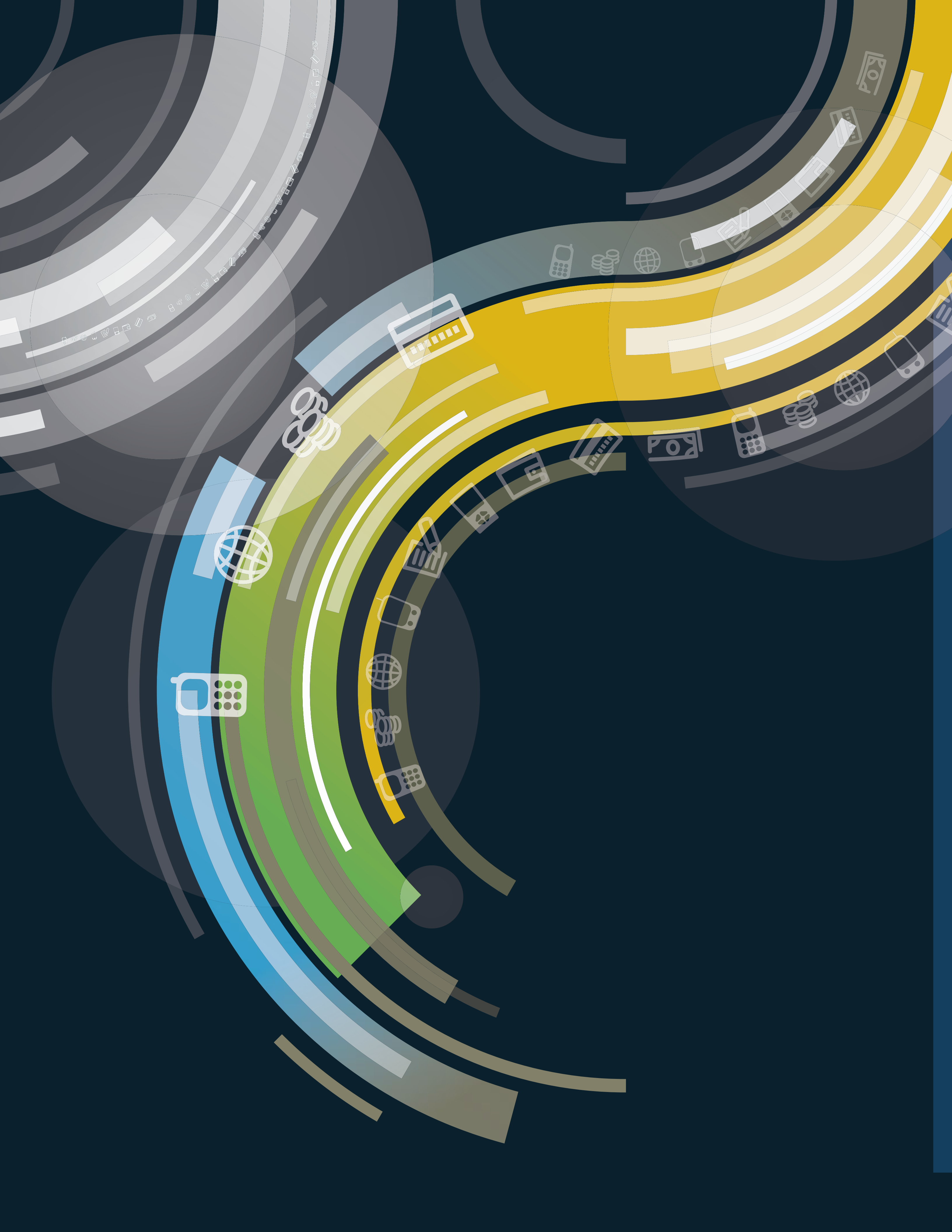
SCENARIOS FOR THE FUTURE OF THE CANADIAN PAYMENTS SYSTEM

Viewpoint Learning, in association with
the Scenarios Roundtable and the Canadian
Task Force for the Payments System Review

VIEWPOINT LEARNING



Viewpoint Learning, in association with the Scenarios Roundtable and Canada's Task Force for the Payments System Review

TABLE OF CONTENTS

FOREWORD

When the Task Force for the Payments System Review was appointed last year, massive change—economic, social and technological—was already under way in the world of payments. Given the speed of that change and the resulting uncertainties, the Task Force decided early on that fulfilling our mandate would require more than the usual analytic approach, and that we would need to engage the experience, expertise and perspectives of industry experts and other key stakeholders.

The Scenarios Roundtable was conceived as an opportunity for Task Force members and stakeholders from a wide range of industries and sectors to learn from leading experts in the field, and from one another. The scenario development process allowed participants to explore different viewpoints, map key uncertainties that might affect the future, and engage in sustained dialogue on the future of the payments system.

Over a period of several months, the Scenarios Roundtable brought together diverse stakeholders—including many who had never before been given an opportunity to participate in a payments-specific dialogue. Leading authorities from Canada and around the world were invited to share their expertise on a wide range of topics, bringing their knowledge and enthusiasm, and challenging participants to think more dynamically about payments than ever before.

The result has been insights and approaches that are far richer and more innovative than could have emerged with a traditional, circumscribed approach. The process has allowed us to think in the longer term and from a far broader vantage point. This advantage has been of great value to the Task Force as we begin to develop our recommendations; it has also given other participants important insight into the developing nature of their industry and its implications for their own organizations.

In addition to new perspectives on longstanding challenges, the Scenarios Roundtable dialogues have helped build greater mutual understanding and stronger working relationships across sectors, both within the Roundtable itself and also with the wider group of stakeholders who were invited to evaluate and refine the scenarios that follow. This foundation will be invaluable as the Task Force takes its next steps, and engages an ever-wider circle of Canadians on this issue.

We wish to express our gratitude to the Scenarios Roundtable members and outside experts for their dedication and their many contributions to this project. In particular, the Task Force would like to recognize the outstanding contribution of Viewpoint Learning, whose skill in guiding us through this learning process, and deft development of these four scenarios, have brought the world of payments into greater focus for the benefit of all Canadians.

This report serves as an invaluable companion to *The Way We Pay*, a separate discussion document that articulates our thinking and reflects our own independent research, analysis, and evaluation. The spirit of these four scenarios, and the collaborative work undertaken to achieve them, lie at the heart of our own report and its guiding principles.

Patricia Meredith

Chair
Task Force for the Payments System Review

ACKNOWLEDGEMENTS

The scenarios described in this volume were created by the Scenarios Roundtable, which included the members of the Task Force for the Payments System Review as well as a wide range of key stakeholders. The members of the Roundtable included:

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In addition, a larger group of stakeholders participated in a day-long session that reviewed preliminary drafts of the scenarios with the Scenarios Roundtable and developed significant revisions and improvements. The members of the larger group included:

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The dialogue and scenario process was designed, organized and facilitated by Viewpoint Learning. Steven Rosell and Ged Davis were co-directors of this project. The organizational skills of Daniel Coates and Heidi Gantwerk helped keep this complex undertaking running smoothly, while Isabella Furth and Patricia Davis played key roles as lead writers and editors. Reagan Espino was responsible for financial administration, and Gerry Dobra provided administrative support.

The staff of the Task Force for the Payments System Review provided ongoing assistance and support throughout this effort: Kevin Wright, Kym Shumsky, Brendan Carley and Margit Herrmann.

This effort could not have succeeded without the contributions and input of those listed here, as well as many others.

INTRODUCTION

INTRODUCTION

Since the late 18th century, five great waves of development have transformed the global economy. Each wave was driven by a unique set of technologies and institutions (see Chart 1). As they swept through society, these waves did more than just add new technologies and industries: instead, each one transformed the whole structure of the economy.

CHART 1: FIVE WAVES OF DEVELOPMENT

1771
The 'Industrial Revolution' (machines, factories and canals)

1829
Age of Steam, Coal, Iron and Railways

1875
Age of Steel and Heavy Engineering (electical, chemical, civil, naval)

1908
Age of Automobile, Oil, Petrochemicals and Mass Production

1971
Age of Information Technology and Telecommunications

20??
Age of Biotech, Nanotech, Bioelectronics and new materials?

For example, starting in 1771, machines, factories and canals shaped the Industrial Revolution. At the turn of the 20th century the rise of automobiles, petrochemicals and mass production completely transformed our economy and our society.

Today, we are in the midst of the age of information technology and communications

The advent of the personal computer, software, the Internet, mobile telephones, cloud computing and social communication networks has spawned new industries and transformed services. It has even changed the way we engage in traditional activities such as manufacturing and agriculture, leading to large improvements in productivity. Nothing has been left untouched.

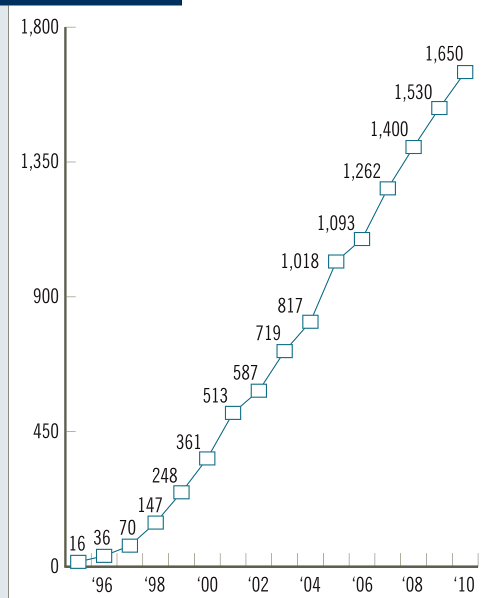
We have seen significant growth of virtual markets and a vast set of new opportunities. For example, Chart 2 shows that the Internet has grown from serving 0.4% of the world's population in 1995 to 29% today, and that this exponential rate of growth is continuing. This is a global dynamic, and it favours those who comprehend the nature of the change and can harness its possibilities. A new set of global companies has emerged, including Amazon, Apple, Cisco, Google and Facebook, with many smaller companies bidding to join them. This situation has allowed the development of new business models and possibilities for change (see Box 1).

These changes are not without costs. Techno-economic revolutions undermine existing investments and expectations and change the economics of industries. They can lead to unemployment, shuttered businesses, and rising

CHART 2: INTERNET USERS IN THE WORLD 1995–2010

Source: www.Interworldstats.com—January, 2008
Copyright © 2008, Miniwatts Marketing Group

millions of users



tension between "winners" and "losers." They challenge those who are slow to adapt or who cannot easily change behaviours and habits.

The history of the Canadian Payments System (CPS) has been one of thoughtful and gradual adaptation. Over the last decade, CPS has carefully considered possible innovations and worked to ensure that they are smoothly implemented (see Box 2).

However, payments systems are now changing far more rapidly worldwide. Some of the most significant changes include moves to phase out cheques, a decline in the use of plastic, the rise of ebanking, rapid development of mobile payments options and many more.

In response to these changes, the Minister of Finance established a task force to review the Canadian Payments System (CPS). In particular, the mandate of the Task Force for Payments System Review is to:

1. Identify public policy objectives to be pursued in the operation and regulation of the payments system;
2. Identify and assess the regulatory and institutional structures best suited to achieving these public policy objectives;
3. Assess and report on the safety and soundness of the Canadian payments system;
4. Assess the competitive landscape by identifying any potential barriers for new entrants and mechanisms to improve the competitive landscape of the domestic payments system;
5. Assess the degree of innovation in the domestic payments system and report on the challenges and opportunities to bring new and innovative products to market in Canada; and
6. Assess and report on whether consumers and merchants are well served by the domestic payments system.

As an early step, the Task Force decided to work with a roundtable of stakeholders to develop alternative scenarios for the future of the payments system. There are, of course, many possible futures for the system, some positive and some less so, some known and some unknowable. Indeed, for everything we think we can anticipate about how globalization, technology and social attitudes will shape the CPS in the coming decade, there will be much more that we cannot yet even imagine.

BOX 1: THE "EDGE" AND THE "CLOUD"

Edges are the peripheries of the global business environment. This is where unexpected solutions and disruptive innovations are born, far from the stable "core." In today's world of accelerating change what's born on the edge can *transform* the core with breathtaking speed. A few years ago, both India and China were marginal players in the global economy. Now they are central players and they have transformed the way the rest of the world does business. Not long ago, the Internet was a specialized communication platform for scientists. Now it's a centre for commerce and advertising…. Companies avoiding the edge will find their core markets and capabilities under attack from edge players who can deliver more value at lower cost.

– John Hagel and John Seely Brown

Cloud computing is a pay-per-use model for enabling available, convenient, on-demand network access to a shared pool of configurable computing resources (for example, networks, servers, storage, applications, services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

– National Institute of Standards and Technology.

Cloud computing allows for great flexibility, as well as potentially dramatic cost reductions in IT hardware, software and services. Products can be moved to market and businesses can achieve scale much more quickly. Some businesses, such as Google and Amazon, already have most of their IT resources in the cloud.

The combination of the edge and cloud computing is a powerful force for disruptive change.

The goal of the Scenarios Roundtable was to explore the different ways in which the CPS might develop. This has required members of the Roundtable to challenge their own mental maps—to "think the unthinkable." It has required them to learn from each other and from leading experts, suspend disbelief and engage in real dialogue.

DIALOGUE AND SCENARIOS

Scenarios are not predictions and they are not preferences. Scenarios are alternative plausible futures, each based on different assumptions.

BOX 2: MILESTONES IN THE HISTORY OF THE CPS 2000–2010

1. Due to the success of Interac, by 2003 **Canadians became the highest per-capita users of debit cards** in the world.
2. An increase in debit and credit card fraud led to the mandated adoption of **chip and Personal Identification Number (PIN) technology**.
3. Following the popularity of alternative payment methods, major telcos in Canada formed a strategic partnership to develop Zoompass, Canada's first major **mobile phone payment service**.
4. MasterCard and Visa released **contactless cards** in order to capture a larger segment of small cash payments.
5. The Minister of Finance created the **Debit and Credit Card Code of Conduct** to protect merchant and consumer interests.

Because they use multiple perspectives to explore problems, rather than just an extended and deeper analysis of a single viewpoint, scenarios can help us to see the significance of issues and events that we might otherwise dismiss as unimportant, or just not see at all.

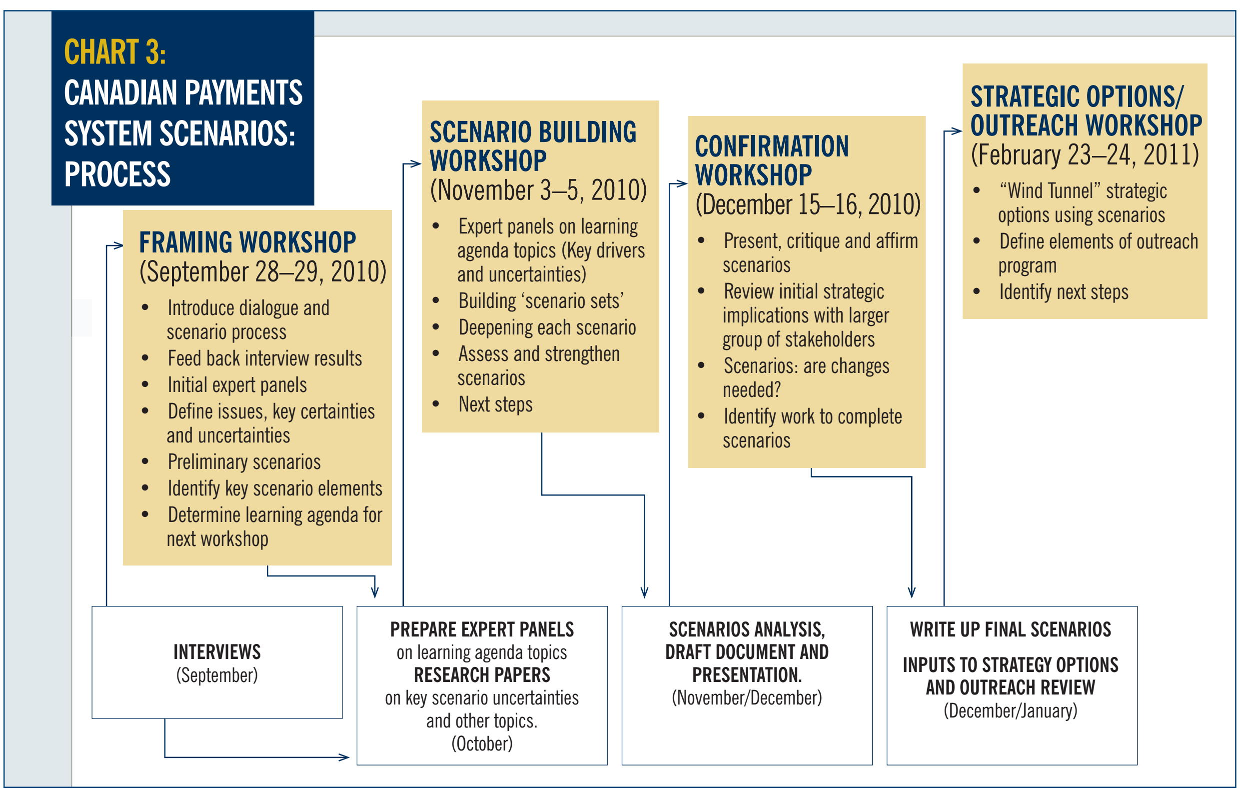
Scenario construction combined with effective dialogue is a proven methodology for challenging assumptions about what the future holds and exploring uncertainties. Dialogue does not replace debate or decision-making; it precedes them. Dialogue does create the shared language and deeper understanding that can make subsequent debate or decision-making more productive.

