Comment la modernisation des paiements peut-elle profiter aux entreprises canadiennes?

Évaluation du coût du traitement des paiements

Meilleure la question,
meilleure la réponse.
Pour un monde meilleur.

PAYMENTS CANADA

EY

Travailler ensemble
pour un monde meilleur

http://www
OK
PERANNUM
OK!
RING
RING
Yes?
let's meet.
Let's Talk
Notes
MY COMPANY
come
how much?
HAVE
Actions
1) Prepare
2) Actualise
3) Research
REPORT
CARD
INTRODUCE ME
Research
ACT NOW
don't forget
meeting at ten

Contenu

Sommaire

Cette étude vise à cerner les effets de l'actuel écosystème des paiements sur les entreprises canadiennes en raison de l'inefficacité des processus, laquelle au bout du compte fait augmenter les coûts d'exploitation. Elle examine également la gamme des éventuelles solutions susceptibles de créer des gains d'efficience pour les petites et moyennes entreprises (PME) et pour les grandes entreprises dans le contexte des efforts de modernisation des paiements à l'échelle mondiale, avec une attention particulière sur le Canada.

La réalisation d'une infrastructure de paiement modernisée au Canada s'appuie sur des arguments solides et pourrait représenter d'importants gains d'efficience. Pour le milieu des affaires, il s'agit d'une excellente occasion de réduire les coûts opérationnels associés au traitement des paiements. Comme chaque entreprise est différente, l'objectif de cette étude est de présenter une large perspective opérationnelle à des fins de sensibilisation et d'information. Si les entreprises sont plus conscientes du coût actuel du traitement des paiements dans l'ensemble du milieu des affaires, elles peuvent envisager des façons de réaliser des gains d'efficience et de réduire les coûts pour leur propre organisation. Dans le cadre d'une infrastructure modernisée, chaque entreprise devra formuler des réponses individuelles pour réduire les coûts des processus actuels.

Il est important de comprendre que les coûts décrits dans cette étude ne seront pas tous éliminés par la mise en place d'une infrastructure modernisée. Les estimations des coûts présentées ci-dessous représentent plutôt une possibilité de réduction des coûts dans l'écosystème.

Voici les principales constatations de cette étude.

1 Des efforts de modernisation des systèmes de paiement sont déployés partout dans le monde, y compris le Canada, en réponse aux nouveaux besoins des consommateurs et des entreprises pour une plus grande rapidité et une plus grande richesse en données.

2 Les procédures actuelles de traitement des paiements font grimper les coûts d'exploitation des entreprises canadiennes de 3 à 6,5 milliards de dollars par année (14 à 32 milliards de dollars sur une période de cinq ans).

[1] Sauf indication contraire, tous les chiffres sont en monnaie canadienne.

3

Le programme de modernisation de Paiements Canada vise à réduire les coûts de traitement des paiements pour les entreprises et les consommateurs canadiens, sans compromettre la sûreté et la sécurité, en offrant une infrastructure des paiements évolutive qui renforcera la position concurrentielle du Canada dans une économie de plus en plus mondialisée.

#BetterQuestions

- Comment les paiements changent-ils aujourd'hui pour répondre aux besoins de demain?
- Quelles sont les répercussions de l'actuelle inefficacité du traitement des paiements sur le milieu des affaires au Canada?
- Comment le Canada réagit-il aux changements requis dans l'infrastructure des paiements?
- Comment les entreprises canadiennes peuvent-elles profiter d'une nouvelle infrastructure de paiement?

How are payments changing today to meet the needs of tomorrow?

Payments system modernization around the world

In response to the on-demand economy, increased connectivity and resulting expectations from consumers and businesses to be able to pay and move money faster, many countries around the world are modernizing their payments systems to meet the needs of the economy (refer to Appendix 2 for an overview of modernization related concepts).

These modernized payments systems are intended to help consumers, businesses and financial institutions to achieve a safer and more efficient payment experience by delivering significant benefits including:

- Expedited availability of funds and certainty of payments
- A more information rich payment experience
- Enhanced scalability and opportunities for new overlay services[2]

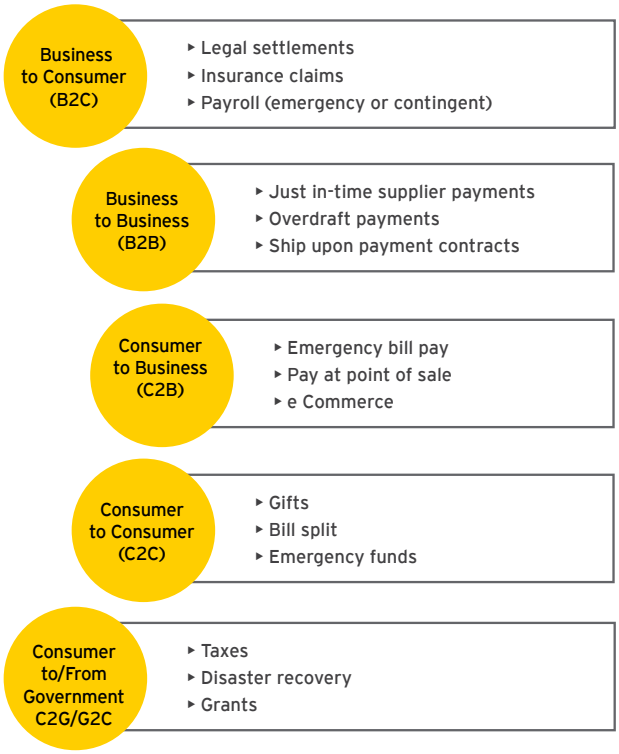
A key focus of payments modernization efforts in many countries is to enable faster funds availability to payment recipients. Supported by increasing rates of adoption for electronic payment methods by corporates SME and governments, this offers an opportunity to unlock economic benefits across several use cases. For example, faster funds availability will allow corporates and SMEs to transfer just-in-time supplier payments, and for governments to ensure that essential benefits are paid to citizens quickly in emergency situations. Additional use case examples of payments modernization can be seen in Figure 1.

Different capabilities contemplated in the delivery of faster payments include expedited processing, settlement and funds availability for batch payment instruments such as direct credits (e.g., payroll) and direct debits (e.g., monthly membership fees), as well as real-time or near-real-time single credit transfers (e.g., person-to-person payments) where authorization and irrevocable funds availability are accomplished in seconds.

In addition to increased speed of funds availability, many countries are also working toward improving capacity for more information about the payments (known as remittance information) to travel with the payment message, as well as promoting interoperability by working to standardize the format of payment messages across systems and use cases. Today, it is often the case for Canadian businesses using electronic payment methods that invoice and other payment details must travel to the beneficiary separately from the payment itself. This typically results in a costly manual reconciliation effort by the beneficiary to close the transaction. Enhanced capacity for remittance information to travel with payment are anticipated to deliver significant benefit to Canadian businesses. For example, better invoice data can enable solutions for automated payments processing, optimized payment tracking and enhanced interoperability.

Canada, like many other developed economies, relies on an arrangement of legacy core payments system that has become outdated, rendering innovation and future scalability difficult. A modernized payments ecosystem based on a future-proof infrastructure and ISO 20022 adoption are among the core tenets of Payments Canada's Modernization agenda.

