

NEW PAYMENT METHODS: Is Canada Ready?

Final Report of the Research Project
Presented to Industry Canada's
Office of Consumer Affairs



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The masculine is used generically in this report.

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UNION DES CONSOMMATEURS, *Strength through Networking*

Union des consommateurs is a non-profit organization whose membership is comprised of several ACEFs (*Associations coopératives d'économie familiale*), *l'Association des consommateurs pour la qualité dans la construction* (ACQC), as well as individual members. Union des consommateurs' mission is to represent and defend the rights of consumers, with particular emphasis on the interests of low-income households. Union des consommateurs' activities are based on values cherished by its members: solidarity, equity and social justice, as well as the objective of enhancing consumers' living conditions in economic, social, political and environmental terms.

Union des consommateurs' structure enables it to maintain a broad vision of consumer issues even as it develops in-depth expertise in certain programming sectors, particularly via its research efforts on the emerging issues confronting consumers. Its activities, which are nation-wide in scope, are enriched and legitimated by its field work and the deep roots of its member associations in the community.

Union des consommateurs acts mainly at the national level, by representing the interests of consumers before political, regulatory or legal authorities or in public forums. Its priority issues, in terms of research, action and advocacy, include the following: family budgets and indebtedness, energy, telephone services, radio broadcasting, cable television and the Internet, public health, food and biotechnologies, financial products and services, business practices, and social and fiscal policy.

Finally, in the context of market globalization, Union des consommateurs works in collaboration with several consumer groups in English Canada and abroad. It is a member of *Consumers International* (CI), a United Nations recognized organization.

INTRODUCTION

The payments system is the combination of institutions, instruments and services that facilitates the transfer of monetary value between parties to a transaction. It is the infrastructure that makes it possible for a variety of payment instruments to be exchanged in the economy for goods, services and financial assets. A safe and efficient payments system is essential to the operation of a modern and sophisticated market economy.

Department of Finance Canada
*Payments System Review
Discussion Paper¹*

Financial and technology sector businesses and companies are constantly innovating so that they can provide consumers and merchants with new forms of payment or technologies that allow traditional forms of payment such as mobile, biometric and contactless payments to be used differently.

Forms of payment have slowly become diversified over the years: bartering was replaced with paper money, after which came cheques and payment cards. Over the last few years, in particular as a result of the advent of new technologies, there has been a profusion of alternate forms of payment on the market. Some of the new forms of payment recently introduced on the market are already available in Canada while others will most likely be so in the near future. All of these new forms of payment must of course be properly regulated to ensure that consumers are provided with secure and efficient methods of paying for their purchases and bills or transferring funds. In June 2010, the federal government announced the creation of the Task Force for the Payments System Review in charge of reviewing the Canadian payments system and of submitting recommendations to the federal government on how payments are to be regulated.

What are the benefits, drawbacks and costs of the new forms of payment? Is the level of protection provided to consumers using the new forms of payment the same as for traditional forms of payment? Are existing legislative frameworks adequate for future forms of payment? Will consumers truly benefit from using the new forms of payment?

The aim of our study is to present an overview of the main forms of payment currently available or being tested in Canada and elsewhere in order to compare them with existing forms of payment. Our study also aims at identifying existing regulations in and outside of Canada in order to determine whether they are adequate and efficient in dealing with the new forms of payment.

The first chapter of our report presents general information on the history of currency and payments systems, and will include a certain number of definitions along with an overview of the forms of payment used in Canada and the current state of the payments system.

The second chapter deals with traditional forms of payment and will cover cash, cheques, debit cards, and credit cards. It will present how each form of payment works, along with its benefits and drawbacks. It will end with an overview of the legislative framework of traditional forms of

¹ Department of Finance Canada, *Payments System Review Discussion Paper*, Ottawa, Canada, July 1998. [Online] http://www.fin.gc.ca/toc/1997/pdf/psr_e.pdf (Viewed on August 3, 2010).

payment.

The third chapter presents some of the new forms of payments already available in Canada or likely to be available in the coming months or years. This chapter will also present how these forms of payment work, their benefits and drawbacks, and how they are regulated.

The fourth and final chapter will present a comparison between the legislative frameworks and the main benefits and drawbacks of traditional forms of payment and the new forms of payment being discussed. A summary will be presented in the form of a table.

The study conclusions will be followed by recommendations.

CHAPTER 1: BACKGROUND

To put it in succinct and current terms, money's destiny is to become digital. This general conclusion emerges from an examination of money's long historical record and its likely relationship to future socioeconomic changes. Historically, money has been on the path towards greater abstraction, or pure symbolic representation disassociated from a precise physical materialisation, for millennia.

Organisation for Economic Co-operation and Development
The Future of Money²

In this chapter, a few useful definitions will be presented followed by a brief history of money. We will then present an overview of how the various methods of payment are currently being used.

1.1 Definitions

Generally speaking, payment is the act of settling an obligation. For the purposes of our study, we will only look at obligations that consist of paying a sum of money, excluding such forms of payment as bartering, and only focus on payments made using cash (e.g. cash, cheques, debit cards) and credit.

When attempting to define the terms and expressions related to payments, an initial observation can be made: there is considerable confusion in the literature. In fact, some authors use the terms *forms of payment*, *methods of payment*, *means of payment*, *payment instruments*, etc. arbitrarily and without distinction. Other terms are also used, including *cyberwallet*, *virtual purse*, and *electronic purse*. The context in which the term is used will often dictate the meaning.

Article L311-3 of the French Monetary and Financial Code defines forms of payment as any instrument that allows a person to transfer funds, regardless of the medium or process used.³

The *Grand dictionnaire terminologique de la langue française* provides three definitions for forms of payment, including a more general one:

*Physical means (e.g. cash, cheque, card, money order) or process (e.g. funds transfer, online payment) through which a payment is made.*⁴

Forms of payment thus consist of cash, cheques, debit cards, credit cards, prepaid cards, online payments, etc.

For the purposes of our study, to avoid any confusion and given that the definition of form of payment and method of payment refers equally to means as well as processes and instruments,

² OECD, *The Future of Money*, Paris, France, 2002, p. 7. [Online] <http://www.oecd.org/dataoecd/40/31/35391062.pdf> (Viewed on February 15, 2011).

³ *Code monétaire et financier*, Droit-finances.net, France, September 22, 2010. [Online] <http://droit-finances.commentcamarche.net/legifrance/60-code-monetaire-et-financier/154665/definition-des-moyens-de-paiement> (Viewed on October 4, 2010).

⁴ Grand dictionnaire terminologique, *Moyens de paiement*, Office québécois de la langue française, Québec, Canada. [Online] http://www.granddictionnaire.com/BTML/FRA/r_Motclef/index800_1.asp (Viewed on February 15, 2011).

we will use the expression *form of payment* to refer to any instrument or process used in relation to a payment, which, in our opinion, refers less to the physical aspect and remains more general; furthermore, this choice is subjective.

Regarding the expressions *virtual purse*, *electronic purse*, and *cyberwallet*, these terms often appear to be used incorrectly (and synonymously) to refer to concepts they do not actually define. When using these terms, we will do so with the following definitions in mind:

Virtual purse:

*A secured payment system which, through software installed directly on the consumer's computer, enables virtual cash to be stored on the user's hard disk for the online payment of purchases of small amounts.*⁵

Electronic purse:

*A prepaid, non-personalized cash card issued by a bank or a company, that enables the bearer to use electronic cash to pay for products and services anonymously, without authorization or signature, as if paying by cash.*⁶

Cyberwallet:

*Software used to manage the transfer of funds electronically during online transactions and that may use the following methods of payment: credit and debit cards, cash, cheques, and e-cash.*⁷

Though in the literature the expression *payment instrument* is considered to be synonymous with *form of payment* and *method of payment*, we will use this term to refer to a tangible payment medium, such as the actual card, finger (for a biometric payment), etc., thus referring more to the common meaning of the term "instrument."

We are thus limiting the meaning that the Bank of Canada and the Department of Finance gave this expression in 1998 in a document submitted to the Payments System Advisory Committee:

*Payments instruments basically convey relevant information regarding the transfer of monetary value from one party in a transaction to the other. Such information may, for example, include the face value of the payment, the identity of the parties and their intermediaries, the transaction date, and the value or settlement date. These instruments and their processing systems are generally low-cost relative to the value transferred per item, provide a high degree of confidence in the authenticity of the value transferred, and are generally acceptable as evidence of value received.*⁸

⁵ Grand dictionnaire terminologie, *Virtual purse*, Office québécois de la langue française, Québec, Canada. [Online] http://www.granddictionnaire.com/BTML/FRA/r_Motclef/index800_1.asp (Viewed on February 15, 2011).

⁶ Grand dictionnaire terminologie, *Electronic purse*, Office québécois de la langue française, Québec, Canada. [Online] http://www.granddictionnaire.com/BTML/FRA/r_Motclef/index800_1.asp (Viewed on February 15, 2011).

⁷ Grand dictionnaire terminologique, *Cyberwallet*, Office québécois de la langue française, Québec, Canada. [Online] http://www.granddictionnaire.com/BTML/FRA/r_Motclef/index800_1.asp (Viewed on February 15, 2011).

⁸ The Payments System in Canada: An Overview of Concepts and Structures, Background Paper for Discussion by the Payments System Advisory Committee Prepared by Staff of the Bank of Canada and Department of Finance, February 1997. [Online] <http://www.bankofcanada.ca/wp-content/uploads/2010/09/psac1.pdf> (Viewed on July 27, 2010).

It is important to distinguish forms of payment and their instruments from the system in which they are found. The *payments system* is defined as follows by the Task Force for the Payments System Review created in 2010 by the federal government:

*The payments system refers to arrangements that allow consumers, businesses and other organizations to transfer value from one party to another. It includes the institutions, instruments and services that facilitate the transfer of value between parties in a transaction.*⁹

The *Grand dictionnaire terminologique de la langue française* provides a similar definition:

Electronic compensation and settlement system through which cheques and other payment instruments can be used to perform transactions across the economic system.

Note(s):

*The payments system is a complex network of instruments, institutions and services that facilitates the transfer of value between parties in a transaction.*¹⁰ [translation]

The Bank for International Settlements (IBS) glossary provides a perfect definition of a payment system:

*A payment system consists of a set of instruments, banking procedures and, typically, interbank funds transfer systems that ensure the circulation of money.*¹¹

The various forms of payment are used to perform a transaction. Any payment system transaction involves some or all of the following participants:

- The consumer who purchases a good or service;
- The merchant that sells a good or service;
- The issuer (chartered banks, credit unions and some major retailers) that issues the means of payment, such as cheques, credit cards or debit cards;
- The payment processor (Moneris Solutions, TD Merchant Services, Groupe Desjardins and others) that sells or rents credit card and debit card terminals to merchants and that moves information and funds between the merchant and the issuer; and
- The network operator (Visa, MasterCard, Interac, and others) that operates and oversees the payment system that structures transactions between consumers, merchants and their respective financial institutions.¹²

Since in this study we are looking at consumers acting as purchasers (versus businesses acting as such), we will be more often using the term consumer when referring to the party purchasing the good or service.

⁹ Task Force for the Payments System Review, *FAQ*, Ottawa, Canada 2010. [Online] <http://paymentsystemreview.ca/index.php/news-and-articles/the-comment-period-has-closed-2/> (Viewed on December 20, 2010).

¹⁰ Grand dictionnaire terminologique, *Système de paiements*, Office de la langue française, Québec, Canada. [Online] http://www.granddictionnaire.com/BTML/FRA/r_Motclef/index800_1.asp (Viewed on February 15).

¹¹ Bank for International Settlements. A glossary of terms used in payments and settlement systems. March 2003. [Online] <http://www.bis.org/publ/cpss00b.pdf> (Viewed on December 20, 2010).

¹² Standing Senate Committee on Banking, Trade and Commerce, *Transparency, Balance and Choice: Canada's Credit Card and Debit Card Systems*, Report of the Standing Senate Committee on Banking, Trade and Commerce, Ottawa, Canada, June 2009. [Online] <http://www.parl.gc.ca/Content/SEN/Committee/402/bank/rep/rep04Jun09-e.pdf> (Viewed on October 12, 2010).

Now that we have defined the concepts of payment, form of payment, payment instrument, payment system and the different participants involved, we will look at how a payment system that was essentially based on bartering evolved to metal coins, paper money, payment cards, and electronic payment.

1.2 History

a) The Origins of Money

For millennia, men have sought ways to give value to their goods for the purpose of trade. Before money appeared, bartering was the preferred method of trade. Though a cow could be traded for 10 kg of wheat, trading half a cow for 5 kg of wheat was considerably more difficult. The need soon arose of finding ways to trade goods in the form of small units of account. It became important to have portable and standardized units of account. The first money appeared – an intermediary tool that is no longer the good or service that is to be purchased or sold, but which, without consideration for its intrinsic value, represents an agreed-upon value. Besides its divisibility and abstract nature, money had the advantage of facilitating three-party exchanges: it is no longer necessary to wait, in order to sell one's goods and services, for a buyer with something to exchange that is needed. The first money consisted of common objects such as salt, shells, etc. that could be easily stored (to avoid having the money itself deteriorate). This is how, more than 3,000 years ago, the Chinese used cowry shells as a store of value. In the 14th century, the Aztecs used cocoa beans for trading purposes. The method of payment was simple: handing over the actual good which constituted the money in exchange of the good or service that the person wished to acquire.

b) Invention of Metallic Currency

The appearance of the first metal coins dates back to 610-560 B.C., during the reign of King Alyattes in Lydia. The first coins came from shops in the city of Sardis. In the 6th century B.C., King Croesus founded a bimetallic money system made possible through developments in metallurgy that allowed gold to be separated from silver.¹³ In Ancient Greece, pieces of gold and silver often served as coins. These metallic pieces of money spread around the Mediterranean, facilitating trade.

c) Roman Monetary System

In Rome in the third century B.C., the first minting shop began operating where sesterces were produced. At the start of the Christian era, Augustus reorganized the system based on the trimetallism policy (gold, silver, bronze). As the Roman Empire grew, Roman coins replaced Greek coins in trades between nations. However, political instability and the decline of the Roman Empire led to the weakening of currency and the collapse of silver and bronze coins. To

¹³ The first coins were made of electrum (a natural alloy of gold and silver extracted from the Pactolus River). However, electrum presented a problem since the combination of this natural alloy was unstable; some coins contained 55% gold while others contained only 31%. Advances in metallurgy (separation of gold and silver) allowed coins of pure gold and silver to be made. J-L. Bailly, Collectif, *Économie monétaire et financière*, Boréal, Montréal, Canada, 2006. [Online] http://books.google.ca/books?id=lpc110sla28C&pg=PT16&lpg=PT16&dq=roi+cresus+m%C3%A9tallurgie+monnaie&source=bl&ots=NUgMhIwchH2&sig=5HSxQhufSyGaFjsEQML-CNJHhpc&hl=fr&ei=1bJvTfSED4jrgQeRvt24AQ&sa=X&oi=book_result&ct=result&resnum=5&ved=0CDAQ6AEwBA#v=onepage&q&f=false (Viewed on October 25, 2010).

counter this, Constantine I imposed monometallism in the 4th century and put a new gold coin in circulation, the *solidus*. Despite the fall of the Western Roman Empire, this currency continued to be in circulation for close to a thousand years.

The first international currency appeared in Vienna. During her reign, Empress Maria Theresa had a gold thaler struck in her effigy. Maria Theresa's thaler (*Marie Theresien Thaler* or MTT) was used in all the American and African colonies. Its use by North American plantation owners as the first currency would make it the precursor of the American dollar.

d) Advent of Other Metallic Currencies in Europe

Several years later, when Great Britain became both an economic and military power, its currency was accepted all over Europe.

The currencies of various world powers were thus in turn, depending on the relative power of the issuing states, accepted by other countries: Greek, Roman and British, and now American.

e) Evolution of Currency in Canada

The first European settlers who came to Canada first used commodity money, such as beaver skins. The Aboriginal people who were the land's inhabitants before the arrival of the Europeans were also using commodity money, including shells that they would string up like pearls. Over time, as the new country was developed and the number of settlements grew, forms of money that had become more commonplace in Europe began to be used in the colony, including the currencies of some of the countries where the explorers came from (France, Great Britain, Spain and Portugal). France's currency was used to a greater extent where the country was more influential.

However, the French in Canada found themselves with a shortage of French coins, particularly owing to the fact that France required that payments from the colony be made in coins (gold and silver), which caused the colony's reserves to be depleted. Around 1685, owing to the depletion of the coin reserves, the French settlers invented card money for trading purposes. This was the first example of paper money in Canada.

Starting from 1729, card money continued to be used until the fall of New France. The English settlers then began to reject it; and when a currency is not widely accepted, it naturally loses a large part of its usefulness and, as a result, its value. Early on in the country's economic development, there was a lot of different types of money in circulation (flattened buttons were even used as money), which led to some confusion among the inhabitants, who no longer knew which form to accept. To standardize the situation, a law was passed in Lower Canada in the early 1800s that authorized banks to issue copper chips. It was hoped that there would be less confusion by issuing the new money; however, to do so, people had to trust the banking system since the coins only had the value that was agreed on and that the banking system guaranteed.

After the unsuccessful creation of the first bank, the Bank of Canada, in 1790, the Montreal Bank was created in 1817 and was well received. As new banks were created, the use of paper money increased: people were in fact getting used to the idea that a piece of paper could keep its value for what could be purchased with it rather than its intrinsic value, since they knew that the notes could be exchanged for gold or silver at the banks that had issued them.

f) From Metallic Currency to Fiat Money

Fiat money¹⁴ and deposit money¹⁵ appeared in the 19th century. In fact, with the creation of banks, the use of paper money became widespread, both in Canada and elsewhere, with banks issuing paper notes similar to those found today. There was considerable development from the first paper money issued by various banks and the notes found today, but for this study, we will merely mention that because of the present stability of the financial system, fiat money is now widely accepted. Over time, acceptance of fiat money led to the acceptance of cheques and, more generally, deposit money, which allows transactions to be made without the traditional exchange of a coin or note, a fiat money instrument that symbolizes the value of the transaction.

g) To Electronic Payments

Technological advances led to the advent of electronic payments around the 1970s, along with that of debit cards, which allowed consumers to directly access their bank accounts without the use of an intermediary in the form of cheques, coins or notes. The use of credit cards also became more widespread, which allow consumers to access a line of credit and introduce a third party in the payment system. In fact, the merchant is immediately paid by a third party that agrees to be paid at a later time by the consumer. Next, cyberwallets such as PayPal were introduced.

Over the last few years, the payment system has grown considerably and new forms of payment are attempting to capture market share from traditional methods of payment such as cash, cheques, debit cards and credit cards, while these traditional forms of payment are in turn developing new tools to enable or facilitate access to them.

1.3 Current Situation

In 2010, The Canadian Bankers Association (CBA) gathered some statistical data from various organizations (Financial Consumer Agency of Canada, Statistics Canada) aimed at drawing up an overview of the use of the main forms of payment in Canada.

Regarding the penetration rate of certain services:

96% of Canadians aged 18 and over have a savings, chequing or other account with a financial institution that they can use to write cheques, pay bills, or transfer money without having to handle cash.

94% of Canadians have a debit card to use at point-of-sale or at ABMs to make transactions.

¹⁴ Paper-based payment instrument issued by a central bank. Bank notes are fiat money, i.e. money accepted by economic agents based on the trust they have in the issuer. The term "paper money" is also used. *Grand dictionnaire terminologique*, Office québécois de la langue française, Québec, Canada, 2010. [Online] http://www.granddictionnaire.com/BTML/FRA/r_Motclef/index800_1.asp (Viewed on August 25, 2010).

¹⁵ Money created by banks for settlements between debtors and creditors through accounting entries. No medium is used for deposit money. This form of money corresponds to current credit accounts, demand accounts and cheques. *Grand dictionnaire terminologique*, Office québécois de la langue française, Québec, Canada, 2010. [Online] http://www.granddictionnaire.com/BTML/FRA/r_Motclef/index800_1.asp (Viewed on August 25, 2010).

*82% of Canadian households have at least one major credit card.*¹⁶

The above data show the large market share held by payment cards (credit and debit), which are the preferred forms of payment of Canadians.

A survey conducted in spring 2010 by Union des consommateurs among about 1,000 respondents tends to confirm the data. In addition to confirming the popularity of credit cards with consumers, our survey, which attempted to more precisely detail types of use, shows that credit cards are used more regularly than debit cards, except in grocery stores and, to a lesser extent, in drug stores. Our survey also showed that consumers now appear to widely favour electronic payments over cash payments.¹⁷

In 2009, a study conducted by the Bank of Canada, which mailed out 6,900 questionnaires to Canadians, revealed some data on the use of cash, credit cards, and debit cards. The relevant data taken from this survey are shown in Tables 1 and 2.

Table 1 compares payments by cash, debit card, and credit card in terms of transaction volume and value. While the volume of transactions paid with cash is higher, payments by credit card had the highest value, with cash being used to pay for smaller purchases. Table 2 shows the graph in the latter case: the higher the amounts involved, the more consumers tend to favour debit or credit cards over cash. Cheques are not part of the payments that were being studied, most likely because their use is on a steady decline: "In fact, Canadians are writing fewer cheques than ever before. According to the Canadian Payments Association, 86 per cent of transactions were paper-based in 1990, but by 2005 they accounted for only 23 per cent of transactions." ¹⁸ Admittedly, debit cards, within the limits imposed by card issuers that are available with this form of payment, and because the greater level of security that this instrument provides merchants compared to cheques, are an attractive alternative to this form of payment. Five years later, with a debit card penetration rate of 94%, with, in addition, the popularity of the Internet and electronic payments, the proportion of payments made by cheque will likely decrease even more. Payment by cheque, though steadily declining, is still used in Canada, while other countries are considering phasing this form of payment out:

*The British, for their part, will have to learn to live without cheques. Within 10 years, cheques will become a thing of the past, decided the Payments Council, an organization basically made up of banks. After October 2018, this form of payment will no longer be accepted.*¹⁹ [translation]

¹⁶ Canadian Bankers Association, *Submission to the Task Force for the Payments System Review*, Canada, September 15, 2010. [Online] http://www.cba.ca/en/component/content/publication/67-submission-reports-and-letters#y_2010 (Viewed on October 3, 2010).

¹⁷ Union des consommateurs, *Sondages sur les modes de paiement*, Montréal, Canada, March 15, 2010. [Online] <http://www.consommateur.qc.ca/union-des-consommateurs/?p=348> (Viewed on September 15, 2010).

¹⁸ Canadian Bankers Association, *Fraud Prevention Tip of the Month*, Canada, June 2007. [Online] http://www.cba.ca/tips/en/content/consumer/tips/June_EN_07.html (Viewed on October 5, 2010).

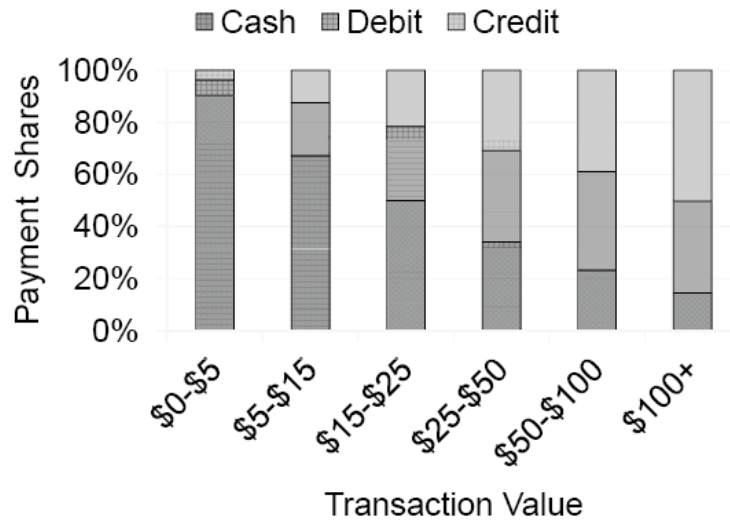
¹⁹ Ariane Krol, *Le chèque, cette espèce en voie d'extinction*, Cyberpresse, Québec, Canada, December 17, 2009. [Online] <http://blogues.cyberpresse.ca/edito/2009/12/17/le-cheque-cette-espece-en-voie-dextinction/> (Viewed on October 4, 2010).

TABLE 1
Use of forms of payment in terms of volume and value (2009)²⁰

Payment Shares

	From diaries	
	Volume	Value
Cash	54%	23%
Debit cards	24%	32%
Credit cards	21%	42%

TABLE 2
Use of various forms of payment based on purchase amount (2009)²¹

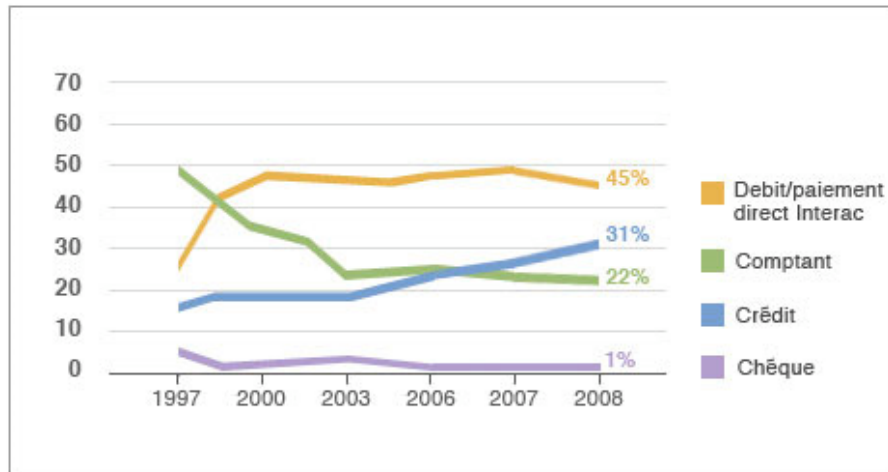


²⁰ Rene Pelegero, *Who is driving change in payments?*, Bank of Canada, Ottawa, Canada, June 17, 2010. [Online] http://www.cdnpay.ca/conference/pdf/english/driving_change.pdf (Viewed on August 30, 2010).

²¹ Rene Pelegero, *Who is driving change in payments?*, Bank of Canada, Ottawa, Canada, June 17, 2010. [Online] http://www.cdnpay.ca/conference/pdf/english/driving_change.pdf (Viewed on August 30, 2010).

Table 3 shows how the use of the various forms of payment by bank card holders has evolved since 1997. Although the rate of use of cash and bank cards has been quickly reversed, the proportion now seems to have relatively levelled off, with their combined use representing 67% of payments.

TABLE 3
Forms of payment favoured by bank card holders (1997-2008)²²



However, with regard to e-commerce, credit cards are considerably ahead of all other forms of payment:

The most common form of payment for online purchases is the credit card. This is the simplest and fastest way for consumers to transfer funds to your account.²³ [translation]

To summarize: use of payment cards is currently widespread; over 80% of households have a credit card; payment by cash is still used, especially for small-item purchases. However, cheques are in the process of being phased out.

This description of payment methods in Canada, though not wrong, is not quite accurate: in fact, it reflects a world that is fairly dated and that is closer (outside of debit cards) to the 1970s; a vast array of new forms of payment have in fact been introduced since then. Table 4 presents a comparison of the payment options used in the 1970s compared to those used today. Note that besides the above diversification in payments, there is also that of sales channels and types of accounts available to consumers.

²² Interac 2011 Statistics, Toronto, Canada, 2009. [Online] <http://www.interac.ca/media/stats.php> (Viewed on December 15, 2010).

²³ Microsoft Corporation, *Premiers pas dans le monde du commerce électronique*, 2011. [Online] <http://office.microsoft.com/fr-ch/frontpage-help/premiers-pas-dans-le-monde-du-commerce-electronique-HA001162224.aspx> (Viewed on March 15, 2011).

TABLE 4
Consumer payments options, 1970s vs. 2010s²⁴

Axis	1970s	2010s
Channels	POS	POS
	Branch	Branch
		Web
		Telebanking
		Mobile
Form factors	Cash	Cash
	Mag-stripe credit card	Chip credit/debit cards
	Paper cheque	Paper cheque
	Wire transfer	Wire transfer
		Fob
		Contactless
		Biometrics
	Electronic token	
Funding types	Deposit account	Pay before (pre-paid/eWallets)
		Pay now (chequing accounts)
		Pay later (credit, line of credit)

In summary:

Money initially consisted of metallic coins. It then changed to paper, then to deposit money. Banks have played a key role in the process. Money has now gone digital and many players that are not financial institutions and are not regulated in any way play a determining role in its circulation.²⁵ [translation]

Some payment instruments are thus being progressively replaced with more modern options. This is the case of the paper cheque. Is the coin of the realm destined to experience the same fate?

Chapter 2 will present traditional forms of payment, after which the new forms of payment and transaction systems will be presented in Chapter 3.

²⁴ Deloitte, *Charting a new course for the credit card industry*, Toronto, Canada, 2009, p. 11. [Online] http://www.deloitte.com/assets/Dcom-Canada/Local%20Content/Articles/Services/Consulting/ca_en_fsi_credit_card_pov_030810.pdf (Viewed on December 12, 2010).

²⁵ Jacques St-Amant, *Le cadre juridique des paiements électroniques au Canada: quand Fortune se fait virtuelle*, Option consommateur, Montréal, Canada, 2002. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_paiements_electroniques_fr_1102.pdf (Viewed on November 18, 2010).

CHAPTER 2: TRADITIONAL FORMS OF PAYMENT

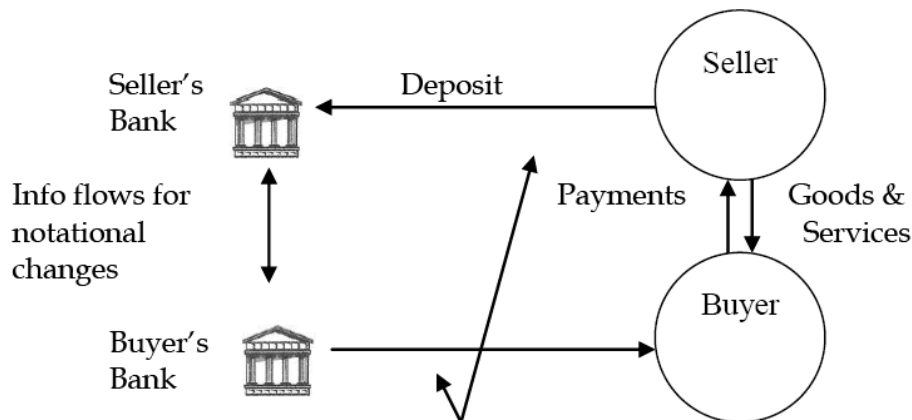
Today, what do we have? Credit cards, cash and cheques dominate our money technologies. We do not expect any of them to disappear. In the coming few years some combination of today's electronic payment instruments (card, chip, and PC based), cheques, and cash will continue to dominate, though perhaps in a different mix.