The scenarios developed by the Scenarios Roundtable and presented here aim to stretch thinking about both the opportunities and the obstacles that the future might hold. The scenario set as a whole captures a range of plausible future possibilities, good and bad, expected and surprising.

PROCESS USED TO CREATE THE SCENARIOS

The Scenarios Roundtable used scenario development techniques pioneered by Shell in the 1970s, and refined and used by many groups around the world, to understand and prepare for alternative futures in highly complex and dynamic environments.

The process proceeded in five steps: interviews, framing of the issues, scenario building, scenario confirmation, and testing strategic options using the scenarios. These steps and supporting work are summarized in Chart 3.



SCENARIO FRAMING AND OVERVIEW

SCENARIO FRAMING AND OVERVIEW

The Scenarios Roundtable identified a number of key certainties and uncertainties for the future of the Canadian Payments System (CPS), which they then used to frame the scenarios.

KEY DRIVERS OF CHANGE (CERTAINTIES)

In the coming decade the CPS will be shaped by a number of key drivers of change, which need to be part of any scenario. In particular:

- Globalization: a world that is increasingly connected through information exchange, trade and migration;
- New technologies and industries: especially those related to information technologies and communication in a world of increasing connectivity; and
- New societal attitudes: that value speed, social networking and increasing online activities.

CRITICAL UNCERTAINTIES

Critical uncertainties define and differentiate the scenarios: the uncertainties will turn out one way in one scenario, and a different way in another. The Scenarios Roundtable identified many potential uncertainties including: the nature and extent of regulatory change; the speed of technological innovation; the form and source of leadership of the CPS; the impact of developments outside Canada; and the way issues of authentication, security and privacy would be addressed.

The Scenarios Roundtable then selected what members saw as the two most significant critical uncertainties that would shape the future of the CPS:

- How well aligned is the CPS ecosystem?
- How rapid is consumer and user adoption?

BOX 3: CANADIANS' ON-LINE BEHAVIOUR

Canadians spend more time online than any other country and have the highest number of Internet connections per person. In 2010 Canadians spent an average of 42 hours per month on the Internet, 50% more than users in the US and the UK. More than 2/3 (68%) of Canadians are online, as compared to 62% in France and the UK, 60% in Germany and 59% in the United States.

What do Canadians do online?

In 2009:

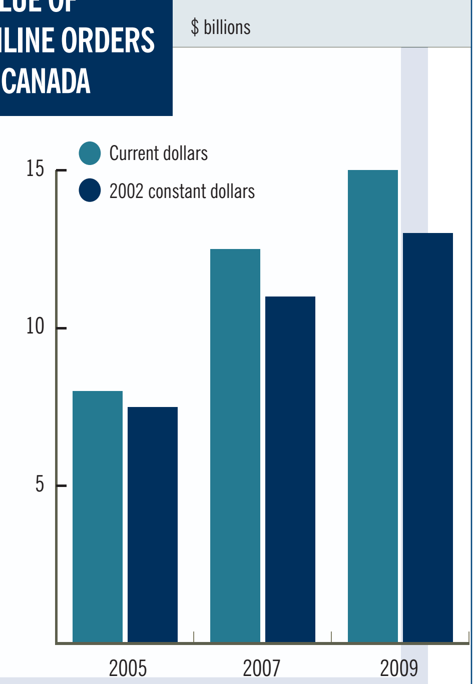
- Canadians spent **$15.1 billion online**, up from $12.8 billion in 2007.
- Canadians placed **95 million online orders**, up from 70 million in 2007.
- **39% of Canadians made online purchases**, up from 32% two years before.

Canadians are also heavy users of social network sites (in 2010 the top quintile of users reported spending an average of 5½ hours a week on sites such as Facebook and LinkedIn). They are the world's leading users of YouTube and Wikipedia, and they are active search engine users.

Canadians also bank online more than any other nation.

CHART 4: VALUE OF ONLINE ORDERS IN CANADA

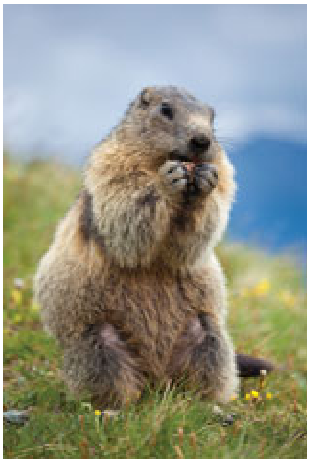
Source: Statistics Canada. E-Commerce: Shopping on the Internet (September 2010)



THE SCENARIO SET

These two branching points—the degree of alignment of the Canadian Payments ecosystem (aligned or fragmented) and the extent of consumer/user adoption (rapid or moderate)—were used to create a set of four futures for the CPS that are divergent, challenging, internally consistent, and plausible. What follows is a brief review of each scenario. The different combinations of the two key uncertainties and the four scenarios that resulted are summarized in Chart 5 on page 15 and Table 1 on page 16-17.

GROUNDHOG DAY



Fragmented ecosystem and moderate consumer adoption

Like the movie *Groundhog Day*, this scenario replays the recent past. Canada's payments system moves forward as it has in the past. Not much changes in the infrastructure of the payments system. The ecosystem is not strongly aligned: government, financial institutions (FIs), businesses and telcos are all charting their own courses and protecting their own interests, with few or no universal standards.

The regulatory environment responds slowly and as a rule offers only basic protection, except when specific crises force a more significant response. At the same time, consumers and businesses are slow to adopt new technology; mobile payments move slowly, concerns about authentication, privacy and security remain high, and no clear product winners drive consumers to embrace a new technology strongly. Meanwhile much of the rest of the world moves ahead, adopting new technologies and creating a more robust regulatory framework.

TECH-TONIC SHIFT

Fragmented ecosystem and rapid consumer adoption

Technology companies such as Google, Apple and social networking sites develop alternative payments platforms and become major players. Government is slow to regulate and competition is fierce. Several factors aid the success of these companies including high consumer adoption and cheap new technological platforms. New entrants take advantage of cloud computing and collaborative networks to create low-cost scalable businesses. The proliferation of new financial services and applications to address specific needs is phenomenal.

The first half of the decade sees increasing fragmentation in the marketplace, with a wide range of different user systems, each with different interfaces and authentication methods. The traditional FIs find themselves under great pressure. Although consumers and businesses benefit from convenient new products, at the same time fraud rises and security breaches become more widespread, as do legal cases involving liability. Responding to growing pressure from businesses and consumers, and following a major security breach at an alternative FI, the government moves to regulate the new entrants more actively. In the latter part of the decade, alternative FIs come to terms with new government regulation and there is consolidation in this market. Many consumers and businesses enjoy the new and convenient payment options but some are left behind. In the space of a decade, innovative new technologies and market forces have fuelled a tectonic shift in the way Canadians transact.

CANADA GEESE

Aligned ecosystem and moderate consumer adoption

Like a flock of Canada geese, the payments system is strongly aligned and co-operative. All parties—federal and provincial governments, FIs, telcos, networks, merchants, and other players—operate on a level playing field. Over the course of the decade, this high level of collaboration reduces friction in the system: the framework of the CPS is expanded to include all players who work together to agree on the rules and standards, spurred by the understanding that if they don't, government will act with a heavier regulatory hand.

Because the system is reasonably efficient and the major players are happy enough, there is limited push towards new technology, and the cost of meeting standards and regulatory requirements slows innovation. Instead, the payments system prioritizes gradual, thoughtful, evidence-based reform that embraces the best of technologies being road-tested in other systems. This allows Canada to benefit from innovations while avoiding the risk and disruption of working on the bleeding edge.

OWN THE PODIUM

Aligned ecosystem and rapid consumer adoption

There is growing awareness of the magnitude and speed of changes being fuelled by the convergence of computing and connectivity into the smart phone, disrupting existing business models and ways of working while creating huge new opportunities. Nowhere are both the threat and the opportunity clearer than in Canada's payments system. Responding to this challenge, industry comes together to facilitate the rapid development of a set of standards in key areas of payment, especially privacy, security, digital ID and authentication, and mobile payments that will encourage competition and innovation and enable Canada to lead developments elsewhere in the world. This effort is reminiscent of the "Own the Podium" campaign at the 2010 Olympics, when Canada moved away from traditional approaches to win the most gold medals ever for a Winter Olympics host country.

Canada sees remarkable shifts to new ways of processing payments and other transactions. The principle that Canadians "own their own data," and the accompanying robust digital identification and authentication systems that are developed, are crucial in encouraging rapid consumer adoption and enabling Canada to capitalize on the massive changes under way. Companies use cloud computing and collaborative networks to set up payments businesses quickly in response to consumer needs. Lessons learned in payments quickly flow to other sectors, such as health. In FIs and other industries, there is much disruption and considerable job loss but also the creation of new industries and new jobs. By 2020 Canada is a global leader in this new online world, and is exporting its expertise and systems to the global community.

THE SCENARIOS

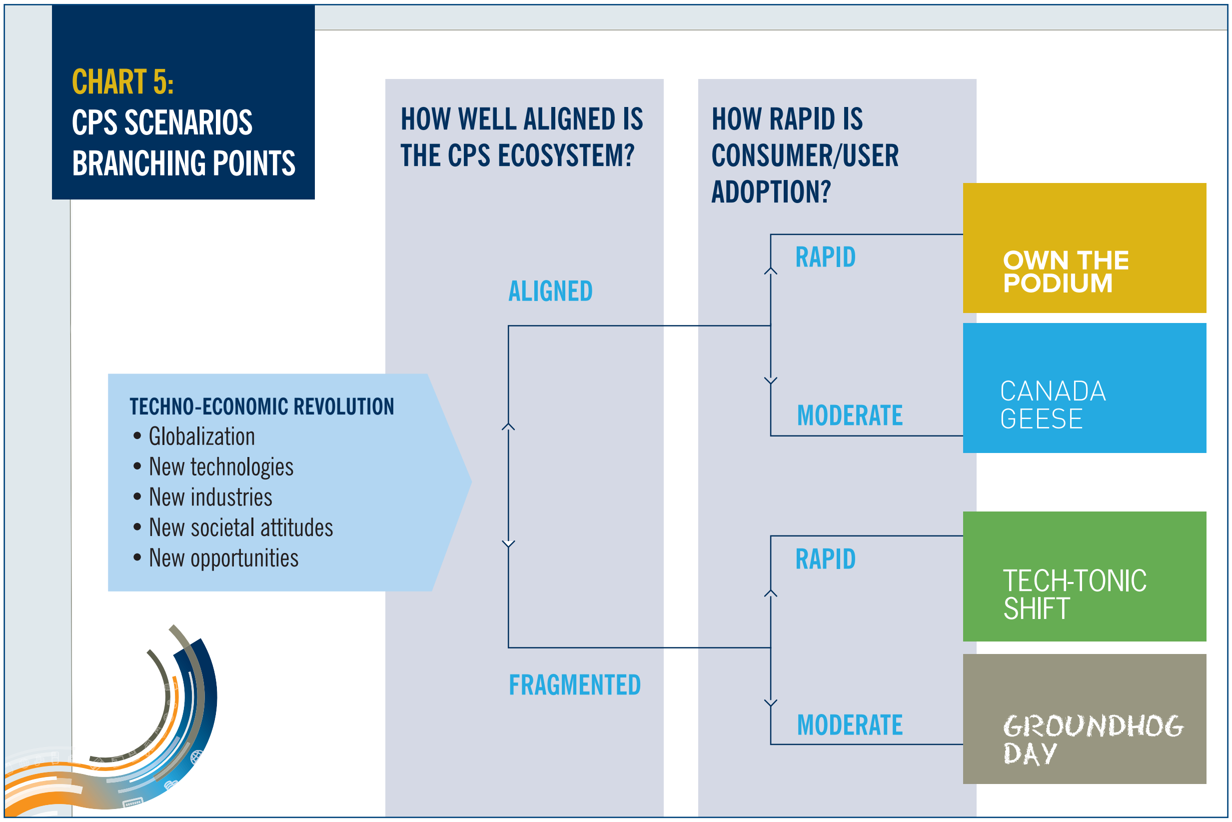
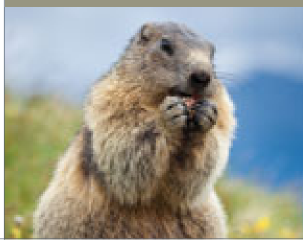


Table 1 on the following page is a comparison of the scenarios across important dimensions.

In the following chapters we describe each of the scenarios in greater detail. Each scenario is written from the vantage point of 2021, offering four histories of the coming decade.

In the concluding chapter we discuss how these scenarios can be used and their implications.

The scenarios that follow are not meant to be exhaustive; rather, they are designed to be both plausible and provocative, to engage imagination while also raising new questions about what that future might look and feel like.

TABLE 1: SALIENT POINTS OF THE SCENARIOS	GROUNDHOG DAY 	TECH-TONIC SHIFT
CRITICAL UNCERTAINTY 1 **How well co-ordinated is the CPS ecosystem?**	• Stakeholders weakly aligned	• Entry of a diverse range of new players into the payments system ecosystem • Markets fragmented • Competition fierce and initially unrestricted by governmental regulation
CRITICAL UNCERTAINTY 2 **How rapid is consumer and user adoption?**	• Slow take-up of new technology • Concerns over authentication, security and privacy still high	• High consumer and user take-up of new technology
STORY LINE	• No major crisis to drive systemic reform • Instead, incremental change and micro-collaboration • Growing frustration by end of decade	• Technology companies now major players in payments; proliferation of innovative payments solutions • Ultimately, government introduces regulations because of concerns about security and liability • Market consolidation late in the decade
SIGNIFICANT REGULATION TO 2020	• Little new regulation: small scale and incremental changes only	• Initial limited and incremental approach by government • Stronger regulation, including new entrants, from 2016
MIX OF TRANSACTION PAYMENT INSTRUMENTS IN 2020	• Cheques still in wide circulation • Some acceptance of contactless but not widespread	• More than 75% of payments electronic; dwindling cash and cheque payments • Contactless dominant share of transactions

CANADA GEESE	OWN THE PODIUM
	
• Stakeholders well aligned with a high degree of collaboration	• Stakeholders work together to agree on a set of standards in key areas, such as security and mobile payments
• Slow to moderate take-up of new technology • "We don't need new gadgets every three months"	• High consumer and user take-up of new technology, in part based on successful authentication and security initiatives
• First half of decade focused on establishing governance and regulatory structure and getting players aligned • Rollout of new systems initially slower than in rest of world but eventually widespread	• Industry cohesiveness, supported by government, to build an online payments infrastructure and set standards in key areas of payment • New, efficient systems rolled out • Canada a global leader in payments
• CPA restructured: industry-set standards with strong government oversight	• Standards set in privacy, security, digital ID and authentication and mobile payments • Designed to encourage competition and innovation
• Cheques much less widely used than in 2010 • Contactless debit > 25% of transactions.	• Cheques almost entirely phased out • Phased reduction of cash • 90% of payment volume is electronic; contactless dominant share of transactions

SCENARIOS

GROUNDHOG DAY

MARTON SCHOOL OF MANAGEMENT
UNIVERSITY OF TORONTO
COURSE TITLE: PAYMENTS: A GLOBAL AND HISTORICAL PERSPECTIVE (MSM 2541)
INSTRUCTOR: RICHARD OPOPONAX

LECTURE 8

"CANADIAN PAYMENTS IN THE 21ST CENTURY"

APRIL 2021

TORONTO WORLD & TELEGRAPH

RETAILERS DEMAND MANDATORY STANDARDS FOR CREDIT AND DEBIT NETWORKS

CITE COMPLEXITY, COST, DELAYS OF CURRENT SYSTEM

March 23, 2021: TORONTO – Canada's largest retailers' organization today challenged Finance Minister Cassandra Darkwater to set stronger mandatory standards for Canada's debit and credit networks

Professor Opoponax: Good morning every-one. Nice to see you all.

We are going to pick up where we left off last time. As you recall, last week we were talking about the state of global payments systems at the turn of this century and how developments set the stage for where we are today.

This week we will bring our survey up to the present day, with a specific focus on our system here in Canada. Today's lecture provides an overview; we will be delving into many of these issues in more detail in future classes.

So, if you've been paying even a little bit of attention to the news over the last few months, you've probably noticed that there is some frustration and tension in the world of Canadian payments.

Look at the recent headlines on your screens, all from the first few months of 2021.

It's not a very pretty picture. We in Canada have limited access to payments options that are widely available elsewhere in the world; we have much less mobile and online transacting. Payment and clearing are still almost entirely handled by the big banks and FIs, and to some extent by the global networks such as Visa and MasterCard. We are more dependent than many other nations on older, less efficient payment modes such as cheques and cash. The pie charts show you Canada's mix of payments over the last 10 years.