Figure 1 Faster payment use cases



Potential benefits of ISO 20022

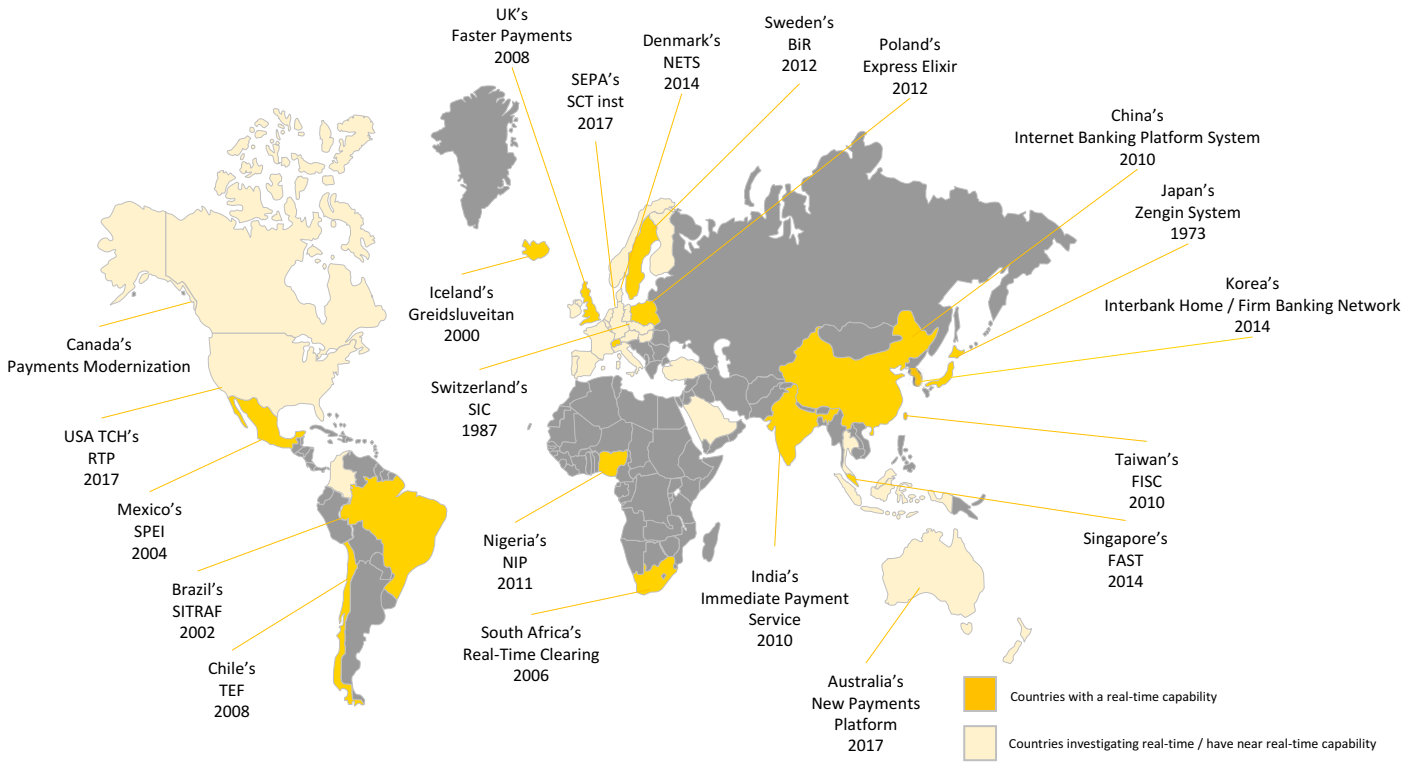
- Standardization of financial messages
- Enhanced remittance information included with payment
- Transparency into payment status
- Greater global interoperability
- Increased privacy

2 For example: proxy directories that remove the need for detailed bank account information to be shared between payor and payee.

Faster payments case studies from around the world

Faster payment infrastructures, including expedited batch payment processing, and real-time or near-real-time credit transfers, have been set up or are nearing execution globally. Other countries, including Canada, are currently planning the deployment of similar infrastructure revisions. Figure 2 highlights these "faster payment" initiatives around the world.

Figure 2 Global faster payments systems adoption



Adoption rates in the markets where faster payments exists vary significantly and are driven either by government intervention through regulation, new offerings brought about by payment service providers (PSPs) or maturity of existing local payments schemes.

Currently, the most mature faster payments market is the UK where 120 million transactions are flowing through real-time rails on a monthly basis.[3] Real-time functionality was established in 2008 in response to regulation and was offered as a free service to consumers. At the time the functionality was established, it was not developed in a holistic manner and therefore was not initially successful.

However, in 2015 the UK's Payments System Regulator collaborated with 24 payments industry experts[4] to create the Payments Strategy Forum: a forum to address payments industry challenges and identify a holistic strategy fit for the future. In November 2016, the Forum published a bold strategy for modernizing the UK payments industry and in July 2017, shared a draft blueprint – which set out detailed design and implementation plans - for public consultation.

The strategy outlined a number of solutions to address four key areas:

- Responding to user needs
- Improving trust in payments
- Simplifying access to promote competition
- A new architecture for payments

The UK's strategy is ambitious and seeks to enhance current payment functionality, while adopting longer-term strategies to enhance competition, architecture and improve trust, in order to create a payments system that is truly fit for the future.

Highlights from the UK and other faster payments schemes around the world are illustrated in Figure 3. These schemes unlock the ability to deliver faster funds availability and are capable of embedding richer remittance data within the payment itself as ISO 20022 is adopted, as well as promoting greater traceability of transactions.

[3] fasterpayments.org.uk/about-us. Accessed December 2017.
[4] paymentsforum.uk. Accessed December 2017.

Figure 3 Select faster payments infrastructures

	Faster Payments Systems (FPS)	SEPA	New Payments Platform (NPP)	Fast and Secure Transfer (FAST)	Real-time Payments (RTP) TCH/NACHA
Country / region					
Overview	One of the earliest real-time infrastructures, and currently the largest in the world with more than 1B transactions totaling over £1.2T processed in 2016. Service is available to member banks, and other financial institutions can access the service through agency arrangements with a member. Direct Access Corporate Payments service enables businesses to send bulk files of payment messages directly to the Faster Payments Service.	A new rulebook from the European Payments Council (EPC), defines Euro immediate payment flows, in response to the European Central Bank's request for a pan-European instant payment scheme. SEPA Inst will eventually span more than 34 countries. SEPA credit transfers are processed individually and clearing and settlement takes place on a net basis at the end of the day.	Infrastructure developed to provide businesses and consumers with a fast, versatile, data-rich payments system for everyday payments. Provides interbank clearing and separate settlement via the Fast Settlement Service (FSS) of the central bank. The Real-Time Gross Settlement system clears in two hours for any transaction size.	An electronic funds transfer service that enables customers of the participating banks to transfer Singapore dollar funds from one bank to another in Singapore almost instantly. More than 33,000 transactions valued at S$64M were processed on the first two days of operation.	The Clearing House launched real-time payments in November 2017. Other faster payment options are being established by organizations such as NACHA, Visa, MasterCard, large banks and other emerging entrants. NACHA has introduced a rule to provide the ability to move ACH payments faster and will enable the same-day processing of ACH payments.
Reach	✓ Consumers ✓ Corporates ✓ Government	✓ Consumers ✓ Corporates ✓ Government	✓ Consumers ✓ Corporates ✓ Government	✓ Consumers ✓ Corporates ✓ Government	✓ Consumers ✓ Corporates ✓ Government
Driving force	Regulation	Regulation	Industry	Regulation	Industry
Deployment date	2008	2017	2017	2014	2017
Participants	16 banks	Nearly 600 payment service providers across 8 countries	13 banks	20 banks	25 banks
Transaction limit	£250,000	€15,000 initially	Set by banks	S$50,000	US $50,000
Platform	VocaLink	SIA	Swift	VocaLink	VocaLink
Messaging standard	ISO 8583 moving towards ISO 20022	Modified version of ISO 20022	ISO 20022	ISO 20022	ISO 20022
Availability of Funds	Under 15 seconds	Under 10 seconds	15 seconds	15 seconds	15 seconds
Key learnings	▸ Critical mass took four years to reach due to late introduction of end-user applications and increased transaction limits to accommodate B2B use cases ▸ New Access Model implemented to make it easier for new entrants to connect	▸ Enables cross-border instant payments for the same cost as a domestic payment ▸ PSPs only had 1 year to prepare for SEPA inst which leveraged the framework for SEPA credit transfers	▸ Key improvement to infrastructure increasing number of remittance characters from 18 to 1800 ▸ Phased approach starting with focus on consumer- to-consumer payments and overlay services	▸ Adoption driven by regulatory mandate and Singapore's smart nation vision ▸ Adoption for businesses slower due to pricing differential between real-time transactions and cheques	▸ Corporate/ Bank treasurers enthusiastic about enhanced data capabilities ▸ Corporate fraud managers enthusiastic about credit push framework impact on unauthorized debit

The impact of these schemes for the domestic business communities in these jurisdictions is hard to quantify, primarily due to how recent some of the implementations are. However, qualitative feedback from participants in this study (refer to Appendix 1 for study approach) indicates that businesses in geographies where the change has taken place have been able to better meet customer needs through faster availability of funds or the creation of new products and services. Additionally they have derived liquidity benefits from faster availability of funds and enhanced forecasting ability. Participants also suggest that, in the case of Singapore, the pricing differential between faster and traditional payments created a barrier to adoption that was not removed until the market corrected the pricing for faster payments to a level where businesses understood the benefits associated with them.