Financial Services Technology Consortium
Organisation for Economic Co-operation and Development –
 The Future Technology of Money (2002)²⁶

As seen in the previous chapter, there are basically four so-called traditional forms of payment: cash, cheques, debit cards, and credit cards. Before the advent of the Internet and of a certain number of other technologies, Canadians mainly used these forms of payment. Money orders, certified cheques, etc. are used to a lesser extent, and nothing indicates that these forms of payment will increase in popularity in the foreseeable future; they are not part of the forms of payment being covered in this chapter.

Table 5 shows how the conventional payment system works (cash and non-cash transactions). Simply put, when a payment in cash is made, the money is transferred directly from the consumer to the merchant when the payment is done in person. When a payment is made using one of the other traditional forms, the money is transferred between the financial institutions, which adjust the respective accounts of the consumers and merchants.

TABLE 5
Conventional/Traditional Payment System
(Cash and non-cash transactions)²⁷



²⁶ Zachary Tumin, *The Future Technology of Money*, Organisation for Economic Co-operation and Development, in *The Future of Money*, OECD, Paris, France, 2002. [Online] <http://www.oecd.org/dataoecd/57/48/35629031.pdf> (Viewed on December 12, 2010).

²⁷ Singh Sumanjeet, *Emergence of payment systems in the age of electronic commerce: the state of art*, Global Journal of International Business Research, Vol. 2, No. 2. Texas, U.S.A., 2009. [Online] <http://www.oppapers.com/essays/Electronic-Payment-Methods/578645> (Viewed on December 15, 2010).

This chapter briefly presents how each traditional payment method works, along with its respective benefits and drawbacks. The chapter concludes with a review of the legislative framework of the various methods of payment in order to draw up an overview of the situation before presenting, in a later chapter, the same elements for a sampling of new methods of payment.

2.1 Cash

a) Operating Principle

The way cash payments work is very simple: payment occurs immediately and directly between the consumer and merchant, through a hand-to-hand transfer of fiat money. The merchant receives a sum of money from the consumer (coins or notes), and this transfer of money constitutes payment for the good or service that the consumer wishes to purchase.

b) Benefits/Drawbacks

Benefits

For consumers – There are numerous benefits to paying with cash:

- Cash is generally accepted everywhere, during transactions in person or in vending machines;
- Cash payments are fast, simple and reliable;
- Cash payments are anonymous;²⁸
- Lastly, cash payments make it easier to stay within your budget, may prevent impulsive purchases, and limit money management and third-party error.

For merchants – When they receive a payment in cash, the money is immediately in their hands, which can be an advantage: there is no risk of payment recalls (charge-backs or stop payments) or insufficient funds. Cash payments are thus more secure.

Drawbacks

For consumers – The main drawback of paying by cash is that this form of payment can be relatively cumbersome and not very convenient when large payments are involved.²⁹ In addition, lost or stolen cash cannot be recovered. Lastly, from the outset, cash appears to limit the possibility of remote purchases, although some merchants allow customers to pay at delivery.

For merchants – Cash would involve certain drawbacks which, according to some, merchants do not appear to take into account.

²⁸ Rene Pelegero, *Who is driving change in payments?*, Bank of Canada, Ottawa, Canada, June 17, 2010. [Online] http://www.cdnpay.ca/conference/pdf/english/driving_change.pdf (Viewed on August 30, 2010).

²⁹ Rene Pelegero, *Who is driving change in payments?*, Bank of Canada, Ottawa, Canada, June 17, 2010. [Online] http://www.cdnpay.ca/conference/pdf/english/driving_change.pdf (Viewed on August 30, 2010).

Most merchants perceive cash as the least costly form of payment and, in comparison, find debit cards only moderately costly and credit cards the most costly.³⁰

The Bank of Canada is suggesting, however, that merchants who consider cash as a low-cost form of payment may be neglecting to consider certain costs that they incur as a result of accepting cash payments. In fact, handling cash exposes merchants to the risk of theft or loss as a result of counterfeiting or human error.

In this respect:

Security measures (e.g., surveillance cameras and security guards), secure storage (vaults and cash registers), and investment in counterfeit-detection training are necessary fixed costs associated with cash.³¹

The Bank of Canada also mentions that cash is the most labour-intensive form of payment: the cash must be counted, deposits made to the financial institution, etc. Financial institutions also charge fees for cash deposits. Lastly, if merchants do not deposit the cash immediately, they lose the interest that may be earned during the time when the money is not deposited.³²

2.2 Cheques

a) Operating Principle

In practice, paying for purchases by cheque is a fairly simple process for consumers; they only need to fill out a cheque by indicating the amount to be paid, the person to whom the cheque is being made out and the date of the payment, then sign the cheque and give it to the merchant.

Payment by cheque is still more complicated than paying by cash. Before being able to make a payment by cheque, a consumer must naturally first open a bank account (chequing account) with a financial institution, which will issue a book of cheques to the account holder³³ and agrees to comply with the consumer's payment orders. The consumer will then need to have the required amounts or sufficient credit to cover the payment order that is in the form of a cheque.

When paying by cheque, a third party, the payer's bank, is involved. Payment is not immediate but rather results from an order given by the payer to his bank to pay the payee the amount indicated on the cheque.

³⁰ Carlos Arango and Varya Taylor, "Merchants' Costs of Accepting Means of Payment: Is Cash the Least Costly?" *Bank of Canada Review*, Winter 2008–2009, Ottawa, Canada. [Online] http://www.bankofcanada.ca/wp-content/uploads/2010/06/arango_taylor.pdf (Viewed on October 1, 2010).

³¹ Carlos Arango and Varya Taylor, "Merchants' Costs of Accepting Means of Payment: Is Cash the Least Costly?" *Bank of Canada Review*, Winter 2008–2009, Ottawa, Canada. [Online] http://www.bankofcanada.ca/wp-content/uploads/2010/06/arango_taylor.pdf (Viewed on October 1, 2010).

³² Carlos Arango and Varya Taylor, "Merchants' Costs of Accepting Means of Payment: Is Cash the Least Costly?" *Bank of Canada Review*, Winter 2008–2009, Ottawa, Canada. [Online] http://www.bankofcanada.ca/wp-content/uploads/2010/06/arango_taylor.pdf (Viewed on October 1, 2010).

³³ Karen A. Horcher, *The Business of Payments – Part 2*, CGA, Canada. [Online] http://www.cga-pdnet.org/Non_VerifiableProducts/ArticlePublication/BusinessPayments/BusinessPayments_p2.pdf (Viewed on October 5, 2010).

*This is a pure and simple order. A cheque is not a credit instrument; it is payable at sight.*³⁴

A cheque, which states the payer's name and the address of his financial institution along with the name of the payee and the amount the payer is ordering his bank to pay the latter, is given to the payee who, after endorsing it, may ask the payer's or his own financial institution to disburse the amount indicated on the cheque.

In Canada, the automated clearing system that allows obligations to be settled between those part of the system was set up in 1984. Clearing members have settlement accounts with the Bank of Canada and they exchange directly through the Automated Clearing and Settlement System (ACSS). A financial institution with a volume of payment instruments that corresponds to at least 0.5% of the total national volume of payment instruments settled through the ACSS can become a clearing member. Those who do not meet this requirement are considered indirect clearers and use the services of a clearing member for their transactions. The value of the cheques is transferred between the payer's institution and that of the payee through the ACSS.

Ultimately, when a payment by cheque is made, the transfer of the value is done by debiting the clearing member's settlement account.

b) Benefits/Drawbacks

Benefits

Cheques have the following benefit for both consumers and merchants:

- Ease of use;

For budget-conscious consumers, cheques provide an advantage similar to that of cash: provided the chequing account is not linked to a line of credit, cheques can only be used for the money already available in the account, which allows consumers to manage their money.³⁵

Drawbacks

One of the drawbacks for consumers of paying by cheque is that this form of payment is not universally accepted, which does not make it very convenient. In fact, whereas a cash payment cannot theoretically be refused, merchants are free to accept or refuse a cheque.

For example, nearly one in three retailers do not accept cheques even though virtually every adult Canadian has a chequing account. There is no question that accepting cheques carries a greater level of risk for the retailer because of NSF cheques and

³⁴ Jean-Claude Patin, *Chronique juridique Le chèque*, Juritel, France. [Online] http://www.juritel.com/Liste_des_chroniques-87.html (Viewed on October 5, 2010).

³⁵ Karen A. Horcher, *The Business of Payments – Part 2*, CGA, Canada. [Online] http://www.cga-pdnet.org/Non_VerifiableProducts/ArticlePublication/BusinessPayments/BusinessPayments_p2.pdf (Viewed on October 5, 2010).

*fraud. The decision is up to the business owner based on the value they receive from each form of payment, including credit cards.*³⁶

Another drawback for consumers is the cost related to cheques. Before being able to use a cheque, consumers must have a chequing account and obtain a book of cheques, which are relatively costly. Also, if a consumer wishes to write a cheque and there are insufficient funds in the account, the fees charged by his financial institution could be high.

Another drawback of paying by cheque for both consumers and merchants: the risk of fraud. In fact, there are a number of different types of cheque fraud:

- The person who signed the cheque may intentionally write an NSF cheque;
- A lost or stolen cheque book could fraudulently be used to issue unauthorized payment orders;
- Someone could, prior to endorsing the cheque, modify the amount entered by the payer on the cheque;
- The name of the payee on the cheque could also be changed by someone wishing to cash a cheque not made out to him or her;
- A cheque could be counterfeit.³⁷

There is an additional drawback for merchants of having to handle cheques, the risk of loss in the event of NSF cheques, and the lack of versatility of cheques (which must be kept in the cash register and cannot, contrary to cash, be given to another consumer paying for a good or service with a higher denomination note than that of the amount owed, or be used to pay for supplies³⁸).

The benefits and drawbacks of certified cheques are considerably different. The risks for consumers in the event of theft or loss are much greater. The risks related to acceptance of certified cheques are, as concerns the merchant, reduced to nil. They can be relatively costly for consumers and are only used for special situations. As special rules apply to certified cheques and their use remains limited, we will not be covering these specific cheques for this study.

2.3 Debit Card

a) Operating Principle

Debit cards, called “client cards” by financial institutions (and often ATM cards by users) are payment cards linked to the bank account held by the cardholder at a financial institution.

In practice, a consumer wishing to pay for a purchase with a debit card simply needs to present the card to the merchant, who will enter the amount of the purchase in the terminal. The consumer then confirms the amount and enters his Personal Identification Number (PIN) on the

³⁶ Canadian Bankers Association, *Canada's Credit and Debit Card Marketplace*, Toronto, Canada, May 28, 2009. [Online] http://www.canadian-banker.com/contents/files/submissions/sub_20090528_creditcards_en.pdf (Viewed on November 5, 2010).

³⁷ The RCMP issued a warning regarding counterfeit cheques. RCMP, *A warning regarding counterfeit cheques*, Ottawa, Canada, February 25, 2011. [Online] <http://bc.rcmp.ca/ViewPage.action?siteNodId=87&languageId=4&contentId=1080> (Viewed on March 25, 2011).

³⁸ Not because the cheque is not transferrable, but simply because the consumer or supplier would usually not accept this form of payment.

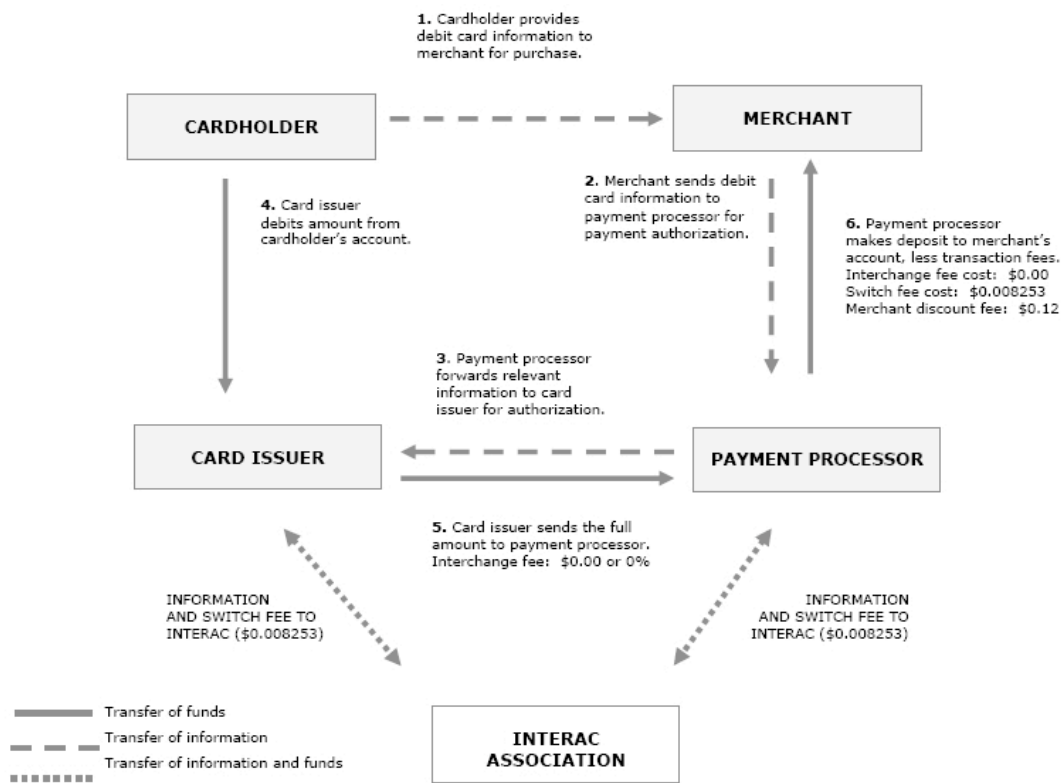
terminal keypad. The transaction is then validated, with the PIN taking the place of a signature or authentication authorizing the transaction with the issuing financial institution.

Contrary to cheques, debit card payments are not a payment order made to a financial institution but rather direct access to the user's account, which is debited in the agreed-upon amount on behalf of the merchant.

Beyond these seemingly simple steps, there are more complex operations involved in debit card transactions. The four-party debit card model, shown below, illustrates the process.

TABLE 6

The Four-Party Debit Card Model³⁹



As shown in the table, the four parties in the transaction are 1) the cardholder (consumer), 2) the merchant, 3) the card issuer and 4) the payment processor (who may be the merchant's financial institution if it provides debit and credit card terminals to the merchants (such as Groupe Desjardins or TD Merchant Services) or any other company that provides this type of service).

Contrary to what one may think, it is not the consumer who, by using his card, directly transfers the funds to the merchant, but rather the payment processor handling the transaction who

³⁹ John Bulmer, *Payment Systems: The Debit Card Market in Canada*, International Affairs, Trade and Finance Division, Ottawa, Canada, September 24, 2009. Diagram adapted from Pacheco and Sullivan (2006). [Online] <http://www.parl.gc.ca/Content/LOP/researchpublications/prb0909-e.htm> (Viewed on November 15, 2010).

forwards to the card issuer, based on the data transmitted to him by the merchant, the order to debit the cardholder's account.

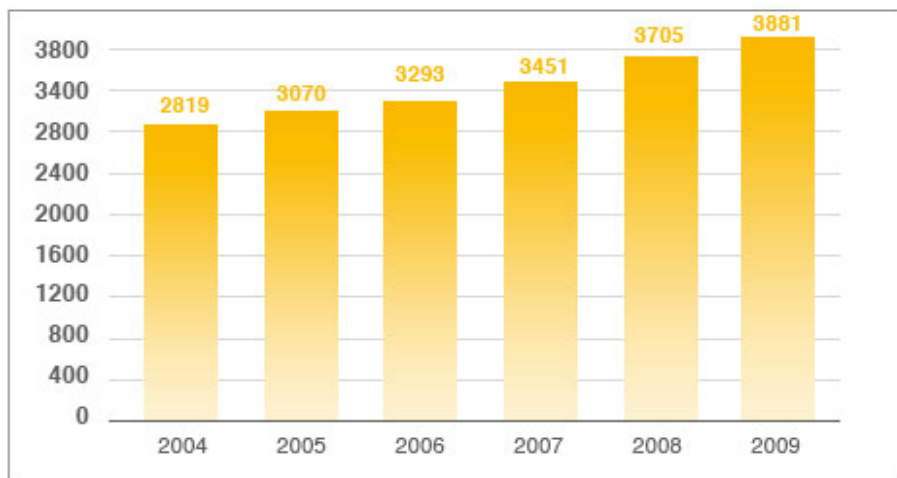
As seen in Table 6, there is in fact a fifth party, the association that manages and oversees the payment system that is in charge of processing transactions: the *Interac* association.

The payment system that enables consumers to make debit card payments is operated by *Interac*, a non-profit organization created in 1984 which establishes the nation-wide network required for such payments to be made.

Consumers using this form of payment must present their cards to the merchant, who then forwards the transaction data to the payment processor through the payment terminal. Payments made through the *Interac* system can only be accepted by the merchant if the latter has the required terminal capable of reading and identifying the card and of forwarding to the payment processor the information required for the transaction to be done. Through the *Interac* Association network, the payment processor forwards the information on the transaction to the issuer to authorize the transaction. Once the payment has been authorized, the merchant charges the purchase amount to the consumer's bank account and supplies the goods or services to the consumer. The issuer debits the consumer's account and transfers the debited funds to the payment processor, who forwards the payment to the merchant.

Since 2004, the number of debit card payments, or *Interac* debit transactions, has been on the rise, as shown in the following table.

TABLE 7
Total *Interac* Debit Transactions (in millions)⁴⁰



Canada has the highest debit card use after Sweden.⁴¹

⁴⁰ *Interac* 2009 Statistics. Toronto, Canada, 2009. [Online] <http://www.interac.ca/media/stats.php> (Viewed on November 12, 2010).

⁴¹ Standing Senate Committee on Banking, Trade and Commerce, *Transparency, Balance and Choice: Canada's Credit Card and Debit Card Systems*, Report of the Standing Senate Committee on Banking, Trade and Commerce, Ottawa, Canada, June 2009. [Online] <http://www.parl.gc.ca/Content/SEN/Committee/402/bank/rep/rep04Jun09-e.pdf> (Viewed on October 12, 2010).

b) Benefits/Drawbacks

Benefits

For consumers – Debit cards are convenient. Like cheques, with debit cards consumers do not have to carry cash (or large amounts of cash) on them, as the instrument issued by the financial institution allows the payee direct access to the amounts available in or from the cardholder's account.

With debit cards, consumers can only use the amounts available in their transaction account (provided, of course, the account is not linked to a line of credit that would allow the account holder to spend amounts that exceed the balance in the account); this has the benefit, if not of countering debt, at least not encouraging it.

Debit card payments are generally fast and simple. They are basically low in cost, although some merchants charge a fee for using them. Financial institutions also have the regrettable habit of charging fees for debit card transactions; to avoid (or limit) such costs, consumers have to choose a banking package, for which the financial institution may also charge a fee.

For merchants – Despite the fees that merchants must pay the payment processor for each payment made by debit card, such cards allow merchants to run their business much more efficiently since processing debit card payments is less labour-intensive than processing payments by cash or cheque.

Some authors go so far as to add that debit card payments may even contribute to reducing the costs related to managing cash if customers choose to make a cash withdrawal at the time of the payment.

However, the main benefit for merchants of consumers' use of debit cards (and other forms of electronic payments) probably resides in the fact that, by having direct access to their bank accounts, consumers are likely to purchase items that they would not otherwise have bought or to spend more than they had intended.⁴²

For merchants, the range of payment options currently available including debit and credit cards and other electronic payment tools have meant increased business. The more payment options consumers have, the more likely they are to make purchases. As noted earlier, research suggests that over the last two decades, \$60 billion of the increase in personal consumption expenditures was directly attributable to electronic payments both from credit cards (\$49.4 billion) and debit cards (\$10.4 billion) because of the transactional efficiencies they create.⁴³

The possibility that consumers may lose track of their budget is thus a benefit for merchants, while being a drawback for consumers.

⁴² Carlos Arango and Varya Taylor, "Merchants' Costs of Accepting Means of Payment: Is Cash the Least Costly?" *Bank of Canada Review*, Winter 2008–2009, Ottawa, Canada. [Online] http://www.bankofcanada.ca/wp-content/uploads/2010/06/arango_taylor.pdf (Viewed on October 1, 2010).

⁴³ Canadian Bankers Association, Submission to the Task Force for the Payments System Review, Ottawa, Canada, September 15, 2010. [Online] http://www.cba.ca/contents/files/submissions/sub_20100915_payments_en.pdf (Viewed on January 8, 2011).

Drawbacks

For consumers – Though it represents a practical and relatively low-cost form of payment for consumers, debit card payment, as we have seen, is not free: some merchants charge a fee for debit card purchases. Financial institutions will also charge fees to clients who do not have a banking package or who have exceeded the number of allowed transactions.

Though the fact of being forced to pay for a banking package is in itself a drawback, major debit card users will not find basic banking packages (the least costly) sufficient which only include a limited number of monthly transactions. Such consumers will therefore need to pay more to obtain a package that meets their needs and to have access to their money whenever they wish.

As widespread as debit card payment has become, this form of payment is still not universal: some merchants will refuse it outright (rather than accept payment by debit card, some will go so far as to provide a private ATM machine strategically located in their retail establishment, with high fees for each withdrawal⁴⁴), while others will only accept payment by debit card for transactions over a certain amount.

Consumers using such a payment instrument are not immune to fraud. For instance, debit cards can be cloned and the PIN fraudulently obtained (through a camera or “skimming” system)⁴⁵ in order to clean out the account. The same situation can occur if the debit card is lost and the PIN is uncovered; as we shall see further on,⁴⁶ consumers are protected against some risks, but they may still in certain circumstances have to assume the losses if the financial institution determines that the PIN was too easy to guess or the cardholder had written down.

For merchants – Merchants who accept payment by debit card (with the exception of a few large department stores with their own system) must use a payment processor, i.e. a financial institution or other third party that sells or leases terminals (credit and debit cards) to merchants and transfers the information and funds between the merchant and the issuer of the payment instrument. The merchant must therefore pay for the leasing, maintenance and upgrade of the systems as well as for using the communication lines that link the terminals to the card payment networks.⁴⁷ In addition to these fixed costs, there are the fees that merchants must pay for each payment made by debit card. These fees are in fact relatively low:

*We find that debit cards are the least costly payment method for a broad cross-section of merchants because of the relatively low debit card fees per transaction.*⁴⁸

⁴⁴ Financial Consumer Agency of Canada, *Banking: ABM Fees*, Ottawa, Canada, August 19, 2010. [Online] <http://www.fcac-acfc.gc.ca/eng/consumers/banking/persacco/debitcardfees-eng.asp> (Viewed on October 15, 2010).

⁴⁵ Industry Canada and Interac report certain methods currently used to steal or copy a card and obtain the card PIN and how consumers can protect themselves. Industry Canada, *Debit Card Fraud*, Ottawa, Canada, November 16, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca01832.html>; Interac, Security – Fraud Prevention. [Online] http://www.interac.ca/consumers/security_fraud.php

⁴⁶ The legislative framework section at the end of this chapter will show in greater detail how consumers are protected against fraud and situations where such protection may not apply.

⁴⁷ Carlos Arango and Varya Taylor, “Merchants’ Costs of Accepting Means of Payment: Is Cash the Least Costly?” *Bank of Canada Review*, Winter 2008–2009, Ottawa, Canada. [Online] http://www.bankofcanada.ca/wp-content/uploads/2010/06/arango_taylor.pdf (Viewed on October 1, 2010).

⁴⁸ Carlos Arango and Varya Taylor, “Merchants’ Costs of Accepting Means of Payment: Is Cash the Least Costly?” *Bank of Canada Review*, Winter 2008–2009, Ottawa, Canada. [Online] http://www.bankofcanada.ca/wp-content/uploads/2010/06/arango_taylor.pdf (Viewed on October 1, 2010).

2.4 Credit Cards

a) Operating Principle

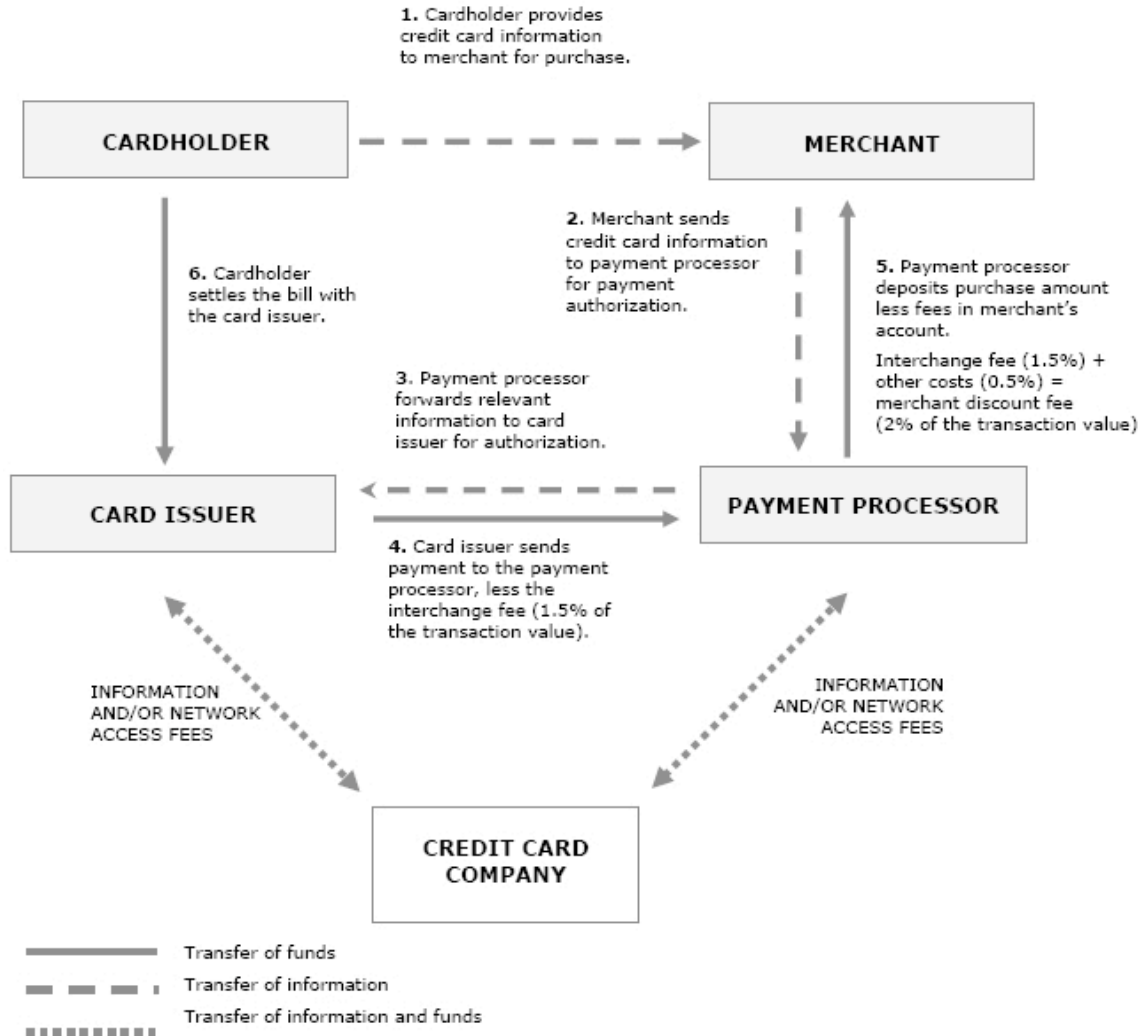
In practice, the process of paying by credit card is virtually the same for consumers as for debit cards: consumers hand over their card to the merchant, who has first entered the amount of the transaction in the cash register connected to the payment terminal. The credit card is then swiped through the payment terminal and the consumer need only confirm the amount and authenticate the transaction by signing or by entering a PIN, depending on the card⁴⁹ and the type of terminal that the merchant is using, for the payment to go through.

Rather than coming directly from the consumer's transaction account, the funds to be used for the payment are advanced to the consumer by the card issuer. The consumer thus has a certain period of time to make the payment, and will only be required to pay for the purchases made during the current month once he has received the statement. At that time, if the consumer does not pay the balance in full, interest will be added to the credited amounts.

Beyond these seemingly simple steps, once again there are more complex operations involved in credit card transactions. As with debit card transactions, credit card transactions operate on the basis of a four-party credit model, as shown in Table 8.

⁴⁹ All recently issued credit cards in Canada now come with a chip, for both new and replacement cards. The chip is found in addition to the magnetic stripe.

TABLE 8
The Four-Party Credit Card Model⁵⁰



In the same way as for debit cards, and as presented in the table above, the four parties to the transaction are 1) the cardholder (consumer), 2) the merchant, 3) the card issuer and 4) the payment processor.

Contrary to what one may think, it is not the consumer who, by using his card, directly transfers funds to the merchant, but rather the payment processor processing the transaction who forwards the order to debit the cardholder's account based on the data received from the merchant. The issuer then sends the payment (less the fees) to the payment processor, who forwards the payment (less the fees) to the merchant.

⁵⁰ John Bulmer, *Payment Systems: The Credit Card Market in Canada*, International Affairs, Trade and Finance Division, Ottawa, Canada, September 24, 2009. [Online] <http://www.parl.gc.ca/Content/LOP/researchpublications/prb0909-e.htm> (Viewed on August 25, 2010). The fee amounts are provided solely for illustrative purposes.

As shown in Table 8, a fifth party is required: the network operator (in this case the credit card company). This party is not directly involved in the transaction but rather oversees the payment system that handles the transactions in which the other parties (cardholder, merchant, issuer and payment processor) are involved.

b) Benefits/Drawbacks

Benefits

For consumers – According to the Canadian Bankers Association (CBA), credit cards benefit consumers in a number of ways. The CBA lists three main benefits for consumers who use a credit card as a form of payment:

- An interest-free grace period between the time of the purchase and the date when the payment is to be made to the issuer, provided the balance is paid in full;
- A wide range of credit cards at a variable cost and rate of interest, that may or may not include insurance programs, a loyalty program, etc. likely to provide the cardholder with collateral benefits each time the card is used to pay for purchases;
- The possibility of using the credit card all over the world in numerous establishments (30 million locations worldwide) makes it a practical means of payment.⁵¹

In addition to the above benefits noted by the CBA, the Financial Consumer Agency of Canada adds that:

- Credit cards are an easy and practical way to pay for goods or services in person, over the phone or online;
- Credit cards are safer than cash, for instance, since they protect consumers against fraud through the Zero Liability protection policy;
- Lastly, credit cards allow consumers to obtain a good credit rating if they make their payments on time.⁵²

For merchants – The main benefits of accepting credit cards as a form of payment are roughly the same as the benefits provided by accepting debit cards. Credit card transactions are more efficient since they are less labour-intensive than cash transactions. Also, consumers, by having direct access to a line of credit, are likely to make purchases they may not otherwise make.