Merchants and consumers are frustrated, forced to do the best they can within a complicated and fragmented system.

Instead of the kind of fast, secure, globally interoperable payments system we see in Korea for example, Canada's big payments innovation of the last five years is LoyaltyTracker.

This was not the future we envisioned 10 years ago. In 2010 a lot of us thought we were on the verge of a brave new world. Really neat new technologies were hitting the market all over the place; new phone technology was making things such as mobile payments and ewallets a reality. And cloud computing was opening up all sorts of new possibilities for sharing and storing information.

"What happened?" I hear you cry.

Actually, the real question is: what didn't happen? Changes in the system didn't happen. Changes in government regulation didn't happen. Universal standards didn't happen. Broad-based co-operation among the major players didn't happen.

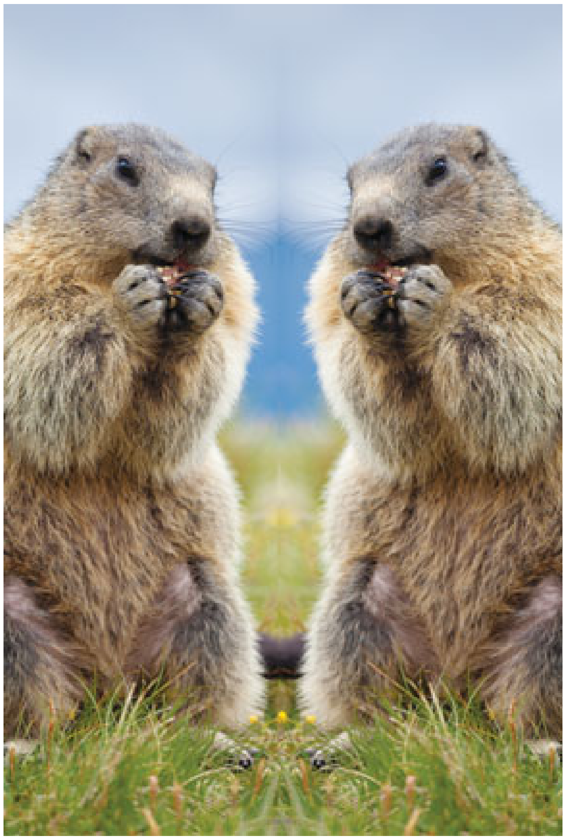
I call it the Groundhog Day effect.

You look puzzled, Ms. Banerji. I must be showing my age again. For those of you too young to recall the movie *Groundhog Day*, it features Bill Murray, doomed to repeat a single day over and over.

No disrespect to Sir Bill, but this is all too apt a metaphor for the state of the Canadian payments system. I look at the payments system and I see us repeating the same patterns over and over. We just don't seem to be getting anywhere.

OPTING FOR THE STATUS QUO

We had the opportunity to do things differently. 2010 was actually a promising juncture for making some significant changes. The government had passed a Voluntary Code of Conduct laying out guidelines for the credit and debit industry. And the Payments Card Network Act of June 2010 gave the Finance Minister the authority to enforce that code as necessary.



At that point, some parties suggested we should decouple banking from payments and open up the Canadian payments system to all the major players, not just the big banks and FIs. Most established players, the incumbents, argued that we all have a lot invested in the existing system and by and large it's working pretty well. Do we really want to risk the costs and disruption that come with changing it?

Ultimately the incumbents were the ones with the financial and political muscle to shore up the status quo. Others, more widely dispersed and without common views on possible remedies, ended up with little leverage.

PAYMENTS BY TRANSACTION TYPE 2010–2020 (AS PERCENT OF TOTAL VOLUME)

PAYMENTS BY TRANSACTION TYPE 2010–2020 (AS PERCENT OF TOTAL VALUE)

2010

CHART 6: 2010 VOLUME

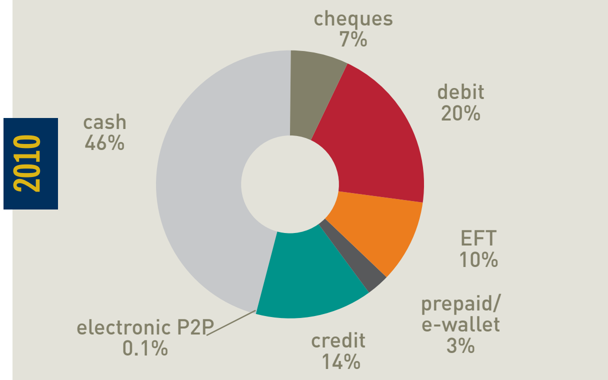
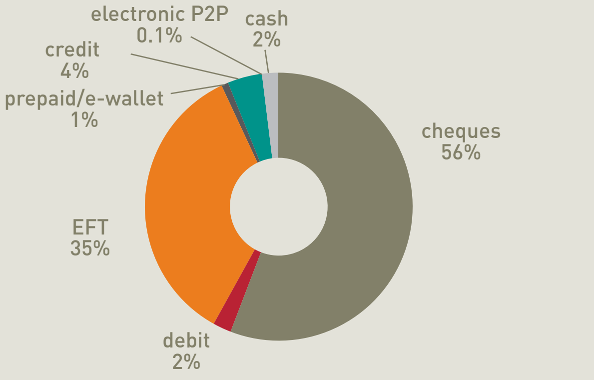


CHART 7: 2010 VALUE



2015

CHART 8: 2015 VOLUME

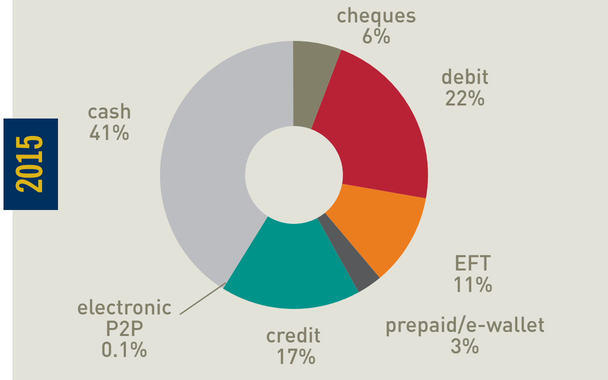
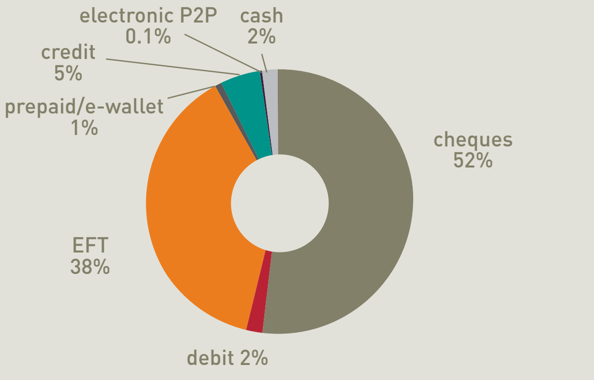


CHART 9: 2015 VALUE



2020

CHART 10: 2020 VOLUME

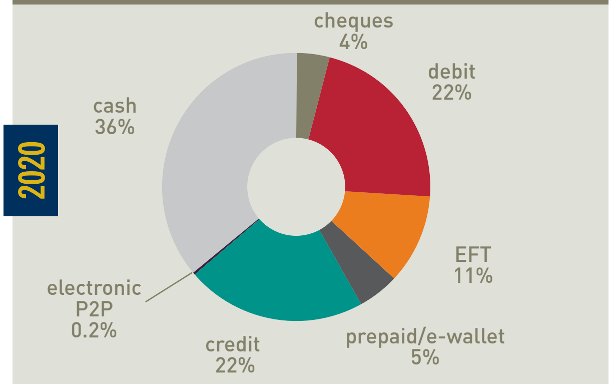
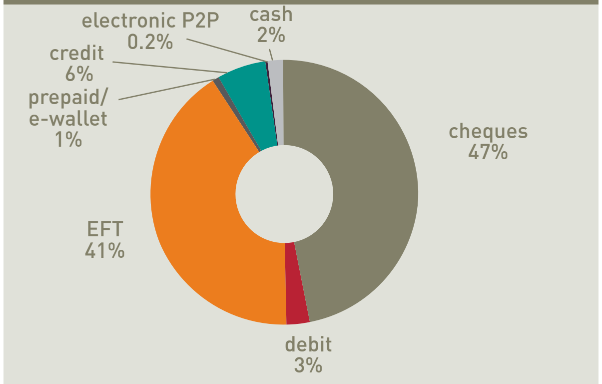


CHART 11: 2020 VALUE



BOX 4: VOLUNTARY CODE OF CONDUCT

Adopted in 2010, the Voluntary Code of Conduct lays out guidelines for payment card networks (for example, VISA and MasterCard), card issuers (such as banks and credit unions), and payment processors.

These guidelines require the industry to give merchants information about the costs involved in accepting credit and debit cards and flexibility in deciding what cards and features to accept.

A few key provisions of the Code:

- Merchants must get clear information on rates and fees as well as the freedom to opt out of their contract if fees change;
- Merchants may offer discounts to encourage customers to choose a payment option that costs the merchant less;
- Merchants may choose which payment options to accept: card companies cannot require that merchants who accept their debit cards, for example, also accept their credit cards.

This is described as a voluntary code, but when it was proposed all parties understood that if card companies did not adopt it legislation would follow. All Canadian payment card networks, major credit and debit card issuers, and payment processors have adopted the Code of Conduct.

BOX 5: THE CANADIAN PAYMENTS ASSOCIATION (CPA)

canadian payments association — association canadienne des paiements

The CPA is a not-for profit association created in 1980 by Parliament to "establish and operate national systems for the clearing and settlement of payments and other arrangements for the making or exchange of payments" within Canada.

The CPA operates three national clearing and settlement systems for payments: the Automated Clearing and Settlement System (ACSS), the US Bulk Exchange (USBE), and the Large Value Transfer System (LVTS). It also operates a payments exchange network and systems that facilitate the routing of payments across the country.

The CPA has a statutory duty to promote efficiency, safety and soundness of its clearing and settlement systems, and take into account the interests of users.

The Minister of Finance is responsible for overseeing the operations of the CPA; the Bank of Canada has regulatory and oversight responsibilities for the LVTS.

The CPA facilitates the reconciliation of payment items exchanged every day between Canada's FIs and the calculation of the clearing balances between FIs, which are then settled at the Bank of Canada. Through a series of risk controls and rules, risk to participants is mitigated and timely completion of daily settlements is ensured.

The CPA clears a variety of payment types, including cheques, bill payments, and point-of service debits.

All banks operating in Canada, including the Bank of Canada, are required to be members of the CPA. Other categories of FIs are eligible for membership.

The CPA is critical to the Canadian financial system: it cleared and settled $42.8 trillion in 2010, or $170 billion on average each business day.

So when push came to shove, the incumbents got their way: no significant changes in the existing system.

If there had been a major crisis at that moment, a "burning platform" to drive public pressure for fundamental reform, things might have played out differently. But without one, laissez-faire ruled the day. Issues that came up were left to the Competition Bureau and the legal process. FIs, businesses and telcos continued to chart their own courses and protect their own commercial interests. For its part, government was content to rely on the market and to focus on incremental reforms.

So you have a technological revolution in an unevenly regulated, loosely aligned ecosystem. Most experts would say this could play out in one of two ways. You can get an explosion of new ideas: a real Wild West when everyone dukes it out. Or you can get a much slower, more fragmented take-up. And here in Canada, we clearly wound up with option number 2. We muddled along.

MUDDLING ALONG

Take B2B as an example. Even in 2010, data was available showing how much a paper-based B2B system was costing in terms of delays in clearing and lost productivity. But it was hard to make a case for improving the B2B system on the grounds of foregone productivity: those losses were largely invisible to the public, and even to many small and medium business owners themselves. As a result there was never a really strong push to make the investments in the ACSS and LVTS networks that would enable Straight-Through Processing (STP) for businesses. Even today most Canadian businesses are using cheques for B2B. More and more businesses are waking up to these costs, but at the moment they don't have much choice except to keep eating them.

On the consumer side, in 2013 MasterCard and Visa made another big push to enter the Canadian debit space. There was reason to believe that the public would be receptive. You can see on your screens how thrilled they were on the consumer blogs when word of the pending deal got out.

The merchants went bananas. Just a few years earlier, they had been forced to spend a bundle—dealing almost simultaneously with rising interchange fees, the cost of implementing chip and PIN technology, and the need to become Payment Card Industry (PCI) compliant. That still stung, and they were in no mood to take on yet more costs. They were fiercely opposed to MC's and Visa's proposal.

BOX 6: HONOUR ALL CARDS (HAC) CASE STUDY, AUSTRALIA

Most major credit card companies require that a merchant who accepts one of its cards must accept **all** its cards—including debit, credit, prepaid and premium credit cards—even though some of these cards involve much higher transaction costs for the merchants.

Australia has gone the farthest in unravelling such HAC rules: that country's HAC rules have been modified so that card schemes cannot force merchants who accept one type of scheme card (credit, debit, or prepaid) to accept a different type. If a merchant accepts Visa, she can choose to accept Visa credit but not Visa debit or Visa prepaid—or any combination.

As a result some merchants, including two major Australian supermarket chains, now do not accept Visa and MasterCard prepaid cards, which have relatively high interchange rates. This has led to some consumer frustration: customers see a MasterCard logo displayed at the cash register but find they are unable to use their MasterCard-branded prepaid cards.

However another HAC provision remains in place: a merchant may not pick and choose among cards of the same type, even if they have different interchange rates. This means that a merchant who accepts Visa credit must accept **all** Visa credit cards, including premium or "platinum" cards, which offer extra rewards to cardholders funded by higher interchange rates for merchants. Merchants often add a surcharge to credit purchases to recover these costs, but these surcharges usually affect **all** credit customers whether or not they are using a premium card.

The Reserve Bank of Australia has expressed concern about this situation, but so far has chosen not to amend the rules.

TORONTOWORLD & TELEGRAPH

Appeal court rules against MasterCard and Visa, strikes down "honour all cards" rule

Merchants may choose which payment types they will accept

Ottawa, November 23, 2013 – The long-running case brought by the Competition Bureau against MasterCard and Visa was finally decided yesterday, when the Federal Court of Appeal upheld the decision to strike down the rules requiring merchants to honour all payment types offered by a given network. As of January 1, a retailer who accepts a Visa debit card, for example, may refuse to accept Visa credit or prepaid cards or may add a surcharge to cover the cost.

And they were bolstered later that year when the courts at last issued their verdict in the case brought by the Competition Bureau against MasterCard and Visa. Look at your screens for the headline.

These combined actions took the wind out of MC's and Visa's sails. More to the point, it also reduced pressure from merchants for more fundamental reforms.

And the upshot? Canada continues to rely heavily on Interac for a big chunk of retail transactions. Interac is a good system in a lot of ways: it's inexpensive and remarkably efficient. Merchants like it. But it's also something of a one-trick pony, and a 40-year-old pony at that. It's starting to show the strain of the demands being placed on it.

It would be great if we could bring Interac fully into the 21st century: expand its functionality and build in some of the technologies that have been rolled out in the rest of

the world. But the pressure to keep costs low means that there isn't the kind of revenue needed to underwrite the level of research and development that would be required.

I see a hand. You have a question, Ms. Yuan?

> *Q. Yes thanks. Your description of Interac brings up something I've been wondering about. When I arrived in Toronto last year from Hong Kong, it was a real shock. I was used to using the ewallet in my phone for just about everything, and here everywhere I went I had to use a debit or credit card. But what really surprised me was that none of my Canadian friends understood why I was annoyed. Here are technologically savvy people, but they're OK with using a system that seems to me to be, well, a bit … primitive.*

Professor Opoponax: We might as well be using cowrie shells and blue beads, right? It's a vicious cycle. Without standards and unified systems, mobile payments are not very convenient: you never know where you can use a product and there's not much interoperability. There are no clear product winners, so many consumers—even those who might be open to these innovations—stay away. The bottom line is that it's really hard to be an early adopter in Canada. It costs a lot and there's a lot of uncertainty.

The other big factor is security. You may have heard about the Valentine's Day fiasco. In February 2014, hackers accessed online purchase information from tens of thousands of Canadian accounts, along with the transaction information retailers had been gathering to improve the shopping experience. It was a double whammy. People didn't only lose financial information. Every detail about their visit to VictoriasSecret.com or PornoCity or wherever was out there: where they clicked, where they lingered, where they had that $300 gift shipped (oops, not to their spouse!).

Individual companies affected by the breach put new protections in place. But without comprehensive national standards for digital security, even seven years later a fair number of Canadians are inclined to say that "primitive" is not so bad.

MICRO-COLLABORATION

That's not to say that innovation has fallen totally by the wayside here in Canada. Over the last decade there has been a lot of what might be called "micro-collaboration," where individual players have teamed up to solve problems affecting their specific business cases. For example: The Bay leveraged its huge Facebook following to devise an alternative payments strategy for its customers, "FaceBay," launched in 2017—remember those clever online ads with Luc Robitaille and the moose?