The recent developments in the UK with the Payments Strategy Forum highlight the need to develop a strategic approach to faster payments implementation. Introducing real-time capabilities without consideration for data standards and architecture will not deliver a platform based on future proof capabilities. Canada is well poised on the modernization journey given the vision outlined in its payments modernization agenda, which includes ISO 20022[5] and scalable architecture.

Payments Canada Modernization

Payments Canada is currently undertaking a multi-year modernization project to enhance the core clearing and settlement infrastructure in Canada, including the technology, rules, standards and procedures governing the exchange, clearing and settlement of payments (for detailed information on modernization plans please refer to Payments Canada's Target State document)[6].This effort is necessary to respond to the technological, social and economic developments currently impacting payment systems across the globe. Payments modernization therefore becomes a strategic imperative to maintaining Canada's competitive position in international trade, and supporting long-term economic growth.

The vision for the Canadian payments ecosystem has been defined to be fast, flexible and secure; to promote innovation and strengthen Canada's competitive position. That vision is grounded in eight primary needs identified through extensive consultation with Canadian stakeholders. These needs also gave rise to an integrated roadmap that focuses on five key changes illustrated in Figure 4. An important tenet of Canada's modernization effort is based on leveraging richer remittance data derived from the adoption of the ISO 20022 messaging standard.

Figure 4 Overview of the five pillars of Payments Canada's Modernization agenda

Build a new core clearing and settlement system	Establish a real-time capability	Enhanced Batch and Automated Funds Transfer	Align with global regulatory standards	Modernize the rules framework
A new high-value system will be acquired as a replacement to the Large Value Transfer System (LVTS) and Canada's retail payment system, the Automated Clearing Settlement System (ACSS) will be replaced. The new systems will meet international standards for managing risk in both high value and retail payments and will have modern technical and risk management architecture. It will also incorporate a standardized framework for wire transfers (ISO 20022)	A "real-time rail" payments system will be delivered, with Payments Canada as the operator. It will provide for near real-time clearing, rich remittance information through ISO 20022, and enhanced functionality to support overlay services that serve consumers and small and medium sized businesses.	Automated Funds Transfer (AFT) batch payments will continue to operate along with any new real-time system. During the first phase of work, an additional late day exchange window will be established allowing for funds availability within a two hour window. AFT batch payments will be transitioned to the ISO 20022 standard during the second phase of work.	Implement changes to the existing retail system (ACSS) in the near term and align all modern systems with global regulatory standards and risk management best practices. Activities center on developing a new credit risk model to collateralize the ACSS and preparing it to be operationally ready. Additional activities focus on risk monitoring, and enhanced recovery plans and testing. Further changes will be introduced as outcomes of modernization become operational.	Modernize Payments Canada's rules and policy framework so that they remain relevant and reflect current market practices. The appropriate balance between flexibility and compliance will foster competition and innovation.

[5] To find out more about ISO 20022, visit Payments Canada ISO 20022 Resource Centre at payments.ca
[6] https://www.payments.ca/about-us/news/payments-canada-releases-detailed-future-view-canadian-payments

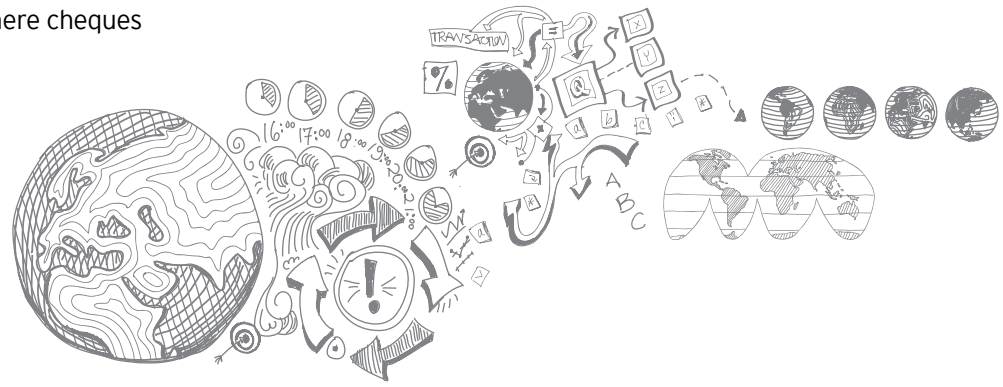
How do inefficiencies in current payments processing impact the business community in Canada?

The introduction of a new payments infrastructure that enables more fulsome remittance details to accompany the payment itself in an electronic format would support an accelerated migration away from larger value cheques towards electronic payment methods.[7]

Cheque usage in Canada continues to diminish at an accelerating rate, having decreased by as much as 9%[8] in 2016, an increase over the recent trend of -8%[9] per year in 2015. Users continued to migrate towards EFT, driving EFT volume growth by 4%[10] annually from 2011 to 2016.[11] In the electronic payments space, business credit cards (bill payments and PADs) are increasingly being used, increasing by 40% since 2011. This trend can be explained by the fact that some cards offer rewards, which can be re-invested in the business working capital; credit cards also offer liquidity benefits in the form of a grace period, and the fact that they provide access to enhanced transactional information for payments made with the card.

Despite the downward trend in volume, the value of cheques has steadily increased, with the five year average volume growth increasing by about 2% due in large part to their common presence in the business-to-business space.[12] Moreover, Canadian businesses' propensity to use cheques remains relatively high. In a recent study conducted by RFi Group, more than 70% of SMEs surveyed indicated that they continue to issue cheques to pay for business expenses, while just fewer than 60% of Canadian corporations offered a similar response[13]. Expense segments where cheques figure prominently across both types of businesses include payroll, government / tax payments, professional services and rent. Specifically, SMEs surveyed indicated that around 30% of business expenditures were paid using cheque, while only about 20% of surveyed corporates' total business expenditures were paid using cheque. From a payment acceptance standpoint, the RFi results also suggest that around 70% of Canadian SMEs accept cheque as a means of payment (representing approximately 26% of their annual sales), whereas less than 50% of Canadian corporates accept cheques (estimated at roughly 13% of their annual sales). As mentioned above, increased propensity among medium-sized enterprises in Canada to accept a credit/charge or debit card as a means of payment is also identified in the RFi survey results.

Cheque usage is favoured in commercial payments in large part because, based on current payment message standards, payment by cheque is the only way a business can attach the remittance information with the payment itself for ease of reconciliation at the other end. Security concerns and the absence of data-rich remittance information of current electronic payment options are often cited as reasons to maintain cheque usage[14]. This drives companies to require manual verification of information, rely on human intervention and business processes to assist with matching payments to invoices, understand the composition of short payments and perform payment application.



[7] "The Role of Automated Funds Transfer Payments in Canada's Declining Use of Cheques. Canadian Payments Association Discussion Paper No.1 - July 2015". Payments Canada.
[8] "Canadian payment methods and trends 2017". Payments Canada.
[9] Ibid
[10] Ibid
[11] Ibid
[12] Ibid
[13] These findings stem directly from two semi-annual surveys of Canadian businesses conducted by RFi Group. These are the Canada SME Banking Council and the Canada Commercial Banking Council surveys. Results are reported from the 2017H1 edition of the surveys.
[14] "The Role of Automated Funds Transfer Payments in Canada's Declining Use of Cheques. Canadian Payments Association Discussion Paper No.1 - July 2015". Payments Canada.

71%

Of SMEs use cheques as a means of payment

57%

Of corporates use cheques as a means of payment

$15

Average cost of a cheque issued in Canada[15]

Additional barriers to adoption of electronic payments include development and configuration costs for EFT file set-up, often customized to individual financial institutions. In addition, typically the only mechanism available to Canadian businesses to send a payment greater than $3,000 for same-day arrival at the beneficiary are wires that carry higher transactional costs and require specific financial information (e.g. Bank account/transit number). Lastly, the true cost of cheque issuance and processing is seldom fully understood.