Drawbacks

For consumers – The main drawback to using credit cards is the associated costs. Merchants are charged higher fees for credit card transactions than for debit card transactions (discount fee = interchange fee + other fees⁵³). In fact:

⁵¹ Remarks by Nancy Hughes Anthony, Canadian Bankers Association, to the Senate Committee on Banking, Trade and Commerce, *Payment Cards in Canada: Choice and Competition for Consumers and Businesses*, Ottawa, Canada, April 1, 2009. [Online] http://www.cba.ca/contents/files/presentations/pre_20090401_nha_01_en.pdf (Viewed on October 4, 2010).

⁵² Financial Consumer Agency of Canada, *En ce temps des Fêtes, connaissez-vous bien votre carte de crédit?*, Protégez-vous, Québec, Canada, December 2009. [Online] <http://www.protegez-vous.ca/acfc/temps-des-fetes-connaissiez-vous-bien-votre-carte-avantages-et-inconvenients-dune-carte-de-credit.html> (Viewed on October 15, 2010).

⁵³ The discount fee is the portion of the credit card purchase that is retained by the payment processor from the merchant to finance its costs, including the interchange fee. The interchange fee is the portion of the credit card transaction retained by the card issuer when it pays the payment processor. It is set by the credit card company under

According to a 2006 Bank of Canada survey of 500 merchants, credit cards are, overall, the most expensive method of payment in Canada. In the fiscal year ending 31 October 2006, the median merchant discount fee on credit card transactions for the survey sample was 2% of the transaction value. In that year, about \$214.7 billion in purchases were made with Visa and MasterCard credit cards. Using these figures, and making certain assumptions, the total estimated merchant cost for all Visa and MasterCard credit card transactions in the fiscal year ending 31 October 2006 can be estimated at about \$4.3 billion, a large proportion of this amount being transferred to card issuers through the interchange fee. As a basis for comparison, and again subject to certain assumptions, the merchant cost of debit card point-of-sale transactions can be estimated at \$395 million in 2006.⁵⁴

As a result of the restrictions contractually imposed on merchants by credit card issuers, these fees are not directly and explicitly passed on to credit card users, but they increase merchants' operating costs. This is an even greater issue today owing to the use of "prestige" cards which are being offered to an ever-growing number of consumers and for which merchants are charged even higher interchange fees than the average credit card. Thus, all consumers, regardless of the form of payment, must assume the costs resulting from the use of credit cards and that of the privileges granted solely to prestige credit card users.

According to the U.S. Federal Reserve, each household that pays in cash pays an average of \$151 a year for these charges generated by credit card users and that often serve to provide them with direct benefits.⁵⁵

The other costs that credit card users must assume naturally include interest charges. Although no interest is charged to consumers who pay their credit card balance in full each month, consumers who only pay part of the balance are charged about 18% interest for MasterCard and Visa cards and about 28% interest for department store cards. Reduced rates of interest are available for an annual fee.

Lastly, in the same way as with debit cards, consumers who pay for purchases with a credit card may lose track of their spending; this is even more the case with credit cards since consumers may be spending money they do not have. Furthermore, this access to a line of credit also increases the risk of debt.

For merchants – In addition to the high costs associated with accepting credit cards by merchants, the low payment finality of this form of payment is another sizeable drawback.

Compared with cash and debit cards, credit cards offer the least payment finality because of the consumer's deferred payment advantage and limited liability against fraud. Though merchants receive funds within one to two business days, consumers

the four-party credit card model. Based on John Bulmer, *Payment Systems: The Credit Card Market in Canada*, International Affairs, Trade and Finance Division, Ottawa, Canada, September 24, 2009. [Online]

<http://www.parl.gc.ca/Content/LOP/researchpublications/prb0909-e.htm> (Viewed on August 25, 2010).

⁵⁴ John Bulmer, *Payment Systems: The Credit Card Market in Canada*, International Affairs, Trade and Finance Division, Ottawa, Canada, September 24, 2009. [Online]

<http://www.parl.gc.ca/Content/LOP/researchpublications/prb0909-e.htm> (Viewed on August 25, 2010).

⁵⁵ Reuters, *Les cartes de crédit renforcent les inégalités*, Radio-Canada, Québec, Canada, July 26, 2010. [Online] <http://www.radio-canada.ca/nouvelles/Economie/2010/07/26/014-frais-cartes-inegalite.shtml> (Viewed on October 8, 2010).

have a certain number of days to dispute a credit card transaction, whether because of an unresolved dispute with the merchant or because of a fraudulent claim (i.e., the card was used without the cardholder's consent). In these cases, the transaction will be reversed through a chargeback, the value of which is deducted from the merchant's account by the acquirer while the dispute is under review. Merchants have a limited number of days to provide information in their defence (i.e., to prove that they followed proper procedures). These chargebacks can be costly to merchants, who are charged for the process and risk losing the transaction funds.⁵⁶

2.5 Legislative Framework

In Canada, legislative power is shared by both governments under the Constitution Act, 1867.⁵⁷ Under Section 91 of the Constitution Act, the federal government is authorized to draw up legislation on matters related to currency, coinage, banks and the issue of paper money. Under Section 92 of the same act, the provinces and territories can establish legislation on matters related to property. These jurisdictions overlap on issues involving payment, since payment constitutes, under a synallagmatic (or bilateral⁵⁸) contract, compensation for the goods or services being delivered by the merchant. The payment of the sum of money, through a form of currency or other form, and regardless of the form of payment used, will result, in the event of a sale, such as the transfer of property, from the merchant to the buyer, of the goods involved and of the amounts paid by the buyer to the merchant. Hence, certain aspects of forms of payment may be regulated by either level of government, by both levels of government, or by codes of conduct established by third-party organizations.

a) Cash

Cash is regulated by federal legislation under the **Currency Act**⁵⁹ which states, in Section 3, that the monetary unit of Canada is the dollar. Section 7 of the Act defines current coins while Section 8 covers legal tender. The above three sections read as follows:

“3. (1) The monetary unit of Canada is the dollar.

(2) The denominations of money in the currency of Canada are dollars and cents, the cent being one hundredth of a dollar.

[...]

7. (1) A coin is current for the amount of its denomination in the currency of Canada if it was issued under the authority of:

a) the Royal Canadian Mint Act; or

⁵⁶ Carlos Arango and Varya Taylor, “Merchants’ Costs of Accepting Means of Payment: Is Cash the Least Costly?” *Bank of Canada Review*, Winter 2008–2009, Ottawa, Canada. [Online] http://www.bankofcanada.ca/wp-content/uploads/2010/06/arango_taylor.pdf (Viewed on October 1, 2010).

⁵⁷ Department of Justice Canada, Constitution Act, 1867, Ottawa, Canada, 2010. [Online] <http://lois.justice.gc.ca/eng/const/page-1.html> (Viewed on October 10, 2010).

⁵⁸ Civil Code of Québec. Article 1380. A contract is synallagmatic, or bilateral, when the parties obligate themselves reciprocally, each to the other, so that the obligation of one party is correlative to the obligation of the other.

⁵⁹ Department of Justice Canada, Currency Act, R.S.C., 1985, c. C-52, Ottawa, Canada, 2010. [Online] <http://www.canlii.org/en/ca/laws/stat/rsc-1985-c-c-52/latest/rsc-1985-c-c-52.html> (Viewed on October 15, 2010).

b) the Crown in any province of Canada before it became part of Canada and if the coin was, immediately before October 15, 1952, current and legal tender in Canada.

[...]

8. (1) *Subject to this section, a tender of payment of money is a legal tender if it is made:*

- a) in coins that are current under section 7; and*
- b) in notes issued by the Bank of Canada pursuant to the Bank of Canada Act intended for circulation in Canada. [...]"⁶⁰*

As can be noted, the money covered by the Currency Act only pertains to fiat money. Deposit money is not covered by this act, including methods of electronic payment (e.g. cyberwallet), credit cards or debit cards.

Note that this federal act includes certain rules that pertain to civil law and contracts that are under provincial jurisdiction:

Contracts and Sales

13. (1) *Every contract, sale, payment, bill, note, instrument and security for money and every transaction, dealing, matter and thing relating to money or involving the payment of or the liability to pay money shall be made, executed, entered into, done or carried out in the currency of Canada, unless it is made, executed, entered into, done or carried out in:*

- a) the currency of a country other than Canada; or*
- b) a unit of account that is defined in terms of the currencies of two or more countries.*

Section 25 of the **Bank of Canada Act**⁶¹ stipulates the exclusive rights of the Bank of Canada on issuing notes of legal tender, under Section 8 of the Currency Act:

25. (1) *The Bank has the sole right to issue notes and those notes shall be a first charge on the assets of the Bank.*

Arrangements for issue

(2) *It is the duty of the Bank to make adequate arrangements for the issue of its notes in Canada and to supply those notes as required for circulation in Canada.*

Denominations

(3) *Notes of the Bank shall be in such denominations and shall be printed and signed or otherwise executed as the Governor in Council by regulation determines.*

Form and material

(4) *The form and material of the notes of the Bank shall be subject to approval by the Minister, but each note shall be printed in both the English and French languages.*

⁶⁰ Department of Justice Canada, Currency Act, R.S.C., 1985, c. C-52, Ottawa, Canada, 2010. [Online] <http://www.canlii.org/en/ca/laws/stat/rsc-1985-c-c-52/latest/rsc-1985-c-c-52.html> (Viewed on October 15, 2010).

⁶¹ Department of Justice Canada, Bank of Canada Act, R.S.C., 1985, c. B-2 [Online] <http://laws-lois.justice.gc.ca/eng/acts/B-2/> (Viewed on October 15, 2010).

Notes previously printed

(5) *Notwithstanding anything contained in this section, each note of the Bank printed before June 23, 1936, whether issued before, on or after that date, is a valid and binding obligation of the Bank.*

Distinction

(6) *Notes of the Bank are neither promissory notes nor bills of exchange within the meaning of the Bills of Exchange Act.*⁶²

In short,

*The previously cited provisions from the Currency Act and the Bank of Canada Act are nonetheless the obvious reflection of this evolution: this metal fiat money is given legal tender and these coins and the notes issued by an entity with State monopoly are given legal tender for their face value. Under such a regime, money has two essential attributes: the conveyance of the monetary object carries out a transfer of value that is both immediate and virtually indisputable. There is no need to check the debtor's right to the property or its capacity to provide it as payment, or to investigate its value. This is a virtually perfect form of payment, apart from its materiality.*⁶³ [translation]

Payment itself falls under civil law since it consists of the manner of settling an obligation, with payment also meaning here both the payment of a sum of money as well as the execution of the purpose of the obligation (such as providing the good or service). With regard to the payment of sums of money, civil law stipulates that the payment of the nominal amount in currency that has legal tender constitutes discharge. This is what appears, for instance, from Article 1564 of the Civil Code of Québec, which also stipulates, however, that other forms of payment have equal legal tender, subject, in some cases, to their acceptance by a creditor.

1564. Where the debt consists of a sum of money, the debtor is released by paying the nominal amount due in money which is legal tender at the time of payment.

*He is also released by remitting the amount due by money order, by cheque made to the order of the creditor and certified by a financial institution carrying on business in Québec, or by any other instrument of payment offering the same guarantees to the creditor, or, if the creditor is in a position to accept it, by means of a credit card or a transfer of funds to an account of the creditor in a financial institution.*⁶⁴

b) Cheques

Cheques, for their part, are regulated by the **Bills of Exchange Act**⁶⁵ (BEA), which mainly regulates notes and bills of exchange. A promissory note is an unconditional promise in writing

⁶² Department of Justice Canada, Bank of Canada Act, R.S.C., 1985, c. B-2, Ottawa, Canada, 2010. [Online] <http://laws-lois.justice.gc.ca/eng/acts/B-2/> (Viewed on October 15, 2010).

⁶³ Jacques St-Amant, *Le cadre juridique des paiements électroniques*, Option consommateurs, Montréal, Canada, November 2002. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_paiements_electroniques_fr_1102.pdf (Viewed on November 14, 2010).

⁶⁴ Government of Quebec, Civil Code of Québec, S.Q., 1991, c. 64., 2010. [Online] <http://www.canlii.org/en/qc/laws/stat/lrq-c-c-1991/> (Viewed on November 15, 2010).

⁶⁵ Department of Justice Canada, Bills of Exchange Act, R.S.C. 1985, c. B-4., Ottawa, Canada, 2010. [Online] <http://www.canlii.org/en/ca/laws/stat/rsc-1985-c-b-4/latest/rsc-1985-c-b-4.html> (Viewed on October 15, 2010).

signed by the maker engaging to pay a sum certain in money to a specified person. Under the Act, a document only becomes a promissory note when it is endorsed by the maker. A bill of exchange is a written document signed by a person authorizing another to pay a specific sum of money on a given date to a third person or to a bearer.⁶⁶ According to the Bills of Exchange Act, cheques are a special type of bill of exchange:

165. (1) *A cheque is a bill drawn on a bank, payable on demand.*

*(2) Except as otherwise provided in this Part, the provisions of this Act applicable to a bill payable on demand apply to a cheque.*⁶⁷

The basic rules related to cheques were clearly summarized by Jacques St-Amant in a study on the legal framework of electronic payments:

First, it is a written order that bears the signature of the drawer, as indicated in Section 16 of the BEA. Theoretically, the written order that does not conform to the requirements of paragraph 16 (1) of the BEA does not constitute a bill of exchange, and therefore not a cheque. There is the known practice whereby the sum payable by a bill is expressed in words and in figures; under paragraph 27 (2) of the BEA and in the event there is a discrepancy between the two, “the sum denoted by the words is the amount payable.”

*Its negotiability theoretically constitutes an essential feature of the bill of exchange, and thus of the cheque: the instrument may be transferred from hand to hand in each case for consideration, because the holder knows that he has an instrument against which he will obtain value on presentation to the drawee, or that he can negotiate with a third party against value. The holder is assumed to have obtained the instrument for value and in good faith. The negotiability of the bill of exchange obviously makes it an extremely useful commercial instrument: theoretically, one can circulate large amounts quickly, safely and between several parties through the exchange of a mere piece of paper slightly more than 100 square centimetres in size.*⁶⁸ [translation]

c) Debit Cards

The legal framework related to debit cards is more complex.

To further understanding, the review of this legal framework will be divided into categories: (1) federal and provincial legislation, (2) the Canadian Code of Practice for Consumer Debit Card Services, (3) the Code of Conduct for the Credit and Debit Card Industry in Canada and (4) bank agreements.

⁶⁶ Jacques St-Amant, *Le cadre juridique des paiements électroniques*, Option consommateurs, Montréal, Canada, novembre 2002. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_paiements_electroniques_fr_1102.pdf (Viewed on November 14, 2010).

⁶⁷ Department of Justice Canada, Bills of Exchange Act, R.S.C. 1985, c. B-4., Ottawa, Canada, 2010. [Online] <http://www.canlii.org/en/ca/laws/stat/rsc-1985-c-b-4/latest/rsc-1985-c-b-4.html> (Viewed on October 15, 2010).

⁶⁸ Jacques St-Amant, *Le cadre juridique des paiements électroniques*, Option consommateurs, Montréal, Canada, November 2002. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_paiements_electroniques_fr_1102.pdf (Viewed on November 14, 2010).

In Canada, under the **Bank Act** (S.C. 1991, c. 46), banks can issue debit cards (Section 409)⁶⁹ and, under certain conditions, advertise (Section 453). Though the Bank Act covers the disclosure of information by the bank to a debit card holder (Section 452) and the implementation of procedures for reviewing claims related to the processing of fees to be paid for a debit card (Section 452)⁷⁰, there is no question of the bank's obligations in the event of erroneous or fraudulent transactions.

The federal government also has the power to regulate banking operations through the Canadian Payments Association (CPA). Created by the federal government, the CPA has been in charge since 1980 of organizing the national interbank clearing system in Canada. To do so, the CPA has adopted several rules in this respect. Note that CPA rules are designed to regulate relations between members of the Association⁷¹ and, despite the fact that certain provisions will impact consumers, there is nothing that directly regulates relations between debit card holders and the issuer. For instance, **Rule E1, Exchange of Shared Electronic Point-of-service Payment Items for the Purpose of Clearing and Settlement**, states that the cardholder's bank must protect the confidentiality of the PIN and that it is liable in that respect.

The governments from the Canadian provinces and territories also have not enacted any legislation regarding credit card use. Disputes that may arise between cardholders and issuers fall under common law and it is only on this basis that courts can render decisions.

In Quebec, for instance, the Consumer Protection Act, since its first version in 1971, regulates consumer credit to some extent, including variable credit, which includes credit cards. However, despite the 1978 reform, no protection is provided for the other forms of electronic payment, such as pre-authorized payments, online payments and debit cards.⁷²

⁶⁹ Bank Act, S.C. 1991, c. 46, Section 409.

(1) Subject to this Act, a bank shall not engage in or carry on any business other than the business of banking and such business generally as appertains thereto.

(2) For greater certainty, the business of banking includes:

providing any financial service;

acting as a financial agent;

providing investment counselling services and portfolio management services; and

issuing payment, credit or charge cards and, in cooperation with others including other financial institutions, operating a payment, credit or charge card plan.

⁷⁰ Bank Act, S.C. 1991, c. 46, Section 452.

A bank shall, in accordance with the regulations, at the prescribed time and place and in the prescribed form and manner, provide prescribed information in any application forms or related documents that it prepares for the issuance of credit, payment or charge cards and provide prescribed information to any person applying to it for a credit, payment or charge card.

(2) Where a bank issues or has issued a credit, payment or charge card to a natural person, the bank shall, in addition to disclosing the costs of borrowing in respect of any loan obtained through the use of the card, disclose to the person, in accordance with the regulations:

any charges or penalties described in paragraph (1)(b);

particulars of the person's rights and obligations;

any charges for which the person becomes responsible by accepting or using the card;

at the prescribed time and place and in the prescribed form and manner, any prescribed changes respecting the cost of borrowing or the loan agreement;

any other prescribed information, at the prescribed time and place and in the prescribed form and manner.

⁷¹ Members consist of banks, Credit Unions, trust and loan companies, investment brokers, and some other financial institutions.

⁷² Marc Lacoursière, *Propositions de réforme pour une protection des titulaires de cartes de débit victimes de transferts de fonds non autorisés*, McGill Law Review, Montréal, Canada, March 22, 2009. [Online] <http://lawjournal.mcgill.ca/documents/Lacoursire.pdf> (Viewed on October 10, 2010).

In fact, the growing use of debit cards has led the Electronic Funds Transfer Working Group⁷³ to adopt a code of practice in 1992, the **Canadian Code of Practice for Consumer Debit Card Services**⁷⁴, which Canadian financial institutions can follow.⁷⁵ The purpose of the Code is mainly to protect Canadian consumers who use a debit card in Canada. For instance, it states that agreements that bind debit card holders must be written in standard language and establish rules in the event of a dispute. The Code also aims at regulating the parties' liability in relation to unauthorized transfers of funds. As stipulated in the first section, the Code is applied voluntarily and is non-binding. As a result, during the first years of the Code's existence, financial institutions generally refused to conform to it. In subsequent years, they finally incorporated a certain number of aspects of the Code into their banking agreements.

Another code also regulates credit card use: the **Code of Conduct for the Credit and Debit Card Industry in Canada**.⁷⁶ The Financial Consumer Agency of Canada is in charge of monitoring the application of this code, observance of which is voluntary rather than mandatory. The purpose of the code is to show the industry's commitment to:

1. *Ensuring that merchants are fully aware of the costs associated with accepting credit and debit card payments thereby allowing merchants to reasonably forecast their monthly costs related to accepting such payments;*
2. *Providing merchants with increased pricing flexibility to encourage consumers to choose the lowest-cost payment;*
3. *Allowing merchants to freely choose which payment options they will accept.*⁷⁷

In short, consumers are not involved to a great extent by the Code and do not benefit much from its adoption. Moreover, certain parts of the code may pertain to them, though indirectly. In fact, some strategic elements found in Code of Conduct include:

3. *Payment card network rules will ensure that following notification of a fee increase or the introduction of a new fee, merchants will be allowed to cancel their contracts without penalty [...]*
5. *Payment card network rules will ensure that merchants will be allowed to provide discounts for different methods of payment (e.g. cash, debit card, credit card). Merchants will also be allowed to provide differential discounts among different payment card networks [...]*
10. *Payment card network rules will ensure that negative option acceptance is not allowed.*

⁷³ The Electronic Funds Transfer Working Group is made up of the Consumer Affairs Minister (Industry Canada), consumer groups, financial institutions, and retailers.

⁷⁴ Electronic Funds Transfer Working Group, *Code of Conduct for the Credit and Debit Card Industry in Canada*, Ottawa, Canada, 2004. [Online] http://www.cba.ca/contents/files/misc/vol_20100518_creditdebitcode_en.pdf (Viewed on December 15, 2010).

⁷⁵ The code was ratified by the following organizations: Canadian Payments Association, Canadian Bankers Association, Credit Union Central of Canada, Fédération des caisses Desjardins du Québec, Retail Council of Canada, Canadian Federation of Independent Business, and the Consumers' Association of Canada. *Code of Conduct for the Credit and Debit Card Industry in Canada*, 2004 [Online] http://www.cba.ca/contents/files/misc/vol_20100518_creditdebitcode_en.pdf (Viewed on December 15, 2010).

⁷⁶ Department of Finance Canada, *Code of Conduct for the Credit and Debit Card Industry in Canada*, Ottawa, Canada, May 18, 2010. [Online] http://www.fin.gc.ca/n10/data/10-029_1-eng.asp (Viewed on December 15, 2010).

⁷⁷ Department of Finance Canada, *Code of Conduct for the Credit and Debit Card Industry in Canada*, Ottawa, Canada, May 18, 2010. [Online] http://www.fin.gc.ca/n10/data/10-029_1-eng.asp (Viewed on December 15, 2010).

These provisions provide greater latitude for merchants in terms of the forms of payment that they accept; ultimately, this could help curb the costs that merchants must assume, which cannot harm consumers, who end up sharing the costs incurred by merchants.⁷⁸

Lastly, **debit cardholder agreements** and **banking agreements** are not covered by any specific legislative framework. The integration of a certain number of provisions in the Code of Practice provides some protection to consumers. For instance, banking agreements stipulate that consumers are no longer liable once they have informed the issuer that their card has been lost or stolen, or the possibility of their PIN having been discovered, which conforms to one of the clauses in the Canadian Code of Practice for Consumer Debit Card Services. Moreover, certain provisions in banking agreements run counter to the Code of Practice when they state that consumers must inform the issuer within 24 hours in the event their card is lost or stolen; the Code, for its part, mentions a reasonable time period.⁷⁹ In short:

*[...] There are numerous gaps in both the Canadian Code of Practice and its application in banking agreements regarding the issue of protecting debit card holders from unauthorized card use. Note, in particular, the inability to change the sequence of PIN numbers or of using other numbers and symbols, no presumption in favour of the cardholder, no liability based on risk, no obligation for the issuer to install a video security system, no obligation for the issuer to grant provisional credit to the cardholder during the investigation of alleged fraud, its release from liability in the event of a technical defect or force majeure, and the imposition of a set time for informing the issuer of a lost or stolen card and/or PIN.*⁸⁰ [translation]

d) Credit Cards

Credit cards are subject to federal legislation, namely the *Credit Business Practices Regulations* and the **Cost of Borrowing Regulations**. They are also subject to codes of conduct such as the Code of Conduct for the Credit and Debit Card Industry, which was previously covered in the section on the debit card regulatory framework. Finally, credit card agreements are, to some extent, regulated by consumer protection laws.

Credit card agreements

Credit card agreements are contracts of adhesion that may, as stipulated in the contract, be modified at any time by the credit card issuer, except with regard to the compulsory conditions which in any event are stipulated by law (such as the maximum liability set at \$50). The issuer can thus modify any of the credit card features or conditions at any time, subject to a written notice being sent 30 days before the changes come into effect.⁸¹

⁷⁸ Department of Finance Canada, *Code of Conduct for the Credit and Debit Card Industry in Canada*, Ottawa, Canada, May 18, 2010. [Online] http://www.fin.gc.ca/n10/data/10-029_1-eng.asp (Viewed on December 15, 2010).

⁷⁹ Marc Lacoursière, *Propositions de réforme pour une protection des titulaires de cartes de débit victimes de transferts de fonds non autorisés*, McGill Law Journal, Montreal, Canada, March 22, 2009. [Online] <http://lawjournal.mcgill.ca/documents/Lacoursire.pdf> (Viewed on October 10, 2010).

⁸⁰ Marc Lacoursière, *Propositions de réforme pour une protection des titulaires de cartes de débit victimes de transferts de fonds non autorisés*, McGill Law Journal, Montreal, Canada, March 22, 2009. [Online] <http://lawjournal.mcgill.ca/documents/Lacoursire.pdf> (Viewed on October 10, 2010).

⁸¹ Financial Consumer Agency of Canada, *Credit Cards: Understanding Your Rights and Responsibilities*, Ottawa, Canada, August 12, 2010. [Online] http://www.fcac-acfc.gc.ca/eng/resources/publications/paymentoptions/rightrespcc/rightrespcc_toc-eng.asp (Viewed on November 15, 2010).

Credit card agreements specify the protection that consumers can benefit from in the event of fraud or if their card is lost. A consumer's maximum liability is \$50.⁸²

Note that in addition to the maximum liability of \$50 stated in credit cardholder agreements, MasterCard and Visa cardholders also benefit from "zero liability protection," and American Express cardholders from "fraud protection guarantee." This protection is part of a public agreement made by the issuers of these cards. Under this agreement, in the event a credit card is lost or stolen, or if a credit card number is used for unauthorized transactions, the cardholder will not be held liable for the transactions. These zero liability policies apply to transactions on the Internet, by phone, or at a retail establishment. However, this protection is not comprehensive. In fact, credit card companies mention that the policy may not apply to a transaction made with a PIN, such as a cash withdrawal from an ATM, or for corporate credit cards.⁸³

The above public commitment is not required by law; credit card companies could modify these policies at any time.

Credit Business Practices Regulations

The *Credit Business Practices Regulations*, adopted by the federal government under the Cooperative Credit Associations Act, the Bank Act, the Insurance Companies Act, and the Trust and Loan Companies Act, came into force on January 1, 2010. They provide an interest-free 21-day grace period for all new credit card purchases when the balance is paid in full, explicit consent on the part of consumers prior to any increase in credit limit, and certain restrictions in relation to collection practices. The Regulations also stipulate that payments made by consumers on the total credit card balance must be applied in a manner that benefits the cardholder.

Cost of Borrowing Regulations

The *Cost of Borrowing Regulations*, adopted by the federal government under the Bank Act and recently amended, require issuers to provide consumers with clear information on interest rates and an estimate of the number of months needed to repay the entire balance when only the minimum payment is made each month.⁸⁴

⁸² Financial Consumer Agency of Canada, *Credit Cards: Your Rights and Responsibilities*, Ottawa, Canada, November 18, 2009. [Online] <http://www.fcac-acfc.gc.ca/eng/consumers/rights/creditcard/index-eng.asp> (Viewed on November 17, 2010).

⁸³ Financial Consumer Agency of Canada, *Credit Cards: Your Rights and Responsibilities*, Ottawa, Canada, November 18, 2009. [Online] <http://www.fcac-acfc.gc.ca/eng/consumers/rights/creditcard/index-eng.asp> (Viewed on November 17, 2010).

⁸⁴ Deloitte, *Charting a new course for the credit card industry*, Toronto, Canada, 2009. [Online] http://www.deloitte.com/assets/Dcom-Canada/Local%20Content/Articles/Services/Consulting/ca_en_fsi_credit_card_pov_030810.pdf (Viewed on December 12, 2010). Mouvement Desjardins is generally not subject to federal laws since it falls under provincial jurisdiction. However, several of its subsidiaries are, including the trust, in certain respects. Mouvement Desjardins and its subsidiaries are subject to federal and provincial regulations regarding the protection of personal information, for instance.

Consumer Protection Act

In Quebec, credit cards are also regulated by the Consumer Protection Act.⁸⁵ In fact, various aspects related to credit cards are covered in terms of contracts and information, as well as that of liability and the credit product. The following is also covered: statement, amendments to credit agreements, increase in credit limit, etc. Sections 118 to 124 can be provided as examples:

118. *A contract extending variable credit is a contract by which credit is extended in advance by a merchant to a consumer who may avail himself of it, in whole or in part, from time to time, in accordance with the terms and conditions of the contract.*

Credit cards and contracts of a similar nature.

Contracts extending variable credit include, in particular, contracts made for the use of what are commonly called credit cards, credit accounts, budget accounts, revolving credit accounts, marginal credit and credit openings and any other contract of similar nature.

[...]

Issuing a credit card.

120. *No person may issue or send a credit card to a consumer unless the consumer has applied for it in writing.*

Renewal, replacement.

121. *Section 120 does not apply to the renewal or replacement, on the same conditions, of a credit card which the consumer has applied for or used.*

Exception.

No person may, however, renew or replace a credit card if the consumer has notified in writing the issuer of the card of his intention to cancel such card.

Credit card.

122. *No person may issue more than one credit card bearing the same number except on the written request of the consumer who is a party to the contract extending variable credit.*

Lost or stolen credit card.

123. *In case of loss or theft of a credit card, the consumer incurs no liability for a debt resulting from the use of such card by a third person after the issuer is notified of the loss or theft by telephone, telegraph, written notice or any other means.*

Limited liability.

124. *Even where such notice is not given, the liability of the consumer whose credit card is lost or stolen is limited to the sum of \$50.⁸⁶*

⁸⁵ Government of Quebec, Consumer Protection Act, R.S.Q., c. P-40.1, Quebec, Canada, 2011. [Online] http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=2&file=/P_40_1/P40_1.html (Viewed on March 5, 2011). Other provinces have similar laws, which we will cover later on when dealing with chargebacks.