There were other similar examples but, overall, build-out and dissemination of these innovations has been quite slow. And the technology is still fragmented: each of these efforts works pretty well in itself, but there is little interoperability and it's difficult to establish economies of scale. No one system has been able to break away from the pack and become adopted as a clear winner.

CAN WE BREAK OUT OF THE LOOP?

We are just about out of time, so I leave you to contemplate the question of where Canada goes from here.

By watching from the sidelines, Canada has avoided the worst mistakes made in other systems. No Indonesia-style breakdowns in the cloud-computing network to cramp our style!

But, overall, we are in an unenviable position. Our payments system is less innovative, more costly and less efficient than those in the rest of the world. For example, Canadians are far behind the pack when it comes to being able to make cross-border transactions. International players are passing Canada by in search of greener pastures with more potential for large-scale progress and profits. We haven't made the kind of investments in our payments infrastructure that will allow us to make up for lost time quickly.

But I do think we have the opportunity to break out of the *Groundhog Day* loop. Businesses are getting restive at the cost, complexity and inefficiency of the system, and at the difficulty of collecting payments from abroad. And as Ms. Yuan suggested, it's becoming more apparent to consumers that Canada is falling behind.

Next class we will discuss the possible shape of further reforms and what their implications might be. Until then I will leave you with a ray of optimism: *Groundhog Day* had a happy ending. After a lot of false starts, Bill Murray eventually got the day right. Let's hope we will too.

Thank you and see you next week.

TECH-TONIC SHIFT

Department of Finance

MEMORANDUM | NOTE DE SERVICE

DATE

5 February 2021

TO
A

Minister of Finance

FROM
DE

Deputy Minister of Finance

SUBJECT
OBJET

History of the Canadian Payments System 2010–2020

This note is for information. It reviews the history of the Payments System in Canada. The information is being provided as background for consideration of establishing a proposed Task Force to Review the Payments System.

You will recall your desire to establish a Task Force to Review the Payments System. As a first step we have commissioned an internal review of the development in the payments system in Canada over the last decade, given that the turbulence of that decade shaped many of the questions we now face. Salient points are presented below.

Overview

In the last decade, technology giants developed alternative payments platforms and became major players in payments. Along with other new entrants, they took advantage of cloud computing to create low-cost scalable businesses. The proliferation of new financial services and applications to address specific needs has been phenomenal.

A range of user systems emerged, each with different interfaces and authentication methods. Near field communication (NFC) devices became widespread. Consortiums of telcos, handset manufacturers and banks developed, centred around the ewallet and mobile commerce. This transformation had a significant impact on financial institutions (FIs), which had previously dominated the payments space. This radical change in payments came to be known as the "tech-tonic shift."

Despite the benefits of convenient new payments services, concerns about security and liability for online transactions increased, peaking in 2014, when hackers stole tens of thousands of consumers' credentials in a single security breach.

The previous government responded with a series of more comprehensive regulations on security, authentication and liability. In particular, they established the Payments Commission of Canada (PCC), a new kind of regulatory agency that was assigned policy responsibilities including those of the Canadian

Payments Association (CPA) and the power to enforce compliance. An important part of the PCC's mandate was to ensure the effective participation of Canadians and Canadian organizations in the increasingly global payments system. The PCC was more open and inclusive than the CPA, but any organization that wished to conduct a payments business in Canada needed to become a member of the PCC and abide by its rules.

In the latter part of the decade, the market consolidated. Volumes of person-to-person (P2P) and business-to business (B2B) cash and cheque transactions fell significantly, replaced by online and mobile payments, and plastic credit cards largely disappeared as credit transactions also moved to online and mobile environments. Tax laws for online payments were enacted. Many Canadians now appreciate the new and convenient payment options, though some have been left behind. In the space of a decade, innovative new technologies and market forces dramatically changed the way most Canadians transact.

Questions

In the aftermath of this turbulence, we now need to address several questions. These questions could be part of the mandate of a new Payments Task Force. Key questions include:

1. Whether and how best to complete the phase-out of cash and cheques, given the inefficiency and cost of these payment types;
2. Options to reduce the relatively high level of fraud in comparison with other countries and to further strengthen digital identification and authentication;
3. Ways to improve public understanding of the payments system;
4. Possibilities for more effective collection of tax online;
5. How to streamline the payments system and reduce overall costs to users.

The following is a more detailed review of the last decade.

Phase I: Incumbents overturned (2011-2014)

The rise of smart phones

In 2011-2012, handset manufacturers released a range of smart phones equipped with ewallets and NFC capability. The convenience of mobile commerce combined with the ease of NFC led to fast consumer uptake. In response, most merchants adopted NFC contactless quickly.

Initially, consumers used NFC for small retail purchases but soon adopted it for larger-value transactions as well. Merchants' costs dropped as technology allowed them to aggregate transactions, and the contactless readers and computers needed to transact were cheaper than earlier point of sale (POS) devices.

Online and mobile payments via ewallets on contactless devices replaced many cash and cheque transactions. Responding to consumer demand, they became fully functional in 2011, including everything from cash and coupons to loyalty cards, which were triggered on payment.

On the B2B side, innovations in electronic invoice presentment and payment (EIPP) led to a steady fall in B2B cheque volume. Businesses appreciated the convenience and low costs of these new methods, which they could also access using mobile devices.

Overall, there was a swift uptake of the new technologies.

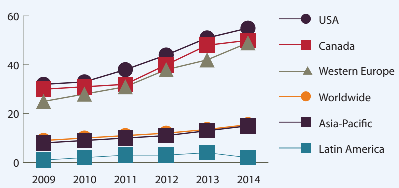
BOX 7: MOBILE PHONES: THE FUTURE OF PAYMENT

Mobile phone use worldwide is growing sharply. The number of mobile connections reached 5 billion (74% of the global population) in 2010, and is projected to rise to 6 billion in 2012.

Western Europe has more than 100% mobile penetration with 130 subscriptions for every 100 people, while Africa is lowest at 52%. Canada's relatively low rate of 72% is forecast to rise to 85% by 2014. The fastest growth is in the Asia-Pacific region, which accounts for nearly half of all subscriptions worldwide.

More and more of these phones are now smart phones: mobile phones offering advanced capabilities such as Internet access and email. By the end of 2010, 31% of all Canadian handsets were smart phones, a proportion similar to that in the USA and Western Europe. This figure is expected to rise to 50% by 2014 (see Chart 12).

Chart 12:
Smart Phones as a % of Total Mobile Handsets in Different Geographic Regions



Source: Cisco VNI Mobile, Informa Media and Telecoms, In-Stat, Gartner, 2009, 2010

This combination of rising mobile phone use and new technologies is changing the way we pay. In particular, NFC, a wireless communication technology that allows devices to swap data over short distances, allows users to pay by tapping their phone onto an NFC reader or another phone containing an NFC chip. This technology will ultimately eliminate the need for plastic cards.

Fragmentation in the marketplace

Handset manufacturers, telcos, banks, and in some cases acquirers, formed exclusive consortiums centred around ewallets and mobile devices. It became more common to lock down phones to certain card types. Competitors vied to gain access to customers via the ewallet: those that offered more functionality were more likely to gain the customer.

Online giants such as Apple and Google, aided by the flexibility and low set-up costs of cloud computing and open platforms, developed their own payments systems.

Social networking sites also started to process payments. Many consumers liked the way these new ways to pay meshed with their social networking activities. Facebook started to encourage foreign exchange between popular international currencies using Facebook credits: consumers could redeem their credits in a number of different currencies. The wide range of alternative payments providers allowed Canadians to buy and sell globally with ease.

Several debit alternatives to Interac appeared in 2012, and competition led to attractive pricing for merchants and good deals for consumers. Banks issuing Interac cards started to shift toward other debit networks. By 2014, most debit payments had shifted to alternative networks, and subsidies from members had evaporated.

Different payments companies used their own proprietary authentication systems. Bio-authentication, from iris profiling to face recognition, became more widespread, stimulated by growing usage abroad. The lack of a single standard allowed a range of innovative authentication systems to develop.

The federal government and several provincial governments started making payments online, aided by sophisticated digital ID and authentication mechanisms showcased by British Columbia. But once again there was fragmentation, as a number of provinces including Ontario decided to build different systems.

Traditional FIs

In this competitive environment, traditional FIs came under increasing pressure and their influence began to erode. In particular:

- Profits from traditional transactions declined, reducing what had been a significant part of traditional FIs' income;
- Traditional FIs failed to understand the importance of the micropayments market;
- Traditional FIs' legacy systems prevented them from keeping up with newer competitors.

But it was not all bad news for Canadian banks:

- Several banks formed profitable consortiums with other companies, such as telcos;
- Others specialized in areas such as corporate banking and managing settlement risk;
- Some aligned themselves with online brands such as Facebook;
- A few took advantage of cloud computing to provide services such as private banking. Some of these divisions later spun off to become successful companies.

BOX 8: A MAJOR SECURITY BREACH: GAWKER MEDIA

Gawker Media is a US online media company and blog network founded in 2008. By 2009, it was worth around $300 million. It is renowned for blogs such as Gawker.com, which reports media news and gossip in New York.

In December 2010 a group of hackers calling themselves "Gnosis" compromised the Gawker Internet site, releasing its entire Internet site source code and the usernames and passwords of 1.3 million accounts. The hackers then used the stolen credentials on other Internet sites, such as Twitter, Google and LinkedIn.

Gnosis claimed the attack was retaliation for Gawker Media's "outright arrogance" in its dealings with the Internet site 4Chan.com. The breach caused shock waves in the online world, not only because of the ease with which a small group could breach a large online site (Gawker Media had previously boasted about the security of its site), but also because the hackers were then able to compromise accounts on other Internet sites.

Mounting unease

Although many Canadians felt satisfied with the new ways to pay, concerns grew. These centred mainly around online security. As fraud levels rose, Canadians became increasingly worried about the security of personal data held online by poorly regulated companies. In addition, the rising number of players in the value chain blurred liability: in some cases, companies went bankrupt and consumers found themselves liable for losses of stored value in their ewallets. As well, traditional FIs were unhappy about newer entrants not being subject to the same level of regulation.

In 2014, a major security breach occurred when hackers stole tens of thousands of consumers' credentials from the Internet site of a new entrant. Confidence in alternative payments service providers was severely dented.

Phase II: Picking up the pieces (2014-2020)

After the breach

After the breach, the previous government enacted a series of stronger security, digital ID and authentication, and liability regulations.

In particular, it established the Payments Commission of Canada (PCC), a new kind of regulatory organization that combined elements of a traditional regulatory agency with those of a self-regulating organization. The PCC's policy responsibilities included those of the CPA; it also also had the power to enforce compliance. An important part of its mandate was to ensure the effective participation of Canadians and Canadian organizations in the increasingly global payments system.

The PCC was more open and inclusive than the CPA, but any organization that wished to conduct a payments business in Canada needed to become a member in good standing of the PCC and abide by its standards and rules. The PCC worked with the Financial Consumer Agency of Canada (FCAC) to ensure that PCC members complied with federal consumer protection measures.

Through activities such as ewallets, some payment service providers started to hold customers' balances as part of their business. The Office of the Superintendent of Financial Institutions (OSFI) decided that the balances were the equivalent of deposit taking and needed to be subject to prudential rules.

Some of the new payment services providers then actively started to take deposits. Since they were now subject to OSFI regulation, they decided to capitalize on the successful payments brands they had built through ewallets. In their view, by taking deposits they could increase their share of wallet customer loyalty and strengthen their brands.

New regulations led to higher costs at all levels of the payments system. Some of the new entrants consolidated to cut costs, much as the traditional FIs had done years before. Likewise, several of the consortiums created earlier in the decade merged to increase their market power and simplify their infrastructure.

Gradually, consumer confidence recovered and scale and brand became more important considerations for consumers in search of a reputable source of payments services.

Today's Canadian payments landscape is dominated by a few consortiums, with an array of smaller players providing all manner of services.

Conclusion

Today 77% of payments (by volume) are online compared to 48% in 2010. The cost per transaction for merchants, consumers and payments service providers has dropped significantly over the last decade. B2B transaction costs have been significantly lowered, although some experts suggest that savings could have been higher if EIPP had been standardized.

While we have seen improvement for consumers and businesses, a number of critical issues remain and could be addressed by the proposed Task Force. These issues include the following.

1. Whether and how best to complete the phase-out of cash and cheques

A small volume of cheques remain in circulation. These are increasingly expensive to process, although the ability to deposit them via cheque image capture on mobile devices has lowered costs somewhat. Those who rely on cheques tend to be consumers with less familiarity and access to technology, as well as small businesses that have not adopted the new B2B systems such as EIPP. Any phasing out of cheques will require the strengthening of online alternatives such as electronic funds transfer (EFT). Likewise, cash transactions are now so low that ABMs are no longer viable. Several studies suggest that significant savings for the economy and the government could be made by eliminating cheques and limiting the use of cash to only the smallest transactions, as several European countries have done.

PAYMENTS BY TRANSACTION TYPE 2010–2020 (AS PERCENT OF TOTAL VOLUME)

PAYMENTS BY TRANSACTION TYPE 2010–2020 (AS PERCENT OF TOTAL VALUE)

2010

CHART 13: 2010 VOLUME

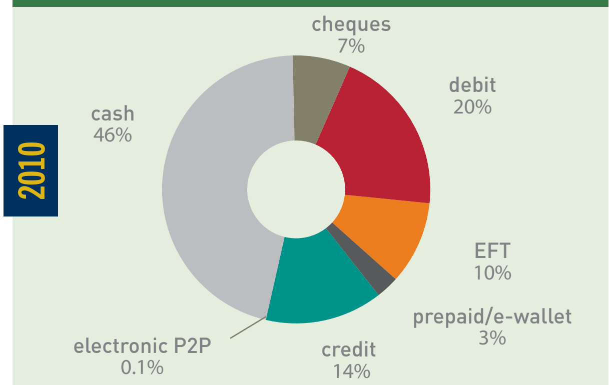
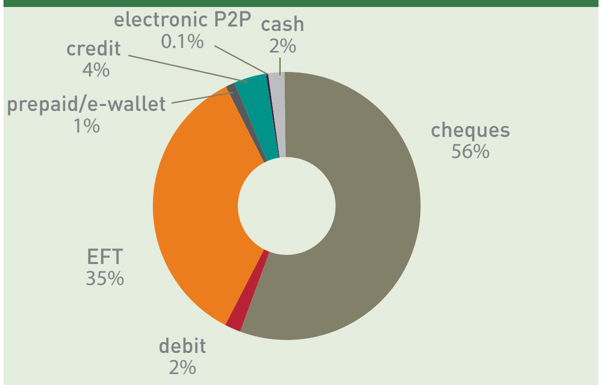


CHART 14: 2010 VALUE



2015

CHART 15: 2015 VOLUME

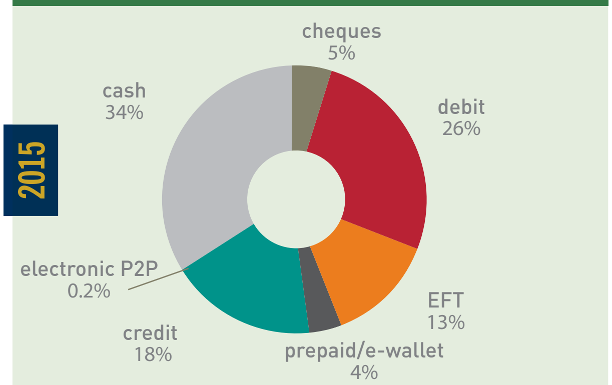
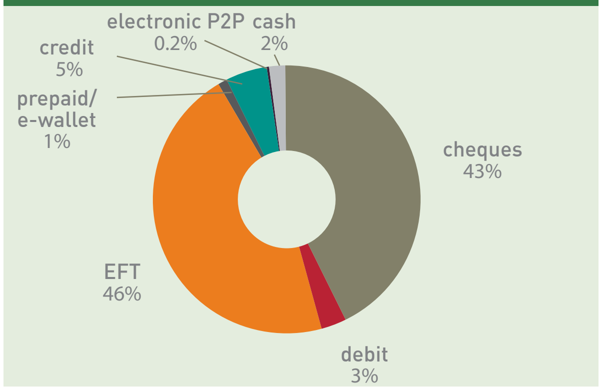


CHART 16: 2015 VALUE



2020

CHART 17: 2020 VOLUME

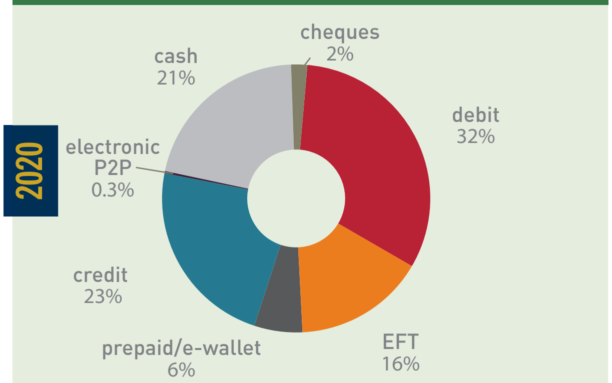
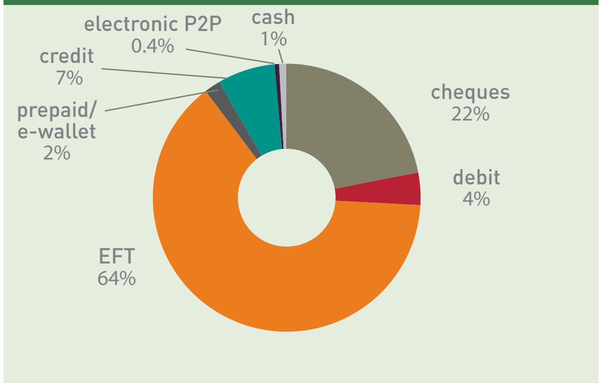


CHART 18: 2020 VALUE



2. Options to reduce fraud and strengthen digital identification and authentication

Although fraud has dropped since its peak in 2014, fraud levels in Canada are relatively high compared to other countries (e.g. in Scandinavia), which have developed more comprehensive authentication standards.