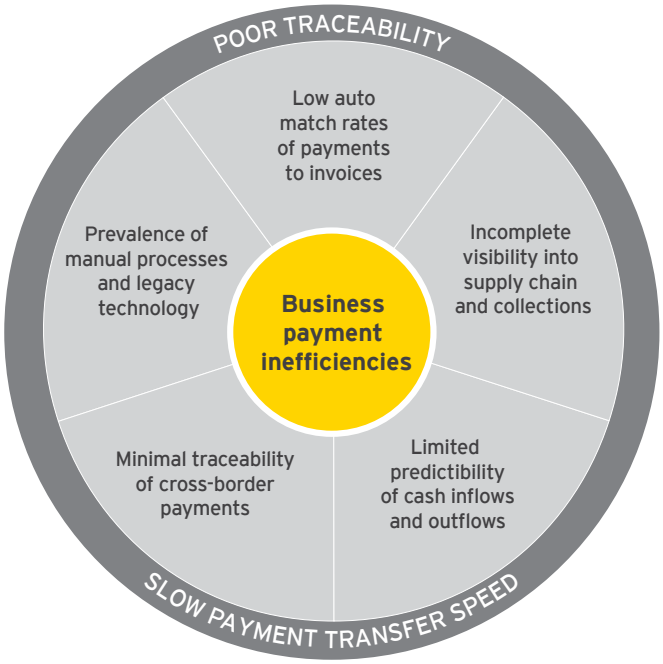
The benefits of faster payments (expedited batch or real-time credit transfer) is dependent on businesses' willingness to continue to migrate to more efficient options, away from paper-based to electronic payments by modernizing manual processes that rely on cheque remittance information.

[15] "The economic benefit of adopting the ISO 20022 payment message standard in Canada". Payments Canada

Poor traceability and slow transfer speed of payments drives a number of business problems for Canadian businesses including:

- Low auto-match rates of payments to invoices
- Incomplete visibility into supply chain and collections
- Limited predictability of cash inflows and outflows
- Minimal traceability of cross-border payments
- Prevalence of manual processes and legacy technology

Figure 5 Business payments inefficiencies



Low auto-match rates of payments to invoices

$7.4B — 5 year cost range — $13.6B

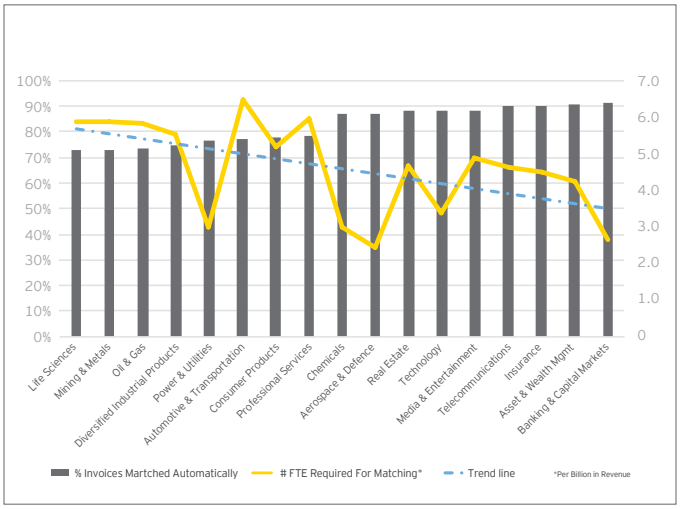
The absence of detailed remittance data traveling alongside an electronic payment results in low rates of straight through processing as there is usually insufficient information upon arrival for a payment to be automatically matched to their corresponding invoices. Despite automation efforts to increase the efficiency of payments application processes, on average, approximately 75% of payments are automatically matched to invoices. The level of inefficiencies arising from matching and reconciling today's batch payments to invoices, purchase orders and contractual agreements grows in correlation with the volume of transactions and supply chain complexity.

The standard approach to solve for this problem has traditionally involved hiring people to perform manual reconciliation, make adjustments and investigate exceptions. As companies grow, the process becomes increasingly complex requiring additional resources, up-skilling of those resources and the adoption of requisite management layers to provide oversight on the process.

Matching and reconciliation of payments is further complicated in industries that have a higher prevalence of off-invoice early payment discounts, volume or rate driven deductions, allowances, rebates and commissions (e.g. insurance). Due to timing differences and incomplete information, this creates a deviation between invoices sent and consolidated payments received. In some cases, it can significantly limit the ability to apply payments to any invoices until research has been undertaken and further information has been received.

Figure 6 illustrates the correlation between rates of payments that are automatically matched to invoices against the number of full time equivalent staff (FTE) required to perform the matching and application processes. While there are significant variations by industry and company size, a lower auto-match rate translates into higher effort requirements to perform the process. Participants interviewed for the purpose of this study (refer to Appendix 1 for study approach) indicated the time spent matching and reconciling payments ranged from a few hours a week (0.05 FTE) to up to 15 FTE. When extrapolated to the business community as a whole, the five year cost of low auto-match rates could range between $7.4B and $13.6B.

Figure 6 Impact of auto-match rates on reconciliation[16]



Incomplete visibility into supply chain and collections

$3.3B — 5 year cost range — $7.7B

The limited amount of information available with today's electronic remittances impacts companies' visibility into their supply chain and renders collection efforts difficult.

The absence of information creates operational risk exposure due to the difficulty in leveraging payments data to identify trends like vendor concentration risk. Additionally, on the accounts payable side, a great deal of effort can be spent triaging with suppliers to relate payment information in order to allow payees to appropriately apply and record the payments they receive.

Visibility into how payments are received across the supply chain can also impact collections efficiency. Accounts receivable (AR) specialists and collectors spend a significant amount of their capacity tracking payments, reviewing unapplied cash, assessing credits on account and gathering relevant information prior to contacting their customers. In many cases, collectors may be reluctant to expeditiously follow up on delinquent payments because they mistrust available information on payments status.

Collections efforts have become increasingly complex for companies across many sectors including consumer products, distribution, insurance, retail and wholesale – where off-invoice adjustments and deductions are prevalent. Companies in these sectors often need to assign additional resources to review payment reconciliation discrepancies and work with the payor to ultimately identify any deductions. Once deductions are identified, a lengthy process often takes place to agree or negotiate discrepancies between buyer and seller before collections efforts can be undertaken.

CASE STUDY
Incomplete visibility into collections

Inadequate remittance data is causing companies to chase collections unnecessarily

This case focuses on an insurance provider collecting premiums of more than $1.5B per year. The majority of its business is generated through insurance brokers who make one payment a month for all of their clients; included within that payment are commission deductions and special term adjustments that often create a discrepancy between invoiced values and payments submitted.

Due to the large number of items attached to each payment, discrepancies occur often. Insufficient remittance data necessitates a collections team of 13 FTE to manually research and reconcile all discrepancies. Often the payment is correct but the details were not immediately accessible, preventing the operations team from closing the process.

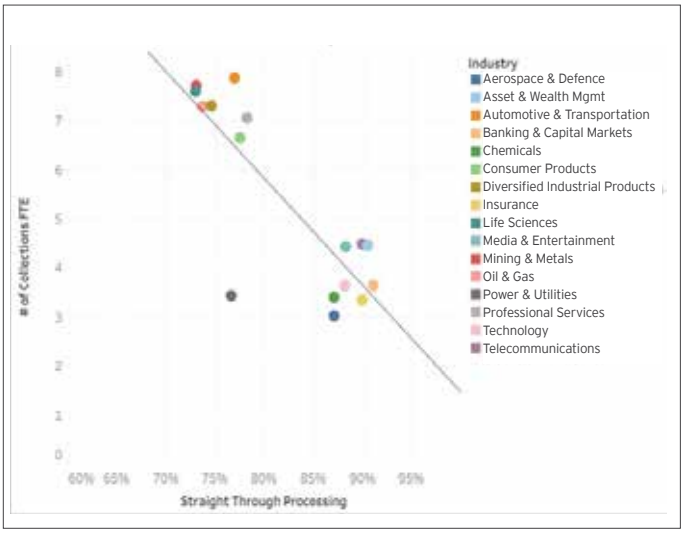
Associated costs:
$600,000 per year in time spent researching collections

Some companies identified that the complexity related to the agreements or the length of time required to properly identify and trace how these adjustments flow from invoice to payment application often resulted in write-offs. Quantifying the economic cost of these write-offs is challenging due to the varying industry performance and the poor recording of reason codes for the write-offs, but it is meaningful for many companies in those sectors.

The analysis and reconciliation effort consumes capacity that could otherwise be more effectively deployed towards collecting on delinquent payments and enforcing adherence to payment terms. The inefficiency manifests itself in the higher number of collections FTE required for industry sectors with lower payment straight through processing, a proxy for visibility, as illustrated in Figure 7. The range of cost related to sub-optimal information in the payment process impacting supply chain visibility and collection efficiency varies by company size and industry type ranging from $3.3B to $7.7B for business in Canada.