⁸⁶ Government of Quebec, Consumer Protection Act, R.S.Q., c. P-40.1. Quebec, Canada, 2011. [Online] http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=2&file=/P_40_1/P40_1.html (Viewed on October 15, 2010).

The Consumer Protection Act also allows consumers, in relation to distance contracts, to request a chargeback if there is a problem with the transaction and the merchant refuses to reimburse them. Chargebacks allow consumers experiencing problems following a distance purchase paid by credit card to request that the card issuer credit them for the purchase. To be eligible for a chargeback, a consumer must request it in writing from the credit card issuer. The Consumer Protection Act states that, for distance contracts:

54.16. *A credit card issuer that receives a chargeback request must:*

a) acknowledge receipt within 30 days;

b) make the chargeback and cancel all credit card charges in connection with the distance contract and any accessory contract within 90 days or two complete periods, as defined in section 67, following receipt of the request, whichever comes first.⁸⁷

However, Quebec is not the first province to come up with a similar mechanism. Several provinces, based on the recommendations in the Internet Sales Contract Harmonization Template, have already integrated the chargeback mechanism in their consumer protection acts, namely Ontario, B.C., Alberta, Saskatchewan, Manitoba and Nova Scotia.⁸⁸

Across Canada, credit card users thus benefit from better protection than debit card users.

Lastly, certain regulatory frameworks apply to electronic payments in a general manner. They are found in **Section E** (electronic items) of the **Automated Clearing Settlement System (ACSS) Rules and Standards Manual** governing the exchange of payment items between CPA member institutions (CPA Manual), adopted by the Canadian Payments Association and which pertains to its members⁸⁹ and in the **Principles of Consumer Protection for Electronic Commerce: A Canadian Framework**, arising from the efforts of the Working Group on Electronic Commerce and Consumers, which approved the Principles in August 1999. The Principles are general and pertain to all the stakeholders involved. The Working Group was coordinated by Industry Canada's Office of Consumer Affairs.

Section E of the CPA Manual deals with electronic items and consists of the following sections:

E1 Shared Electronic Point-of-Service Payment Items

E2 Exchange for the Purpose of Clearing and Settlement of Electronic On-line Payment Items

E3 Rules Applicable to Electronic Data Interchange (EDI) Transactions

⁸⁷ Government of Quebec, Consumer Protection Act, R.S.Q., c. P-40.1, Quebec, Canada, 2011. [Online] http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=2&file=/P_40_1/P40_1.html (Viewed on February 21, 2011).

⁸⁸ Vincent Gautrais, *LPC et rétrofacturation*, Chaire en droit de la sécurité et des affaires électroniques, Montréal, Canada, September 1, 2008. [Online] <http://www.gautrais.com/Retrofacturation> (Viewed on December 15, 2010).

⁸⁹ The members of the Canadian Payments Association are listed in Footnote 75.

*E4 Exchange of PIN-less Point-of-Service Debit Payment Items for the Purpose of Clearing and Settlement*⁹⁰

This code basically covers the roles and responsibilities of lenders and acquiring financial institutions in their relations with each other.

For their part, the Principles of Consumer Protection for Electronic Commerce are relatively vague. Principles 4, 5 and 6 are of particular interest to us, since they specifically pertain to consumers. Note the odd approach adopted by the Principles, which, rather than imposing constraints on merchants and intermediaries, often suggests that third parties be involved, or requires consumers to exercise caution or even take responsibility for transaction security:

Principle 4: Security of Payment and Personal Information

Vendors and intermediaries should take reasonable steps to ensure that transactions in which they are involved are secure. Consumers should act prudently when undertaking transactions.

4.1 Vendors and intermediaries should safeguard payment and personal information that is exchanged and/or stored as a result of a transaction.

4.2 Consumers should take reasonable steps to conduct transactions safely and securely.

Principle 5: Redress

Consumers should have access to fair, timely, effective and affordable means for resolving problems with any transaction.

5.1 Vendors should provide adequate resources to handle consumer complaints efficiently and effectively.

5.2 When internal mechanisms have failed to resolve a dispute, vendors should make use of accessible, available, affordable and impartial third-party processes for resolving disputes with consumers. However, vendors should not require consumers to submit to such processes.

5.3 Governments, businesses and consumer groups should work together to develop appropriate standards for dispute resolution mechanisms.

5.4 So that consumers are not disadvantaged, governments should cooperate in the development of clear rules regarding the applicable law and forum, and the mutual enforcement of judgements, in the event of cross-border disputes.

Principle 6: Liability

Consumers should be protected from unreasonable liability for payments in transactions.

6.1 Consumers should not be held liable for amounts billed to them for "unauthorized transactions." Vendors should promptly refund consumer payments for unauthorized transactions or sales transactions in which consumers did not receive what they paid for.

⁹⁰ Canadian Payments Association, *Automated Clearing Settlement System (ACSS) Rules and Standards*, Toronto, Canada, [Online]
http://www.cdnpay.ca/imis15/eng/Act_Rules/Automated_Clearing_Settlement_System_ACSS_Rules/eng/rul/Automated_Clearing_Settlement_System_ACSS_Rules.aspx?languageId=0 (Viewed on January 15, 2011).

6.2 *Credit card issuers should make reasonable efforts to help consumers resolve complaints with vendors in the event of non-delivery or unauthorized transactions.*

6.3 *In inadvertent sales transactions in which consumers acted reasonably, the vendor should allow the consumer a reasonable period of time to cancel the transaction once the consumer has become aware of it.*

6.4 *When a consumer disputes a sales transaction in which the vendor failed to provide relevant information, the vendor should refund payment provided that the consumer returns the good or declines the service within a reasonable period of time.⁹¹*

e) Summary

At present, in Canada, only cash, cheques and credit cards are covered by specific legislation,⁹² while debit cards are only regulated by a voluntary code.

In short, forms of payment in Canada are governed by a complex regulatory system that is at times obsolete and incomplete. We noted the main aspects that make up this regulatory system by focusing more on those that specifically affect consumers. The other protection systems not part of common law and that apply to forms of payment that were not specifically mentioned since they are less relevant to the issues that concern us (i.e. direct consumer protection and the specific regulations pertaining to forms of payment, for instance) include the *Payment Clearing and Settlement Act*, the *Personal Information Protection and Electronic Documents Act*, and the *Competition Act*.

⁹¹ Working Group on Electronic Commerce and Consumers, *Principles of Consumer Protection for Electronic Commerce: A Canadian Framework*, Ottawa, Canada, 1999. [Online] <http://publications.gc.ca/collections/Collection/C2-417-1999E.pdf> (Viewed on January 6, 2011).

⁹² Marc Lacoursière, *Propositions de réforme pour une protection des titulaires de cartes de débit victimes de transferts de fonds non autorisés*, McGill Law Review, Montreal, Canada, March 22, 2009. [Online] <http://lawjournal.mcgill.ca/documents/Lacoursire.pdf> (Viewed on October 10, 2010).

CHAPTER 3: NEW FORMS OF PAYMENT

The forms of payment of the future are fast upon us: NFC mobile phones, biometric point of payment terminals, and contactless bank cards. With the diversity of proposed solutions, potential entrants and possible business models, what will the payments industry look like over the medium term? [translation]

SIA Conseil

Nouveaux moyens de paiement grand public:
vers une reconfiguration du marché⁹³

In the previous chapters, we saw that traditional methods of payment are still widely used, but some, such as cheques, are losing ground, and that new forms of payment are making their way on the market. In fact, the electronic payments market is far from being saturated, for two main reasons. First, debit cards, and even more so credit cards, are costly forms of payment. Second, the most commonly used forms of payment are strongly rooted in banking systems; therefore, there is a niche for forms of payment tailored to consumers who would like to use a means of payment that does not involve their financial institution or that would provide greater security and confidentiality than conventional forms of payment, at a lesser cost.⁹⁴

Not too long ago, the number of available forms of payment and their providers were relatively limited: because of the reasons mentioned above combined with technological advances, the forms of payment available to consumers are becoming more varied. The most striking new aspect is probably the recent advent of new specialized players on the payments market, which had primarily been the exclusive domain of the financial sector.

An analysis of a sample of 100 electronic forms of payment in Europe shows an interesting trend: thirty-nine (39) of these forms of payment were introduced by financial institutions or members of their group, forty-one (41) must be attributed to a company outside of the financial sector, and twenty (20) others were designed by a partnership made up of bankers and non-bankers. To some extent, the new forms of payment market appears to be moving out of the financial sector.⁹⁵ [translation]

To depict this changing world, in this chapter we will be looking at some of the new forms of payment⁹⁶ that appear the most promising by virtue of their increasing use abroad, their media coverage, or the benefits they may provide.

We will thus be looking at a certain number of new forms of payment that could be grouped into two main categories: contactless payments and remote payments.

⁹³SIA Conseil, *Nouveaux moyens de paiement grand public: vers une reconfiguration du marché*, France, July 24, 2007. [Online] http://finance.sia-conseil.com/wp-content/plugins/Post2PDF/SW_Post2PDF.php?id=139 (Viewed on December 14, 2010).

⁹⁴Ignacio Mas and Sarah Rotman, *Going Cashless at the Point of Sale: Hits and Misses in Developed Countries*, Consultative Group to Assist the Poor, Focus Note No. 51, Washington, U.S.A., December 2008. [Online] <http://www.cgap.org/gm/document-1.9.7885/FN51.pdf> (Viewed on December 15, 2010).

⁹⁵Jacques St-Amant, *Le cadre juridique des paiements électroniques*, Option consommateurs, Montréal, Canada, November 2002. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_paiements_electroniques_fr_1102.pdf (Viewed on November 14, 2010).

⁹⁶Note that a new method of contact between credit cards and merchant terminals cannot really be qualified as a new form of payment. If, however, the new technology were to involve payments that no longer require identification or authentication (signature or PIN) like conventional forms of payment do, certain specific issues naturally come up, which we will be examining further on.

The types of contactless forms of payment that will be examined include mobile payments (Zoompass Tag) and payments made through a card, key fob or other medium⁹⁷ equipped with a radio-frequency identification (RFID) chip (*PayPass*, *PayWave* and *Flash Interac*).

Forms of remote payments include mobile payments (SMS), Zoompass, PayPal and weXpay.

The other forms of payment that will be reviewed are the Visa debit card, Square, and biometric payments.⁹⁸

We will try to show the benefits and drawbacks of these various forms of payment. A later section will examine the regulatory framework the new forms of payment are subject to.

3.1 Contactless Payment

Contrary to payments made with a traditional payment instrument that contains a chip or magnetic stripe that must come in physical contact with the terminal reader, contactless payment takes place without any physical contact, namely by radio frequency between the payment instrument and the terminal.

From a technical standpoint, forms of contactless payment consist of:

Methods of payment in the form of an electronic chip, they are distinguished based on the medium used (basically card-based or mobile) and how the transactions are carried out (payment by bank card or by credit versus electronic purse [electronic purse: funds transferred to a chip card (Moneo)]⁹⁹. [translation]

The most widely used contactless technology, regardless of the type of medium used (e.g. mobile phone, card, key fob), is known as Near Field Communication (NFC). This technology is based on the use of Radio Frequency Identification (RFID) radio waves. It allows two devices to communicate with each other without any contact, via short-distance radio, such as a few dozen centimetres.¹⁰⁰

Near Field Communication is already widely used in various fields, including transportation. Its use is expanding to other fields such as payment by mobile phone, bank card, etc.

⁹⁷ The imagination of the designers of media for new forms of contactless payment is boundless. We only chose to review a certain range and chose not to examine certain less frequently used media such as USB keys.

⁹⁸ We chose not to examine prepaid payment cards, which have been on the market for a number of years already and have not been as successful as expected in Canada where they represent only a marginal form of payment. A study was also done on prepaid payment cards in 2008: Option consommateurs, *La protection des consommateurs utilisant des cartes de paiement prépayées: Un instrument laissé aux forces du marché*, Montréal, Canada, 2008, 102 p. The study mainly concluded that Canadians are not very likely to use this form of payment and that the regulatory framework for it, like all forms of electronic payment, is lacking.

⁹⁹ Philippe Lerouge, *Contexte et environnement*, BNP Paribas, France, June 16, 2009. [Online] <http://www.easybourse.com/bourse/international/dossier/11176/contexte-et-environnement.html> (Viewed on November 18, 2010).

¹⁰⁰ Les clés de la banque, *Les paiements sans contact*, France, 2009. [Online] <http://www.lesclesdelabanque.com/Web/Cles/Content.nsf/DocumentsByIDWeb/784CF4?OpenDocument> (Viewed on December 2, 2010).

One of the advantages of contactless technology is the ability to incorporate the contactless chip into a variety of form factors beyond traditional payment cards, enabling payment using forms such as mini cards, key fobs and mobile devices.¹⁰¹

Statistics show that contactless technology could, in very little time, attain widespread use, much more quickly than was the case for other forms of payment:

The pace of technological adoption: the U.S. payments example

It took:

- 28 years to reach 100 million mag-stripe credit card accounts.
- 12 years to reach 100 million debit accounts.
- 7 years to reach 100 million PayPal accounts.

It is projected that it will take only:

- 5 years to reach 100 million contactless credit/debit cards.
- 2-3 years to deploy 100 million NFC-enabled (near field communication) mobile handsets.¹⁰²

a) Contactless Payment with a Card, Key Fob or Other Medium

Examples

Various media can be used for embedding microchips that would allow users to pay for their purchases by flashing the medium in front of a reader. This type of chip has already been embedded in transit passes and key fobs to pay for gas at service stations. Companies that issue credit cards and other payment cards are also aware of the benefits and have come up with various electronic chip cards that allow contactless payment, including *PayPass*, *payWave* and *Flash Interac*.

MasterCard PayPass

One example of a contactless payment card is the MasterCard PayPass card. Launched in Canada in 2004, the technology continues to attract new merchants and consumers, despite the fact that it is currently not widely used.

The MasterCard PayPass card is basically a traditional credit card embedded with a chip and antenna that uses short-range radio waves. In practice, when a consumer wishes to pay for a purchase with a *PayPass* card, he flashes the card a few centimetres in front of the reader or taps the reader with the card. Payment is confirmed in a few seconds, with the sounding of a beep. Information is transmitted in the same way as with conventional credit card transactions, with the exception that consumers do not need to enter a PIN or sign a sales slip to complete the transaction. Although no identification or authentication is requested for purchases under \$25 (or below the limit established for participating retailers), authentication is required when the transaction exceeds the above amount or for debit transactions.¹⁰³

¹⁰¹ Visa, *Visa payWave speeds up every day payments in Canada*, Toronto, Canada, May 16, 2010. [Online] <http://www.visa.ca/en/aboutcan/mediacentre/news/26052010/index.jsp> (Viewed on December 4, 2010).

¹⁰² McCarthy, Barry. 2008. *The Risks and Opportunities in a Mobile Commerce Economy*, September 2008, in *Industry Canada, Mobile Commerce – New Experiences, Emerging Consumer Issues*, Ottawa, Canada, September 7, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02518.html> (Viewed on October 20, 2010).

¹⁰³ MasterCard, *MasterCard PayPass, Frequently Asked Questions*, Canada, 2010. [Online] http://www.mastercard.com/ca/wce/PDF/PayPass_FAQ_2009.pdf (Viewed on December 14, 2010).

The card can also be used like any other credit card where MasterCard cards are accepted.¹⁰⁴

Visa payWave

Like MasterCard contactless payment cards, Visa *payWave* cards are credit cards that are embedded with a microchip and radio antenna. The antenna allows the chip to communicate wirelessly and, depending on the company, securely with the terminal reader. To complete the transaction, the cardholder need only wave the card in the front of the terminal.¹⁰⁵ The payment process for consumers is the same as with the MasterCard *PayPass* card. The *payWave* reader will generally reject payments above \$50; as *payWave* cards have the same functionalities as conventional credit cards, consumers have to insert or swipe their card through the terminal before signing the payment slip or entering their PIN.¹⁰⁶

The issuer and its partners are confident that this instrument will soon become very popular:

*Visa issuers have also embraced contactless technology. TD Canada Trust and RBC Royal Bank value the convenience, security and speed of Visa payWave and are actively issuing Visa payWave cards to their customers. By the end of 2010, it is expected that there will be several million Visa payWave cards in the Canadian market.*¹⁰⁷

Flash Interac

Interac has also announced that contactless payment technologies will be integrated into its payment instruments. In 2011, Canadians will have access to what Interac is calling a new technology, i.e. *Flash Interac*, which will allow contactless payment with a debit card. The *Flash Interac* system is still not available but should be integrated into ATM cards starting in 2011.

*Flash Interac comes with a dual-interface chip (meaning that a chip is added to the terminals), which allows both contact and contactless payment, at the consumer's discretion.*¹⁰⁸ [translation]

In practice, the payment process for consumers is the same as with the contactless credit cards presented above. Interac states on its website that starting from a certain amount, transactions can no longer be done using contactless technology and must be processed with the traditional method. The set dollar limit is not stated.¹⁰⁹

Operating Principle

In practice, as already stated, contactless payment cards are simple to use for consumers, who need only place their card near the payment terminal for the transaction to be completed.

¹⁰⁴ MasterCard, *MasterCard PayPass Security*, Canada, 2010. [Online]

<http://www.mastercard.com/sea/personal/en/aboutourcards/paypass/security.html> (Viewed on September 30, 2010).

¹⁰⁵ Visa, *Visa payWave – Wave through more customers every day*, Toronto, Canada, 2010. [Online]

<http://visa.ca/merchant/resources/paywave/pdf/value-of-visa-paywave.pdf> (Viewed on December 15, 2010).

¹⁰⁶ Visa, *Visa payWave – A faster way to pay*, Toronto, Canada, 2010. [Online] <http://www.visa.ca/en/personal/visa-paywave/index.jsp> (Viewed on December 14, 2010).

¹⁰⁷ Visa, *Visa payWave speeds up every day payments in Canada*, Canada, May 26. [Online]

<http://www.newswire.ca/fr/story/569925/visa-paywave-speeds-up-every-day-payments-in-canada> (Viewed on December 14, 2010). No data could be found on the number of Visa *payWave* cards in use in early 2010 or 2009.

¹⁰⁸ Michel Munger, *Interac offrira bientôt le paiement sans contact*, Argent, Montréal, Canada, June 17, 2010. [Online] <http://argent.canoe.ca/lca/affaires/canada/archives/2010/06/20100617-093911.html> (Viewed on December 19, 2010).

¹⁰⁹ Interac, *Frequently Asked Questions*, Toronto, Canada. [Online] <http://www.interac.ca/consumers/faqs.php> (Viewed on March 16, 2011).

However, behind this seemingly simple process is a more complex system. The contactless payment systems in the three examples provided (i.e. MasterCard *PayPass*, Visa *payWave* and *Flash Interac*) operate on the basis of NFC technology. Companies that develop this type of payment describe contact payment as follows:

These products use the existing payment infrastructure. The card uses a radio-frequency interface to transmit the required information to the terminal for the payment to be processed in the conventional manner. [...] The latter must be modified so that contactless cards can be accepted. The terminal must be equipped with a compatible reader and handle the special communications protocol.

*Although the card's radio-frequency interface could potentially be intercepted, the protocols that have been implemented use cryptographic mechanisms to secure the transactions*¹¹⁰. [translation]

Issuers are touting the security of NFC technology. However, this security appears to be relative. For instance, students from a Dutch university showed, backed by a video, that the Crypto1 algorithm, the encryption used by NFC, was fallible and could be intercepted and then used to clone ID or payment cards that could then be subsequently used.¹¹¹

In addition to praising the secure aspect of contactless payment, contactless technology developers add that:

*To maximize the concept's benefits, contactless payment is used for low-value transactions (less than \$25), which are done without a PIN or signature. As the amounts involved are limited, card issuers are accepting the risk.*¹¹² [translation]

There is therefore an actual risk, which small amounts would make acceptable. However, developers do not specify the nature of the risk that they candidly admit to.

Benefits/Drawbacks

Benefits

For consumers – As they are all linked to credit or debit cards, contactless payment cards automatically have the benefits associated with these types of payment.

With regard to the additional benefits of a contactless payment card, they are roughly the same from one instrument to another. On its website, MasterCard describes its *PayPass* card as follows:

¹¹⁰ Nicolas Guay, *Les cartes de paiement sans contact en déploiement*, Direction informatique, Montréal, Canada, June 1, 2008. [Online]
<http://www.directioninformatique.com/DI/client/fr/DirectionInformatique/Nouvelles.asp?id=48478&PageMem=2> (Viewed on January 15, 2011).

¹¹¹ Damien Bancal, *Piratage de carte à puce sans contact facile*, Pays-Bas, July 22, 2008. [Online]
<http://www.zataz.com/news/17472/carte--puce--contact--NXP--NFC--Crypto1.html> (Viewed on October 15, 2010).

¹¹² Nicolas Guay, *Les cartes de paiement sans contact en déploiement*, Direction informatique, Montréal, Canada, June 1, 2008. [Online]
<http://www.directioninformatique.com/DI/client/fr/DirectionInformatique/Nouvelles.asp?id=48478&PageMem=2> (Viewed on January 15, 2011).

Encryption technology and MasterCard Zero Liability protection on your PayPass-enabled Credit, Debit or Prepaid MasterCard card make using PayPass at checkout as safe as swiping.

You are in control – your PayPass never leaves your hands to make a payment.

No accidental payments – your PayPass must be extremely close to the reader at checkout to work.

Not billed twice – even if you tap more than once at checkout, you'll only get billed once for your purchase.¹¹³

Rather than state the actual benefits that users could obtain from contactless forms of payment, the issuer insists, as if it constituted an inherent advantage, on controlling the risks that the technology could present, risks that were non-existent with traditional forms of payment and that have only been brought up by this new technology.

The company adds:

It's like having exact change wherever you go, so you don't have to worry about carrying around a lot of cash or fishing for coins.

You are in control because your MasterCard PayPass card never leaves your hand at checkout.

With MasterCard PayPass you get better record keeping of all your purchases than using cash for those small everyday items.

It's fast and ideal at places where speed is essential, like at fast food restaurants, grocery stores, movie theatres and gas stations.¹¹⁴

It is amusing to note that the issuer is stating as benefits for contactless payment cards the fact that having this type of card is equivalent to always having exact change and that this type of card allows users to keep better records of their day-to-day purchases. These benefits, however, are not limited to contactless payment cards but apply to any type of payment card. It is also interesting to note that issuers are presenting as advantages specific to this new technology the control of risks that would not be found without the new feature (no accidental payments or double billing, encrypted transmissions).

In short, for consumers, contactless payment is:

- Fast;
- Simple.

Issuers maintain that transactions are perfectly secure since the data transmitted between the payment instrument and the terminal are encrypted. Some issuers refer to other techniques used to secure payments such as Dynamic Data Authentication (DDA) without, however,

¹¹³ MasterCard, *MasterCard PayPass Security*, Canada, 2010. [Online] <http://www.mastercard.com/sea/personal/en/aboutourcards/paypass/security.html> (Viewed on September 30, 2010).

¹¹⁴ MasterCard, *MasterCard PayPass Quick Facts*, Canada, 2010. [Online] <https://www.stage.mastercard.com/ca/personal/en/technologies/paypass/faqs.html> (Viewed on December 14, 2010).

explaining how the system works. Visa adds that “Only secure readers at authorized merchants can process the information on cards with the Visa payWave feature.”¹¹⁵

The Zero Liability protection that credit card issuers provide also applies to this new type of credit card. This is therefore not a benefit associated with contactless payment. Note that debit cards do not provide this type of protection; *Interac* did not announce that it intends to provide its cardholders with such protection.

For merchants

*MasterCard PayPass is ideal for traditional, cash-heavy environments where speed is essential, and has led the way in bringing contactless technology to consumer categories, where quick service is important.*¹¹⁶

It is true that contactless payment cards speed up payment at checkout; however, only a few seconds are saved, not minutes. Are consumers so exasperated by the few seconds required to enter their PIN (which provides them with fraud protection)?

With the exception of Zero Liability protection, which only applies to credit cards, all of the benefits touted by one issuer or another are applicable to similar tools issued by their competitors, but that do not include this functionality.

Drawbacks

For consumers – Once again, as they are linked to credit or debit cards, contactless payment cards will automatically carry the drawbacks associated with these forms of payment.

This form of payment is already bringing up questions regarding specific potential drawbacks:

*Contactless payment systems, designed to facilitate exchanges, may present a potential privacy risk by providing new opportunities for gathering personal information on individuals, including without their knowledge.*¹¹⁷ [translation]

Such a card could also more easily be the target of fraud since purchases can be made without entering a PIN. However, the zero liability policy applied by credit card companies limits the direct impact of this risk for consumers.¹¹⁸ Lastly, MasterCard states that there is no risk of double billing should a consumer flash the card twice in front of the reader since the card must be held at a certain angle and at a distance of 5 cm from the reader. MasterCard’s website also

¹¹⁵ Visa, *Visa payWave – The faster way to pay*, Toronto, Canada, 2010. [Online]

<http://visa.ca/merchant/resources/paywave/pdf/visa-paywave-merchant.pdf> (Viewed on December 15, 2010).

¹¹⁶ MasterCard, *Canada Embraces MasterCard PayPass*, Toronto, Canada, November 13, 2007. [Online] http://www.mastercard.com/ca/company/en/press/2007/11_13_canada_embraces.html (Viewed on September 18, 2010).

¹¹⁷ Dominique Aguilar, *Identification par radio fréquence, la Commission européenne lance une consultation*, Quoi de neuf en Europe Actualité de l'Union européenne et du droit communautaire, July 15, 2006. [Online]

http://quideneufeneurope.hautetfort.com/technologies_societe_de_l_information/ (Viewed on March 2, 2011).

¹¹⁸ Furthermore, the Zero Liability policy is not absolute; will credit card companies unquestionably reimburse purchases made by a teenager, for instance, who has taken advantage of the contactless feature of his parents’ credit card by not having to enter a PIN or sign a sales slip?

states that flashing the card several times in front of the reader will only result in one transaction.¹¹⁹

For merchants – This form of payment does not appear to present any specific drawbacks for merchants; however, when credit cards are involved, the drawbacks related to high costs still come into play.

b) Contactless Payment by Mobile Phone

Here is how contactless payment by mobile phone is done:

*Using chip-embedded cellphones that contain credit card account details, consumers pay by tapping the handset close to a compatible point-of-sale reader.*¹²⁰

To make a contactless payment with a mobile phone, the cell phone must, like contactless payment cards, be embedded with a special chip and the merchant must have a terminal capable of reading the chip.

In-store contactless payment by mobile phone is clearly successful throughout the world, particularly in Asia. In Japan, over 30 million phones are currently embedded with a chip that allows for contactless payment.¹²¹ In 2007, several hundred thousand retail establishments were already accepting contactless payment.¹²² This form of payment was already being tested in the fall of 2010 in New York and should be launched nation-wide in 2011.¹²³

The business world is anticipating a revolution in mobile banking services:

*The Gartner research firm estimates that 190 million people worldwide will be making purchases with a wireless device in 2012 compared to 32 million in 2009.*¹²⁴ [translation]

*According to ABI Research, over 400 million people will be using mobile banking services in 2015, and close to 70 million of them will be in North America.*¹²⁵ [translation]

Currently, in Canada:

¹¹⁹ MasterCard, FAQ MasterCard, Paypass, Canada, 2011. [Online]

<https://www.stage.mastercard.com/ca/personal/en/technologies/paypass/faqs.html> (March 3, 2011).

¹²⁰ Office of Consumer Affairs, *Mobile Commerce – New Experiences, Emerging Consumer Issues: Footnotes*, Ottawa, Canada, March 25, 2011. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02519.html> (Viewed on April 5, 2011).

¹²¹ Les clés de la banque, *Les paiements sans contact*, France, 2009. [Online] <http://www.lesclesdelabanque.com/Web/Cles/Content.nsf/DocumentsByIDWeb/784CF4?OpenDocument> (Viewed on December 2, 2010).

¹²² Karyn Poupée, *Live Japon: le paiement sans contact, sans souci*, Japon, November 10, 2007. [Online] <http://www.clubic.com/actualite-85382-live-japon-paiement-contact-souci.html> (Viewed on November 4, 2010).

¹²³ BNP Paribas, L'Atelier, *Le paiement sans contact testé pour le marché américain*, France, August 24, 2010. [Online] <http://www.atelier.fr/banque-assurance/10/24082010/mobile-porte-monnaie-paiements-nfc-champ-proche-echange-apple-systeme-40151-.html> (Viewed on October 20, 2010).

¹²⁴ Alain McKenna, *La révolution des services bancaires mobiles est en marche*, Les Affaires, March 8, 2010. [Online] <http://www.lesaffaires.com/secteurs-d-activite/technologies-et-telecommunications/la-revolution-des-services-bancaires-mobiles-est-en-marche/510817> (Viewed on March 4, 2011).

¹²⁵ Mobile Trend, *La généralisation du paiement par mobile est-elle une question de sécurité?*, France, February 23, 2010. [Online] <http://mobiletrend.typepad.com/> (Viewed on March 5, 2011).

*Canadian banks still do not feel an urgent need to provide mobile payment services to their clients. "This will come, of course, but not before three to five years," says Joan Dal Bianco, Vice President, Online Channel, TD Bank Group. "Canadians still have concerns about the security of mobile payment."*¹²⁶ [translation]

Furthermore, in Canada, the high cost of wireless communications is also a major hindrance to the development of the new services. In 2009, the penetration rate of mobile telephony was only 71% in Canada, compared to 151% in Italy two years earlier.¹²⁷

Although few in number, there are still some Canadian companies that are currently offering or testing contactless payment by mobile phone. They include EnStream with the *Zoompass Tag* and MasterCard with its Tap & Go system, which basically consists of the *PayPass* system (presented earlier) embedded in a mobile phone. In 2009, Visa, RBC and Rogers Communications also launched a cell phone payment pilot.¹²⁸ The *Visa payWave* technology was thus embedded in a mobile phone rather than a payment card.

*Using chip-embedded cellphones that contain credit card account details, consumers pay by tapping the handset close to a compatible point-of-sale reader. These NFC (near-field communication) contactless payment pilots parallel the migration to chip-based credit cards that is underway in Canada.*¹²⁹

These three contactless mobile phone payment systems are similar and, given that the MasterCard and Visa contactless payment solutions were presented earlier, we will only be looking at the EnStream *Zoompass Tag*.