3. Ways to improve public understanding of the payments system

Government education programs in partnership with FCAC and other organizations have been widely criticized as not far-reaching enough, especially for people of lower socioeconomic status or whose first language is not English or French.

4. Possibilities for more effective collection of tax online

Despite payments tax laws that cover alternative forms of payment transactions, in practice it is still challenging to track online payments and collect tax effectively.

5. How to streamline the payments system and reduce overall costs to users

There is now a broad choice of value-added payment types. However, these payment types feature a variety of different operating and authentication systems. As new systems have been introduced over the last decade, older systems have not been eliminated. The result overall is a complex, fragmented and expensive payments system, which includes elements that are not interoperable. Although this system offers many advantages, it is also bewildering, and it puts less sophisticated businesses and individuals at a real disadvantage. There are likely to be lower costs and other benefits to be gained from standardizing and simplifying the payments system.

CANADA GEESE

SPECIAL REPORT ON GLOBAL PAYMENTS

Canada's Payment System

JUNE 2021

Establishing the CPB
A rocky road to alignment
Mid-decade challenges
Reaching out to the public

Canada's Payment System

Ten years ago, in 2011, global payments were poised for takeoff. Thrilling new technologies surged into the marketplace and a smorgasbord of new payments options became possible. Nations around the globe began experimenting with a range of possibilities, moving to phase out cheques, reduce the use of cash and standardize ecommerce.

In the midst of this wild-west environment, Canada's response was viewed with mingled frustration and amusement in international finance circles. The editors of the *Wall Street Journal* quipped, "Ottawa's decision to 'regulate and co-ordinate' their payments system promises to stifle innovation and set that nation back by a generation. Moderation, collaboration and mutual support may be touted as cardinal Canadian virtues. We say, spare us."

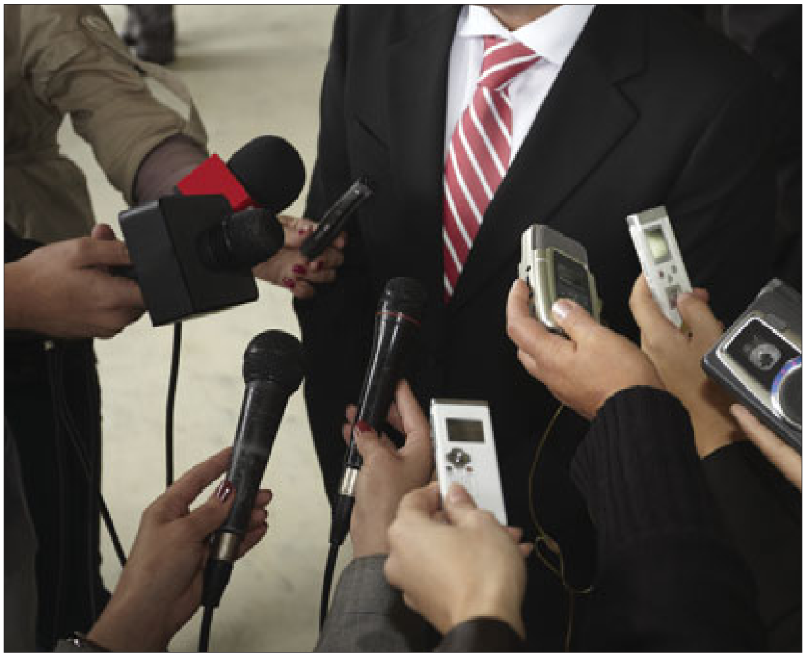
What a difference a decade makes. Nations that opted for the more innovative and decentralized market-driven approach are now contending with the turmoil that accompanies creative destruction. Meanwhile, Canada has quietly rolled out a series of significant payments innovations, broadly, seamlessly and largely without disruption. Ten years after the controversial establishment of the Canadian Payments Board (CPB), this measured, deliberate pace of adoption seems prescient, not timid.

A look back: Establishing the CPB

2010 marked the beginning of a new, more assertive regulatory mood in the world of Canadian payments. That year's *Payments Card Network Act* gave the Minister of Finance the power to regulate the market conduct of the credit and debit card industry. A new Code of Conduct reined in the credit and debit industry, the Task Force for the Payments System Review was created, and the Competition Bureau began to take a more aggressive stance with regard to how credit card companies operate in the Canadian marketplace.

By the end of 2011, the Finance Minister was calling publicly for a new payments framework and set of standards. On returning from an international meeting of finance ministers, he stated, "The global game has changed. Canada needs a coherent and inclusive payments infrastructure that puts everyone on the same page." He called for a new, highly inclusive payments board with the authority to license players and products.

Industry leaders were galvanized. "We saw the writing on the wall," recalls BigBank Chair Martin Goldfinch. "We had to take the initiative to create a more aligned and inclusive framework



No piecemeal approaches.

The Finance Minister delivers his 2011 ultimatum.

BOX 9: NACHA: A SELF-REGULATING, SELF-CORRECTING GOVERNANCE MODEL

The National Automated Clearing House Association (NACHA) is an example of an industry association reinventing its governance structure to reflect the needs of its user base, without a crisis of confidence or government intervention forcing that action.

NACHA manages the development, administration, and governance of the Automated Clearing House (ACH) network, an electronic network for financial transactions in the United States. ACH processes large volumes of credit and debit transactions, including payments from the federal government, public and private payrolls, and bill payments.

In the years after its founding in 1974, NACHA membership was limited to the regional ACH associations and a few large national banks that, in turn, provided services for smaller financial institutions (FIs). Each member had a seat on the Board, which oversaw operations and voted on all rules.

In the 1990s more diverse institutions began to use the ACH, including not only a broader range of FIs, but also other payments companies and corporations. In response, NACHA opened up its membership base, rule-making and voting processes. It also moved from a directly appointed Board to a representative model with elected members. The Board now focuses on strategy, while a committee deals with rules and operations.

As a result of the reforms, NACHA's extensive affiliate membership – including FIs, payments firms, corporate users and business and consumer associations – can propose, help develop, and vote on ACH rules. Larger members have more votes (voting power is based on a member's ACH volumes) but rules are in place to ensure that powerful members with big votes cannot impose their decisions on others.

for payments, or Finance would create it for us. And we knew the risks of that kind of scenario."

Accordingly, the government and industry together began to hammer out a framework and structure for a new CPB, a self-regulatory organization with authority to set and enforce standards for Canadian payments. Membership was expanded beyond banks and other financial institutions: the new CPB included networks, third party payment service providers, merchants, industry associations, telcos, governments, retailers and consumer groups—many of whom had had little voice, let alone a vote, in the old system. The price of inclusion? All participants in the payments industry would have to be licensed and undergo regular compliance review to ensure that they were playing by the rules and adhering to standards.

A rocky road to alignment

The first months of the new regime were difficult. CPB president Olympia de Bergerac-Fergusson describes those early days as "wading through molasses" as the new organization struggled to bring everyone together and create a broad enough consensus to move forward. "In some ways we were handicapped by the fact that our existing system worked fairly well," she recalls. "For a lot of players there was no 'burning platform' to create an incentive for change."

Competitors eyed each other mistrustfully across the table. Banks, merchants and others engaged in a high-stakes game of hot-potato, each trying to push liability for online fraud into the others' lap, a struggle that for a time threatened to bring the whole CPB to a standstill.

The requirement that *all* payments participants, including new entrants, abide by CPB processes and systems was likewise controversial. "Our Board hit the roof," says SmartPhoneCo CEO Wendy Nzimande. "Going from a context where technology and competitiveness were the key concerns to this more regulated, albeit self-regulated world: it was a whole new mindset. We were going to have to retool a bunch of products to bring them into compliance. Our only consolation was that everyone else was in the same boat."

But as the broad umbrella of the CPB took shape, members realized that, in addition to regulation and standard-setting, it also provided a new framework and context for cross-sector collaboration on key issues. By early 2013, a lively cluster of merchants, banks and other partners had coalesced around the task of creating better functionality for B2B transactions and giving businesses a viable alternative to cheques. Two other clusters quickly formed, one around digital identification and authentication, and another around mobile payments, and with surprising speed began to lay the groundwork for a nation-wide set of standards and practices.

BOX 10: INTRODUCING EUROPAY, MASTERCARD AND VISA (EMV) CHIP CARDS

The Canadian migration to EMV chip and PIN began in 2003 with an announcement from Visa Canada. In 2005, Interac Association announced its plans to transition to EMV chip; MasterCard Canada confirmed its support of EMV in 2006.

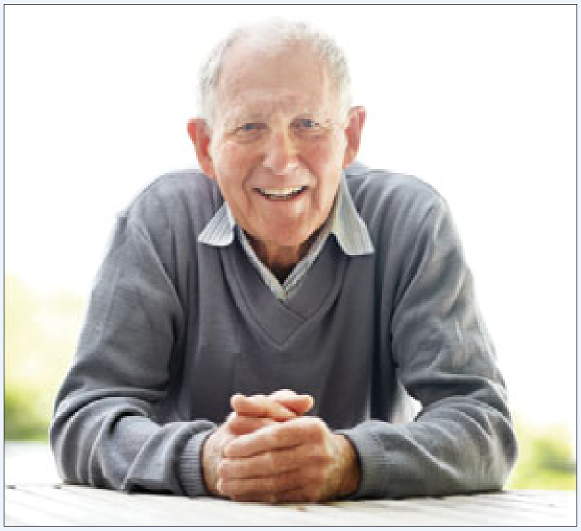
Under this new standard, all debit and credit cards issued in Canada will store information on an embedded microchip. The chip is protected by high-level encryption and is almost impossible to copy, making these cards more secure than the magnetic stripe cards currently in use in Canada and the US.

The Canadian payments industry collaborated in developing chip and PIN to ensure broad-based interoperability across payment brands, as well as in a market trial of EMV chip and PIN technology in Kitchener-Waterloo in 2007-2008. The trial tested interoperability, communication, and the experience of cardholders and merchants in preparation for full-scale rollout at a national level, which began in late 2008. Each payment card network established timelines to complete the migration.

"It was very exciting to have a say in shaping solutions to things that had been weighing on us for a long time – and it definitely helped everyone's ability to make long-term business plans," said Mickey Serape, head of a small business association. "But it was scary. Get it wrong and we could all paint ourselves into a corner. We could be going in lockstep off a cliff."

Mid-decade challenges

As NFC-capable phones and online commerce became more widespread in 2013–14, several non-traditional players, including PayPal, Google, Apple and social media sites, stepped up their efforts to enter the Canadian payments space. Some balked at the CPB's requirements but most found it made more sense to join. In July 2014, an internal email from a PayPal vice-president was leaked to MarketWatch.com: "If we want to play [in Canada], we have to align ourselves with the CPB. We won't make a killing. But we can make a profit. Half a loaf is probably all we can expect." MarketWatch's take on this



The Canadian financial system is highly concentrated—one of the soundest in the world—with well-established infrastructure and networks, a principle-based regulatory framework, and an efficient payments system. Its particular strength is that when change is necessary, it can act as a unified body to embrace that change.

Economist Aloysius Reynard

CPB to PayPal: We are the Borg. In Canada, resistance is futile.

capitulation: “Welcome to the CPB Borg Collective: In Canada, Resistance is Futile.”

Borg it may have been, but the CPB moved slowly. Even after the struggle over standards was resolved, getting buy-in from consumers and businesses took time, and implementing new technology took more. Even Canadians who generally scoffed at others’ constant need to upgrade to the newest, shiniest technology began to chafe by the middle of the decade. Complaints began to surface on blogs and social network sites. “I just got back from a tiny village in Malawi and they could pay for a beer with a cell phone!” wrote one popular travel blogger. “And we can’t do that in Montreal?!”

By the following year, however, a wider rollout of mobile and online payments was under way and consumers were beginning to take notice. Canadians began to have more options for accessing payments services when travelling internationally or making cross-border transactions. In addition, businesses could now make B2B payments through new electronic systems that provided an alternative to cheques and paper-intensive invoicing. And an improved clearing and settlement framework was poised for launch.

Reaching out to the public

As these innovations began to roll out nationwide, polling showed that the public was especially concerned about the move away from cheques, privacy, and digital identification and authentication. In response, the entire CPB membership launched a co-ordinated educational effort to maximize public acceptance.

The “Payment 2020” campaign reached an unprecedented range of Canadians, in part because it was promoted through nearly every sector of the economy, from mom-and-pop retailers to large banks and telcos. The campaign was widely credited with raising public awareness and presenting the changes in the payments system in a way that was clear and non-threatening. In addition, the fact that the reforms were supported by such a wide range of players, many of them with competing interests, did a great deal to bolster public confidence in the new system. There was even a brief vogue for T-shirts and coffee mugs adorned with the campaign’s stylized Canada geese emblem.

2021: Flying high

Looking back on the past decade, most CPB members describe the system’s strong alignment and moderate pace of adoption as a plus.

A look at the overall payments mix over the past decade shows a dramatic shift. Canada has moved from a heavy reliance on paper-based payments to the more streamlined and efficient EFT, mobile and ewallets. This has made a dramatic difference, especially in the B2B space.

Certainly the payments system has been brought much further into the 21st century than seemed likely to the naysayers at the *Journal* and elsewhere back in 2011. Canadian payments innovations may lack the flash found in more unfettered systems.

PAYMENTS BY TRANSACTION TYPE 2010–2020 (AS PERCENT OF TOTAL VOLUME)

PAYMENTS BY TRANSACTION TYPE 2010–2020 (AS PERCENT OF TOTAL VALUE)

2010

CHART 19: 2010 VOLUME

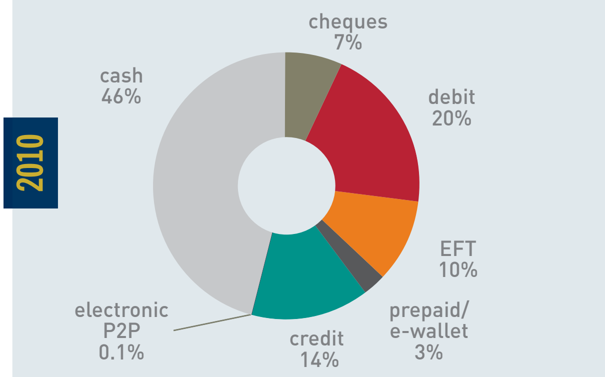
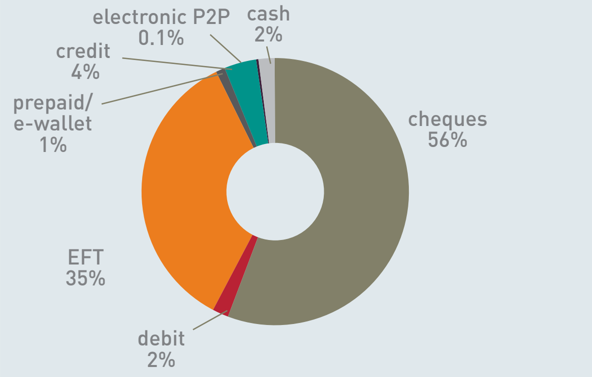


CHART 20: 2010 VALUE



2015

CHART 21: 2015 VOLUME

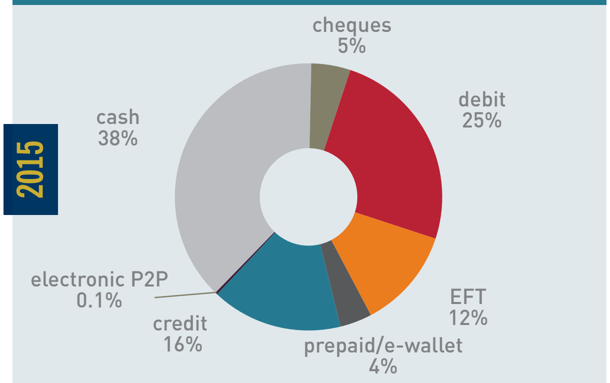
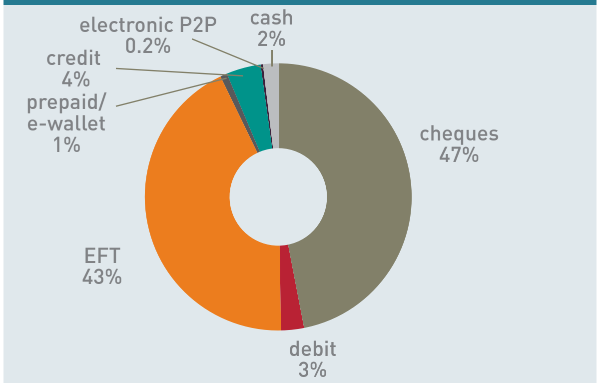


CHART 22: 2015 VALUE



2020

CHART 23: 2020 VOLUME

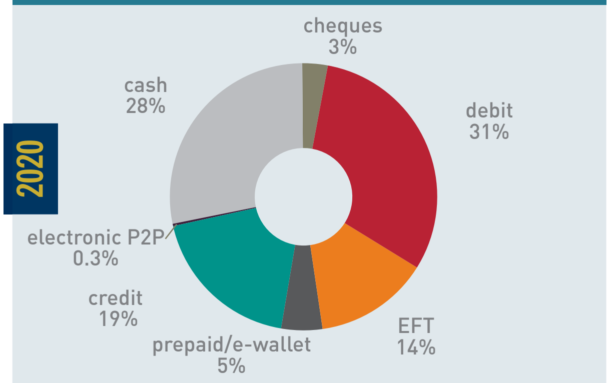
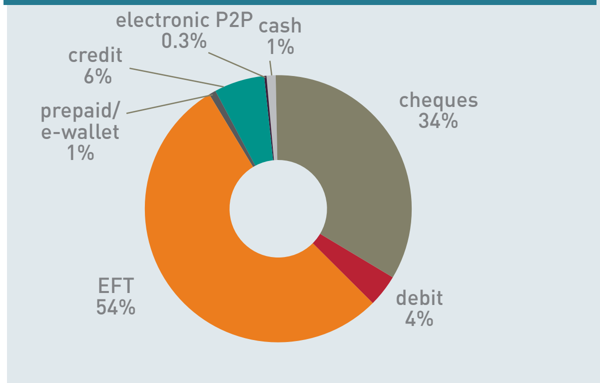


CHART 24: 2020 VALUE



Canada offers nothing to match the sparkle of the Korean Cloud. But it has also been insulated from the lowest lows, such as the massive Balkan ID theft crisis that brought three separate economies to their knees.