[16] APQC Finance and Accounting Benchmarks 2017

Figure 7 Collections efficiency by industry

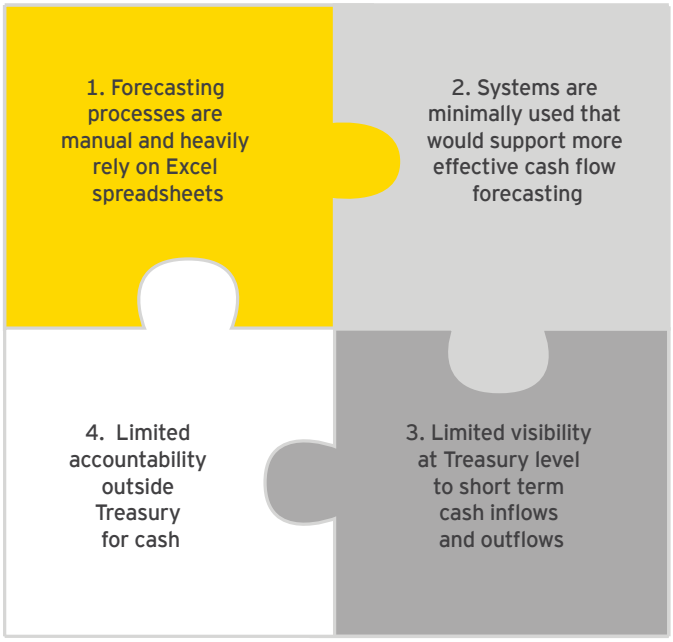


Limited predictability of cash inflows and outflows

$0.9B — 5 year cost range — $3.7B

The predictability of cash inflows and outflows is impacted by variability in payment processing times and can therefore have a major effect on business operations. There is an opportunity cost to the treasury function when it spends more time reconciling actual cash positions than helping the organization make better decisions. Figure 8 illustrates treasury function challenges stemming from incomplete payment information and the impact they have in cash forecasting efficiency.

Figure 8 Cash flow forecasting challenges



The absence of rich remittance payments data drives a reliance on manual processes and spreadsheets as primary tools for forecasting cash needs. Some participants indicated a preference for paper over electronic payments in order to better support execution of cash forecasting.

Inconsistency in the timing of payment receipts, particularly from cheques or delinquent payments, create a high variance in cash flow forecasting accuracy and limited visibility into short term cash requirements. Funds must be made available for withdrawal from the moment a payment has been issued until it has cleared, a window of time that can range from one to three days for EFT. This creates an inefficiency related to the investment returns for available short term cash or increased financing costs to provide sufficient working capital during the processing time.

Feedback from study participants highlighted the challenge associated with the limited visibility of funds resulting from different clearing times for EFT payments based on the number of financial institutions involved in the transaction. Specifically when the payee banks with the same financial institution as the payor, the funds sometimes clear the same day while funds can take longer to clear if they bank with different financial institution. This variability in processing times obscures the view on which payments in the batch are still pending.

Limited visibility of funds also impacts an organization's liquidity by increasing the cost of borrowing. For many companies, delayed receipt of payments caused by processing lags contribute to higher days sales outstanding (DSO) and ultimately more cash tied up in accounts receivable. The unavailability of this cash requires companies to borrow in order to meet working capital requirements. If there is uncertainty as to whether sufficient payments will be received, an organization may be required to borrow in order to accommodate their obligations. At a minimum, most participants stated that they operate daylight or overdraft facilities to ensure availability of funds if needed.

As companies often have limited accountability for cash management residing outside the treasury function, the true position of collection and payments efforts can't always be leveraged in accurately forecasting cash needs. Some participants indicated investment in integration of treasury management solutions into ERP platforms to leverage existing data and augment forecasting capabilities was needed.

Feedback from study participants also indicates that faster payments and increased remittance information could help in avoiding one to three days of borrowing. Depending on the cost of funding faced by individual companies, the range of cost associated with this inefficiency could be $0.9B to $3.7B.

CASE STUDY
Cash management inefficiency

Poor visibility in the payment process is causing companies to lose thousands due to sub-optimal cash management

The case examines a manufacturer with over $4B in annual revenue and operations across North America. Its payments volume exceeds 1 million transactions on both AP and AR sides. Despite efforts to reduce its reliance on cheques, Company Y still makes and receives approximately 70% of its payments by cheque.

For the proportion of payments that are processed electronically, the current processing speed results in an approximate one day delay in receiving funds. Real-time payments or same day AFT batch would eliminate this lag.

Associated costs:
$475,000 payment processing lag cost per year

CASE STUDY
Bill payment cross-border

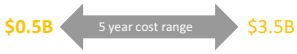
Lack of cross-border payment traceability requires companies to engage international payment brokers

This case reviews a mining company headquartered in Canada and operating in diverse geographical locations including Africa. The differences in payment messaging requirements and the lack of payment traceability made managing international payroll for expat employees extremely difficult for the company and required it to send payments anywhere from 24 to 72 hours in advance of its deadline.

After repeated instances of payroll arriving late to their cross-border employees, Company Q hired an international payment broker to manage the entire international payment process ensuring on time delivery in exchange for transactional fees.

Associated costs:
$7,500 - $112,500 in international brokerage fees over a year

Minimal traceability of cross-border payments



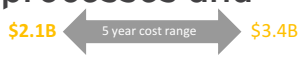
Canada's imports amounted to $547B in 2016. Participants in this study indicated that the majority of international payments are sent to the U.S., Europe and Asia; zones that are now, or will soon be, in faster payments schemes. For Canadian companies, the processes for sending these payments are often unique, fragmented and different from other processes. This is due to several factors in the current international payments clearing and settlement processes. Improved alignment across jurisdictions on standards, technology, rules and procedures governing payment exchange, clearing and settlement are required in order to make international payments more efficient.

One factor, poor traceability of international payments drives minimal predictability of payment timelines and transparency on associated costs. Organizations need to therefore initiate payments early to ensure on-time receipt. The early withdrawal of funds and delayed receipt of international payments negatively impact working capital.

Additionally, intermediaries are sometimes required to expedite cross-border payments due to low traceability, driving increased transaction costs. Details on fee deductions are seldom transparent to payee and payor, especially for payments that can pass through several intermediaries, driving discrepancies in the actual transaction amount. Some participants in our study indicated that the process has become so complex to manage that leveraging a specialized international remittance service is almost an imperative. In addition to increased transparency, some of these companies offer value-add services including consolidation, reporting and follow up.

Based on estimated payments volume and value, the cost of inefficiencies for international remittances can amount to as much as $0.5B to $3.5B.

Prevalence of manual processes and legacy technology



A large majority of Canadian companies continue to rely heavily on manual processes for various aspects of payments application. This is largely driven by the requirement for richer remittance information that is more detailed than what is available in existing electronic payments in order to effectively execute a number of business processes. As an extreme manifestation of this issue, one participant indicated a preference for cheques over electronic payments as a way to de-risk their payment-related operations.

To address these challenges, many of the companies participating in this study have recently, or are currently, investing in technology and automation to help them streamline their payments efforts. The solutions, as presented in Figure 9, range from or combine:

- Cash application software
- ERP configuration and design
- Treasury management solutions
- Outsourcing to specialist providers

Figure 9 Business solution and automation options

CASH APPLICATION SOFTWARE	ERP CONFIGURATION AND DESIGN	TREASURY MANAGEMENT SOLUTIONS	OUTSOURCING TO SPECIALIST PROVIDERS
Solutions designed specifically to increase auto-match payment rates for lockbox, EFT and wire payments. Applications can be used as stand-alone or integrate with ERP and leverage advanced analytics for matching	Enterprise wide software designed to integrate business functions into one automated platform to facilitate transfers of data across the organization. Payment matching capability is often available as configuration or supplemental modules	Solutions designed to automate reporting and reconciliation of cash balances, streamline processes and incorporate controls into treasury management	Contracting out the payment reconciliation and cash application functions to providers that can perform the function more efficiently

This is particularly evident in companies that anticipate accelerated growth in operations and revenue; some companies are looking for opportunities to re-deploy capacity while others are simply unable to cope with increased business volumes or want to reduce operational costs. Some participants indicated that they factored payments functionality into their business case for evaluating ERP upgrades and investments.

Software implementations are often sizeable investments and are dependent on legacy business and technology architectures. The degree of integration between multiple applications within a company's platform often prevents seamless flow of payments data from one business unit to another and creates silos that obscure visibility into operational risk and liquidity management.

Additional costs can also be borne as a result of having to customize solutions to deal with multiple file layouts required by individual financial institutions. The costs to individual companies is dependent on their current capabilities and historical investment levels.