Example

Zoompass Tag

In March 2010, EnStream¹³⁰, the creator of *Zoompass*¹³¹, launched the *Zoompass Tag*, a sticker that can be attached to a mobile phone. *Zoompass* users affix the *Zoompass Tag* sticker to their mobile phone to access their *Zoompass* account. The service is currently only being offered to a limited number of *Zoompass* users so that the service and needs can be assessed.¹³²

¹²⁶ Alain McKenna, *La révolution des services bancaires mobiles est en marche*, Les Affaires, March 8, 2010. [Online] <http://www.lesaffaires.com/secteurs-d-activite/technologies-et-telecommunications/la-revolution-des-services-bancaires-mobiles-est-en-marche/510817> (Viewed on march 4, 2011).

¹²⁷ Canadian Radio-television and Telecommunications Commission, CRTC Communications Monitoring Report 2010, Ottawa, Canada, 2010. [Online] <http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2010/cmr.htm> (Viewed on January 26, 2012).

¹²⁸ Visa, *Visa payWave speeds up every day payments in Canada*, Toronto, Canada, May 26, 2010. [Online] <http://visa.ca/en/aboutcan/mediacentre/news/26052010/index.jsp> (Viewed on November 15, 2010).

¹²⁹ Office of Consumer Affairs, *Mobile Commerce – New Experiences, Emerging Consumer Issues: Footnotes*, Ottawa, Canada, September 7, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02519.html> (Viewed on October 20, 2010).

¹³⁰ EnStream LP is a Bell, Rogers and TELUS mobile commerce joint venture.

¹³¹ *Zoompass* is a remote payment system and will therefore be covered in the next section. Since *Zoompass Tag* is an additional element in the *Zoompass* payment solution, all the details related to this form of payment (such as fees) will be covered in the section on remote payment.

¹³² *Zoompass, The Zoompass Tag and your Mobile Phone: All you need to Make Purchases*, Toronto, Canada, March 3, 2010. [Online] <http://blog.zoompass.com/2010/03/03/the-zoompass-tag-and-your-mobile-phone-all-you-need-to-make-purchases/> (Viewed on March 16, 2011).

EnStream, a Bell, Rogers and TELUS joint venture, tested the Zoompass Tag, a sticker embedded with an NFC chip that is attached to a cell phone for point-of-sale payments. EnStream also developed the Zoompass, which allows money transfers among users.¹³³
[translation]

The general principle of contactless mobile phone payment, whether in the form of the model designed by EnStream or that of the Visa, RBC and Rogers joint venture, is simple. Like contactless card payments, a consumer only needs to have a phone containing a chip or to attach an NFC contactless chip to his phone and then to tap the phone in front of the merchant's terminal reader to make the purchase.

Illustration 1 shows the Zoompass Tag.

ILLUSTRATION 1
Zoompass Tag¹³⁴



Operating principle

The actual physical process is simple: the phone is placed in front of the reader to transfer the data required for the payment. However, technically, the system is more complex. Contactless payment by mobile phone through Zoompass Tag uses NFC technology, which was presented earlier.¹³⁵ What is special about the Zoompass Tag is that the funds do not necessarily come from a credit card or an existing account with a financial institution:

Zoompass funds are held in a stored value account¹³⁶ that can be linked to your personal credit card and bank account, which makes transferring money simple and convenient. You can also use the optional Zoompass prepaid MasterCard® with

¹³³ Frederic Perron, Payer avec son cellulaire, c'est pour quand?, Protégez-vous, Montréal, Canada, October 8, 2010. [Online] <http://techno.ca.msn.com/actualites/protégez-vous/articles.aspx?cp-documentid=25879358> (Viewed on March 16, 2011).

¹³⁴ Zoompass, *The Zoompass Tag and your Mobile Phone: All you need to Make Purchases*, Toronto, Canada, March 3, 2010. [Online] <http://blog.zoompass.com/2010/03/03/the-zoompass-tag-and-your-mobile-phone-all-you-need-to-make-purchases/> (Viewed on March 16, 2011).

¹³⁵ The NFC technology was presented in the section on contactless payments (section 3.1).

¹³⁶ "A Zoompass Account is not a deposit account and may not be insured by the Canada Deposit Insurance Corporation or any provincial deposit insurance program. You agree that we may keep any benefits provided by a financial institution that holds these funds," Zoompass, *Terms of Use*, Toronto, Canada, 2010. [Online] https://www.zoompass.com/info/terms_of_use_zoompass.jsp (Viewed on January 10, 2011).

*PayPass, linked to your Zoompass account, to make in-store or online purchases or withdraw cash from an ATM.*¹³⁷

When a consumer pays for a purchase with his mobile phone to which a chip has been attached, the information is sent using NFC technology and the funds come from a Zoompass account.

Benefits/Drawbacks

Benefits

For consumers – Some of the benefits of this form of payment include:

- A phone and form of payment, or bank card, incorporated in the same device;
- Time saved, given that such a form of payment is simple and fast.

Expectations appear high regarding this form of payment, and the technology's numerous benefits are already being touted:

- This form of payment could work anywhere (e.g. retail and grocery stores, public transit);
- The same device could be used for various payment cards, even all of a consumer's cards, regardless of the type;
- If stolen, operators could block a phone immediately, thereby reducing the risk of fraud;¹³⁸
- Should the phone's battery go dead, the chip would still work for accessing public transit or buildings in the same manner as a contactless card¹³⁹ (except for transactions requiring a code);
- If a user changes to another phone, he or she would only need to transfer the chip to maintain access to his or her payment option;¹⁴⁰
- Similarly, as the chip is part of the phone, it should be possible, if the user switches to another operator, to keep the data¹⁴¹ related to past purchases.¹⁴²

Zoompass promoters add that it may be possible to transfer funds to someone more easily using this form of payment than any other.¹⁴³

¹³⁷ Zoompass, *About Zoompass*, Toronto, Canada, 2010. [Online]

<https://www.zoompass.com/info.jsp?content=aboutUs> (Viewed on January 10, 2011).

¹³⁸ This is also true for credit cards, for instance, which are automatically blocked when the consumer phones his issuer to report the card lost or stolen. It is interesting to note that consumers take six minutes on average to realize they have lost their cell phone compared to 25 minutes for their wallet. Annick Poitras, *Adieu chèques, cartes, billets de banque...*, L'Actualité, Montréal, Canada, October 29, 2010. [Online] <http://www.lactualite.com/economie/adieu-cheques-cartes-billets-de-banque> (Viewed on November 10, 2010). Note, however, that if a consumer loses his wallet, he can immediately phone in to report it, which would not necessarily be the case for a phone.

¹³⁹ This aspect is one of the benefits of mobile phone payment, depending on the companies that market it; however, this problem is not an issue with other forms of payment (conventional or contactless), as cards do not have batteries that can go dead; so in this case it's more a question of the response companies provide in relation to drawbacks that may be mentioned.

¹⁴⁰ In this specific case, the Zoompass Tag could be affixed to a new cell phone without entailing any changes.

¹⁴¹ This issue does not come into play for the system we presented; however, if mobile phone operators provided billing directly on consumers' mobile phone bills, consumers may wish to keep a history of their transactions when switching to another operator.

¹⁴² Nil Sanyas, *Paiement sans contact par téléphone: avantages et inconvénients*, ARCEP, France, February 23, 2010. [Online] <http://www.pcinpact.com/actu/news/55525-paiement-sans-contact-telephone-france.htm> (Viewed on October 15, 2010).

For merchants – Merchants also benefit from time saved since cash transactions are processed faster. One could also rightfully say that ease of payment could increase the number or amount of the purchases made, just like credit or debit cards, as a result of which consumers are likely to buy or spend more than they would have if they were paying with cash. In fact, retailers do not try to conceal this when they tout the merits of contactless payment by mobile phone. The following quote on mobile payment excerpted from Visa's website speaks eloquently to this:

*Consumers typically spend more when using cards than paying with cash; Visa payWave transactions encourage higher average ticket size. A study in Malaysia in 2006 showed an average ticket size increase of 22% over cash transactions with Visa payWave transactions.*¹⁴⁴

Therefore, if using payment cards increases consumer spending, the use of the same cards or of similar forms of payment on other contactless media may increase household spending even more.

Drawbacks

For consumers – Payment by mobile phone does entail certain risks or drawbacks. Over the short term, the main drawback from using this technology is that the Near Field Technology (NFC), the new standard based on Radio Frequency Identification (RFID) required for contactless payment chips incorporated into phones, is still not the standard for mobile phones in Canada.¹⁴⁵

Also:

- Personal information may not be protected against fraud; if wireless phone service providers do not adequately secure their computer files, some unsecured data may be read by other phones and the users' personal information may be at risk;
- If a phone battery is dead, certain payment transactions that require the user to enter a code on his or her phone may no longer work;
- The cost for operators in relation to storing data associated with past purchases would certainly involve additional costs, and additional barriers to a change in supplier:

*The mechanisms to be set up to ensure that services are maintained are highly complex and may increase the cost of switching operators even more. As a result, mobile telephone and banking services may become combined and make it even more difficult to change banks or mobile operators.*¹⁴⁶ [translation]

¹⁴³ Provided, of course, that we exclude the use of this terribly old-fashioned form of transfer of funds known as cash.

¹⁴⁴ Visa payWave, Canada, 2010. [Online] <http://visa.ca/merchant/products-and-services/paywave/index.jsp> (Viewed on January 15, 2010).

¹⁴⁵ L'Atelier, *Le paiement sans contact testé pour le marché américain*, Paris, France, August 24, 2010. [Online] <http://news.fr.msn.com/m6-actualite/technologie/article.aspx?cp-documentid=154482422> (Viewed on October 20, 2010).

¹⁴⁶ Nil Sanyas, *Paiement sans contact par téléphone: avantages et inconvénients*, ARCEP, France, February 23, 2010. [Online] <http://www.pcinpact.com/actu/news/55525-paiement-sans-contact-telephone-france.htm> (Viewed on October 15, 2010).

Some are concerned about the risk for consumers in the event of loss, fraud or error:

But while mobile payment technologies may offer a convenient new way to pay for goods and services, consumers could be at risk of losing money when mistakes are made by merchants and processors or as a result of fraud, according to Consumers Union, the nonprofit publisher of Consumer Reports.

“As mobile payments systems come to the U.S., product providers and regulators need to make sure that they are at least as safe for consumers to use as traditional credit card and debit card payments,” said Michelle Jun, staff attorney for Consumers Union. “It is critical that mobile payment systems are covered by strong rules to protect consumers from losing money because of fraud, processor error or a dispute with a retailer.”

Federal law protects consumers in the event that their credit card or debit card is lost, stolen or misused. But current protections are badly fragmented and don’t apply to all new types of payments.¹⁴⁷

3.2 Remote Payment

Remote payment¹⁴⁸ consists of:

Entirely virtual form of payment combined with standard online or mobile technology and not requiring any dedicated hardware either for the buyer or seller. Requires for the most part registering with the payment solution provider in view of authentication at the time of payment (via e-mail address, laptop number) and password, and to connect, depending on the solution, to a bank account, bank card or e-wallet [e-wallet: funds stored on a generally extra-bank computer server (PayPal type)].¹⁴⁹ [translation]

Some of the forms of remote payment that we will be presenting have been around for a number of years but are still relatively new (such as PayPal¹⁵⁰), while others are more recent, at least in Canada, including mobile payment (SMS) and Zoompass.¹⁵¹

¹⁴⁷ Consumer Union, Mobile payment could leave consumers at risk, New York, U.S., August 24, 2010. [Online] http://www.consumersunion.org/pub/core_financial_services/016790.html (Viewed on August 25, 2010).

¹⁴⁸ Remote payment should not be confused with mobile banking services. In fact, mobile banking services consist of adapting online banking services to mobile phones. Consumers are able to pay their bills through mobile banking services just like they do online through online banking services.

¹⁴⁹ Philippe Lerouge, *Contexte et environnement*, BNP Paribas, France, June 16, 2009. [Online] <http://www.easybourse.com/bourse/international/dossier/11176/contexte-et-environnement.html> (Viewed on November 18, 2010).

¹⁵⁰ Amazon, with its *Amazon Flexible Payment Service*, and Google, with *Google Checkout*, have introduced similar payment systems (e-wallet) as the one proposed by PayPal, i.e. online payment systems that allow users to make payments without sharing their bank account or credit card information with merchants (or other vendors). Given the popularity of PayPal, we chose to discuss this system rather than its competitors.

¹⁵¹ We will not be covering prepaid credit cards in this section. These cards have already been available for a number of years in Canada but have not really managed to penetrate the Canadian market. They were also the subject of a study in 2008. *La protection des consommateurs utilisant des cartes de paiement prépayées: Un instrument laissé aux forces du marché*, Option consommateurs, Montréal, Canada, June 2008, 102 p. The TELUS Assure solution will also not be covered here, as TELUS sold its debit and credit card payment solution to CT-Payment, a company specialized in electronic payment processing. *La presse canadienne, Telus vend ses activités de traitements bancaires*, Canada, January 7, 2010. [Online] <http://www.lesaffaires.com/secteurs-d-activite/technologies-et-telecommunications/telus-vend-ses-activites-de-traitements-bancaires/508460> (Viewed on November 26, 2010).

a) Mobile Payment (SMS)

One way that Canadian mobile users today can buy electronic information and digital content is by using text messaging systems, with the purchase costs being added to their cellphone bill. Examples of SMS fee-based services include dating chat sites, various mobile information services (from horoscopes to flight status alerts), SMS voting systems in reality shows, and SMS chat boxes that appear during programs. Another recently launched application provides Canadian consumers the opportunity to text a donation to a registered charity and charge it to their cellphone bill.¹⁵²

Person-to-person fund transfers are now also possible through SMS by mobile phone.

Examples

RBC Mobex Mobile Payment (Person-to-Person Payments)

On its website on mobile commerce, Industry Canada's Office of Consumer Affairs reports that:

In September 2008, RBC began lab testing a service called Mobex Mobile Payment, which allows for person-to-person fund transfers through SMS.¹⁵³

The system is simple: users need only send a text message specifying the amount of the transaction along with the payee's mobile phone number. To ensure security, RBC Mobex communicates with the user through his mobile phone and requests that any amount greater than \$25 be confirmed by entering a PIN.

Fund transfers are done through the sender's Mobex account. An RBC Mobex account is a prepaid account that can be supplied with funds through a bank account held with a Canadian financial institution or through a credit card. At the time of the funds transfer, the payee receives a text message on his mobile phone stating that the funds have been transferred. A given sendee can send up to \$100 per day to the payee of his choice who has a mobile phone serviced by a Canadian mobile provider, regardless of whether or not the payee has an RBC Mobex account. If not, the payee must register with RBC Mobex in order to access the funds that have been transferred.

The pilot project was to be completed in January 2009. System usage costs were not specified. To obtain more information, we contacted the Royal Bank, which informed us that it did not currently intend to pursue the development of this product, but that the project may be reviewed in the future.¹⁵⁴

¹⁵² Industry Canada, *Mobile Commerce – New Experiences, Emerging Consumer Issues*, Ottawa, Canada, September 7, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02518.html> (Viewed on October 20, 2010).

¹⁵³ Industry Canada, *Mobile Commerce – New Experiences, Emerging Consumer Issues*, Ottawa, Canada, September 7, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02518.html> (Viewed on October 20, 2010).

¹⁵⁴ Philippe Lerouge, *Le P2P, testé aussi au Canada avec RBC, Le paiement mobile de nouveaux usages pour des services à valeur ajoutée*, Canada, September 29, 2008. [Online] http://mobilepayment.typepad.com/paiement_mobile/2008/09/le-p2p-test-aus.html (Viewed on October 25, 2010) and RBC, *RBC's Mobile Phone Payment Service lets Canadians send and receive money right from their cell phones*, Canada, September 25, 2008. [Online] <http://www.rbc.com/newsroom/2008/0925-mobex.html> (Viewed on October 25, 2010) and correspondence (March 23, 2011) with Dina Chiasson, Client Care Specialist, Royal Bank of Canada.

Boku

Launched in June 2009, *Boku (Boku pay by mobile)*,¹⁵⁵ a U.S.-based company, provides a mobile payment system (SMS). The system is mainly designed for the purchase of virtual goods (social networks and games). The companies that provide Boku services to consumers mention on their website that the service is available; customers wishing to purchase a virtual good through Boku need only select Boku as their form of payment and enter their mobile phone number. *Boku* sends a confirmation SMS for the amount which the consumer accepts by pressing “Y” (for yes) on the device’s keyboard, which confirms the purchase and authorizes billing. Once the response has been sent, the virtual good is unblocked. Billing is done by charging the customer’s mobile phone account.¹⁵⁶ However, the system is very costly, much more for merchants than payments made by credit card. In fact:

*The main drawback is the high fee charged by operators. In fact, as the charges are reflected on your mobile phone subscription (or prepaid account), phone companies do not hesitate to take a healthy share. Negotiations between Boku and the operators are done on a case-by-case basis, depending on each country and operator; however, they state that they charge 35% on average for each transaction, compared to 2-3% charged by credit card issuers.*¹⁵⁷ [translation]

Boku has set up a partnership with over 200 mobile operators in 651 countries, which represents a potential market of 1.6 billion users.¹⁵⁸

PaymentPin

PaymentPin provides a service similar to RBC Mobex and Boku, namely, the payment of a good or other item by phone (*Phone Line Billing*), but differs in that the service is available not only by mobile phone but also via the consumer’s land line.¹⁵⁹

The company presents itself in glowing terms:

PaymentPin is an innovative and established software provider specialized in mCommerce solutions all within the domain of mobile phones. Headquartered in Montreal, Canada, PaymentPin fuses our in-depth wisdom of the mobile industry with our strategic international partners to provide a seamless and wholly-integrated platform upon which web traffic is monetized.

¹⁵⁵ The Boku website redirects users who click on *Customer* to Paymo (Pay my Mobile). Despite the different names, Paymo does not appear to be different than Boku. It would seem that the service has one name for merchants and another for consumers.

¹⁵⁶ If the customer has a prepaid account with his service provider, Boku states: “The charge is deducted from the balance on the phone account at the time of the transaction. If you do not have sufficient funds, your transaction will be declined. Some mobile networks require a minimum balance to process payments additional to the amount requested, for details please contact your mobile network provider.” Boku, Knowledge Base, San Francisco, U.S., 2010. [Online] <http://www.paymo.com/support/> (Viewed on November 15, 2010).

¹⁵⁷ Clement Vouillon, *Dossier: paiement mobile, m-paiement*, Paris, France, August 30, 2010. [Online] <http://clementvouillon.com/2010/08/30/dossier-paiement-mobile-m-paiement/> (Viewed on January 8, 2011).

¹⁵⁸ Clement Vouillon, *Dossier: paiement mobile, m-paiement*, Paris, France, August 30, 2010. [Online] <http://clementvouillon.com/2010/08/30/dossier-paiement-mobile-m-paiement/> (Viewed on January 8, 2011).

¹⁵⁹ This payment system is being used at various dating and networking sites (www.DoYouLookGood.com, www.NetClub.com, www.monlip.com). A Quebec TV show, *LoftStory*, also used the services of *PaymentPin*; viewers could vote for the contestants of their choice and pay with the system. *PaymentPin, PaymentPins Success*, Montréal, Canada, 2009. [Online] <http://www.paymentpin.com/results.php> (Viewed on January 9, 2011).

*PaymentPin was launched in 2004 and has proven to be an industry leader in micro-payment solutions with transactions that now surpass over a million dollars annually. Through a network of local offices we provide high level customer support guaranteeing infrastructure functionality and precise payment processing.*¹⁶⁰

Illustration 2 shows how the system operates (steps and information to be provided for making a payment) by mobile phone and land line.

ILLUSTRATION 2
Using *PaymentPin*
through a mobile phone or land line¹⁶¹



MOBILE PAYMENT

NO CREDIT CARD REQUIRED

Pay with your mobile phone 

\$ 4.99 for all completed transaction.

First step: enter your mobile phone #, select your carrier

Select your carrier ▾

Then submit **SEND MY PIN**

Second step: enter your pin received by SMS

PAY

Supported carriers: AT&T, Sprint, T-Mobile, Verizon, Alltel, Nextel and Dobson. Charges will appear on your wireless bill or deducted from your prepaid account. Standard rate message apply. For customer support,  866-787-1440  or support@paymentpin.com. By submitting a PIN when clicking on PAY, you agree and accept the terms and conditions.





PHONE LINE BILLING

NO CREDIT CARD REQUIRED

Using this payment system, you will be charged directly on your phone bill! Dial the number below and a 6 digit PIN will be issued:

  1-900-226-8828 

The name PaymentPin will appear on your phone bill and the amount of \$34.99 will be charged

Then, enter your PIN and phone number in the fields below.
It's easy, fast and secure!

Your phone #: 
(10 digits)

Your PIN: **OK!** 

You must be 18 or older or have your parent's permission to use this system. Touchtone phone required. Not available from cell phones or public pay phones.



The land line-based payment service is available in North America only, while the mobile-based service is available in several countries worldwide. If a consumer wishes to use his mobile phone, he need only enter his mobile phone number at the merchant's website, and then receives an SMS indicating the PIN to enter at the site. The transmission of this PIN to the merchant constitutes his acceptance of the transaction and billing by his phone provider. The process is the same when using *PaymentPin* from a land line, except that consumers must contact *PaymentPin* by phone (through a 1-900 number) to obtain the PIN required to complete the transaction.

Consumers using the *PaymentPin* service are not necessarily aware of the costs related to the use of the service, except if they choose to go directly to the *PaymentPin* website, rather than

¹⁶⁰ PaymentPin, *Corporate Info*, Montréal, Canada, 2009. [Online] <http://www.paymentpin.com/corpinfo.php> (Viewed on January 9, 2011).

¹⁶¹ PaymentPin, *Mobile Payment Demo*, Montréal, Canada, 2009. [Online] http://www.paymentpin.com/demo_mobile_payment.php (Viewed on January 9, 2011).

the merchant's site, to find out about the costs. Consumers pay the amount requested by the merchant, and the merchant receives a percentage of the amount paid by the consumer, while *PaymentPin* pockets the difference between the two amounts. The amounts charged to merchants are therefore similar to the interchange or switch fees charged to merchants for accepting a credit or debit card. Table 9 shows the amounts paid to merchants; the difference between the amounts in the left-hand column and those in the right-hand column represent the fees for using this form of payment.

TABLE 9
Mobile and phone line payment payouts¹⁶²

MOBILE PAYMENT NO CREDIT CARD REQUIRED			PHONE LINE BILLING NO CREDIT CARD REQUIRED	
Updated list as of November 2009			Updated list as of March 2009	
United States			Price Points United States	
Australia			Billed to Customer	
Austria			\$4.99	\$ 3.39
Belgium			\$9.99	\$ 6.79
Canada			\$15.00	\$ 10.20
Operator	Retail Price Point	Website Commission	\$20.00	\$ 13.60
Aliant Mobility	\$ CAD 3.00	\$ CAD 0.90	\$24.99	\$ 16.99
Bell Mobility	\$ CAD 3.00	\$ CAD 0.90	\$30.00	\$ 20.40
Microcell (Fido)	\$ CAD 3.00	\$ CAD 1.49	\$34.99	\$ 23.79
MTS	\$ CAD 3.00	\$ CAD 1.53	Price Points Canada	
Northern Tel	\$ CAD 3.00	\$ CAD 1.17	Billed to Customer	
Rogers Wireless	\$ CAD 3.00	\$ CAD 1.49	\$1.95	\$ 1.40
Sasktel	\$ CAD 3.00	\$ CAD 1.44	\$4.95	\$ 3.56
Sogetel Mobilite	\$ CAD 3.00	\$ CAD 1.17	\$9.95	\$ 7.16
Telebec Mobilite	\$ CAD 3.00	\$ CAD 1.17	\$14.95	\$ 10.76
Telus Mobility	\$ CAD 3.00	\$ CAD 1.53	\$19.95	\$ 14.36
Virgin Mobile	\$ CAD 3.00	\$ CAD 1.35	\$24.95	\$ 17.96
			\$29.95	\$ 21.56
			\$39.95	\$ 28.76
			\$49.95	\$ 35.96

As the table shows, the fees vary based on the type of service (mobile or land line) and, in the case of mobile, on the mobile service provider used; the fees range from 30% to over 45% of the amount of the transaction, depending on the provider.

For instance, a merchant billing an amount of \$24.95 to a consumer using the *PaymentPin* service would ultimately receive \$17.96. In this instance, *PaymentPin* would be charging a 28% commission on the payment.

Operating Principle

As we can see, systems that use an SMS to pay for a good or service or for the transfer of funds do not all work the same. Some systems allow funds to be transferred between users and others goods or services to be purchased.

In both cases, the process is in practice relatively simple for consumers: users must send an SMS and then confirm the transaction.

¹⁶² PaymentPin, *Mobile Payment Payouts* | *PaymentPin*, Montréal, Canada, 2009. [Online] http://www.paymentpin.com/payouts_mobile_payment.php (Viewed on January 9, 2011).

However, these systems are slightly more complex than they appear. In the case of Boku, consumers send a surcharged SMS (more costly than a regular SMS); the operator, merchant and Boku then divide up the amount that the consumer pays once the latter receives the bill sent by his mobile phone operator.¹⁶³ For RBC Mobex, as the system is currently withdrawn, information on the billing method and associated costs are not available. Regarding *PaymentPin*, as mentioned, the consumer is not necessarily aware of the service costs since, like interchange or switch fees, these costs are charged to the merchant rather than added to the price; all of these costs (for the good or service purchased and the fees for using the form of payment) are included in the total amount that will appear on the consumer's mobile or land line phone bill.

Benefits/Drawbacks

Benefits

For consumers – Some of the benefits of mobile phone payment (SMS) include:

- Practical form of payment (use of existing device);
- Easy to use (every consumer knows his or her phone number by heart, but not necessarily his or her credit card number);
- Instantaneous (depending on the system, consumers may not have to open an account);
- No need for a bank account or credit card (depending on the system used).¹⁶⁴

For merchants – The main benefit of accepting this form of payment is the fact that it is instantaneous; the fact that a bank account is not required makes the service available to youths and teenagers, for instance, who do not necessarily have a bank account, but who own a mobile phone.

Drawbacks

For consumers – Some of the drawbacks related to this form of payment include:

- The system does not provide enough guarantees regarding security;¹⁶⁵
- Mobile phones are increasingly incorporating banking and payment functions; mobile phones could thus be more prone to theft, and losses and theft could lead to a greater number of cases of identity fraud and financial losses;¹⁶⁶
- Costs: operators charge a high commission on each transaction,¹⁶⁷ which will likely increase retail prices;
- Certain systems are designed to operate only for micro payments, which limits their use;
- Use is also limited in terms of whether a merchant accepts the form of payment;

¹⁶³ Clement Vouillon, *Dossier: paiement mobile, m-paiement*, Paris, France, August 30, 2010. [Online] <http://clementvouillon.com/2010/08/30/dossier-paiement-mobile-m-paiement/> (Viewed on January 8, 2011).

¹⁶⁴ September 7, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/fra/ca02518.html#retour3> (Viewed on October 20, 2010) and Clement Vouillon, *Dossier: paiement mobile, m-paiement*, Paris, France, August 30, 2010. [Online] <http://clementvouillon.com/2010/08/30/dossier-paiement-mobile-m-paiement/> (Viewed on January 8, 2011).

¹⁶⁵ The elements here are excerpted from an Industry Canada report, which does not draw any conclusions, but rather presents a certain number of issues raised in various documents. Industry Canada, *Mobile Commerce – New Experiences, Emerging Consumer Issues*, Ottawa, Canada, September 7, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02518.html> (Viewed on October 20, 2010).

¹⁶⁶ Industry Canada, *Mobile Commerce – New Experiences, Emerging Consumer Issues*, Ottawa, Canada, September 7, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02518.html> (Viewed on October 20, 2010).

¹⁶⁷ Clement Vouillon, *Dossier: paiement mobile, m-paiement*, Paris, France, August 30, 2010. [Online] <http://clementvouillon.com/2010/08/30/dossier-paiement-mobile-m-paiement/> (Viewed on August 8, 2011).

- Some systems require the user to subscribe since the goods or services are added to the subscriber's bill.

Lastly, mobile payment (SMS) brings up some concerns in particular regarding its unauthorized use by children. This is one of the issues already raised by the Office of Consumer Affairs:

Mobile commerce raises particular issues when considering the extent to which Canadian children have access to, and use, cellphones [...]. "Parental control over minors' commercial activities is currently being challenged in the mobile marketplace" (OECD 2008a, p. 9); for example, contrary to computer-based e-commerce, SMS-enabled mobile commerce transactions can be directly billed to the cellphone account, allowing children a way to shop for digital content without a parentally controlled credit card.¹⁶⁸

Finally, there is a risk in relation to mobile payments (SMS) that mobile phone users or account holders may be billed for transactions that they have not knowingly made or authorized. There are in fact several cases being reported of undisclosed contract terms and conditions, transactions that are billed while not having been approved by the consumer with a confirmation by SMS, and others:

Canadians are being warned they should protect their cellphone number with the same vigilance that they would a credit card.

That's because in our increasingly mobile world, there are more goods and services that people can pay for on the run by typing in not their credit card number but their cellphone number.

The new warnings come after a number of Canadians told CBC News they were duped into signing up for pricey text message schemes after entering their cellphone number through games and quizzes.¹⁶⁹

As SMSs have become extremely commonplace, with this form of payment there is an increased risk that purchases made in this manner will be minimized.

For merchants – SMS-enabled mobile payments are especially used for the transfer of funds between users and for the purchase of virtual goods (and thus for micro payments); therefore, for the time being, retailers do not see any major benefits or drawbacks in this form of payment, except for the fees they are charged if they accept this form of payment, fees which, as we have seen, are higher than those involved in accepting credit cards. Moreover, phone operators benefit from the situation, especially when they bill customers for each SMS that is sent, or when they get a commission for the payments that are made.

b) PayPal

PayPal was founded in 1998 before being bought by eBay in 2002. The PayPal payment system is therefore not actually a new payment system as it has been available for many years

¹⁶⁸ Industry Canada, *Mobile Commerce – New Experiences, Emerging Consumer Issues*, Ottawa, Canada, September 7, 2010. [Online] <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02518.html> (Viewed on October 20, 2010).

¹⁶⁹ Charlene Sadler, Guard cellphone number like credit card: experts, CBC News, Canada, October 29, 2009. [Online] <http://www.cbc.ca/smartshift/2009/10/guard-cellphone-number-like-credit-card-experts.html> (Viewed on November 25, 2010).

already and is being used by a large number of consumers and merchants. However, despite its widespread use,¹⁷⁰ it cannot be qualified as a traditional form of payment and a great many consumers not in the habit of making online purchases are still unfamiliar with it. This is why we chose to include it in our section on new forms of payment.