Instead, as innovations percolated up in Canada and around the world, CPB was able to evaluate them, co-ordinate strategy and implement them in a way that maximized uptake and minimized disruption. “We had to wait an extra couple of years before we could offer a tap-and-go interface and smart-phone based ewallets,” says SmartPhoneCo’s Nzimande. “These features were widely available in other markets, and there was a lot of frustration about that. But now, a couple of years down the line, we can roll it out coast-to-coast and be sure it’s going to work right the first time with the banks, with the merchants, with the consumers. That’s huge.” As BigBank Chair Goldfinch puts it: “We took time to build strong standards and compliance measures, and in the process the global winners and losers sorted themselves out. Basically, we outsourced our growing pains.”

CPB President de Bergerac-Fergusson looks back with pride. “The CPB has done all we hoped back in 2011 and more. We chose Canada geese as the emblem for “Payments 2020” because this kind of tightly aligned system is what Canada does best—think of Canada geese flying in close formation. It took some effort to get off the ground, but once we did, we have been able to go farther and faster than anyone expected.”

Flying high:
CPB’s de Bergerac-Fergusson and friend

OWN THE PODIUM

MONEY TALKS

Straight talk about the financial services industry from Dr. Will Stevens

Posted by Will at 07:01 on 21 February 2021:

Canada—a world standard for payments?

Good morning all. Regulars to this blog will know that this month my focus is the global payments industry. Last week, I discussed the growing problem of biometric fraud, and how hackers overcame the "unbreachable" IdentiSpeak voice recognition system favoured by some UK microbanks ("Speak No More," February 14, 2021).

Today, I turn to Canada, a nation of 38 million inhabitants that has developed what many experts call the "global gold standard in payments." In the words of Dave Dixon, Director of EquiPay, "Ten years ago, Canada's payment system was pretty clunky and characterized by fairly low innovation and high costs to businesses and consumers. Today it has arguably the most efficient payment system in the world." In this week's blog series, I ask: how did the Canadian Payments System (CPS) earn this accolade and is it justified?

Here's a brief overview of what happened in Canada over the last ten years, split into three periods; in subsequent posts, I'll discuss each in more detail.

2011-2012 As in many parts of the globe, payment credentials were integrated into mobile phones. But in Canada (unlike many countries) key players saw the magnitude and speed of the changes being fuelled by the convergence of computing and connectivity into smart phones, disrupting existing business models. Those players who "had a clue" came together to develop a set of standards in key areas such as security, authentication and mobile payments, in order to deal with the tsunami of change they saw coming and capitalize on the opportunities it created. Government came on board and helped by strengthening consumer protection and privacy policies, which gave Canadians the confidence to embrace online and mobile payments.

About the Author

I am Dr Will Stevens, Principal Consultant at *Money Whizz*, a virtual consultancy that brokers new technology ideas for the financial services industry. Money Talks is my blog about the industry. It represents my own views, not those of *Money Whizz* or my clients.

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Straight talk about the financial services industry from Dr. Will Stevens

2013-2016 Companies took advantage of cloud computing and collaborative networks to set up payments businesses quickly in response to consumer needs; there was a shift to new ways of processing payments. New, improved B2B systems also took off. Government and industry rolled out education and marketing programs for consumers and businesses, and incentives were given to those who updated to newer systems. Authentication standards and systems were continually updated to pre-empt hackers: the fraud and security "arms race" we know all too well today.

2017-2020 By the latter part of the decade, Canadians reaped the benefits of the earlier investments and enjoyed a range of user-friendly and cost-effective payment types backed up by rigorous standards and marketing and education programs. Most transactions became electronic. In 2020, cheque usage was low, given the government's mandate to eliminate cheques by 2022, and cash accounted for 16% of all payments. Businesses and government reaped cost savings from reduced overhead and lower fraud.

Before I end this post, let's roll back the clock to see how Canadians were paying in 2010 and 2015. Be prepared for some surprises – it's hard to believe how much has changed in ten years.

I'd better go now – my plane's about to land!

Unbelievable!

Posted by Internet Inukshuk at 16:32 on 21 February 2021:
Will, it's hard to believe that cash and cheque were really the only way for small businesses to transact in Canada in 2010. And cheque image capture wasn't big back then either. What's more, waiting three to four days for funds to clear was the norm. Thank goodness, electronic B2B solutions began to appear on the scene in 2012: I think PayPal was first, EFT was revamped a couple years later, and the rest is history...

What about the CPC?

Posted by Lucille Grenier at 19:12 on 21 February 2021:
Thanks, Will, but no history of Canadian payments should omit the Canadian Payments Council (CPC), formed in 2011. The CPC was instrumental in setting Canadian payments on its way. This "coalition of the willing" was made up of key stakeholders (those who "had a clue," as you say) including financial institutions, telcos, merchants and government. It was responsive to the marketplace in developing the standards for new payment mechanisms.

At that time I was the head of a large retail association in Quebec and was astonished that we had a voice (and even a vote) in the CPC. It finally felt as if the people who mattered were listening to merchants' concerns—back then we were grappling with high fees from card issuers and shelling out for expensive point of sale (POS) terminals. Plus jamais!

About the Author

I am Dr Will Stevens, Principal Consultant at *Money Whizz*, a virtual consultancy that brokers new technology ideas for the financial services industry. Money Talks is my blog about the industry. It represents my own views, not those of *Money Whizz* or my clients.

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Straight talk about the financial services industry from Dr. Will Stevens

PAYMENTS BY TRANSACTION TYPE 2010–2020 (AS PERCENT OF TOTAL VOLUME)

PAYMENTS BY TRANSACTION TYPE 2010–2020 (AS PERCENT OF TOTAL VALUE)

2010

CHART 25: 2010 VOLUME

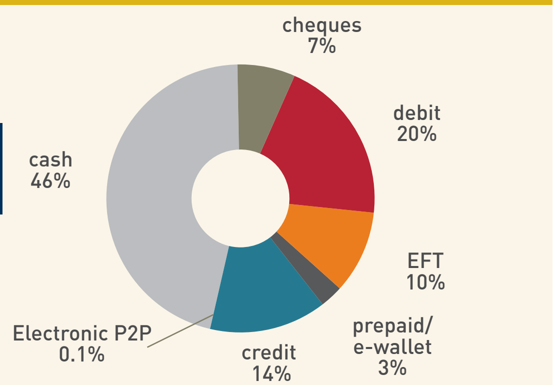
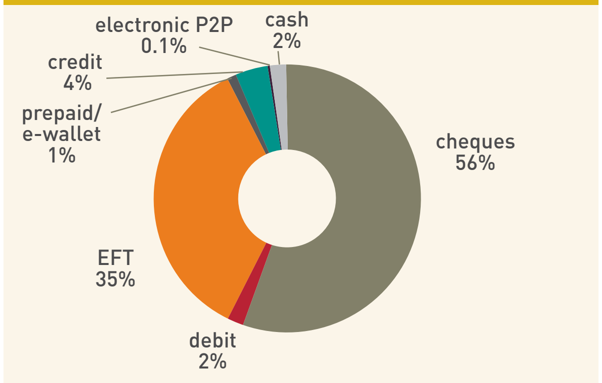


CHART 26: 2010 VALUE



2015

CHART 27: 2015 VOLUME

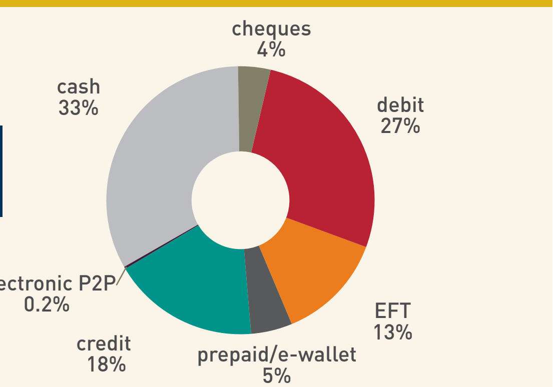
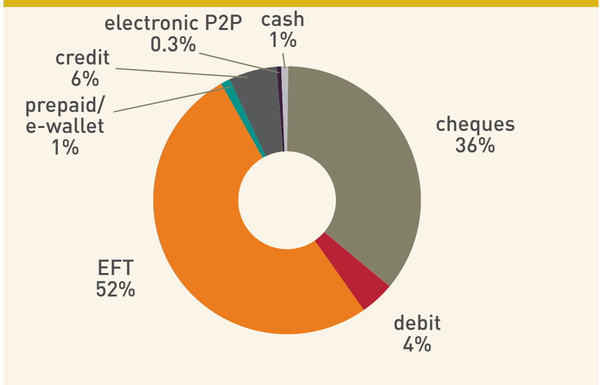


CHART 28: 2015 VALUE



2020

CHART 29: 2020 VOLUME

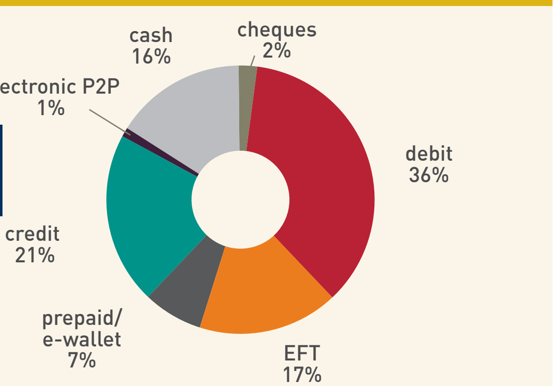
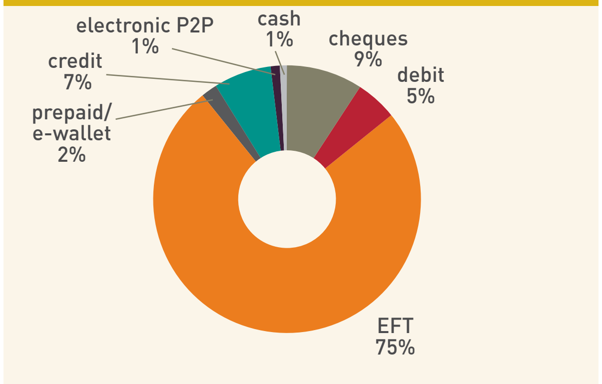


CHART 30: 2020 VALUE



Straight talk about the financial services industry from Dr. Will Stevens

2011-12 Uniting to build an online payments infrastructure

Posted by Will at 08:34 on February 22, 2021

You're right, Internet Inukshuk, the speed of change for both business and consumers has been dramatic. Et merci, Lucille, pour votre contribution. I was actually planning to mention the CPC today.

At the start of the last decade, change was in the air. Mobile devices were becoming the primary form of payment for millions around the world. 2012 was dubbed "The Year of the Cloud" as cloud computing finally entered the mainstream and became accepted for financial applications.

George O'Hare, CIO of MegaInvestmentBank, summed up some of the advantages of the cloud on Digital Money News back in September 2011: "Thanks to cloud computing, I will never buy another server or network device again. I will never wait weeks for hardware or get locked into licences for proprietary software."

Seeing online security and authentication as significant roadblocks to Canada's taking a leading role in the emerging digital world, representatives from industry and government came together to form a Working Group on Digital ID and Authentication, to develop standards in these areas.

Soon after, industry players created the CPC, which formed a Working Group on Mobile Payments to develop Canadian standards for mobile payments. One of its first achievements was to obtain a clarification of the Code of Conduct for debit and credit cards, to allow cards and applications from competing debit and credit networks to exist on the same mobile device.

The government soon moved to formalize the CPC's role, broadened its membership specifically to include representatives of merchants, consumers and other users, and assigned to it the policy responsibilities of the Canadian Payments Association (CPA) as well as a mandate to shepherd the industry through a period of increasing globalization and technological change.

The federal and provincial governments began to update and align consumer privacy legislation. The fundamental principle was that consumers now owned their own data, including data on transactions, and could control access to it.

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Don't forget the fundamentals

Posted by Fraudfighter at 11:14 on February 22, 2021

No offence, Will, but I think you're glossing over the key point. Surely it was the cutting edge digital identification and authentication system that transformed the CPS over the last decade?

I work for one of the large fraud consulting companies, so we followed the events in Canada closely. In 2011, the Canadians piloted one of the first authentication systems to allow the "relying party" (for example, the liquor store asking for confirmation that a buyer is over 18) to confirm that fact reliably from the ID service provider without ever needing to

Straight talk about the financial services industry from Dr. Will Stevens

see or gain access to any other ID information. It sounds basic now, but it was a massive step forward at the time. If you're interested, you can learn more here (Will, I hope you don't mind me directing a bit of traffic to my site).

The province of British Columbia rolled out the system in 2012. Not long after, other provinces followed suit. Their main motivation was the huge savings from eliminating healthcare payment fraud, but soon the digital ID and authentication system was being adopted by the payments industry.

The final piece of the jigsaw was the federal government's ongoing commitment to update the system. Its Roadmap for Digital ID and Secure Off- and Online Authentication, published in 2012, is now the model for others. In 2015 biometric data was incorporated into the system.

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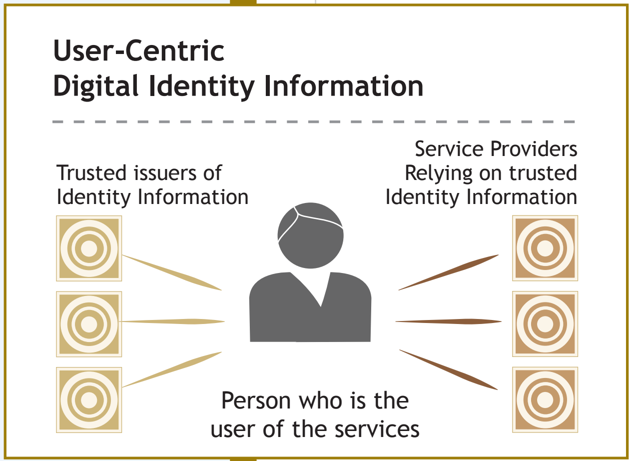
BOX 11: DIGITAL ID AND AUTHENTICATION

British Columbia is currently building a new infrastructure for digital identity information that will allow people to interact safely with online services including payment, banking, and health care. People will be able to confirm digitally basic identity information that they are asked for repeatedly and show that they "really are" the account holder at a financial institution, or the principal owner of a registered business, or the client of a provincial health care system.

Current practice on the Internet means that users have myriad userIDs and passwords. Each service provider must figure out who the person at the keyboard "really is." Not only is this situation frustrating for users, it provides inadequate privacy, security, and assurance of identity.

The digital identity information infrastructure will work by placing the user of online services at the centre. Service providers will no longer ask for a userID and password. Instead they will ask the user to provide the needed identity information (for example, a client number) that must come from a trusted issuer. Once the user obtains the information from the trusted issuer, the user can then automatically provide it to the service provider in a format that is secure and highly encrypted. The user maintains control: she is the one who decides whether to allow her information to be sent, which specific information to send, and to whom.



The digital ID and authentication system will improve ease of use, security and privacy for both online and over-the-counter transactions.