The costs of development, configuration and maintenance related to payments application functionality could be in the range of $2.1B to $3.4B for the corporate segment. These represent the current cost of maintaining existing systems that were implemented in the past. Some participants in the study indicated further planned investment in ERP upgrades, configuration or implementation over the next 12 months with an estimated implementation cost ranging from $300K to $10M for a new system. Smaller SMEs can sometimes be less likely to make investments required for business solutions automation as the cost would outweigh the benefit or result in a very long payback horizon.

Partial or complete outsourcing is another strategy Canadian companies use in an effort to streamline operations and reduce cost. Various models have been deployed on-shore and off-shore in an effort to reduce operational complexity and drive increased efficiency resulting in operational cost savings.

CASE STUDY
Business solution for growing company

Poor remittance data currently transferred with payments drove the purchase of business customized accounts receivable software in order to perform reconciliation

The company in question is a life sciences company with annual revenues in the $65 million range. It receives payments from insurance companies, which are settled on a bi-weekly basis through very large files with little to no remittance data included. As the company grew exponentially, the volume of manual reconciliation required to close the books on a monthly basis became unmanageable.

The solution required an investment in specialized AR software as ramping up FTE became impractical given a mismatch in skills required.

Associated costs:
$150,000 initial investment
Approximately $20,000/month ongoing cost of the solution

Benefit derived:
Automation of a process that would have otherwise become an obstacle to growth with a six month payback on the original investment.

Figure 10 summarizes how the inefficiencies in the current payments system reviewed in this section affect Canadian businesses. These estimates reflect the pool of cost efficiencies that could be derived from adopting a more modern payments scheme with a higher incidence of electronic payments; however it is important to note that it is unlikely that a zero cost scenario can be reached.[17]

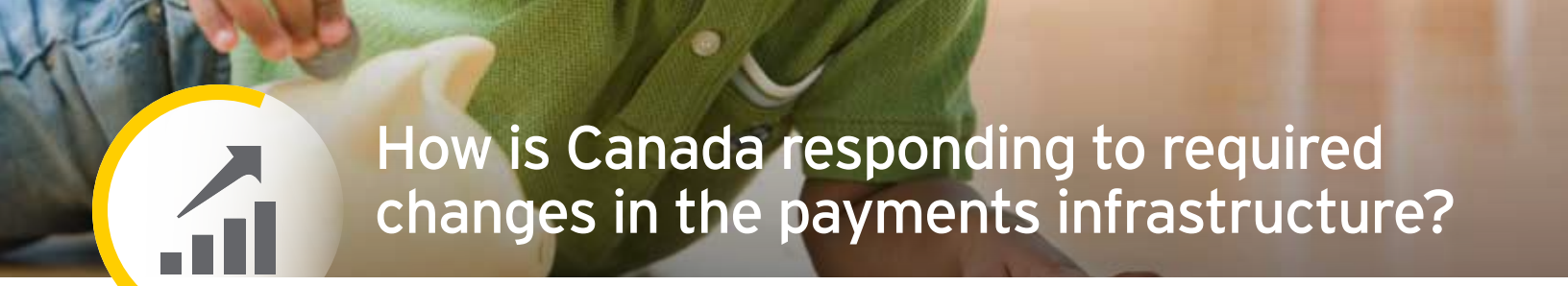
Figure 10 Summary of potential cost savings

	Business issue	Improvement opportunity	Potential impact	
			Low	High
	1. Low auto-match of payments to invoice rates	Improve auto-match rates for matching and reconciling payments to invoices, tracking deductions and discounts	$7.4B	$13.6 B
	2. Incomplete visibility into supply chain and collections	Increase visibility into payments along the supply chain and collection process	$3.3B	$7.7B
	3. Limited predictability of cash inflows and outflows	Improve the predictability of funds decreasing the cost of borrowing to accommodate obligations	$0.9B	$3.7B
	4. Minimal traceability of cross-border payments	Improved interoperability resulting in more transparency of processing times and reduced reliance on intermediaries	$0.5B	$3.5B
	5. Prevalence of manual payments and legacy technology	Optimize technology and automation to streamline payment efforts	$2.1B	$3.4B

$14.2B Five year value of potential for cost reduction **$31.9B**

$2.9B Annual value of potential for cost reduction **$6.5B**

[17] The cost saving estimates in Figure 10 are larger than those conveyed in previous Payments Canada publications. The reason for this that the scope of cost savings in this study is wider. For more information, visit payments.ca



How is Canada responding to required changes in the payments infrastructure?

Canada's payment system relies on two legacy mainframe applications that were built in 1984 and 1999 – these are the Automated Clearing and Settlement System (ACSS) and Large Value Transfer System (LVTS), respectively (refer to Appendix 3). The technology was designed to operate with batch updates, limiting its ability to respond to emerging needs for faster, data-rich payments. This section explores the choices faced in responding to these trends. While Canada's modernization agenda has already been established, Figure 11 offers a more fulsome rationale for the decision to replace these two core clearing systems with entirely new platforms, instead of continuing to enhance the existing platforms, to meet the needs of Canadians.

Figure 11 Payments modernizations options

	ENHANCE EXISTING INFRASTRUCTURE *Comparative*		**TRANSFORM PAYMENTS INFRASTRUCTURE** *Payments Canada Modernization Agenda*	
Approach	▸ Keep existing infrastructure (maintain LVTS and ACSS) ▸ Real-time capability would require new and independent platform as both ACSS and LVTS are not currently configured to support faster payments ▸ Enhanced remittance data will require a complex exercise in field expansion to adapt legacy technology into the new data requirements and standards		▸ Invest in aligned core clearing and settlement platforms ▸ Real-time capability integrated into unified clearing and settlement platform ▸ Adoption of commercially available technology (e.g. SWIFT, VocaLink) that is readily compliant with ISO20022 and is customized to facilitates richer remittance information transfers	
Establishes a Platform for Innovation	▸ Limited ability to respond to new functionality demands driven through digital and mobile adoption ▸ As adoption of mobile and digital continues to increase, the cost of updating existing platform becomes prohibitive		▸ Enablement of proxy directories and overlay services expand payments capabilities and choice for consumers and businesses ▸ Ability to improve analytics on richer data to introduce new products and offers ▸ Expand applicability of existing payment options – e.g. large purchases through use of overlay services	
Facilitates Participant Collaboration	▸ Legacy technology restricts collaboration due to limited ability to interact with API ▸ Opening the existing platform to enhance access would likely require a lot of programing from skills that are increasingly scarce		▸ Updated architecture increases access to the platform through usage of APIs ▸ Potential for new business models and revenue sharing schemes built on collaboration (e.g. Fintech, Bank joint offering) ▸ Access to additional data and services streamlines payments processes	
Drives Execution Efficiency	▸ Legacy mainframe technology can be updated at the expense of time to market ▸ Long term cost implications of maintaining outdated technology		▸ Deploying a new platform can increase time to market ▸ Scalability of the system improves with modern technology ▸ Modern architecture can incorporate new technology (e.g. Blockchain)	
Reduces Risk	▸ Legacy technology faces greater risk of new threats for cyber/financial crime ▸ ACSS does not meet the Bank of Canada "prominent system" requirements related to same day settlement and collateralization		▸ Increased ability to respond to emerging threats for cyber/financial crime ▸ New platform can meet BoC "prominent system" requirements related to same day settlement and collateralization	

Approaches were compared along the dimensions of i) establishing a platform for continued payments innovation ii) facilitating participant collaboration iii) ability to drive execution efficiency and iv) how the approach decreases risk to the payments ecosystem. Study participants indicated that these dimensions were often considered to be the most impactful in payments modernization efforts in other countries.

While some improvements can be made by enhancing existing payments infrastructure, a transformational approach as laid out in Payments Canada's Modernization agenda is required to better support innovation and facilitate increased collaboration amongst market participants. For Canada, the transformational approach includes replacement of the current high-value (LVTS) and retail (ACSS) systems as illustrated in Appendix 3. It also includes the introduction of a new real-time payment system, the implementation of global regulatory standards across all new systems and a modernized rules framework, making Canada's modernization plans some of the most ambitious in the world.

Around the world, the most common approach to modernization consists of enabling real-time capability through an independent application in the platform. After following that approach, the UK has recently, through the PSR's Payment Strategy Forum, decided to move beyond enablement of faster payments and conduct a full replacement of the country's payments infrastructure.