PayPal allows consumers to purchase items online without having to share their financial information, which is provided to PayPal when a PayPal account is opened. Consumers who wish to use PayPal's services must first open a PayPal account, then link the account to their bank account or credit card. Transactions made using PayPal will, depending on the case, be directly debited from or credited to the account, or to the user's credit card if the account is linked to a credit card.

Over the years, the company has added various new features to its payment system, such as a debit card that allows U.S. consumers to use the PayPal service for transactions other than remote payment. In this section we will be looking at PayPal's online payment services as well as the new PayPal payment system that allows PayPal to be used by mobile phone.

Operating Principle

As mentioned above, PayPal payment services can be used directly online through a computer or a mobile phone.

To use the PayPal online payment service with a computer, consumers must:

- Open an account and enter their e-mail address, mailing address and bank account or credit card information (opening an account is free);
- Go to the site of a merchant that accepts PayPal as a form of payment and select that form of payment;
- The last step involves entering their e-mail address, a password, and then confirming payment.¹⁷¹

For mobile phones, PayPal offers users of BlackBerry, iPhone and Android phones the possibility of sending money and making payments.

To send money or make a purchase with a mobile phone, PayPal subscribers must first go to m.paypal.com or download the PayPal application, which will enable them to transfer money by SMS. There is a PayPal application for each phone where the service is available (BlackBerry, iPhone and Android).¹⁷²

To send money by SMS, the subscriber must:

- Send an SMS to 729725 (PAYPAL).
- Enter the amount and the recipient's phone number or e-mail address. If the recipient does not have a PayPal account, he must open one in order to receive the money.

¹⁷⁰ PayPal is the world leader in online payment solutions, with over 153 million users worldwide, including 4 million in Canada. PayPal, Our company, 2010. [Online] <https://www.paypal.com/ca/cgi-bin/webscr?cmd=p/gen/about-outside> and Annick Poitras, *Adieu chèques, cartes, billets de banque...*, l'Actualité, Montréal, Canada, October 29, 2010. [Online] <http://www.lactualite.com/economie/adieu-cheques-cartes-billets-de-banque?page=0,3> (Viewed on November 28, 2010).

¹⁷¹ PayPal, *Three easy steps to faster checkout*, San Jose, U.S., 2010. [Online] https://personal.paypal.com/ca/cgi-bin/?&cmd=render-content&content_ID=marketing_ca/sign_up_for_paypal (Viewed on November 2, 2010).

¹⁷² PayPal, *Texting with PayPal: easy as lifting a finger*, San Jose, U.S., 2010. [Online] https://personal.paypal.com/ca/cgi-bin/?&cmd=render-content&content_ID=marketing_ca/mobile_text (Viewed on January 6, 2011).

To make a purchase, the subscriber must:

- Download the eBay application (currently, only purchases made on eBay can be made with a mobile phone).

Each transaction must be confirmed¹⁷³ by a personal access code or password.¹⁷⁴

Benefits/Drawbacks

Benefits

For consumers – If PayPal currently has such a large market share, it is because of the many benefits related to this form of payment:

- Anonymous: financial information does not have to be shared with the merchant online;
- Fast;
- Allows for person-to-person fund transfers;
- Secure (anti-fraud technology and Zero Liability protection);
- Free;
- No limit as to the amount that can be paid or transferred via PayPal.¹⁷⁵

For merchants – Merchants see the benefit of attracting customers who would otherwise not make online purchases as they do not wish to share their financial information. Some PayPal packages are free for merchants.

Drawbacks

For consumers – The benefits offered by PayPal are offset by a certain number of drawbacks:

- To use PayPal, you need to open an account;
- The PayPal account is not as secure as an account with a financial institution;¹⁷⁶
- PayPal subscribers are often the target of phishing¹⁷⁷ (fraud).

¹⁷³ The fact that PayPal requires that each transaction be confirmed reduces the risk of fraud should the consumer lose his cell phone.

¹⁷⁴ PayPal, *Take PayPal with you – wherever you go*, San Jose, U.S., 2010. [Online] https://personal.paypal.com/ca/cgi-bin/?cmd=render-content&content_ID=marketing_ca/mobile_payments (Viewed on January 6, 2011).

¹⁷⁵ Clement Vouillon, *Dossier: paiement mobile, m-paiement*, Paris, France, August 30, 2010. [Online] <http://clementvouillon.com/2010/08/30/dossier-paiement-mobile-m-paiement/> (Viewed on January 8, 2011).

¹⁷⁶ “Paypal is not regulated like a bank and does not provide the same protection to consumers [...] If this company were to go under tomorrow, who would guarantee the account balances?” [translation] Annick Poitras, *Adieu chèques, cartes, billets de banque...*, L’Actualité, Montréal, Canada, October 29, 2010. [Online] <http://www.lactualite.com/economie/adieu-cheques-cartes-billets-de-banque> (Viewed on November 10, 2010).

¹⁷⁷ “Phishing is a technique used by identity fraudsters. For instance, they send an e-mail that appears to be from your bank asking you to confirm your banking information. There is often an alarmist tone to the message: someone has attempted to hack into your computer, your computer is experiencing a major problem, etc. Always check the address of the person sending the e-mail and the site you are being redirected to. By paying attention, you can quickly realize you are being duped.” [translation] Comment ça marche.net, *Les paiements en ligne*, Paris, France, November 13, 2009. [Online] <http://www.commentcamarche.net/faq/9668-les-paiements-en-ligne> (Viewed on January 15, 2011). The Financial Consumer Agency of Canada has issued alerts regarding PayPal and e-mail fraud. “Vishing hooks consumers using two different approaches. The e-mail based version of the scam, like the original phishing, uses e-mails that mimic messages from an online payment service provider, such as PayPal or eBay. The messages may say that there is some problem with the recipient’s account. Instead of providing a link to a fake website, vishing e-mails provide a false customer-support telephone number. When consumers call, an automated service prompts them to

c) Zoompass

Launched in the summer of 2009, Zoompass is a relatively new form of payment that allows funds to be transferred between two users (persons) instantly and, according to the company that created the system, securely.¹⁷⁸ Zoompass is compatible with virtually all major mobile phones on the Bell, Fido, PC Mobile, Rogers, Solo Mobile, TELUS and Virgin Mobile networks.

When it was launched, Zoompass was introduced as follows:

*Last summer, Bell, Rogers and Telus launched a joint payment service known as "Zoompass." From a cell phone, a Zoompass customer can transfer money to another Zoompass customer without having to take out his wallet. For the time being, this technology, which allows money to be transferred between two wireless device users, is not widely used. But this is only the beginning, according to Robin Dua, President of EnStream, the company created by the three wireless networks to oversee the Zoompass service.*¹⁷⁹ [translation]

With Zoompass, consumers can:

- Send, receive and request funds from friends, family and co-workers;
- Create a link with their financial institution in order to download funds;
- Shop at stores or online, or withdraw money from ATMs using the Zoompass prepaid MasterCard.¹⁸⁰

Zoompass allows funds to be transferred between Zoompass accounts.

Operating Principle

Opening an account

Zoompass is currently available to Bell, Fido, PC Mobile, Rogers, Solo Mobile, TELUS and Virgin Mobile subscribers who use BlackBerry, iPhone or Android phones.

To use Zoompass, consumers must first open a Zoompass account.

Consumers can subscribe to Zoompass online as follows:

- At the Zoompass website, they fill in the registration form by entering their mobile phone number;

"log in" by providing account numbers and passwords, using the telephone keypad." Financial Consumer Agency of Canada, *Consumer Alerts: E-mail and telephone fraud warning*, Ottawa, Canada, November 28, 2008. [Online] http://www.fcac-acfc.gc.ca/eng/resources/consumeralerts/alerts_posting-eng.asp?postingId=219 (Viewed on December 1, 2010).

¹⁷⁸ Consumers who wish to use Zoompass to make online purchases must obtain the Zoompass prepaid MasterCard.

¹⁷⁹ Alain McKenna, *La révolution des services bancaires mobiles est en marche*, Les Affaires, Montréal, Canada, March 8, 2010. [Online] <http://www.lesaffaires.com/secteurs-d-activite/technologies-et-telecommunications/la-revolution-des-services-bancaires-mobiles-est-en-marche/510817> (Viewed on January 15, 2011).

¹⁸⁰ Zoompass, *What is Zoompass?*, Toronto, Canada, 2010. [Online] https://www.zoompass.com/faqs.jsp?id=zoompass&content=detailsfaq&LIST_ID=10430 (Viewed on January 15, 2011).

- An SMS text message with a verification code is then sent to their mobile phone. They must reply to the SMS text message or enter the verification code in the registration screen on the Web page;
- They are then sent an e-mail with a link that they click to activate their account and log in for the first time.

Consumers can also subscribe to Zoompass directly from their mobile phone as follows:

- Download the Zoompass mobile application form;
- If consumers have a phone that is compatible with the system (listed above), they only need to click on Sign Up and fill in the registration form;
- They are then asked to send an SMS, after which they receive a verification message;
- They can then log on to Zoompass;
- The first time a new subscriber logs on, he will be asked to answer two security questions and confirm his e-mail address by clicking on a link that Zoompass sends to the e-mail address that was entered.¹⁸¹

To access Zoompass on his mobile phone, the new subscriber must download the Zoompass mobile application.

Opening a Zoompass account is free.

Using the Zoompass payment system

To access Zoompass on his mobile phone, the new subscriber must download the Zoompass mobile application.

Once the account has been created, the subscriber can:

- Link his Zoompass account to a bank account or credit card to transfer money to his Zoompass account.
- Send or receive funds to or from another subscriber.

Zoompass features a Zoompass prepaid MasterCard¹⁸² that allows cardholders to use funds from their Zoompass account to make purchases and withdrawals from ATMs from their Zoompass account.¹⁸³

The transfer of funds between a bank account and Zoompass account can take two to three business days.¹⁸⁴ The bank account must be a chequing account with a major Canadian financial institution. Transfers of funds can be done directly at the Zoompass site or at a financial institution's website using the online bill payment function.

¹⁸¹ Zoompass, *FAQ*, Toronto, Canada, 2010. [Online]

https://www.zoompass.com/faqs.jsp?id=zoompass&content=detailsfaq&LIST_ID=05493 (Viewed on November 8, 2010)

¹⁸² The Zoompass prepaid MasterCard is a contactless credit card that is linked to the Zoompass account. It allows users to make purchases and withdraw cash, although there may be fees involved.

¹⁸³ Zoompass, *FAQ*, Toronto, Canada, 2010. [Online]

https://www.zoompass.com/faqs.jsp?id=zoompass&content=detailsfaq&LIST_ID=05493 (Viewed on November 8, 2010).

¹⁸⁴ Zoompass, *FAQ*, Toronto, Canada, 2010. [Online]

https://www.zoompass.com/faqs.jsp?id=zoompass&content=detailsfaq&LIST_ID=02470 (Viewed on November 8, 2010).

Once the Zoompass account has been loaded, the subscriber can transfer funds into the Zoompass account of anyone who uses a phone with one of the carriers mentioned above and is on his contact list. If the person to whom he wishes to send funds is still not on his contact list, he need only enter his name and mobile phone number, then add him as a contact. If the person to whom the money is being sent is not a Zoompass subscriber, he will receive a message asking him to sign up within 30 days in order to receive the funds sent to him (the funds will then be transferred into the Zoompass account that the recipient creates). After 30 days, if the recipient has not yet registered, the funds are returned to the sender.

To send money from his mobile phone, the subscriber must:

- Open the Zoompass mobile application;
- Select Send Money;
- Select a contact from his Zoompass contact list;
- Enter the amount he would like to send (along with an optional message);
- Select the Zoompass or Credit Card option and click on Send or Continue;
- A confirmation page is displayed to allow the user to check the recipient's name and mobile phone number along with the amount of the transaction. The user can then make any changes or confirm the transaction;
- The funds are then transferred instantly from the sender's Zoompass account to that of the recipient.¹⁸⁵

Transferring funds from a bank account to a Zoompass account is free, as well as sending funds from a Zoompass account; however, there are charges for making withdrawals at an ATM using the prepaid card. Zoompass sets withdrawal limits per transaction. Appendix 1 lists all the applicable fees.

Regarding the security of the Zoompass system, the company's website states that:

*Zoompass uses state-of-the-art encryption technologies to protect against unauthorized transactions and access to user data. If there are any concerns regarding fraud or unusual activity on your Zoompass account, we will lock your account for your safety until the dispute is settled to prevent any unauthorized transactions from taking place.*¹⁸⁶

Zoompass provides a refund in the event of fraud on prepaid accounts.¹⁸⁷

Appendix 2 presents the measures Zoompass has taken to ensure that transactions are secure.

Benefits/Drawbacks

Benefits

According to the company, Zoompass is:

¹⁸⁵ Zoompass, *FAQ*, Toronto, Canada, 2010. [Online] https://www.zoompass.com/faqs.jsp?id=zoompass&content=detailsfaq&LIST_ID=29944 (Viewed on November 8, 2010).

¹⁸⁶ Zoompass, *Are there safety provisions or fraud prevention provided by Zoompass?*, Toronto, Canada, 2010. [Online] https://www.zoompass.com/faqs.jsp?id=zoompass&content=detailsfaq&LIST_ID=30738 (Viewed on November 10, 2010).

¹⁸⁷ Annick Poitras, *Adieu chèques, cartes, billets de banque...*, L'Actualité, Montréal, Canada, October 29, 2010. [Online] <http://www.lactualite.com/economie/adieu-cheques-cartes-billets-de-banque> (Viewed November 10, 2010).

- Fast;
- Efficient;
- Secure.

Drawbacks

Presented as a fast and efficient form of payment, Zoompass is not a perfect solution and does have some drawbacks.

For consumers – The speed of the system that the company mentions is relative. The fact that a transfer of funds from a user’s bank account and his Zoompass account can take two to three days can greatly impact the speed of the service.

Zoompass accounts are not as secure as accounts held with major Canadian financial institutions.¹⁸⁸

There may be costs involved for the various services. Although some transactions offered by Zoompass are free, there are charges associated with some others, which may make the service more costly than other forms of payment.

For merchants – Zoompass cannot currently be used in stores. According to Robin Dua, President of EnStream LP, “Soon, Zoompass will also become an e-wallet. It will contain our existing payment cards and a prepaid account linked to our traditional bank account. This e-wallet will one day be used by millions of Canada at checkout.”¹⁸⁹ [translation]

d) weXpay¹⁹⁰

Introduced on the market in October 2007 in France, weXpay is a payment system that allows users to make online purchases in a manner that closely resembles paying with cash. It is designed for those who do not own a bank card, do not wish to share their card information online, or who do not have a bank account. This type of payment system is similar to prepaid cards; however, the fees are not the same.

weXpay is currently available only for companies in the European Union that observe French laws. The system is expected to be developed internationally.¹⁹¹

According to the company, weXpay allows users to make both small and large purchases online immediately, without exposing themselves to fraud. How does weXpay work?

¹⁸⁸ A Zoompass Account is not a deposit account and may not be insured by the Canada Deposit Insurance Corporation or any provincial deposit insurance program. Zoompass, *Terms of Use*, Toronto, Canada, 2010. [Online] <https://www.zoompass.com/info.jsp?content=userAgreement> (Viewed on November 10, 2010). To be a member of the CDIC, Zoompass would first have to register as a financial institution and meet all the associated criteria along with observe a certain number of regulatory requirements and then pay CDIC premiums, which would increase the costs related to using its services.

¹⁸⁹ Cited by Annick Poitras in *Adieu chèques, cartes, billets de banque...*, L'Actualité, Montréal, Canada, October 29, 2010. [Online] <http://www.lactualite.com/economie/adieu-cheques-cartes-billets-de-banque> (Viewed on November 10, 2010).

¹⁹⁰ The site is under construction as this is being written; the information being presented may therefore have changed when the new site goes back online.

¹⁹¹ WeXpay, *FAQ*, France, 2010. [Online] http://www.wexpay.com/faq_categories/3/faqs/69 (Viewed on October 21, 2010).

To pay for purchases using weXpay, consumers need to purchase a code directly from the company or reseller which can then be entered on the website.

Operating principle

Introduced in 2007, the weXpay system:

Consists of a 16-digit code used to pay for online purchases.

There are two ways to obtain a code:

1. If you wish to use cash, go to one of our distributors (tobacco store, newspaper kiosk) near you. You can exchange 5 to 31€ per transaction. The distributor keeps 1€ in fees for each weXpay code that is issued.

2. If you do not wish to leave your home or pay 1€ in fees to the distributor, you can also change up to 150€ on our Web site using a bank card.

weXpay can be used on affiliated sites as many times as desired until it is depleted, for a period of one year. Several weXpay's can also be combined to make a payment.¹⁹²
[translation]

Once the 16-digit code has been obtained, to make a purchase on the website of a merchant that accepts this form of payment, users must select the weXpay payment option and enter the 16-digit code(s) provided to them, then confirm their purchase.¹⁹³ Lastly, they must note the transaction number they obtained from the website, which constitutes proof of payment.

In addition to the fees charged at stores for deposits made to a weXpay account, this payment system does not involve any additional fees for users; however, fees are charged to merchants who accept this form payment:

As with PayPal, weXpay requires a few hours processing time. It is designed to be free of charge for Web users, but a commission is applied to transactions (3 to 10% depending on the operation) made at each online store. There are no other fees for the merchant.¹⁹⁴ [translation]

Benefits/Drawbacks

Benefits

For consumers – The weXpay system is described as a form of payment that is:

- Simple;
- Convenient (online purchases can be made without a bank card; at the time of depositing money into the account, users may select normal or restricted use, which prevents the 16-digit code from being used on adult sites);

¹⁹² WeXpay, *À propos de weXpay*, France, 2010. [Online] http://www.wexpay.com/fr/a_propos (Viewed on October 15, 2010).

¹⁹³ WeXpay, *Comment ça marche*, France, 2010. [Online] http://www.wexpay.com/fr/comment_ca_marche (Viewed on October 15, 2010).

¹⁹⁴ <http://www.wizishop.com/blog/les-dossiers-du-e-commerce/le-paiement-en-ligne-les-autres-systemes-de-paiement.html>

- Secure and anonymous (personal information does not have to be provided to merchants).¹⁹⁵

For merchants – weXpay allows online merchants to accept a form of payment likely to attract customers who do not wish to share their financial information online or who do not have a bank account (such as teenagers).

Drawbacks

For consumers – Users who wish to purchase a weXpay code at a distributor outlet rather than at the weXpay website will be charged 1€ in fees for each deposit (maximum deposit of 31€).

The potential loss for consumers can be high since the code cannot be recovered if lost. In addition, a weXpay code is valid for one year from the time it is issued; after that time, the unused amounts are no longer available, and there is no possible recourse.¹⁹⁶

At the end of 2009, about 100 merchants were accepting this type of payment, and 200 other sites were ready to use the system.¹⁹⁷

For merchants – Like other forms of payment that can be used for online purchases, *weXpay* is not free; merchants are charged fees: 3 to 10% of the transaction amount per transaction, depending on the operation.¹⁹⁸

3.3 Other Forms of Payment

a) Visa Debit

The Visa Debit card, available in over 130 countries, has also been available in Canada since October 2010 through a partnership with CIBC. Visa offers more than one type of Visa Debit: the one currently available in Canada is the Visa Debit co-badged card.¹⁹⁹ This card displays both the Visa Debit logo and that of other suppliers (such as Interac). The card is used for shopping online, by phone, by mail order and outside of Canada. Visa Debit is not accepted at points of sale (POS) in Canada; instead, Interac has to be used.²⁰⁰

¹⁹⁵ WeXpay, *À propos de weXpay*, France, 2010. [Online] http://www.wexpay.com/fr/a_propos (Viewed on October 15, 2010). If, to avoid charges, consumers were to go to the company's website to obtain a code, they would then obviously have to provide a bank card number.

¹⁹⁶ WeXpay, *Mentions légales*, France, 2010. [Online] https://www.wexpay.com/fr/mention_legales (Viewed on October 15, 2010).

¹⁹⁷ Paradox Voyages, *Paradox Voyages en ligne et régler en liquide: c'est possible!*, Paris, France, December 2, 2009. [Online] <http://www.paradox-voyages.com/service-de-lagence-paradox-voyages/paradox-voyages-en-ligne-et-regler-en-liquide-cest-possible/1688.html>.

¹⁹⁸ Wizishop.com, *Les dossiers du e-commerce n°5: Le paiement en ligne: quelles options pour les e-commerçants?*, France, 2011. [Online] <http://www.scribd.com/doc/13327092/Les-solutions-de-paiement-en-ligne> (Viewed on March 15, 2011).

¹⁹⁹ Visa, *What is Visa Debit?*, Toronto, Canada, 2010. [Online] <http://www.visa.ca/en/personal/visa-debit-card/index.jsp> (Viewed on November 26, 2010).

²⁰⁰ Visa, *What is Visa Debit?*, Toronto, Canada, 2010. [Online] <http://www.visa.ca/en/personal/visa-debit-card/index.jsp> (Viewed on November 26, 2010).

Like any debit card, Visa Debit allows cardholders to pay for purchases directly from their bank account.²⁰¹

Operating Principle

The Visa Debit co-badged card allows cardholders to pay for purchases in Canada everywhere where *Interac* is accepted. As with payments made with a conventional debit card, the amount of the payment made with the Visa Debit card is debited directly from the cardholder's bank account.

The card, which comes with both a magnetic stripe and chip, is used as a debit card in Canada in stores where *Interac* is accepted, since the transaction is made through the *Interac* terminal. Visa Debit cards can also be used as traditional debit cards in ATMs in Canada.

Furthermore, the Visa Debit card allows consumers to shop online at all websites that accept Visa. The card is used in these cases the same way as a credit card, namely by entering the information required to complete the transaction on the website.

Outside of Canada, cardholders can use the Visa Debit card everywhere where Visa is accepted. In Canada, the card will only be accepted at locations that accept *Interac*.²⁰²

Benefits/Drawbacks

Benefits

For consumers – It is not the reasons cited by Visa and related to convenience (accepted at many stores, no need to carry large amounts of cash) and flexibility (e.g. payment in person, ATM withdrawals) that will convince consumers of the benefits of the Visa Debit card, since these benefits are found with any debit or credit card.

Like traditional debit cards, the Visa Debit card only allows consumers to spend what they have in their account, provided the cardholder's account is not linked to a line of credit.

However, the Visa Debit card has an advantage over other debit cards where fraud protection is concerned: Visa in fact offers the same protection (Zero Liability) for its debit cards as for purchases made with a credit card.²⁰³

The fact that the card can be used for purchases online or outside of Canada at stores that accept Visa is also an advantage over traditional debit cards.

For merchants – Merchants also benefit from the advantages generally associated with payment cards. With regard to interchange fees, this type of card presents a benefit for

²⁰¹ Visa, *Visa Debit*, Toronto, Canada, 2010. [Online] <http://72.46.234.188/fr/merchant/products/visa-debit/index.jsp> (Viewed on November 15, 2010).

²⁰² Visa, *How it works*, Toronto, Canada, 2010. [Online] http://72.46.234.188/en/personal/visa-debit-card/cobadge/how_it_works.jsp (Viewed on November 15, 2010).

²⁰³ Visa, *Visa Debit*, Toronto, Canada, 2010. [Online] <http://72.46.234.188/fr/merchant/products/visa-debit/index.jsp> (Viewed on November 15, 2010).

merchants, as the interchange fees are slightly lower than those they are charged for “standard” transactions made with a Visa credit card.²⁰⁴

Drawbacks

For consumers – There are not many drawbacks for Visa Debit cardholders. In fact, because the Visa Debit card also benefits from Visa Zero Liability, the risk of financial loss related to fraud is substantially reduced. The only potential drawback may be the fees, which depend on the features chosen by the cardholder.

For merchants – So that it can be used at their store, merchants must have the terminals that allow them to accept the Visa Debit card. These are the same terminals as for debit cards, and the fees (for leasing the equipment, etc.) are therefore the same as those charged for accepting debit cards.

Though lower than the interchange fees charged by Visa for the use of its credit cards, the fees associated with the Visa Debit card will nonetheless be considerably higher than those charged for transactions made with conventional debit cards.

b) Square

First announced in December 2009, the Square payment system was introduced in the U.S. in 2010. It is still not available in Canada.

Square is a new technology that allows small businesses and even persons to accept payments by magnetic-stripe credit card without having to pay the fees involved with leasing a terminal. With this payment system, cell phone users can convert it into a mobile payment terminal by connecting the small white square to their phones. The payment is then charged to the consumer’s credit card and transferred to the Square user’s account.

²⁰⁴ Visa, *Visa Canada Interchange Reimbursement Fees*, Toronto, Canada, May 2009. [Online] <http://www.visa.ca/en/aboutcan/mediacentre/interchange/pdf/visa-interchange-rates-current.pdf> (Viewed on November 29, 2010).

Illustration 3 shows the Square payment system.

ILLUSTRATION 3: Square²⁰⁵



First developed for the U.S. market, the Square payment system for now only allows payments to be made using magnetic-stripe cards (the system is not compatible with chip cards; the small white square that connects to a cell phone can only read magnetic stripes²⁰⁶).

In practice, consumers wishing to make purchases with a credit card from a merchant or friend who has a cell phone, the appropriate reader and who has downloaded the appropriate application need only present his card, which is then read by the reader. Once the consumer confirms the transaction, the transaction is completed. The system is designed for transactions up to \$60.²⁰⁷ Seemingly simple, the way Square operates is vastly more complex.

Operating Principle

To use the system, a person who wishes to receive payments using Square must first download the appropriate application²⁰⁸ and obtain the Square Card Reader (mailed free of charge). The user then connects the reader to the phone, opens the appropriate app, and identifies himself.

After entering the transaction amount where indicated on the screen, the Square Card Reader is used to read the card's magnetic stripe. A secure connection is used to check whether the card is valid and, once the cardholder has signed the phone's touch screen, the transaction is completed. A phone number or e-mail is required for a confirmation to be sent.²⁰⁹

When the blue card's magnetic stripe is swiped through the card reader (the size of a key holder), the reader reads the data and converts them into a sound signal. The transaction is first secured by an electronic signature (with one's finger). Next, the microphone in the jack transmits this sound track in the iPhone processors, after which it

²⁰⁵ Square, San Francisco, U.S., 2010. [Online] <https://squareup.com/> (Viewed on December 8, 2010).

²⁰⁶ As we will see, the credit card number can be entered manually, though the fees are higher.

²⁰⁷ WOLFnotdog, Square: Le futur du paiement sur iPhone?, December 2, 2009. [Online] <http://www.wolfnotdog.com/square-le-futur-du-paiement-sur-iphone/> (Viewed on December 10, 2010).

²⁰⁸ There is a Square app for iPhones and iPads and another for Android smart phones.

²¹⁰ WOLFnotdog, Square: Le futur du paiement sur iPhone?, December 2, 2009. [Online] <http://www.wolfnotdog.com/square-le-futur-du-paiement-sur-iphone/> (Viewed on December 10, 2010).

is transmitted to the Square application. From there, the encrypted data are transmitted either by Wi-Fi (for iPod Touch) or 3G to a secure server that will communicate with conventional payment networks to complete the transaction. The major payment networks such as Visa, MasterCard and American Express have already agreed to authorize Square to accept payments. The last step involves sending a receipt to the customer by e-mail [...]²¹⁰ [translation]

The transaction amount, less the fees charged by Square, is then deposited in the Square user's account (which was created after the user provided his financial information to Square).

In terms of security, the company states the following on its website:

- Square's network and servers are housed in a secure facility monitored around the clock by dedicated security staff.
- Square's software is developed using industry-standard security best practices.
- Square's employees act in accordance with security policies designed to keep your data safe.²¹¹

Benefits/Drawbacks

For consumers – Payment is still made by credit card and, therefore, regardless of the type of terminal used to accept it and read it, the benefits and drawbacks are the same as those with any other credit card. However, it may be useful for paying a third party that does not have a stationary terminal and otherwise could not accept this form of payment.

For merchants – This new technology thus only provides special benefits to merchants or users who do not have a stationary terminal or who provide services outside of a fixed location, whom the system allows to accept payments by credit card as securely as if they had a stationary terminal. However, the fees for using Square are relatively high: 2.75% of the transaction amount when the card is swiped and 3.5% of the transaction amount plus \$0.15 when the card number is entered manually.²¹² Furthermore, merchants who accept credit cards at their store must, in addition to the fees charged for each transaction, pay to lease the terminal, costs which merchants who use Square do not have to pay. Therefore, the Square system could be beneficial for occasional use.

c) Biometric Payment

Biometric payment, a point-of-sale technology that uses a terminal capable of scanning fingerprints, appeared to be mere science fiction just a few years ago. However, the technology is currently being tried out in many countries. In 2006, an article on biometric payment stated:

After having been successfully tried out in the U.S., the first biometric payment terminals appeared in Europe. [...] The Midcounties Co-operative supermarket chain in Britain has

²¹¹ Square, *Security is critical to Square*, San Francisco, U.S., 2010. [Online] <https://squareup.com/security> (Viewed on December 10, 2010).

²¹² Square, *What are the processing fees?*, San Francisco, U.S., 2011. [Online] <https://help.squareup.com/customer/portal/articles/11861-what-are-square-s-processing-fees-> (Viewed on January 20, 2011).

*just introduced a fingerscanning payment terminal in three of its stores near Oxford.*²¹³
[translation]

Closer to home, in June 2010, the Calypso Waterpark in Ontario made waves in other ways:

Visitors will also be able to use the 'Money at My Fingertip' service whereby they can purchase food or items at the gift shop without having to bring their wallets.

*The payment method allows them to upload money and access it through their fingertip to make purchases on site. The system selects points from the person's fingerprint that are associated with a barcode and credit card, which makes the system reliable and confidential, as there is no link to the person's name.*²¹⁴ [translation]

Illustration 4 shows a fingerscanning terminal for making payments.

ILLUSTRATION 4 Biometric payment terminal²¹⁵



Consumers wishing to make purchases using a biometric system need only place their index finger over a scanner for the transaction to be completed. The money comes from the consumer's bank account or an account with the service provider. Obviously, before making a payment, consumers must first register their fingerprints with their financial institution or the service provider.

Operating Principle

How does biometric payment work? Rather than the unique code that is embedded on magnetic stripes or other chips found in traditional payment cards, biometric payment uses the consumer's fingerprints as the unique identifier.

