Net Book Value	Net Book Value	
Leasehold improvements	\$ 3,044	\$ 766	\$ 2,278	\$	2,152
Office furniture	1,355	724	631		666
Technology	12,726	6,674	6,052		4,786
Modernization systems under development	10,826	-	10,826		-
	\$ 27,951	\$ 8,164	\$ 19,787	\$	7,604

4. Tenant Inducement

In 2014, the Company entered into a 10 year lease agreement for new office space. As part of the lease, the Company received lease inducements totaling \$1,931. In 2016, the Company entered into a 9 year lease agreement for additional office space and received a lease inducement totaling \$121. The tenant inducements are amortized over the lease terms plus the rent-free period and is included in the general administration expense in the statement of operations.

	2017		2016	
Leasehold improvement allowance				
Balance, beginning of the year	\$ 1,293	\$	1,312	
Additions during the year	-		121	
Amortization	(149)		(140)	
Balance, end of the year	\$ 1,144	\$	1,293	
Free rent				
Balance, beginning of the year	\$ 390	\$	435	
Amortization	(45)		(45)	
Balance, end of the year	\$ 345	\$	390	
	\$ 1,489	\$	1,683	

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5. Accrued Benefit Liability and Employee Future Benefits

Description of the benefit plan

The Company extends post-employment life and health insurance plan to its employees subsequent to their retirement. The Company recognizes these benefits as they are earned during the employees' tenure of service. The related benefit liability was determined using the projected benefit method prorated on service and was based on employee data from the last valuation date of October 31, 2017.

	<u>2017</u>	<u>2016</u>
<u>Accrued benefit liability</u>	\$ 1,249	\$ 747
<u>Significant assumptions</u>		
Discount rate	3.70 %	4.20 %
Health care cost trend rates		
Hospital, dental, other medical	4.50 %	4.50 %
Drugs, grading down to 4.50% per annum in and after 2029	9.00 %	9.00 %

6. Demand Loans

The company has an authorized credit facility which is being drawn down by way of Bankers' Acceptance (BA's) notes with a minimum term of 90 days. At December 31, 2017, the Company has four Bankers' Acceptance outstanding valued at \$24,500. Breakdown as follows:

	<u>2017</u>	<u>2016</u>
Bankers' acceptance, 1.73%, maturing January 19, 2018	\$ 4,500	\$ -
Bankers' acceptance, 1.69%, maturing January 19, 2018	3,000	-
Bankers' acceptance, 1.74%, maturing March 5, 2018	10,000	-
Bankers' acceptance, 1.79%, maturing March 20, 2018	7,000	-
Total	<u>\$ 24,500</u>	<u>\$ -</u>

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7. Restricted Net Assets

The Company's restricted net assets represent amounts restricted by the Board of Directors. During the year, \$13,820 (2016 - \$9,969) was restricted and \$8,126 (2016 - \$106) was transferred to unrestricted net assets to be utilized for designated projects.

At December 31, 2017, the restricted net assets are comprised of the following:

	2017	2016
Special Reserve Fund - Principles of Financial Market		
Infrastructure	\$ 11,745	\$ 8,498
Modernization Program	10,573	4,474
Projects - Other	-	3,652
	<u>\$ 22,318</u>	<u>\$ 16,624</u>

8. Commitments

The Company is committed under long-term operating leases for the rental of premises, infrastructure services and office equipment. Future minimum lease payments total \$35,398 and include the following payments over the next five years:

2018	\$ 8,484
2019	\$ 7,711
2020	\$ 2,648
2021	\$ 2,266
2022	\$ 2,046

9. Financial Instruments

Credit risk

The Company is exposed to credit risk with respect to accounts receivable. The Company provides credit to its members in the normal course of its operations.

Interest rate risk

The Company is exposed to interest rate risk on its fixed interest rate financial instruments. Fixed interest instruments subject the Company to a fair value risk, since fair value fluctuates inversely to changes in market interest rates.

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10. Line of Credit

The Company has an authorized operating line of credit of \$5,000 that is due on demand and bears interest at the bank's prime rate plus 0.35%. At December 31, 2017, the Company had undrawn credit capacity under this facility of \$5,000.

11. Comparative Figures

Certain figures for the previous year have been reclassified to conform to the presentation adopted in the current year.