The infrastructure for digital identity information will be established over several years as each new service provider and each issuer of trusted identity information becomes available online. Ultimately it will be available nationwide.

source: Office of BC CIO

Straight talk about the financial services industry from Dr. Will Stevens

not the roadmap ;)

Posted by TEX378 at 23:59 on February 22, 2021

hey there, Fraudfighter, i'm glad my news app picked up this thread u're totally right that security was one of the greatest "drivers for change" in Canada, or so says prof chandra, who runs the Systems and Security MSc here at Mumbai Uni but PLEEZ don't talk to me about the roadmap - i spent 2 WKS studying it for my finals :) prof chandra also reckons that the opt-in nature of the authentication system was what really made the difference as it meant that canadians only signed up if they were cool with it and saw the benefits

2013-2016 Laying foundations

Posted by Will at 08:34 on February 23, 2021

Thanks Fraudfighter and TEX378. I agree that the authentication system was a key milestone in giving Canadians the confidence they needed to fuel the mass adoption of digital payments services. But I think cloud computing and increasing smart phone usage were also key drivers (see my vBook "Cloud Nine and Beyond" for a full analysis). The speed with which new companies harnessed these changes and created a plethora of new services and apps to address specific needs in payments was like nothing seen before.

Through 2012, the majority of debit transactions at point-of-sale were through Canada's Interac system, which merchants preferred because of the low interchange fee. However, online, the volume of Visa and MasterCard debit transactions by far exceeded Interac's.

In 2013, the consent order under which Interac operated was modified to permit it to revise its governance model and capital structure. This order also allowed Interac to generate substantially higher profits online and offline, which opened the door for a change in ownership.

In a bid to increase efficiency, the government decided to strengthen EFT and to phase out cheques by 2020, just two years after cheques were scheduled to be eliminated in the UK. Tax incentives encouraged businesses to adopt epayments.

Cash was the next target and in 2014 Canada followed a European model and banned retail cash payments of $1,000 and over by 2018, and $500 and over by 2019. The new ecash system, which had just been introduced by the Royal Canadian Mint, was exempted from these rules.

Throughout this period, the government worked with industry to roll out education and marketing programs to raise awareness of updated privacy laws and epayment methods. In the words of Joan Davenport, who managed the PAYONLINE campaign in Manitoba, "We knocked on every door. From grannies to the unemployed, no one was left out."

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BOX 12: INTERAC

The *Interac* logo is a familiar sight on debit cards, automated banking machines (ABMs) and merchant terminals across Canada. A not-for-profit organization, the Interac Association was founded in 1984 as a co-operative venture between several Canadian financial institutions that decided to link their ABM networks and allow their customers to access accounts and make withdrawals at ABMs across Canada. In the early 1990s, the network expanded to allow customers to use bank cards to make Interac Debit purchases at the point-of-sale. By the year 2000, Interac Debit outstripped cash as the payment method Canadians say they use most; by 2003, Canadians were among the highest per-capita users of debit cards in the world.

The Interac Association has expanded beyond banks and today its membership includes trust companies, credit unions, caisses populaires, merchants, payment processors and other payment related companies. A 14-member Board of Directors, appointed annually by the members, governs the association. Until 2009, when Visa and MasterCard entered the market, Interac Debit was the only way to make debit card purchases in Canadian stores. Interac Debit is popular and widely used among Canadian merchants due to its economical, per-transaction fee pricing model.

Other related services include: Interac Online, for secure online payments directly from a bank account; Interac eTransfer, for secure person-to-person payments; and international services, which provide Canadian cardholders with point-of-sale access at nearly 2 million U.S. retailers, and cardholders on certain other networks (including PULSE, Discover, and China UnionPay) access to ABMs in Canada.

BOX 13: BPAY: A B2B PAYMENT SYSTEM

BPAY was introduced in Australia to enable businesses to pay other businesses and customers online, rather than by cheque (previously the only available method). It has helped reduce cheque use in Australia.

Launched in 1997, BPAY was adopted by the entire Australian banking sector. Each month, around 18 million bills worth about $11 billion are paid to more than 16,000 businesses via BPAY.

BPAY is popular because it provides customers (including businesses) with a simplified reconciliation process and saves time and money compared to cheque payments. Its 24/7 accessibility encourages companies to pay invoices more quickly.

In 2007, an electronic invoice presentment service called BPAY View was launched, enabling customers to view and manage (as well as pay) their bills online. This service has further helped to eliminate costs traditionally associated with paper-based systems.

Straight talk about the financial services industry from Dr. Will Stevens

Don't get the violins out yet ...

Posted by Brian at 09:00 on February 24, 2021

I suppose the rapid changes were fairly well managed by industry and government, but it wasn't all easy sailing. Despite the education programs, some did not take advantage of the newer methods, and felt frustrated as support for older services waned. Take my great-aunt Gertrude, who lives in an isolated part of Manitoba. If you're out there, Joan, you forgot to knock on Aunt Gertie's door! In fact, it was my cousin and I who finally got her going with the new technology.

Also, don't forget the disruption these changes caused in some industries, such as my own (an armoured car company). We had a really tough time. Fortunately we were able to sell our assets to a military vehicles manufacturer, but some weren't so lucky.

There were job losses in many established industries, including financial institutions, offset by growth in new industries and online. Slower-moving companies were absorbed by more forward-thinking ones. It's easy to say, but experiencing it was no fun.

2017-2020: Reaping the rewards

Posted by Will at 07:16 on February 25, 2021

Yes, Brian. It's important to remember that not everyone was a winner or well served by Canada's payments revolution. But on balance the benefits far outweighed the drawbacks.

In the final part of the decade, the advantages became apparent. By 2015 every mobile phone was NFC-capable, contactless payments were nearly ubiquitous at point of sale, and card use was dropping. NFC and mobile phones transformed the customer experience and allowed merchants to reach shoppers in a more customized way. Consumers were also able to use their phones to scan items of interest while out shopping, instantly download coupons, and determine whether the same item was available more cheaply online or elsewhere.

By 2020 there was a range of user-friendly, rapid electronic payment methods, along with a host of innovative value-added services. Payments providers were offering near real-time clearing. Cheques had almost gone, cash was 16% of all transactions (by volume), and debit and credit payments via mobile phone and Internet were growing. B2B electronic solutions replaced complex, expensive and time-consuming paper-based systems and enhanced commerce at home and globally.

Fraud levels were significantly lower than they were in 2010. By 2020, Canada was recognized as a pioneer and leader in this digital world and was exporting its expertise and systems to the global community.

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Straight talk about the financial services industry from Dr. Will Stevens

Own the podium

Posted by Lucille Grenier at 09:18 on February 25, 2021

The likes of TEX378 won't remember this, but 11 years ago Canada won the most gold medals for a host country in the Winter Olympics after failing to win even one in the first two games it hosted. How did we achieve this phenomenal result? By forming an effective strategy that focused on creating winners. We proved that Canadians can set aggressive goals on the world stage and be successful. And I think we did it again on a much larger scale over the last ten years with our payments system.

No room for complacency!

Posted by Fraudfighter at 09:40 on February 25, 2021

That's a great metaphor, Lucille. Canadians today are winners as far as payments are concerned. Not only is it more convenient to pay than ever before, but the economic benefits have been significant thanks to lowered costs and increased productivity.

But there's no room for complacency! Look at the trouble Sweden, supposedly one of the most efficient systems in the world, got itself into. As far as fraud is concerned: if you snooze, you lose.

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CONCLUSIONS: USING THE SCENARIOS

CONCLUSIONS: USING THE SCENARIOS

The scenarios described in the preceding pages explore the future of the Canadian Payments System (CPS). Built jointly by stakeholders of the payments system, members of the Task Force for the Payments System Review, and experts from around the world, the scenarios offer a view of the bigger picture within which the CPS is embedded. The scenarios were developed using a process of dialogue, which drew on participants' experience and expertise to map different ways in which the CPS could evolve in the coming decade and to build common ground.

The scenarios highlight the major forces shaping the payments landscape. In particular, they focus on globalization, on the rapid development of new information and communication technologies and industries, and on an increasingly connected world with new societal attitudes that value speed, social networking and online activities.

The scenarios identify two critical uncertainties as being especially important: the degree of co-ordination of the CPS ecosystem; and the speed of consumer and user adoption. These uncertainties will require special consideration as leaders consider options for changing regulatory and governance systems and contemplate new investments.

Scenarios are not predictions of the future. Instead, they are intended to help users recognize the uncertainties in the environment, identify new risks, and be better equipped to create a robust portfolio of activities.

Some elements recur across most or all of the scenarios. These recurring elements may suggest actions that decision-makers can or should take quickly: for example, addressing mobile phone payments, or developing advanced forms of identity management.

The decision to take action on other elements will depend on how events actually unfold. These decisions will require a longer-term process: monitoring the external world for indications that events are moving in a particular direction. In these cases, decision-makers can use the scenarios almost like a map, or a set of alternative maps, to structure their discussions and guide their thinking about the future. Scenarios allow decision-makers to keep different possibilities in mind without being overwhelmed by uncertainties.

Some immediate applications of the scenarios include the following.

- **Testing a strategy or the overall policy framework for the CPS:** Too often strategies are designed for a single scenario, usually reflecting a single viewpoint or perspective about the future. Testing a strategy or policy framework against a wider range of possible futures usually requires a number of steps. One approach is to assemble a group of individuals responsible for strategy and provide a clear outline of the proposed strategy or policy framework. Then the group is asked to assess how the proposal will perform under different scenarios. The simplest way of doing this is to divide the group into scenario teams (one team for each scenario) and ask the teams to consider the following questions:

Assume the world develops in line with your scenario.

1. Which elements of the strategy or policy framework would be relatively easy to implement in your world?
2. Which elements of the strategy or framework are likely to be difficult to implement in your world, and why?
3. What are the obstacles to implementation?
4. What actions would you recommend to overcome the obstacles?

After reviewing the scenarios, the teams then share their findings and look for similarities and differences. Typical trigger questions include:

1. What would be easily implemented under all scenarios?
2. What would be difficult under all scenarios? What are the similarities in the obstacles?
3. Are there similarities or common ground on suggested actions to overcome obstacles?

This provides a basis for modifying the strategy or policy framework so that it will be robust under a wider range of possible futures.

- **Broader stakeholder engagement at the local, provincial or sector level**: Sharing the scenarios with those interested in the future of the payments system is a useful way to begin a conversation on what the changes might mean. When we share scenarios with others, we often learn a great deal from their responses. In most instances, feedback from audiences helps us to understand how others see the world: What do they find unrealistic? What is missing? What is not explained, or seen as incorrect? What important questions are left unanswered?

The work of the Scenarios Roundtable has illustrated the power of using dialogue for such a conversation. Unlike the situation in a debate, in a dialogue the fundamental assumption is that everyone in the conversation has a piece of the answer, and the purposes are to learn from each other and to look for common ground. Our experience with roundtables on the CPS and on other subjects where we have used dialogue in the past is that the amount of common ground uncovered is surprisingly large. While important differences remain, dealing with those differences becomes more manageable once the common ground has been mapped in a dialogue. Dialogue does not replace debate or decision-making: it precedes them. But dialogue creates the shared language, mutual trust and understanding that can make subsequent debate, negotiation and decision-making more productive. Rather than engaging in frustrating confrontations, we can focus constructively on where our real differences lie.

- **Public engagement:** Ultimately, the payments system touches all Canadians and, no matter which course the CPS ultimately takes, public engagement will make the changes more responsive to public concerns and ultimately more effective. The scenarios will be made public through the Task Force's Internet site. One quick way of soliciting public feedback will be to ask those visiting the site to consider a few questions. For example:

  1. Which scenario do you prefer?

  2. Which scenario do you think is most likely?

  3. What do you like most about possible changes in the payments system?

  4. What concerns you most about possible changes in the payments system?

  This approach would help engage and educate citizens about the CPS and would provide useful feedback to the Task Force and ultimately to the government. In addition, dialogues with the public (either with self-selected groups or with random samples) could be organized along the lines of the dialogues with stakeholders described above.

- **Building strategy in an organization**: Not all organizations, even in the same sector, will react the same way to changes in the CPS. They may have different capabilities and attitudes to risk; they may view changes as opportunities rather than just risks (or vice versa). No matter what an organization's perspective, these scenarios can be used as a starting point to build customized scenarios and an updated strategy. This would ensure that organizations better understand the forces shaping change and that their leaders are better equipped to anticipate and take advantage of this change.

  If the CPS scenarios do not fully cover the major challenges that a particular organization is likely to face, then they may need to be augmented. For example:

  1. It may be that the critical uncertainties and branching points of the CPS scenario structure will prove useful to the organization, but it wants to explore factors that are not explored in the broader scenarios, such as issues specific to their business sector. In this case it may be necessary to add other uncertainties or to explore the existing ones in more detail. It may also be possible to add a scenario.

  2. Alternatively, the organization may want to explore a different set of critical uncertainties and branching points. If so, the existing CPS scenarios can be used to provide information for a new scenario-building process.

Before beginning either process, it is important to develop a clear idea of the current strategic positioning of the business and its short- and long-term aspirations. Returning to this throughout the process helps ensure that what is created remains relevant. A fully-fledged internal scenario-to-strategy process also has the benefit of building an integrated outcome.

- **Interpreting signals and monitoring risks:** One of the purposes of building and using scenarios is to help raise organizations' awareness of what is going on in the world, and their understanding of how they interpret what they see. This is intended to help prepare them to respond faster and more effectively to changes in their business environment. Once they have understood a set of scenarios, organizations can begin to define a useful set of signals worth monitoring. That is, they can scan the environment for indications of which scenario or variant is actually happening. This will also help them to see when other dynamics appear. The Internet is an ideal tool for scanning, but TV, radio, newspapers and magazines are all valuable. Discussing signals is a useful first step in thinking about new responses to possible events in the environment and eventually a change in strategy.

USING THE CPS SCENARIOS

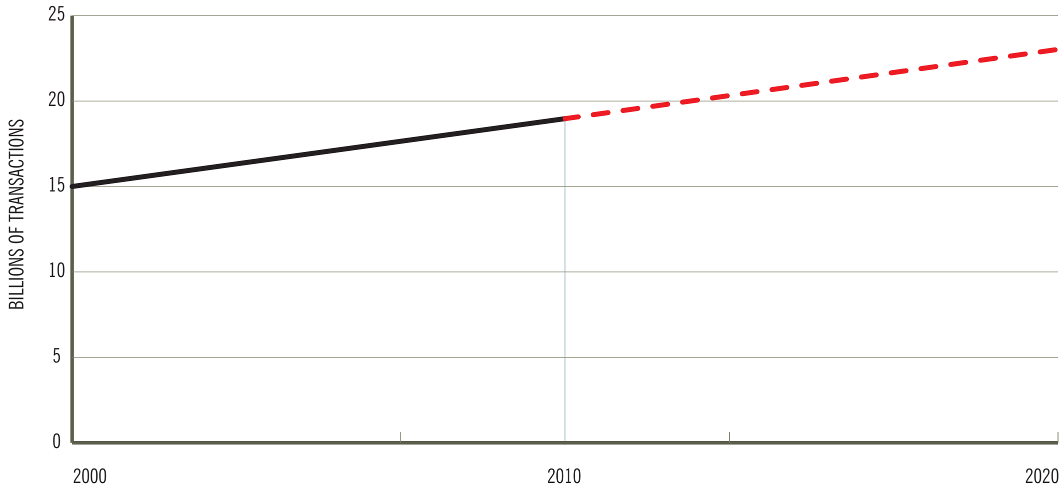
The CPS scenarios can be used in a variety of ways to help develop policy and strategy and move the CPS forward. They can help individuals, organizations and decision-makers at all levels understand the forces shaping the payments system and the opportunities and risks that a new payments system offers. They can provide a basis for more effective dialogue among decision-makers, stakeholders and the public. We hope these scenarios will help stimulate that dialogue, and contribute to the creation of an improved payments system for the emerging digital world that will benefit all Canadians.

APPENDICES

Appendix A: Scenario Quantification

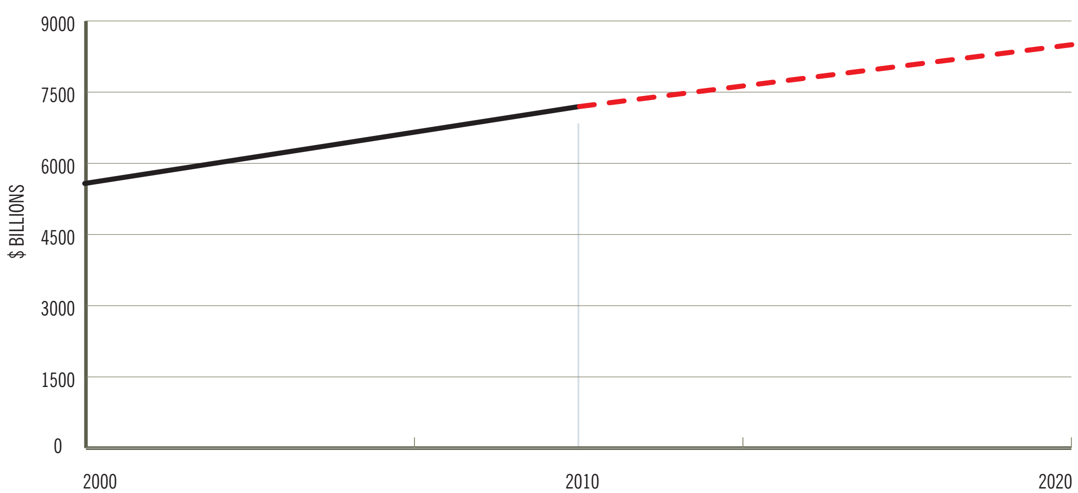
The quantification presented in this appendix and throughout the volume was prepared by Canadian Payments Association staff, with guidance from the members of the Scenarios Roundtable who helped create each scenario. Our thanks in particular go to Guy Legault, Sarah Anson-Cartwright, and Michael Tompkins of the CPA.