Biometrics is a global technique aimed at establishing a person's identity by measuring a physical characteristic. Several types of physical characteristics are possible, some

²¹³ Ludovic TICHIT, La paiement biométrique débarque aux caisses des magasins, JDN Solutions, France, June 7, 2006. [Online] <http://www.journaldunet.com/solutions/0606/060607-paiement-biometrique-grande-distribution.shtml> (Viewed on December 10, 2010).

²¹⁴ Kristina Brazeau, *Le parc Calypso officiellement inauguré*, La Nouvelle, Ottawa, Canada, June 16, 2010. [Online] <http://www.journallanouvelle.ca/Actualites/2010-06-16/article-1311593/Le-parc-Calypso-officiellement-inaugure/1> (Viewed on December 10, 2010).

²¹⁵ Europe 1, *Payer avec votre index, ça vous tente?*, Paris, France, June 8, 2010. [Online] <http://www.europe1.fr/Consommation/Payer-avec-votre-index-ca-vous-tente-210671/> (Viewed on December 10, 2010).

*more reliable than others, but all must be unforgeable and unique so that they are representative of a single individual.*²¹⁶ [translation]

Consumers must visit their financial institution²¹⁷ (if it provides the service) to register their fingerprints and link them to the desired account. To make a biometric payment, a consumer then places his finger over the biometric reader, without the need to enter an additional code or provide identification.

Consumers may have to use the services of a third party rather than their financial institution, as is done in the U.S.:

Payment terminals were jointly developed by Pay By Touch, a company specialized in authentication solutions, and NCR, whose technologies are used in customer relations management. Pay By Touch has already set up a similar system at over 2,000 points of sale in the U.S. Since buying out its main competitor last January, Pay By Touch is now the leader in this field.

*The system is simple to use and free for consumers: they register with Pay By Touch by providing a piece of ID and their financial information. The company then scans their fingerprints. When making purchases, a consumer need only place his fingertip over the payment reader to pay for his purchases. No more bank cards, small change and chequebooks...*²¹⁸ [translation]

Benefits/Drawbacks

Benefits

For consumers – Biometric payment has some benefits, the main one being convenience: a consumer no longer needs to bring along any type of payment instrument, card, wallet or phone, or to remember a PIN, and this payment instrument is not likely to be lost or left at home.

The system appears to be secure: in fact, it is unlikely that someone else's fingerprint could be used; though a bank card can be easily lost or stolen, the same certainly cannot be said for one's index finger. However, this security is relative, as we will see in the section on drawbacks.

This form of payment has the benefit of being fast: in fact, it reduces wait times at checkout, and the consumer no longer needs to handle even a contactless type of payment instrument.

For merchants – Besides speed, biometric payment has another advantage: the possibility of collecting information on customers through profiling (such as a consumer who purchases a certain product also purchases another product, etc.). In fact,

²¹⁶ Laurent Beddelem, Julien Bianchi, Aurélien Durupt and Marie-Hélène Ponsard, *Biométrie – Empreintes digitales*, date unknown. [Online] <http://www.scribd.com/doc/7045082/Les-Empreintes-Digitales> (Viewed on March 26, 2011).

²¹⁷ Biometric identification could give access to a bank account held at a financial institution, to a credit card. Europe 1, *Payer avec votre index, ça vous tente?*, Paris, France, June 8, 2010. [Online] <http://www.europe1.fr/Consommation/Payer-avec-votre-index-ca-vous-tente-210671/> (Viewed on December 10, 2010).

²¹⁸ Ludovic TICHIT, *La paiement biométrique débarque aux caisses des magasins*, JDN Solutions, France, June 7, 2006. [Online] <http://www.journaldunet.com/solutions/0606/060607-paiement-biometrique-grande-distribution.shtml> (Viewed on December 10, 2010).

*[...] knowledge of consumer habits is a critical tool for solution developers. This form of payment in fact allows businesses to increase their stranglehold on consumers: the biometrics debate is still ongoing.*²¹⁹ [translation]

Biometric payment also has the advantage for merchants of being able to obtain a larger quantity of personal information than other forms of payment, as some of this information is especially sensitive. Hence, it may be possible for a merchant to know the consumer's age and to check whether the transaction is legal (as in the case of someone wishing to purchase alcohol or tobacco, for instance).

*To convince retailers, Pay By Touch is stressing the security aspect, in particular the verification of the customer's age, and the fact that managing the day's sales is easier.*²²⁰ [translation]

Drawbacks

For consumers – The mention of checking the customer's age, presented as an advantage for merchants, is perhaps an indication of what may be the most problematic aspect of biometric payment, namely that of the issue of privacy.

*However, the Orwellian nature of this generalization of authenticating people through their physical characteristics is not lost on some watchdog organizations, which are concerned about the potential misuse of such a technology.*²²¹ [translation]

As we know, fingerprints have been until now been used for identification purposes in law enforcement and stored in centralized files. We also know that this unique identification had been linked, in these files, to a range of highly personal characteristics or information. Should consumers be concerned about the fact that similar such files could be created by financial institutions, of a possible link between the files, of the quantity and type of information contained in such files and of the potential use made of it? Would unauthorized access to such files not represent an even greater risk to consumers than that of access to current files?²²²

System security is not fail proof. In fact, fingerprints leave traces (known as latent prints). It is thus possible to lift prints, and even clone them. In fact, a photograph of a fingerprint lifted from a common object (such as a glass) could be used to make a gelatine-based replica that would fool biometric readers.²²³

Another possible drawback would be how such a system would change the way consumers perceive how they pay for goods and spend money:

²¹⁹ Ludovic TICHIT, *La paiement biométrique débarque aux caisses des magasins*, JDN Solutions, France, June 7, 2006. [Online] <http://www.journaldunet.com/solutions/0606/060607-paiement-biometrique-grande-distribution.shtml> (Viewed on December 10, 2010).

²²⁰ Ludovic TICHIT, *Le paiement biométrique débarque aux caisses des magasins*, JDN Solutions, France, June 7, 2006. [Online] <http://www.journaldunet.com/solutions/0606/060607-paiement-biometrique-grande-distribution.shtml> (Viewed on December 10, 2010).

²²¹ Jean-Yves Denis, *Les banques veulent vos empreintes digitales*, November 27, 2006. [Online] <http://bellaciao.org/fr/spip.php?article37646> (Viewed on December 15, 2010).

²²² Jean-Yves Denis, *Les banques veulent vos empreintes digitales*, November 27, 2006. [En ligne] <http://bellaciao.org/fr/spip.php?article37646> (Viewed on December 15, 2010).

²²³ Geneviève Grimm-Gobat, *On ne peut plus se fier aux empreintes digitales*, Geneva, Switzerland, July 1, 2002. [Online] <http://largeur.com/?p=1105> (Viewed on December 11, 2010).

In addition, the obsession of dematerialization in relation to money presents a problem that financial institutions have considered [...], but from an unusual perspective: in their opinion, customers will be only too happy to pay with their fingers that they will ask that concrete payment instruments be withdrawn. Another non-financial institution type of argument would be to say that this gives an even greater impression of not having a concrete feeling of spending money, somewhat as if losing money were a joke.²²⁴ [translation]

For merchants – Obviously, the costs resulting from the implementation of biometric payment will be substantial for financial institutions or the companies that offer the service:

[...] authentication by biometric methods requires that one first enter the characteristics to be checked with respect to each person likely to use the service to which the technique is associated. For instance, and in the case of the authentication of a consumer wishing to perform an ATM transaction, the financial institution will first have to take the fingerprint, palm print or retina scan of each client. In the case of the major Canadian banks, we are talking about millions of consumers.

One therefore gets a picture of the scope of the work involved and the associated costs. Moreover, the reference information must be collected under optimal conditions to ensure that the process is reliable, as we will see. Qualified personnel is therefore needed, along with quality materials, and adequate facilities. The effort involved will be considerable. This data bank must also be kept up to date, with reference information collected periodically because of the changes that the body undergoes as a result of injury, illness and time. Furthermore, there will always be people who, for one reason or another, cannot produce the required biometric feature in accordance with the system parameters that have been implemented. In short, the compilation of the verification and control files is an incredibly arduous task.²²⁵ [translation]

For merchants, the costs could be a factor in their acceptance of such a form of payment:

The system is not free for merchants. As is the case with other forms of payment, merchants will pay a fixed commission on each transaction.²²⁶ [translation]

Another drawback for both merchants and consumers is that an accident (even a minor one, such as a cut to the finger) could falsify the fingerprint. In such cases, what will happen if biometric payment has replaced all other forms of payment for a consumer, but the readers can no longer identify him?

²²⁴ Jean-Yves Denis, *Les banques veulent vos empreintes digitales*, November 27, 2006. [Online] <http://bellaciao.org/fr/spip.php?article37646> (Viewed on December 15, 2010).

²²⁵ Jacques St-Amant, *Le défi de l'identification des consommateurs dans le cadre des nouveaux mécanismes de paiement électronique*, Option consommateurs, Montréal, Canada, August 2006. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/renseignements_personnels/oc_rr_rens_pers_biometrie_200608.pdf (Viewed on December 11, 2010).

²²⁶ Ludovic TICHIT, *Le paiement biométrique débarque aux caisses des magasins*, JDN Solutions, France, June 7, 2006. [Online] <http://www.journaldunet.com/solutions/0606/060607-paiement-biometrique-grande-distribution.shtml> (Viewed on December 10, 2010).

According to some, security would be an issue. Despite their efficiency, fingerprints are not a perfectly reliable system of identification: false positives and false negatives are found in non-negligible proportions, depending on the technology used.

Special considerations

Numerous questions are raised by biometrics, and more specifically biometric forms of payment, as shown by the many drawbacks brought up. Organizations have thus established a number of criteria that these technologies should meet. As stated by the *Commission de la protection de la vie privée belge* :

The biometric payment system must, from a technical and organizational standpoint, meet certain criteria that ensure it is consistent:

- *The chosen biometric method must be based on physical characteristics that leave no trace. Fingerprints, which people leave daily all around them, are therefore not recommended. Instead, technologies should be used that make use of biometric features that leave no traces such as the veins in the finger or hand, the contour of the hand, the iris, etc.;*
- *Biometric reference data must be stored on a portable medium (such as a chip card) or in the biometric reader (the device used for authentication, such as at a building entrance), provided that the latter is not locally accessible without being able to connect to other computer systems;*
- *Only the biometric data “templates” can be recorded. It is therefore not the raw images of the controlled physical characteristics that are stored, but the numbers obtained from the raw images;*
- *The chosen biometric technology should require conscious involvement by the given person during authentication. Remote facial recognition, the collection of fingerprints or voice recording, which are likely to occur without the person’s knowledge, present certain risks in this respect;*
- *The system must provide a sufficiently high level of security.*²²⁷ [translation]

Although biometrics are not being presented as a 100% secure system, forms of biometric payment that use fingerprints (according to the *Commission de la protection de la vie privée belge*, the use of fingerprints should be avoided) to identify a consumer rather than for authentication purposes could bypass the security problem that is presented. In fact, a distinction should be made between “identification” and “authentication”.

Identification: in response to the question, “Who am I?” Based on the biometric sample provided, the device searches for the corresponding template in its database.

Authentication: in response to the question, “Am I really Mr. X?” Technically, the device does a check using a code (identifier) entered on a keyboard, or read by swiping a badge (e.g. chip card, magnetic stripe card, proximity), to determine whether the

²²⁷ Commission de la protection de la vie privée, *Biométrie*, Brussels, Belgium, July 5, 2010. [Online] http://www.privacycommission.be/fr/in_practice/biometrics/ (Viewed on March 25, 2011).

biometric sample provided really corresponds to the template designated by the identifier.

How do you prove your identity?

- *By what you have (card, badge, document)*
- *By what you know (name, password)*
- *By what you are (fingerprints, hand, face)*

*The first two means of identification can be used to wrongfully assume someone else's identity. Only the last method (biometrics) meets the need to irrefutably determine the identity of criminals.*²²⁸ [translation]

Moreover, although biometrics is used solely to identify a consumer who will in fact be providing a payment card or entering a PIN, the speed of payment found with biometrics is questionable.

In short, regarding biometric payment:

There are numerous noteworthy aspects regarding biometrics:

- *It is not enough to replace a login/password with a biometric measure; the entire system must be redesigned and the architecture secured.*
- *A biometric measure cannot be the sole means of authentication; ideally, it should be combined with a chip card, a secure token (small storage medium with a high resistance to attacks, even physical ones), a One Time Password (OTP). [...]*
- *Biometrics should preferably be used for identification rather than authentication.*
- *Lastly, we should once and for all give up this notion of an ultra-secure technology that is falsely propagated by the media. Biometrics is in no way a 'universal and miracle solution'.*²²⁹

3.4 Legislative Framework

a) Canadian Regulations

The various legislative frameworks presented in the section on how traditional forms of payment are regulated also apply here when the payment instrument uses any of the traditional forms of payment (such as contactless debit or credit cards, or the Visa Debit Card). When a form of payment deemed new uses a traditional form of payment, the existing frameworks applicable to these forms of payment remain in force.

In fact, the contactless forms of payment that were presented are for the most part basically an additional instrument made available to consumers when using traditional forms of payment. The MasterCard *PayPass* and Visa *payWave* merely allow consumers to make purchases with a credit card without having to enter a PIN or sign a slip. Similarly, *Flash Interac* allows consumers to make purchases using a PIN-less debit card. The Visa Debit Card, for its part, does not use any new technology, as what is new in this form of payment is the card's issuer.

²²⁸ Nathan Bonetto, Thibault Geoffroy, Timothée Saïssset and Raphaël Koubbi-Hauzi, *La fiabilité des systèmes biométriques: L'exemple de la biométrie R.C.M.*, France, 2010-2011. [Online] <http://www.scribd.com/doc/50598526/DOSSIER-pdf> (Viewed on March 25, 2011).

²²⁹ Ibrahim Belaid, *La carte d'identité électronique*, Université Paris 7 – Denis Diderot UFR d'Informatique, Paris. [Online] http://31.alg.free.fr/OLD/Rapport_CIE_Droit_Info.pdf (Viewed on January 27, 2012).

Are there special frameworks that apply specifically to the new technologies used or to the new methods of identification or authentication?

To our knowledge, no law or regulation has been specifically adopted for the new forms of payment that have been introduced on the market over the last few years. Despite the legal uncertainty underlying these new forms of payment, there are various aspects designed, to varying degrees, to offer some protection to consumers wishing to use a new form of payment.

When purchases are made using an electronic form of payment, the *Principles of Consumer Protection for Electronic Commerce: A Canadian Framework*, which was already discussed in this study, could be used. In fact, the preamble of this guide states the following:

*The principles in this document are intended to guide the actions of businesses, consumers and governments within Canada in the development of a consumer protection framework for electronic commerce over open networks, including the Internet. These principles are not intended to cover communications conducted solely over the telephone.*²³⁰

Hence, PayPal, for instance, should follow the principles stated in the guide,²³¹ which are voluntary. PayPal should set up a process for settling transaction-related disputes, which should be clear and easily accessible by consumers. If there currently is such a process, it is not easily accessible and is not being advertised by the company. As the guide mentions that communications exclusively by phone are excluded, the PaymentPin system, where payments are made by land line, would be excluded from the forms of payment covered by the guide.

For all forms of payment, both new and old, the companies, banks and other issuers should naturally comply with laws on the protection of personal information, in particular the points related to the collection, use, conservation, protection and access to personal information.²³²

This is all the more important where biometric technology is concerned. The use of biometric data to identify or authenticate a consumer involves processing personal and sensitive data, and raises the issue of data use and storage. For the time being, all of the companies, financial institutions or merchants who develop or use biometric forms of payment should conform to the Personal Information Protection and Electronic Documents Act,²³³ the purpose of which is to:

[...] establish, in an era in which technology increasingly facilitates the circulation and exchange of information, rules to govern the collection, use and disclosure of personal information in a manner that recognizes the right of privacy of individuals with respect to their personal information and the need of organizations to collect, use or disclose

²³⁰ Working Group on Electronic Commerce and Consumers, *Principles of Consumer Protection for Electronic Commerce: A Canadian Framework*, Ottawa, Canada, 1999. [Online] <http://publications.gc.ca/collections/Collection/C2-417-1999E.pdf> (Viewed on January 15, 2011).

²³¹ The main principles were defined on page 49 and consist of: security of payment and personal information; redress; and protection from unreasonable liability.

²³² *Personal Information Protection and Electronic Documents Act*, S.C. 2000, c. 5 (and the equivalent provincial laws in Quebec, Alberta and B.C.), which applies to all commercial activities, stipulates that any collection or use of personal information must be authorized by the person to whom the information is related, and the person must be informed both of the collection (and of what is being collected) and each use that will be made of the information thus collected.

²³³ Department of Justice Canada, *Personal Information Protection and Electronic Documents Act*, S.C. 2000, c. 5, Ottawa, Canada, 2011. [Online] <http://laws-lois.justice.gc.ca/eng/acts/P-8.6/index.html> (Viewed on January 15, 2011).

*personal information for purposes that a reasonable person would consider appropriate in the circumstances.*²³⁴

The basic rules of this Act include: inform consumers that personal information will be collected and only collect information that the company needs (and the collection of which has been authorized) and only use them for the stated purposes.

In essence, it appears that the only frameworks that specifically apply to the new forms of payment are contained, when they exist, in the voluntary codes of conduct established by the Canadian Payments Association, which is currently the only payments organization established under a federal act.

The Canadian Payments Association (CPA), whose mission is to “facilitate the development of new payment methods and technologies,”²³⁵ adopted a code of conduct that is voluntarily applied and that specifically deals with contactless payment: Rule E4 (Exchange of PIN-less Point-of-Service Debit Payment Items for the Purpose of Clearing and Settlement) from the Automated Clearing Settlement System (ACSS) Rules Manual governing the exchange of payment items between CPA member institutions, a manual that was mentioned in the section on electronic payments using traditional forms of payment. Implemented in May 2009, Rule E4:

*addresses Payment Items arising from individual transactions initiated by a Payor using a Payment Application embedded in a device (such as a debit card, key fob, or cellular phone) at a PIN-less POS Device, which results in a debit to a Payor’s Account for the purpose of making payment for goods or services, or a credit to the Payor’s account, in the case of refunds or returns.*²³⁶

Rule E4 basically covers the responsibilities of financial institutions in their relations with each other when this form of payment is used. However, consumers’ rights are mentioned in Part C of the rule, which deals with complaints, in particular when a payment was initiated following theft, deceitful practices, etc. In such cases, the rule states:

Payor FI [Financial Institution] Responsibilities

22. Payor FIs shall have clear, timely procedures for dealing with Payor claims, which shall include:

- a) procedures to investigate the claim; and*
- b) provisions for review of claims at a senior level within their institution.*

23. When a Payor contacts its Payor FI with a claim, the Payor FI shall inform the Payor that:

- a) the Payor FI will investigate the PIN-less POS Payment Item(s) in question;*
- b) a determination regarding any reimbursement will be dependent on the outcome of the investigation;*

²³⁴ Department of Justice Canada, *Personal Information Protection and Electronic Documents Act*, S.C. 2000, c. 5, Ottawa, Canada, 2011. [Online] <http://laws-lois.justice.gc.ca/eng/acts/P-8.6/index.html> (Viewed on January 15, 2011).

²³⁵ CanLII, Canadian Payments Act (RSC 1985, c. C-21), Canada, 2011. [Online] <http://www.canlii.org/en/ca/laws/stat/rsc-1985-c-c-21/latest/rsc-1985-c-c-21.html> (Viewed on January 15, 2011).

²³⁶ Canadian Payments Association, *Rule E4 – Exchange of PIN-less Point-of-Service Debit Payment Items for the Purpose of Clearing and Settlement*, Toronto, Canada, 2010. [Online] http://www.cdnpay.ca/imis15/pdf/pdfs_rules/rule_e4.pdf (Viewed on January 19, 2010).

- c) the Payor FI will respond to the Payor's claim as soon as possible, but no later than ten (10) Business Days; and
- d) during the investigation, the Payor FI may require a statement or affidavit from the Payor or request information from another Member which may result in the temporary suspension of the ten-business-days time limit until the requested information is received.²³⁷

Over the last few years, the payments landscape has, as we have seen, undergone major transformations to make way for new forms of payment and new players, who are not necessarily covered by the voluntary codes established by the CPA:

*[...] a number of payments providers that play an important role in payments and their systems, including closed money transfer systems (e.g., PayPal, Yahoo), Zoompass mobile payments, [...] are not governed by CPA by-laws or rules.*²³⁸

In fact, Canadian Payments Association rules apply to CPA members as well as to payments cleared and settled by the CPA, i.e. payments made between the various financial institutions. Hence, CPA rules cannot apply to payments processed by PayPal or Zoompass, which are not CPA members, as these organizations are not financial institutions, and the payments are not made between financial institutions.

Some of the new forms of payment that were presented require that an account be created by consumers with a third party that is not a financial institution; this is the case, for instance, with Zoompass and PayPal. As these companies are not banks, the money deposited in accounts held with them is not insured by the Canada Deposit Insurance Corporation (CDIC), which insures up to \$100,000 of the deposits with financial institutions that are CDIC members. If one such company were to file for bankruptcy, consumers could lose the amounts held in accounts with them.

Aside from a CPA rule on contactless payments, no specific protection has been established to regulate the new forms of payment; some say that regulation of these new forms of payment is lacking in Canada. The Public Interest Advocacy Centre is concerned and states that:

First, electronic payments are fraught with legal uncertainty in Canada. There are few clear rules in place. What rules we have are often inconsistent: whether a consumer pays through a preauthorized debit on her bank account, through a preauthorized debit on her credit union's credit card, through PIN-based point-of-sale debit, [...] to name only a few possibilities, her rights and liabilities, and other stakeholders', will be quite different. Such an environment is unlikely to foster confidence and investment, especially as many of those rules can be changed privately, with scant consultation if any, by providers or their networks.

In addition, providers often attempt to minimize their legal risk by switching it to other parties, and especially consumers, through contractual terms and conditions. Consumers' legal risk may thereby become excessive, although they will likely be

²³⁷ Canadian Payments Association, *Rule E4 – Exchange of PIN-less Point-of-Service Debit Payment Items for the Purpose of Clearing and Settlement*, Toronto, Canada, 2010. [Online]
http://www.cdnpay.ca/imis15/pdf/pdfs_rules/rule_e4.pdf (Viewed on January 19, 2010).

²³⁸ Submission of the Canadian Payments Association, *Building a strong foundation for Canada's digital economy*, Toronto, Canada, September 2010. [Online].
http://www.cdnpay.ca/imis15/pdf/pdfs_news/paymentsreview_taskforce_submission.pdf (Viewed on January 6, 2011).

*unaware of that fact: unfortunately, they tend to trust that if payment mechanisms are deployed in Canada, they should be reasonably safe and their users should be reasonably protected. Even for providers, however, that strategy remains risky: courts may well conclude that the provisions they have sought to impose on consumers are unfair and unconscionable, and therefore invalid.*²³⁹

It therefore appears that current frameworks must be updated so that they encompass all current and future forms of payment. In fact, it seems inconceivable that consumers who pay for purchases – for instance, through their cell phones and are then billed for their purchases on their cell phone bill – do not know whether or not they are protected. Another example: if a consumer pays a merchant through his PayPal account, which is linked to an account with a financial institution and he were to be double-billed, who would be liable? To whom should the consumer complain? PayPal? His financial institution? The merchant? Would the consumer have any recourse? Since no legislation regulates all forms of payment, attempting to find an answer to these questions may prove to be a herculean task for the consumer.

b) Regulatory Frameworks Outside of Canada

Without presenting in detail the regulatory framework of the new forms of payment found outside of Canada, this section provides an overview of the regulatory situation elsewhere, such as in France, the European Union and the U.S.

France

In France, since 2001, electronic payments are regulated by the *Code monétaire et financier*, a code that has force of law, contrary to the voluntary codes of conduct adopted by the CPA. The Code regulates forms of payment, which are defined very broadly so that the framework is neutral from both a technological standpoint and that of the institutions that are likely to propose the form of payment: “Any instrument that allows a person to transfer funds, regardless of the medium or technical process used, is considered a form of payment.”²⁴⁰ [translation]

Sections of the Code specifically deal with payment cards, without any distinction between debit cards and credit cards. The Code appears to be the only legislation that governs forms of payment. It is frequently revised, which allows it to be adapted, when required, to the new forms of payment being introduced on the market.

Regarding the specific case of biometrics, its use is regulated in France by the *Commission nationale informatique et libertés* (CNIL). This Commission is:

*[...] the only authority to have explicit authorization over biometric devices in France. In 2008, it published a document containing the main criteria that it uses to authorize or refuse recourse to devices based on fingerprint recognition using a reader terminal or a server to store the information.*²⁴¹ [translation]

²³⁹ Public Interest Advocacy Centre, *All along the watchtower: Seeking the future of Canada's payments system*, Ottawa, Canada, September 15, 2010. [Online] http://paymentsystemreview.ca/wp-content/uploads/PIAC-Sept15-various_doc (Viewed on January 19, 2011).

²⁴⁰ Comment ça marche, Code monétaire et financier, France, 2011. [Online] <http://droit-finances.commentcamarche.net/legifrance/60-code-monetaire-et-financier> (Viewed on January 15, 2011).

²⁴¹ Net-iris, *La biométrie: identification des individus à partir de caractères biologiques*, Clermont-Ferrand, France, March 16, 2011. [Online] <http://www.net-iris.fr/veille-juridique/dossier/19190/la-biometrie-identification-des-individus-a-partir-de-caracteres-biologiques.php#locate> (Viewed on April 2, 2011).

The CNIL has been highly critical of the use of biometric devices that read fingerprints, and instead prefers biometric payment devices that use the vein tree. The CNIL will also only authorize the use of biometric devices if they also provide certain guarantees to consumers (such as that the data that are collected are not stored locally).²⁴²

It was in this context that in April 2010 the CNIL authorized Banque Accord to conduct a six-month test of a system consisting of a contactless payment card and biometric authentication, by scanning the vein tree in a finger (known as traceless biometrics), which the Commission considers less problematic, in particular because the vein tree print cannot, unlike fingerprints, be collected without a person's knowledge.²⁴³

European Union

The European Union also adopted legislation on new forms of payment and established directives that require member states to adopt and implement all of the legislative, regulatory and administrative provisions required to conform to the new legislation.²⁴⁴

The main directive that targets new forms of payment is the Payment Services Directive (PSD):

The objective is to implement a unique European payments market (make transborder payments as easy, efficient and secure as payments made within a member State). The Directive contains a full and detailed set of rules applicable to all payment services in the European Union. It aims, for instance, to reinforce competition by opening payments markets to new players (payment services providers that are not banks). It also aims to provide the legal framework required for creating a single payment area in euros (SEPA)²⁴⁵. [translation]

This directive, in force since November 1, 2009, aims at ensuring that European citizens will be able to pay for their purchases across Europe with the same level of security they enjoy in their home country, by ensuring that electronic payment rules are the same across the European Union, including Iceland, Norway and Liechtenstein.²⁴⁶ However, probably the most interesting aspect of the directive is the scope of the forms of payment that are covered: in fact, the directive covers all forms of payment that are not made by cash or cheque:

[The Directive] encompasses all kinds of electronic forms of payment other than cash, from transfers to mobile or online payments, including direct debit, payment by debit and credit card, and transfers of funds. It does not cover payments in cash and by cheque. Payment in any European currency (not only in euros) is included, provided the payment

²⁴² Arnaud Devillard, *Les veines du doigt pour payer avec une carte bancaire*, Paris, France, April 2, 2010. [Online] <http://www.01net.com/editorial/514855/les-veines-du-doigt-pour-payer-avec-une-carte-bancaire/> (Viewed on April 4, 2011).

²⁴³ CNIL, *Payer avec son doigt, c'est possible!*, Paris, France, April 1, 2010. [Online] <http://www.cnil.fr/la-cnil/actu-cnil/article/article/payer-avec-son-doigt-cest-possible/> (Viewed on April 2, 2011).

²⁴⁴ European Commission, *Timetable for implementing EU law nationally*, Brussels, Belgium, February 21, 2011. [Online] http://ec.europa.eu/eu_law/directives/directives_echeancier_en.htm (Viewed on March 15, 2011).

²⁴⁵ La finance pour tous, *La régulation financière dans l'Union Européenne*, Paris, France, January 20, 2010. [Online] <http://www.lafinancepourtous.com/La-regulation-financiere-dans-l.html> (Viewed on March 15, 2011).

²⁴⁶ European Commission, *The Payment Services Directive: What it Means for Consumers*, Brussels, Belgium, [date unknown] [Online] http://ec.europa.eu/internal_market/payments/docs/framework/psd_consumers/psd_en.pdf (Viewed on January 15, 2011).

*services providers, both that of the originator and the beneficiary, are found in one of the 30 countries.*²⁴⁷ [translation]

The directive contains provisions regarding:

- Information on the forms of payment that is to be provided to consumers (e.g. information on the service provider, characteristics of the form of payment, costs);
- The speed of payment and the time interval in which consumers should have access to funds;
- Right to reimbursement (unauthorized debits, overbilling, processing errors);
- Strengthening of competition.²⁴⁸

In short, the European Union wished to establish a directive that would encompass all of the issues likely to present problems, in order to ensure substantial protection for consumers, and comparable protection, regardless of the form of payment or payment instrument being used.

United States

In the U.S., since 1978, federal legislators have chosen to regulate electronic payments through the Electronic Fund Transfer Act (EFTA). Marc Lacoursière compares the U.S. framework against the one in Canada:

*In the U.S., payment cards operate in a similar manner as in Canada, meaning that consumers can obtain both debit cards and credit cards. However, U.S. banking regulations are more favorable than our own toward debit card holders. Generally speaking, the Electronic Fund Transfer Act of 1978 regulates transfers by electronic terminal, phone or computer. [...] Since 1979, this law has been supplemented by federal Regulation E (Electronic Fund Transfer Act) aimed at using electronic fund transfers that give access to a bank account.*²⁴⁹ [translation]

The notion of electronic fund transfer in U.S. legislation is broad and allows numerous new forms of payment to be included, while only excluding from the outset, like the EU directive, payments in cash or by cheque.

*[...] any transfer of funds, other than a transaction originated by check, draft or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument, or computer or magnetic tape so as to order, instruct or authorize a financial institution to debit or credit an account. Such term includes, but is not limited to, point-of-sale transfers, automated teller machine transactions, direct deposits or withdrawals of funds, and transfers initiated by telephone. [...]*²⁵⁰

²⁴⁷ European Commission, *The Payment Services Directive: What it Means for Consumers*, Brussels, Belgium, [date unknown] [Online] http://ec.europa.eu/internal_market/payments/docs/framework/psd_consumers/psd_en.pdf (Viewed on January 15, 2011).