Accelerated adoption of digital and mobile solutions requires a flexible infrastructure that can leverage a substantially larger volume of data as well as new capabilities like functionality to identify payee/payor by means other than bank account numbers. Value add overlay services that allow participants to develop new product and service propositions to drive increased loyalty and remove uncertainty around payments processes can only be offered efficiently in a fully transformed platform. With the potential to increase innovation and collaboration, the creation of new business models will ultimately offer consumers and the business community a greater range of choice while allowing participants to monetize on new contextualized solutions that evolve with market needs. In the case of Australia, the architecture of the New Payments Platform (NPP) was built with a distributed layered architecture that integrates basic infrastructure with overlay services.

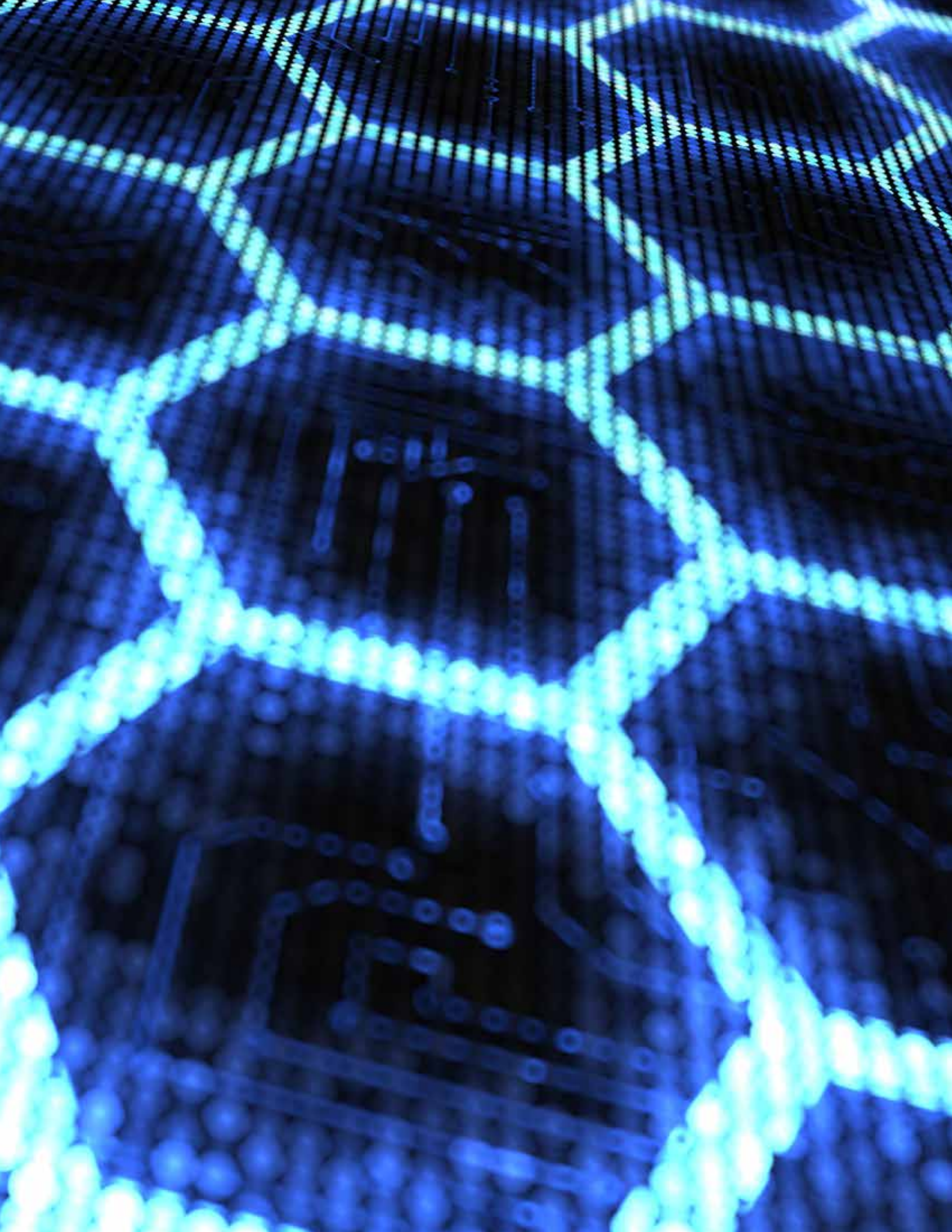
Increased collaboration through a new platform will allow a larger number of participants to deliver a wide range of offerings with greater speed to market. Collaboration can drive specialization of the various participants in the ecosystem and enable more efficient delivery of innovation.

A platform based on mainframe technology will not be able to incorporate the degree of change that is required effectively. The modular and distributed potential approach for a new platform will reduce complexity and costs over the long run by reducing the need to continuously service and integrate outdated technology. This is particularly relevant for Canada as the existing payments infrastructure is built on legacy technology that was not designed to operate in real-time.

How can businesses in Canada benefit from a new payments infrastructure?

A transformative approach has the potential to enable material efficiency gains for the businesses community in Canada:

- **Enhanced analytics from substantially larger data sets:** The ability to exponentially increase the amount of data transferred with payments can potentially unlock new business opportunities by enabling companies to further contextualize and personalize information they receive, ultimately providing an opportunity to better meet customer needs.
- **Simplification of processes:** With an improved range of payment options, companies can tailor their payment habits to suit their business models. The ability to use overlay services to identify the payee by means different than bank account information can help streamline operations and reduce the amount of investigations. It will also likely increase adoption of electronic payments by removing the need to provide detailed bank account information to customers and suppliers.
- **Increased productivity and re-deployed capacity:** The ability to increase auto-match rates unlocks the potential to align the workforce to the areas where they can make a meaningful impact. It also enables the possibility to up-skill resources into jobs that meet new demands.
- **Reduced operational risk:** As companies consume larger amounts of payments data they gain greater visibility into their supply chain helping identify concentration risk or vendors that may be under hardship. It also opens the door to better matching cash outlays to needs in real-time. It is however worth noting that there was a high incidence of fraud in countries that implemented real-time payments schemes, especially in the UK, at the point of introduction. The incidence of fraud diminished as the system matured and real-time detection techniques improved.
- **Increased ability to operate across borders:** As remittances become standardized, the need for requisite processes for international payments disappear. Visibility is also increased, allowing companies to better manage their liquidity requirements and identify competitive advantages in business partnerships.
- **Greater interoperability:** Canada's trade would not be impacted by transactional inefficiencies, especially as more countries move towards modernized payment schemes.
- **Reduction in the shadow economy:** With increased transaction digitization, financial positions can be more easily determined, improving accessibility of funds for business models that are traditionally cash based. It can also act as a deterrent for financial crimes as richer data can be leveraged to establish source of funds and reduce false positive results in anti-money laundering or sanctions investigations.
- **More flexible architecture:** With regulatory concerns over fairness and market stability, significant change is being driven to allow for a more flexible, open and collaborative financial services architectures (e.g. Open Banking, PSD2). For example, a layered stack architecture is being created in the UK and Australia; each stack can be isolated from others, making it possible to make discrete changes without compromising other components of the system. The actual transfer of funds is carried out in a separate layer as an overlay service. These overlay services allow PSPs to develop distinct propositions, without changing the underlying messages.
- **Increased adaptability to new technologies:** The new platform should be flexible and scalable enough to accommodate new technologies, such as blockchain-based applications, though it cannot be built by relying solely on them.



Key takeaways

The global payments landscape is undergoing rapid change driven by social, technological and economic forces. In response, Payments Canada has set out a vision for modernizing the payments infrastructure to be fast, flexible and secure while promoting innovation and strengthening Canada's competitive position.

Payments Canada identified a need to leverage research and analysis to quantify the current cost of payments processing within the ecosystem to better illustrate the potential opportunity for businesses to realize efficiency gains by preparing for upcoming payments modernization and adoption of ISO 20022 standard messaging.

The ability to realize efficiency gains is dependent on the historical investment level that each company has undertaken, with some being able to better leverage increased remittance data and faster payments.

1. Canadian corporate and SMEs continue to rely heavily on cheques due to the ineffective remittance information currently available in electronic payment methods
2. The world is moving towards filling this gap by adopting modern payments schemes that increase speed and support digital transactions
3. Canada needs to keep pace with the global trend; Payments Canada's Modernization agenda defines the transformative approach required to deliver a new fit for future payments infrastructure
4. The potential benefits will ultimately only be realized through an accelerated modernization program
5. Efficiencies gained from deploying the new infrastructure could reduce some of the $14B to $32B five year cost currently faced by the business community

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Appendices

Appendix 1

Study approach

The approach to this study was both qualitative - based on interviews with Canadian companies, solutions providers, payments industry professionals from Canada, USA, Singapore, Germany, UK, Hong Kong and Australia; and quantitative - leveraging data obtained from study participants, benchmarking data sources and EY's experience.