1. Total Volume of Financial Transactions in Canada (2000–2020)



The total volume of transactions grows from 19 billion in 2010 to 23 billion in 2020.

2. Total Value of Financial Transactions in Canada (2000-2020)

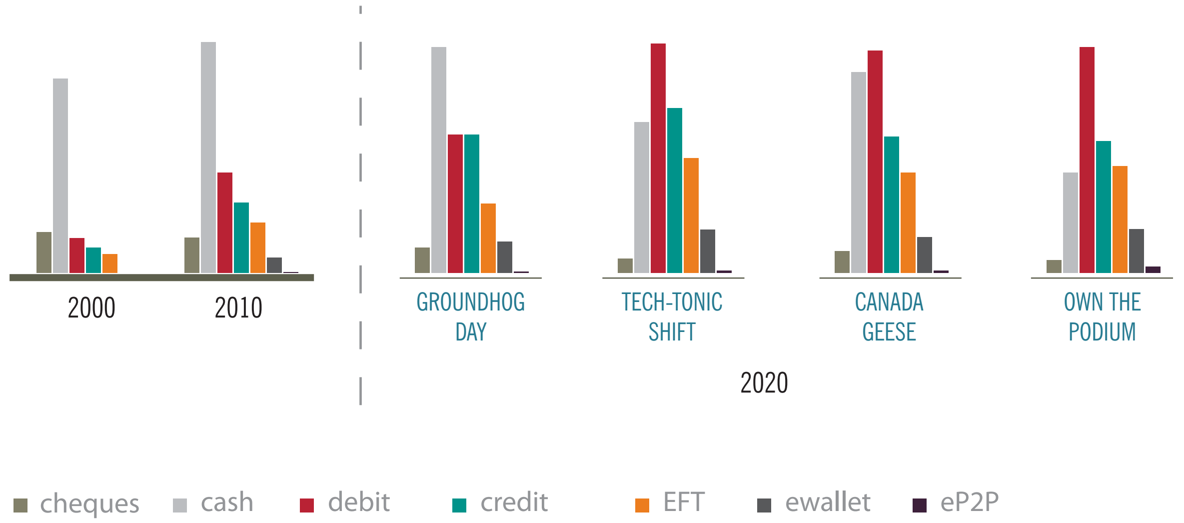


The total value of transactions grows from $7.2 trillion in 2010 to $8.5 trillion in 2020.

3. Transaction mix by volume (payment type as % of total transaction volume)

%	2000	2010	2015				2020			
			GroundHog Day	Tech-Tonic Shift	Canada Geese	Own the Podium	GroundHog Day	Tech-Tonic Shift	Canada Geese	Own the Podium
Cheques	13	7	6	5	5	4	4	2	3	2
Debit	11	20	22	26	25	27	22	32	31	36
EFT	6	10	11	13	12	13	11	16	14	17
Ewallet	–	3	3	4	4	5	5	6	5	7
Credit	8	14	17	18	16	18	22	23	19	21
eP2P	–	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.3	1
Cash	62	46	41	34	38	33	36	21	28	16

3a. Transaction mix by volume

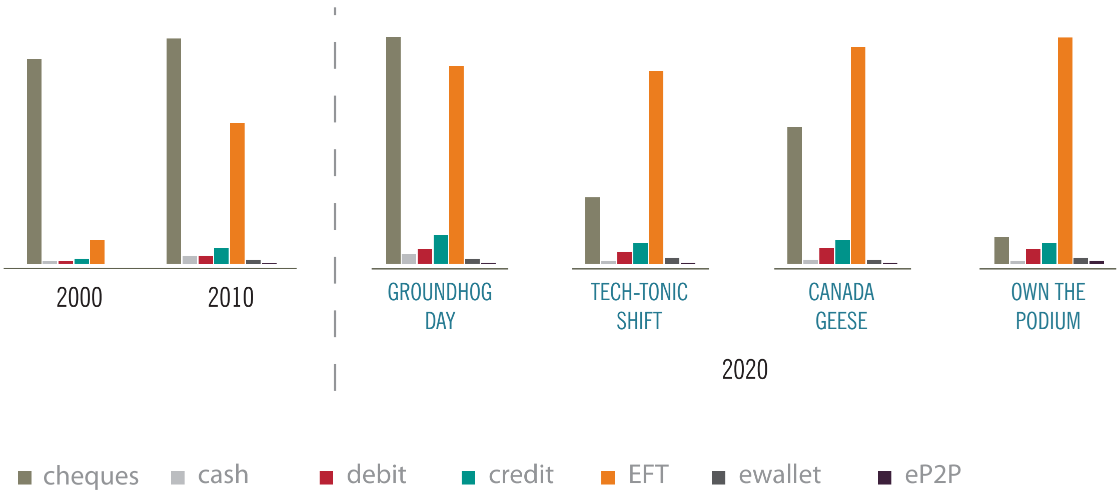


The marked reduction in use of cheques and cash, down from 75% in 2000 to 53% of the transactions volume in 2010, continues. Reduction of this share by 2020 is most dramatic in "Own the Podium," with a further 35% reduction in the share of cheques and cash, replaced by rapid growth in the use of electronic debit and credit, EFT and Ewallets.

4. Transaction mix by value (payment type as % of total transaction value)

%	2000	2010	2015				2020			
			GroundHog Day	Tech-Tonic Shift	Canada Geese	Own the Podium	GroundHog Day	Tech-Tonic Shift	Canada Geese	Own the Podium
Cheques	85	56	52	43	47	36	47	22	34	9
Debit	1	2	2	3	3	4	3	4	4	5
EFT	10	35	38	46	43	52	41	64	54	75
Ewallet	–	1	1	1	1	1	1	2	1	2
Credit	2	4	5	5	4	6	6	7	6	7
eP2P	–	0.1	0.1	0.2	0.2	0.3	0.2	0.4	0.3	1
Cash	2	2	2	2	2	1	2	1	1	1

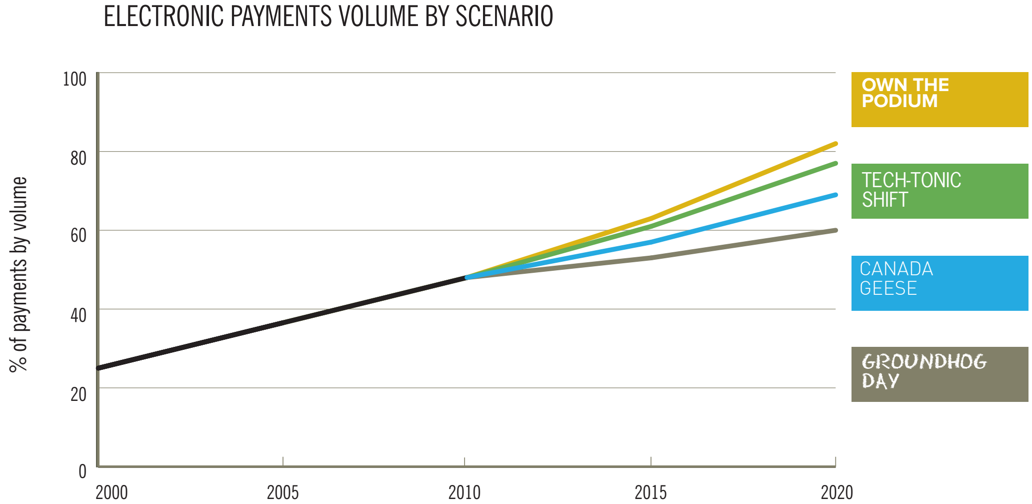
4a. Transaction mix by value



The marked reduction in use of cheques, down from 85% in 2000 to 56% of the transactions value in 2010, continues. Reduction of this share by 2020 is most dramatic in "Own the Podium," with a further 47% reduction in the share of cheques, largely replaced by rapid growth in EFT.

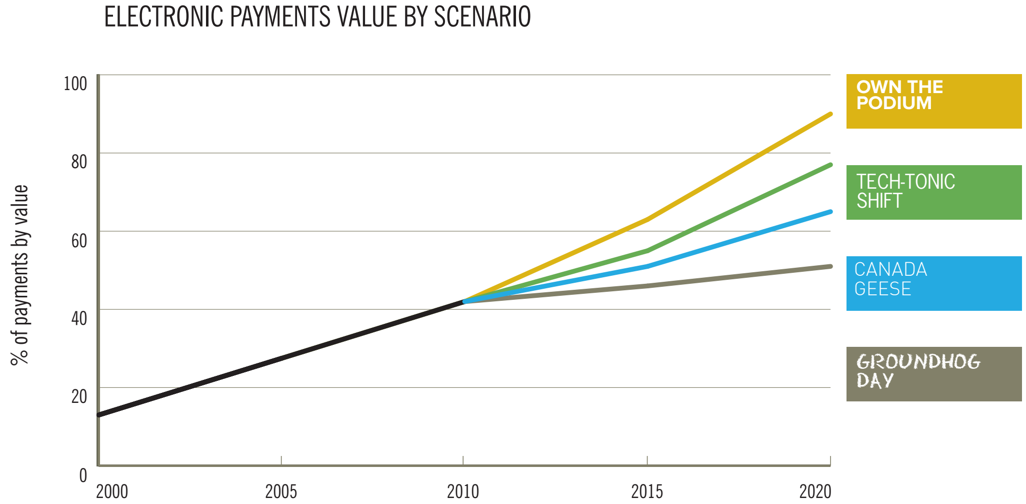
5. Electronic payments compared across scenarios, 2000–2020

a. Payment volume by scenario



There is a continuing rapid increase in the use of electronic payments. This increase is most rapid in "Own the Podium," with the share of electronic payments in the volume of transactions rising from 48% in 2010 to 82% in 2020.

b. Payment value by scenario



The increase in the share of electronic payments in the value of transactions is most rapid in "Own the Podium," rising from 42% in 2010 to 90% in 2020.

Appendix B: Resources

The following are presentations made to the Scenarios Roundtable and related readings:

Adams, Michael (2010). *Stayin' Alive: How Canadian Baby Boomers Will Work, Play, and Find Meaning in the Second Half of Their Adult Lives*. Presentation prepared for the Scenarios Roundtable and the Task Force for the Payments System Review. Available from www.viewpointlearning.com/ca-payments/

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Bruno, Philip, David Chubak, Charlie Nunn (2010). "Winning in the New Payments Landscape: A Global Outlook." *McKinsey on Payments*, March 2010.

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Davis, Ged (2002). *Scenarios as a Tool for the 21st Century*. Presentation to the Probing the Future Conference, Strathclyde University. July 2002. Available from www.viewpointlearning.com/ca-payments/

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Haag, Kristopher (2010). *Iraq: Retail Payments Initiative*. Presentation prepared for the Scenarios Roundtable and the Task Force for the Payments System Review. Available from www.viewpointlearning.com/ca-payments/

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Hagel, John III, John Seely Brown and Lang Davison (2009). *The Shift Index: Uncovering the Emerging Logic of Deep Change*. Deloitte Center for the Edge.

Hamilton, Chris (2010). *Australian Payments: Strategic Trends and Observations.* Presentation prepared for the Scenarios Roundtable and the Task Force for the Payments System Review. Available from www.viewpointlearning.com/ca-payments/

Hamilton, Chris (2010). "How do you 'disrupt' a payments system?" *Efma Journal* N°. 226, October-December 2010.

Leinonen, Harry (2010). "Future Payments – Mobile, Social or Sociomobile?" *Speed* 4:4, 2010.

McDerment, Michael (2010). *Getting the Coin to Drop.* Presentation prepared for the Scenarios Roundtable and the Task Force for the Payments System Review. Available from www.viewpointlearning.com/ca-payments/

McManus, Mickey (2010). *Scanning the Future: User Adoption and Experience.* Presentation prepared for the Scenarios Roundtable and the Task Force for the Payments System Review. Available from www.viewpointlearning.com/ca-payments/

Mistry, Pranav (2010). *Sixth Sense: Integrating Information with the Real World.* Presentation and videos available at www.pranavmistry.com/projects/sixthsense/

Mott, Steve (2010). *The Transformation in Digital Transacting.* Presentation prepared for the Scenarios Roundtable and the Task Force for the Payments System Review. Available from www.viewpointlearning.com/ca-payments/

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Appendix C: Glossary

ABM:	Automatic Banking Machine
ACH:	Automated Clearing House. An electronic network for payments in the United States. ACH processes large volumes of credit and debit transactions, including payments from the federal government, public and private payrolls, and bill payments. (See box on page 40.)
ACSS:	Automated Clearing Settlement System. ACSS is the system through which the vast majority of payment items in Canada are cleared, including paper-based payment items such as cheques and electronic items such as pre-authorized debits and direct deposits. ACSS handles 99% of the Canadian Payments Association (CPA) daily payment volume: nearly 24 million payments on an average business day. But, since most of these payments are for relatively small amounts, this volume accounts for only about 12% of the total value cleared using the CPA systems. Most of the total value is cleared via the Large Value Transfer System (LVTS) (see below).
B2B:	Business-to-business. B2B payments are payments between businesses: for example, payments between a manufacturer and a supplier of parts or raw materials, or between a wholesaler and a retailer. In Canada, most B2B payments are carried out by means of paper cheques.
B2C:	Business-to-consumer. B2C payments are payments between businesses and end consumers, such as retail purchases or service purchases. B2C payments can be made in many ways including cash, cheque, credit, debit, or online.
Chip and PIN:	Chip and PIN: A technology for credit and debit cards, in which card information is stored on embedded microchips rather than on the magnetic stripes currently common in Canada and the United States. The chip is protected by high-level encryption and is almost impossible to copy, making these cards more secure than magnetic stripe cards. When using these cards, cardholders authenticate their information using a Personal Identification Number (PIN).
Cloud computing:	A pay-per-use model for enabling available, convenient, on-demand network access to a shared pool of configurable computing resources (for example, networks, servers, data storage, applications, services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. (See box on page 9.)
Contactless cards:	Plastic cards that communicate with a terminal (for example, a payment terminal) via radio waves. When used for credit or debit payments, contactless cards need only come within a few inches of the payment terminal; they do not need to be physically swiped.
CPA:	Canadian Payments Association. (See box on page 24.)
CPS:	Canadian Payments System.

ewallet:	A digital "wallet" application on a computer or smart phone. Ewallets securely store and transmit information needed for online or mobile payments, including passwords, PINs, credit, debit and prepaid card information, and electronic cash.
EFT:	Electronic Funds Transfer.
EIPP:	Electronic Invoice Presentment and Payment. Electronic billing, usually in the context of B2B or B2C payments.
EMV:	A global standard for chip-based credit and debit cards that allows cards made by different companies to be securely used and authenticated at a wide range of point of sale terminals and ABMs.
FI:	Financial Institution.
Interac:	Canada's electronic debit card network. (See box on page 52.)
Interchange fee:	A fee that forms the bulk of the "acceptance fee" paid by a merchant when accepting payment using a credit card network (MasterCard, Visa and AMEX). The interchange fee usually flows to the card issuer.
LVTS:	Large Value Transfer System. LVTS is an electronic funds transfer system that allows Canadian financial institutions to send large payments back and forth to each other securely and in real time, including Government of Canada payments. LVTS is operated by the CPA and settlement is guaranteed. While ACSS handles the most volume of payments moving through the system, LVTS handles the most value. In 2010, LVTS processed an average of about 24,000 payments a day, worth an average total of $149 billion: about 88% of the total value of payments cleared through CPA each day.
Mobile payments:	Any payment (cash, debit, credit) made using a smart phone or portable computing device, including over the Internet or using NFC (see below) technology.
NFC:	Near Field Communication. A contactless technology that allows devices such as mobile phones to communicate wirelessly with other devices like payment terminals and other phones over short distances (5 to 10 cm). NFC chips are increasingly common features in smart phones.
OSFI:	Office of the Superintendent of Financial Institutions. OSFI is the primary regulator and supervisor of federally regulated deposit taking institutions, insurance companies, and federally regulated private pension plans.
P2P:	Person-to-person. P2P payments are a counterpart to B2B (business-to-business) payments, but are made between individuals. In Canada, most P2P payments are made by cheque or cash.
POS:	Point of Sale.
STP:	Straight-Through Processing. A process through which payments are processed automatically to eliminate the time and cost of manually keying in the information. STP processing is completed in hours, minutes or even seconds: far faster than the three to five days currently required for traditional paper-based clearing.