The cost arising from inefficiencies was modelled by extrapolating the data described above and is provided as ranges rather than an absolute number to accommodate for variations in company size, resource cost, discount and funding rates, and industry sector. The analysis focuses on drivers of inefficiency and their manifestations as costs in companies of different sizes across different industry sectors, using a five year discounted cash flow model. The model illustrates the total pool of costs that may exist in the system today, estimated to be in the range of $14B-$32B as illustrated in Figure 10. The model does not account for a totality of costs as some of the inefficiencies that were identified cannot be quantified based on available data. It is also important to understand that not all costs related to inefficiencies would be eradicated with the implementation of a modernized infrastructure but are instead representative of the potential for improvement that exists in the ecosystem.

The model was built factoring business problem drivers and how costs emerge across the operating model. For example, with lower auto-match rates, manual processes are required to reconcile payments. The cost of the inefficiency arises as the cost of additional fully-loaded FTE (salaries and benefits, premises, equipment and other). Other drivers were modelled using assumptions around existing benchmarks on cost to outsource processes or on-going cost of software/hardware maintenance.

The model accounts for variations in company size and industry sector as inefficiencies arise differently depending on operating model, maturity and the volume and complexity of payments required to support operations. Assumptions were adjusted to reflect these variations as needed. All economic indicators and growth assumptions were sourced directly from Statistics Canada.

The five year present value was calculated using a range of discount rates that reflect current cost of short-term borrowing given the sustained low rate environment.

The study focuses on inefficiencies, however they may appear; it is not meant to investigate the impact of switching from paper to electronic payments, as some of the meaningful work already conducted by Payments Canada and leveraged in the creation of this analysis does. Instead, the questions addressed in this document mean to illustrate the risk that Canada as a country, and in particular the business community, faces from not adopting a strategic approach to address an aging payments infrastructure.

Appendix 2

Modernization concepts defined

Expedited batch

This form of electronic funds transfer allows users to group multiple payments together rather than processing individually. Batch processing in Canada currently accounts for the greatest value of payments in the retail payments system. This payment method will remain integral to an enhanced payments system because it is a convenient and efficient option for bulk transactions.

The majority of batch payments in Canada are moved through Automated Funds Transfer (AFT); enhancing AFT capability by improving its speed and adding more exchange windows is included in Payments Canada's Modernization agenda.

The U.S is moving toward same day ACH in three phases which began in September 2016; the change will enable the ability to have bulk payments processed twice a day the same day that transactions are originated.

Real-time payments

Real-time payments are instantaneous and processed 24 hours a day, 7 days a week. This capability was born from the need for payments mechanisms to improve consumers and businesses' speed of access to funds. Technology innovation including Mobile capabilities, Fintech adoption and Social Platform proliferation have resulted in increased expectations on payments functionality, speed and ease of use. Greater visibility and seamlessness into transactions can benefit consumers, business and government by decreasing friction in economic activity.

Potential benefits of real-time payments for large corporations and small and medium size enterprises include operational efficiencies and liquidity benefits.

Faster payments

Refers to real-time or near-real-time retail payments.

ISO 20022

ISO 20022 is the standard governing payment messaging structure and is considered an essential component to a modern payments infrastructure. Payments Canada is committed to adopting this standard across all aspects of the payments Modernization agenda. The enhanced payment information, such as invoice data, can enable solutions for automated processing, optimizes payment tracking and enhances global interoperability. Canada will be joining the more than 30 other countries planning to adopt the ISO 20022 payment messaging standard.

International remittance processes are afflicted with challenges associated with speed, efficiency, cost and transparency. High transaction costs are often the norm and the time required to send an international wire can detract its attractiveness for emergency payments. ISO 20022 will provide necessary standards to create a common messaging format, however will also allow for local adaptation to meet country specific requirements.

Automated Clearing Settlement System (ACSS)

ACSS is a batch-total debit-entry clearing mechanism used to determine final multilateral clearing balances arising from exchange of payment files between Direct Clearer financial institutions.

Large Value Transfer System (LVTS)

LVTS facilitates the transfer of irrevocable payments between Canadian financial institutions.

While actual settlement with the Bank of Canada occurs at the end of each day, funds are credited to the recipient's account in near real-time. This makes LVTS payments immediately final and irrevocable.

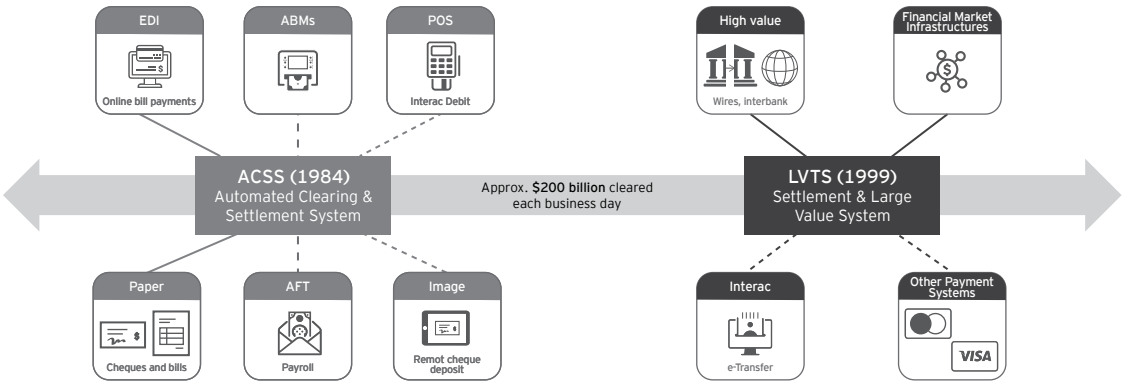
Appendix 3

The Canadian payments ecosystem

Current state

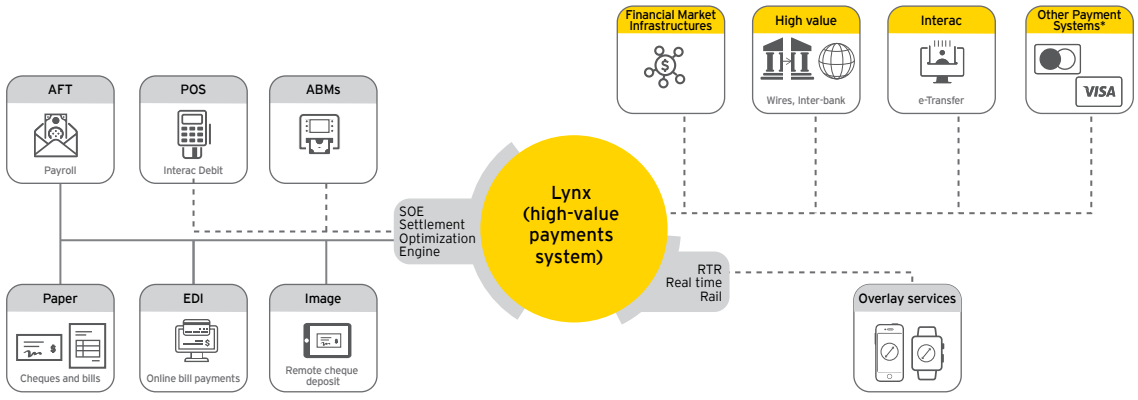
There are a variety of players in the Canadian payments ecosystem[18] (Figure 1) including Payments Canada. Payments Canada is mandated by legislation to own and operate national clearing and settlement systems functions (including a legal framework, rules and standards, processes and technical infrastructure). However, the function of "settlement" is actually performed using direct entries on the books of the central bank (Bank of Canada). And in both cases reference is to "position" settlement, and not payment settlement.

Other participants include financial institutions (FIs) that connect to those systems through their back office structures in order to provide payment services to end users; other financial institutions that connect indirectly; and a variety of new and existing payment service providers (PSPs).



Future state

The future innovation in the payments ecosystem will be facilitated by Payments Canada and its modernized rules framework, which will be proactive, fast and flexible.



* Like the LVTS today, Lynx will continue to serve as a platform to enable settlement of the RTR and SOE in a modernized state. Participating financial institutions will maintain separate settlement accounts for each of the three systems.

[18] "Modernization. Industry roadmap & high-level plan". Payments Canada. 20 April 2016.

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