²⁴⁸ European Commission, *The Payment Services Directive: What it Means for Consumers*, Brussels, Belgium, [date unknown] [Online] http://ec.europa.eu/internal_market/payments/docs/framework/psd_consumers/psd_en.pdf (Viewed on January 15, 2011).

²⁴⁹ Marc Lacoursière, *Propositions de réforme pour une protection des titulaires de cartes de débit victimes de transferts de fonds non autorisés*, Montréal, Canada, March 22, 2009. [Online] <http://lawjournal.mcgill.ca/documents/Lacoursire.pdf> (Viewed on January 8, 2011).

²⁵⁰ Cornell University Law School, *U.S. Code*, New York, U.S., [date unknown]. [Online] http://www.law.cornell.edu/uscode/uscode15/usc_sec_15_00001693---a000-.html (Viewed on March 20, 2011).

The definition thus refers to payment orders given to financial institutions and which affect accounts. The first element is not necessarily problematic since the notion of financial institution includes *any other person who, directly or indirectly, holds an account belonging to a customer.*²⁵¹ Therefore, unregulated entities such as financial institutions could be involved. Moreover, the fact that a payment order must involve an account could eventually exclude forms of payment not related to an account²⁵² (such as weXpay). Among the frameworks that the EFTA monitors:

*The EFTA stipulates the information to be provided to consumers, settlement procedures when errors are made, consumers' liability in the event of theft or loss, solicitation in relation to debit cards, and freedom of choice for consumers regarding the use of electronic payments to make electronic transactions or to receive a payment. For instance, the law limits consumers' liability in the event of theft or loss to \$50 when consumers inform their financial institution of the theft or loss within two business days. U.S. consumers are also entitled to obtain written proof of their ATM transactions. They must also periodically receive a statement which lists [...] the fees being charged. Consumers can also request that a financial institution correct a billing error within a certain period of time.*²⁵³ [translation]

U.S. legislation provides some protection to consumers for numerous forms of payment; though not perfect, it at least forms a basis that can be used to establish rules also tailored to emerging forms of payment.²⁵⁴ An aspect that is equally important: rather than being voluntarily applied, the American regulatory framework is coercive. In short, new forms of payment are generally not found, in these jurisdictions, in a legislative vacuum, as appears to be the case in Canada, where even older forms of payment, such as debit cards, are not adequately regulated, which would be detrimental for everyone:

*[...] Canada's legal framework for payments, and especially electronic payments, is hopelessly antiquated. Jurisdictions such as the United States, Australia and the European Union are easily a decade ahead of us. By not providing them with a clear and apposite regulatory framework, we do a disservice not only to consumers, but also to providers and the whole economy.*²⁵⁵

²⁵¹ Cornell University Law School, *U.S. Code*, New York, U.S., [date unknown]. [Online] http://www.law.cornell.edu/uscode/uscode15/usc_sec_15_00001693---a000-.htm (Viewed on March 20, 2011).

²⁵² Jacques St-Amant, *Le cadre juridique des paiements électroniques au Canada: quand Fortune se fait virtuelle*, Option consommateurs, Montréal, Canada, November 2002. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_paiemts_elctroniques_fr_1102.pdf (Viewed on January 10, 2011).

²⁵³ Options consommateurs, *La protection des consommateurs utilisant des cartes de paiement prépayées: Un instrument laissé aux forces du marché*, Option consommateurs, Montréal, Canada, June 2008. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_ic_cartes_prepayees_200806.pdf (Viewed on January 5, 2011).

²⁵⁴ Jacques St-Amant, *Le cadre juridique des paiements électroniques au Canada: quand Fortune se fait virtuelle*, Option consommateurs, Montréal, Canada, November 2002. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_paiemts_elctroniques_fr_1102.pdf (Viewed on January 10, 2011).

²⁵⁵ PIAC, *All along the watchtower: Seeking the future of Canada's payments system*, PIAC, Ottawa, Canada, September 15, 2010. [Online] www.piac.ca/files/watchtower_final.pdf (Viewed on January 5, 2011).

CHAPTER 4: IS CANADA READY TO ACCEPT NEW FORMS OF PAYMENT?

Unfortunately, Canada [...] is lagging behind many jurisdictions, both in terms of embracing new technologies and of controlling the risks associated therewith.

Public Interest Advocacy Centre (PIAC)
All along the watchtower: Seeking the future
of Canada's payments system²⁵⁶

4.1 Comparative Analysis of Traditional and New Forms of Payment

Among the various new forms of payment that were presented, it would ultimately appear that most of them, though introduced or presented as new forms of payment, are in reality only new instruments made available to consumers for using traditional forms of payment.

The MasterCard *PayPass*, Visa *payWave*, Interac *Flash* and Visa Debit, for instance, are not truly new forms of payment: these cards allow consumers to use credit or debit cards with greater ease or speed.

Some of the forms of payment that we looked at may be more qualified as new, to varying degrees. In fact, making payments through a company that is neither a bank nor a financial institution is a new feature in the payment landscape, although PayPal, which operates on this basis, has been around for a number of years already.

Still, although some of the technologies used by the new forms of payment include interesting new features and provide some benefits to consumers, they can bring up specific problems, as we have seen, the impacts of which should be minimized.

Do the new forms of payment actually provide significant benefits compared to traditional forms of payment? Does Canada provide appropriate regulations so that consumers can use these new forms of payment securely? Is Canada ready to accept them?

a) Comparison of the Benefits and Drawbacks of the Various Forms of Payment

When we identified the benefits and drawbacks of the various forms of payment (traditional and new), we attempted to determine these benefits and drawbacks for both consumers and merchants, even at times for financial institutions. We will be considering consumers since they concern us more and are the most likely to need the protection that a proper framework can provide.

Currently, cash is the only means of payment that is legal tender and universally accepted: the Currency Act gives cash a legal tender that is not officially conferred to any other form of payment.²⁵⁷ Merchants are not obligated to accept any other form of payment. However, it

²⁵⁶ PIAC, *All along the watchtower: Seeking the future of Canada's payments system*, PIAC, Ottawa, Canada, September 15, 2010. [Online] www.piac.ca/files/watchtower_final.pdf (Viewed on January 5, 2011).

²⁵⁷ Article 1564 of the Civil Code of Quebec mentions the same principle, adding a few payment instruments "offering the same guarantees to the creditor":

"Where the debt consists of a sum of money, the debtor is released by paying the nominal amount due in money which is legal tender at the time of payment. He is also released by remitting the amount due by money order, by cheque made to the order of the creditor and certified by a financial institution carrying on business in Québec, or by any other

seems that in Canada, debit cards and credit cards are widely accepted, which is not always the case in small retail establishments where accepting such payment instruments could entail costs greater than the associated benefits. On the other hand, paying for purchases with cash will generally not be the preferred form of payment by someone making purchases remotely or for consumers making sizeable purchases.

The result is that fiat money has intrinsic benefits: it is still the only payment instrument that is universally accepted, mainly because of its legal tender, but also because it excludes the need for a terminal. It can also be used for transactions between individuals. Fiat money ensures that transactions are confidential and provides complete security in terms of privacy protection. Moreover, it would be difficult to incur debt as a result of using fiat money. Lastly, it can favour social integration. Electronic payment instruments, for their part, benefit from greater ease of use. At the same time, the use of these instruments is more reassuring and involves less risk of theft, especially when there is violence involved. Electronic payment instruments leave a trail which can be used as proof in the event of a dispute. For merchants, the use of such instruments makes it easier to keep their books.²⁵⁸ [translation]

The drawbacks of cash (not very convenient and cumbersome for large payments, possibility of theft) have led consumers to use other forms of payment more frequently, with priority given to debit cards and credit cards. In fact, the ease of use and the possibility of preventing fraud (Table 10) are all justifications for the use of payment cards in addition to or instead of cash. Rewards programs associated with the use of credit cards encourage consumers to use this form of payment. The smaller the amount of the transaction, the more ease of use will be cited as justification for the choice of form of payment (Table 11).

instrument of payment offering the same guarantees to the creditor, or, if the creditor is in a position to accept it, by means of a credit card or a transfer of funds to an account of the creditor in a financial institution.□

²⁵⁸ Guy Quaden, *Coûts, avantages et inconvénients des différents moyens de paiement*, Banque nationale de Belgique, Belgium, December 2005. [Online] <http://www.nbb.be/doc/ts/Enterprise/PRess/2005/F/cp20051216Fr.pdf> (Viewed on March 1, 2011).

TABLE 10
What makes consumers choose one form of payment over another?²⁵⁹

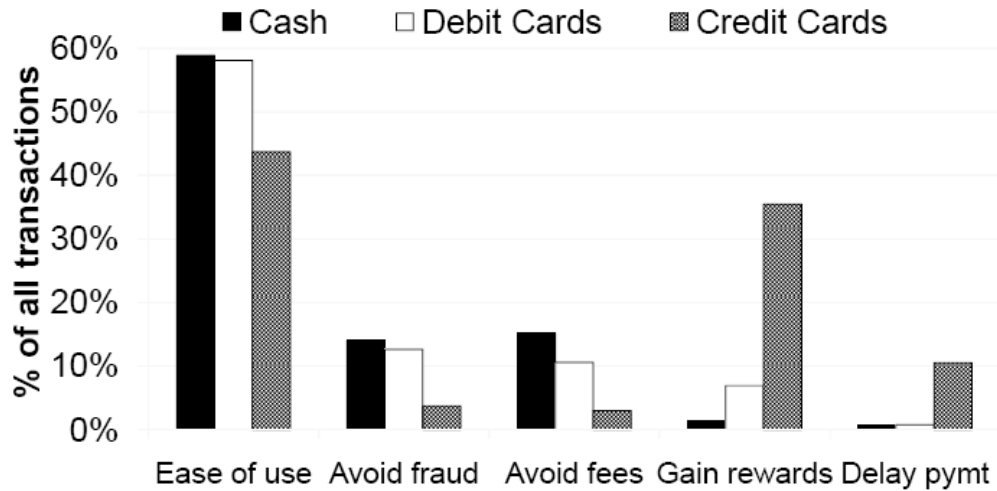


TABLE 11
Transaction where ease of use is the main reason cited for choosing the payment²⁶⁰

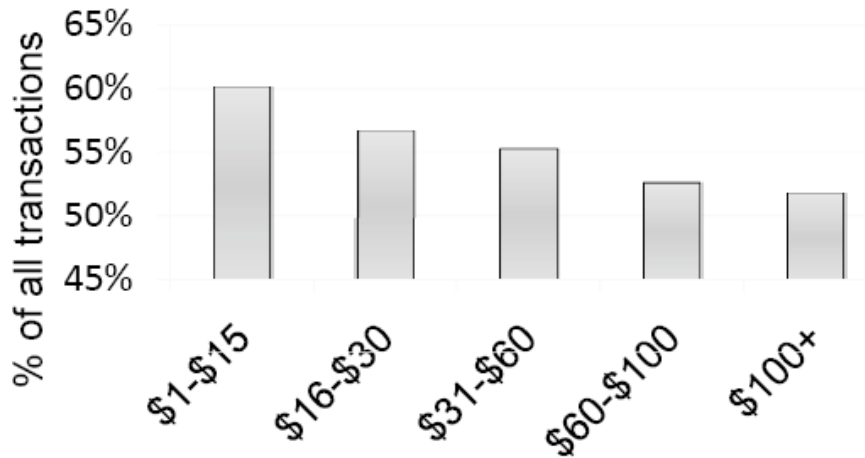
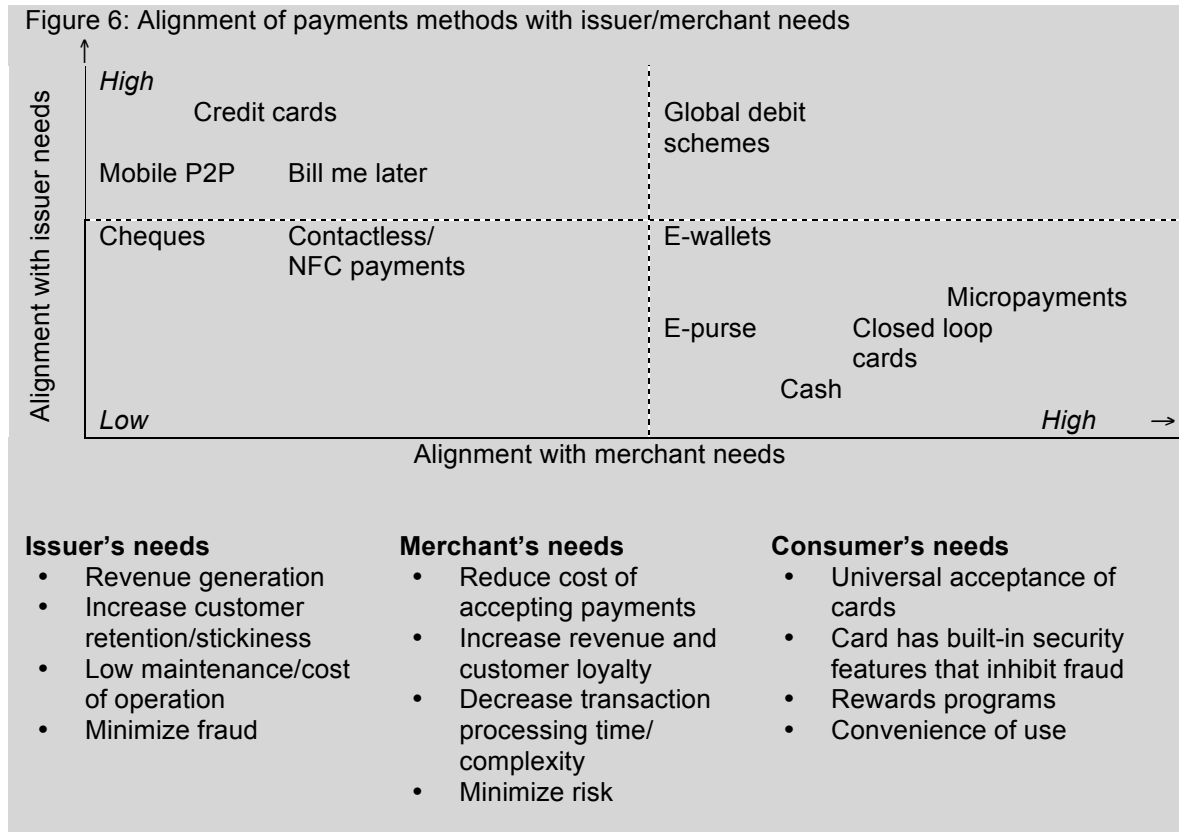


Table 12 shows an alignment of the forms of payment with issuer and merchant needs before listing these needs while adding those of consumers.

²⁵⁹ Rene Pelegero, Who is driving change in payments?, Bank of Canada Canada, Ottawa, Canada, June 17, 2010. [Online] http://www.cdnpay.ca/conference/pdf/english/driving_change.pdf (Viewed on August 30, 2010).

²⁶⁰ Rene Pelegero, Who is driving change in payments?, Bank of Canada, Ottawa, Canada, June 17, 2010. [Online] http://www.cdnpay.ca/conference/pdf/english/driving_change.pdf (Viewed on August 30, 2010).

TABLE 12
Alignment of payments methods with issuer/merchant needs²⁶¹



The above table clearly shows that the various players do not share the same needs, though several of these needs are interrelated. For instance, fraud protection is a recognized need of each player. Also, greater retention of customers valued by issuers and merchants is possible when consumers' needs in terms of universal acceptance of forms of payment and convenience of use are met. Moreover, merchants' need for forms of payment that decrease transaction processing time and complexity meets consumers' need for forms of payment that provide convenience of use. The graph shows that the form of payment that would best meet the needs of issuers and merchants would be a global debit system which would in fact have lower acceptance costs than credit card acceptance, for instance, and that would also have a relatively short processing time. This type of system would also meet a large number of the needs determined among consumers, i.e. universal acceptance and convenience of use.

To conclude, the forms of payment that consumers will prefer are those that are easy to use, that have a low risk of loss (theft, fraud, error), with a very wide acceptance rate, and which do not entail major costs; the last two elements would be found in a global debit system, a form of payment that in fact best meets issuer and merchant needs. The bonuses they may enjoy while using a specific form of payment would obviously be an asset.

²⁶¹ Patricia Daley et al., *Charting a new course for the credit card industry*, Deloitte, Toronto, Canada, 2009. [Online] http://www.deloitte.com/assets/Dcom-Canada/Local%20Content/Articles/Services/Consulting/ca_en_fsi_credit_card_pov_030810.pdf (Viewed on January 6, 2011).

Do the forms of payments that we examined meet these needs?

Contactless Payment

Contactless forms of payment definitely carry benefits in terms of ease of use. In fact, what can be simpler for a consumer than to flash a card, key fob or other medium in front of a terminal reader to pay for a purchase, without having to enter a PIN or sign a sales slip.

When contactless forms of payment are additionally linked to a credit card, the level of security for consumers is high and the direct costs related to the actual form of payment are non-existent (if one excludes the costs that merchants incur and that are then subsequently passed on to consumers, whether the latter are paying by credit card or not, along with zero liability protection for consumers, which is not free and is ultimately paid for by consumers).

Lastly, it can be assumed that contactless credit cards will provide rewards like conventional credit cards. In fact, contactless forms of payment, and more specifically contactless credit cards, are forms of payment with attractive benefits for consumers, who may wish to use this form of payment. The acceptance rate by merchants, for its part, will likely depend only on an adequate supply of terminals by purchasers.

Remote Payment

Remote forms of payment also present a certain number of benefits in relation to traditional forms of payment, but also some drawbacks. In which direction will the scales tip for consumers?

Among the main benefits which consumers are looking for when choosing a form of payment (ease of use, fraud protection and low cost), none of the remote forms of payment identified appears to have all of them.

Mobile payment systems (e.g. RBC Mobex Mobile Payment, Boku and PaymentPin) have the advantage of allowing transfers of funds by phone; however, consumers may be required to open an account with the payments system provider. Opening an account with providers that are not financial institutions is not very convenient for consumers and also not very secure since, as previously mentioned, the funds that are deposited in such an account are not guaranteed by the Canada Deposit Insurance Corporation (CDIC).

Some mobile forms of payment (such as Boku) are designed for specific types of purchases, such as virtual goods; this lack of universality makes this form of payment not very convenient or attractive.

These mobile forms of payment can at times be very costly, like PaymentPin.

In Canada, as mobile phone services are costly, making payments using such services is therefore possibly less of an option for Canadian consumers.

The PayPal payment service, for its part, meets various needs of consumers who make purchases online. The system is relatively simple, though it requires that consumers open an account in order to create an e-wallet. This form of payment is free for consumers, and is relatively easy to use: it allows consumers to make online transactions without having to

disclose any financial information to the merchant (outside of PayPal). In addition, PayPal offers Zero Liability protection.

The costs associated with Zoompass and the occasionally relative speed of the service (as transfers of funds can take a few days to complete) are all elements that run counter to the benefits sought by consumers in their choice of a form of payment.

The weXpay system is not currently available in Canada. If it were to become available, it could meet various needs, such as for those without a bank account or credit card but who would like to make online purchases. weXpay is simple, secure and convenient; however, more than one consumer may be put off by the costs associated with this payment system.

All of the remote forms of payment mentioned have shortcomings in terms of universality. In fact, with the exception of possibly PayPal, which now has proven success, the new forms of payment mentioned are only accepted by a few merchants. Therefore, is it really convenient to use weXpay, for instance, if it is accepted by only a few merchants?

Visa Debit Card

Aside from the fact that the Visa Debit Card is offered on a partnership basis (financial institution and Visa) and that the fees that merchants who accept the card must pay are not the same as in the case of traditional debit cards, this card is not really a new form of payment; however, it offers additional fraud protection for consumers, the Zero Liability protection that the company features for its credit cards.

Square

The Square payments system, a portable terminal connected to a phone, is an interesting innovation; for consumers, however, it merely consists of payment by credit card. The benefit that Square may represent is based on more universal acceptance of the credit card, even between individuals and not only between a consumer and a merchant. However, it is still essentially a tool that allows a certain form of payment to be accepted rather than being an actual form of payment.

Biometrics

Biometric payment presents an undeniable advantage in terms of ease of use, although development of biometric systems is still not advanced enough to precisely know what the costs will be.

Regarding security, we have seen that payments where biometrics are used solely to identify a consumer rather than to authenticate a payment would be preferable. In fact, in the event that biometrics are only used for identification purposes, the risk is no longer related to biometrics but to the form of payment used; biometrics could, for instance, provide added security to payments by debit card. Conversely, when biometrics are used to authenticate a payment made by a consumer who has first provided biometric characteristics to his financial institution or third-party company, the risks are higher, even more so when the biometric characteristic used is a fingerprint. In fact, it would be possible to clone fingerprints, and therefore biometric forms of payment that only require a fingerprint could prove to be not highly secure.

b) Comparison of the Regulatory Frameworks of the Various Forms of Payment

The Canadian Bankers Association notes that:

There is an extensive body of legislation and regulation that requires regulated financial institutions to disclose information about product features, pricing, recourse, and consumer rights and responsibilities. In the case of banks, compliance with this legislation and regulation is overseen by the federal Financial Consumer Agency of Canada.

By contrast, the other payments services providers are subject to far less oversight and have a much narrower relationship with their clients. This opens the possibility that clients may not fully understand their rights, responsibilities and risks that are associated with using some of these new payments services.²⁶²

In the absence of laws and regulations related to the new forms of payment, the protection that consumers will have seems to be deficient. From a legislative standpoint, it would appear that Canada is currently not ready to accept new forms of payment. In fact, although other countries have adopted legislation to regulate forms of payment, or at least electronic forms of payment, as consistently as possible, there is currently nothing like this in Canada that would provide consumers with equivalent protection regardless of the chosen form of payment. We cannot but fully agree with the Consumers Union and require that the same protection be offered in Canada as being requested in the U.S.:

Consumers should not be expected to figure out what protections apply to each competing new payments venture, said Jun. Regardless of the technology or business organization involved, the same high level of consumer protections should be guaranteed by law and contract for any payment service. Now that mobile payment ventures are emerging in the U.S., it's time to harmonize and extend consumer protections for all payment services.²⁶³

In short, when new forms of payment are ultimately only new ways of using traditional forms of payment, existing regulatory frameworks could appear to be sufficient, in particular for payments that involve a credit card, since these are regulated by law and not by mere voluntary codes of conduct. Still, if these new instruments add to the inherent risk in the associated form of payment risks that are specific to the use of the actual instrument, then Canadian consumers should expect to also be protected against these new risks.

If the new way of using a traditional form of payment involves a technology such as biometrics, such new use could require a specific framework. For instance, we are referring to laws on the protection of personal information: though they must obviously be stringently applied for all forms of payment, even greater oversight may be needed for any form of payment that involves the communication of sensitive information. The information that can be accessed from fingerprints is especially sensitive: the collection and use of information that can be accessed in that manner must be very stringently regulated. Consumers must be very explicitly informed of the possible collection and use of the various information that can be accessed in this manner.

²⁶² Canadian Bankers Association, *Submission to the Task Force for the Payments System Review*, Toronto, Canada, September 15, 2010. [Online] http://www.cba.ca/contents/files/submissions/sub_20100915_payments_en.pdf (Viewed on April 5, 2011).

²⁶³ Consumer Union, *Mobile payment could leave consumers at risk*, New York, U.S., August 24, 2010. [Online] http://www.consumersunion.org/pub/core_financial_services/016790.html (Viewed on August 25, 2010).

The storing of such information by financial institutions or other companies will also present a particular risk that will have to be carefully delimited.

The protection of personal information is a major concern for consumers, as noted by the CBA:

*Privacy and security considerations are paramount to payments today, and perhaps even more so in the increasingly digitalized future. While a degree of risk is accepted in the payment system, the emergence of new electronic payment methods and channels has real and perceived implications for confidentiality, fraud and the misuse of personal information.*²⁶⁴

When real new forms of payment are involved, it would unfortunately appear that Canada is lagging in terms of regulatory frameworks and that it is not yet ready to accept them by providing adequate and clear regulations to Canadians.

*As for consumers who are victims of inappropriate practices, they do not know whether to go to their provincial protection regulator, to the Financial Consumer Agency of Canada or elsewhere, because no one apparently has clear jurisdiction or the extensive know-how required to understand our payments system and propose solutions.*²⁶⁵

4.2 Summary

Table 13 presents a summary of the main forms of payment that were presented in our study, including a description, the main benefits and drawbacks for consumers, and the regulatory frameworks.

²⁶⁴ Submission of the Canadian Payments Association, *Building a strong foundation for Canada's digital economy*, Toronto, Canada, September 2010. [Online]. http://www.cdnpay.ca/imis15/pdf/pdfs_news/paymentsreview_taskforce_submission.pdf (Viewed on January 6, 2011).

²⁶⁵ PIAC, *All along the watchtower: Seeking the future of Canada's payments system*, PIAC, Ottawa, Canada, September 15, 2010. [Online] www.piac.ca/files/watchtower_final.pdf (Viewed on January 5, 2011).

TABLE 13
Summary of the main benefits and drawbacks of the various forms of payment
for consumers and their specific regulatory frameworks²⁶⁶

A – Traditional forms of payment					
Form of payment	Description	Benefits	Drawbacks	Regulatory framework	New form of payment?
Cash	Allows a payment to be made immediately	Convenient (widely accepted) Fast, simple, anonymous Low in cost Allows payments to be made between two individuals	Not very secure (risk of theft or loss) Cumbersome	Currency Act Bank of Canada Act	X
Cheque	Scriptural form of payment that allows funds to be transferred from one bank account to another	Simple Allows payments to be made between two individuals	Not very convenient (low acceptance) Not very secure (risk of fraud) Rather slow (time required for payment to be made)	Bills of Exchange Act	X
Debit card	Payment card that allows the cardholder to directly access his bank account	Convenient (widely accepted) Fast Simple Low cost	Not very secure (risk of fraud)	Bank Act Rule E1 Canadian Code of Practice for Consumer Debit Card Services Code of Conduct for the Credit and Debit Card Industry in Canada Cardholder agreement	X
Credit card	Payment card that allows the consumer to make purchases on credit	Convenient (widely accepted) Fast Simple Low cost (no interest charged if balance is paid in full each month) Secure Helps the consumer build a good credit history	Costs may be high (high interest rate if balance is not paid in full each month) Incitement to debt	Credit Business Practices Regulations Cost of Borrowing Regulations Code of Conduct for the Credit and Debit Card Industry Credit card agreement	X

Legend: **X** = No **✓** = Yes **?** = Information not known

²⁶⁶ The available recourse under common law is not mentioned.

B – Contactless payment					
Form of payment	Description	Benefits	Drawbacks	Regulatory framework	New form of payment?
PayPass	Contactless credit card	Same as credit card + greater ease of payment (faster)	Same as credit card	Same as credit card + Rule E5	X
Visa payWave	Contactless credit card	Same as credit card + greater ease of payment (faster)	Same as credit card	Same as credit card + Rule E5	X
Flash Interac	Contactless debit card	Same as debit card + greater ease of payment (faster)	Same as credit card	Same as debit card + Rule E5	X
Zoompass Tag	Sticker to be attached to a mobile phone to make a contactless payment	Fast Simple Phone blocking measures to prevent fraud	Not very secure (risk of fraud if data read by other phones; risk of theft or loss of phone; risk of loss if Zoompass goes bankrupt) Not very convenient (not widely accepted)	Not clear; may be that of credit or debit cards depending on whether Zoompass funds are kept in an account linked to the bank account or to the user's credit card	X

Legend: **X** = No **✓** = Yes **?** = Information not known

C – Remote payment					
Form of payment	Description	Benefits	Drawbacks	Regulatory framework	New form of payment?
RBC Mobex Mobile payment	Transfer of funds between individuals by SMS	Fast (when all users are registered for the service) Allows payments to be made between two individuals	Not very convenient (account must be opened) Not very secure (security risks not known; risk in the event phone is lost or stolen) Costs unknown	No specific regulatory framework	✓
Boku	Transfer of funds by SMS	Fast Simple No need for a bank account or credit card	Same as for RBC Mobex Mobile payment + Not very convenient (few merchants accept this form of payment)	No specific regulatory framework	✓
PaymentPin	Transfer of funds by mobile or residential phone	Convenient (no need for a bank account or credit card) Fast	Same as Boku + major costs Not very secure (anyone with access to a consumer's mobile phone or land line could use it to make purchases)	No specific regulatory framework	✓
PayPal	Online payment system	Convenient (widely accepted by online merchants) Fast Low cost (no fees) Secure (anti-fraud technology + zero liability protection) Possibility of transfers between individuals	Relatively simple (account needed) Not very secure (risk of fraud such as phishing) Need for a PayPal account Relative security (risk of loss if PayPal goes bankrupt)	No specific regulatory framework	✓
Zoompass	Funds transmitted between individuals by mobile phone	Secure (funds reimbursed in the event of fraud) Allows payments to be made between two individuals	Relative speed There may be costs involved with various services offered Relative security (risk of loss if Zoompass goes bankrupt)	No specific regulatory framework	✓
weXpay	Payment system for making online purchases using cash	Simple Anonymous Secure (reduced risk of fraud)	Not very convenient (not widely accepted) Relative speed (consumer must obtain code from a merchant or online) High costs Risk of financial loss if consumer loses code or exceeds time limit for use	Not available in Canada	✓

Legend: **X** = No ✓ = Yes ? = Information not known

D – Contactless payment					
Form of payment	Description	Benefits	Drawbacks	Regulatory framework	New form of payment?
Visa Debit	Debit card issued by Visa	Same as for debit card + Zero Liability protection	Same as for debit card	Same regulatory framework as for debit cards	X
Square	Device that allows mobile phone to be transformed into mobile payment terminal	Same as for credit card + possibility of paying by credit card for purchases in many locations	Same as for credit card	Same regulatory framework as for credit cards	X
Biometric payment	Payment made by scanning fingerprint	Fast Simple Secure	Not very convenient (not widely accepted) May encourage purchases by making spending fun	The regulatory framework will depend on the system implemented, such as a system linked to a bank account or credit card	?

Legend: **X** = No **✓** = Yes **?** = Information not known

CONCLUSIONS

Customers will adopt a new payment service or technology when [...] it provides clear benefits relative to current alternatives and [...] they can trust it based on a clear understanding of the risks involved.

Consultative Group to Assist the Poor
Going Cashless at the Point of Sale:
Hits and Misses in Developed Countries²⁶⁷

The aim of our research was to examine the new forms of payment on the market in order to determine their range, how they work, assess their respective benefits and drawbacks, and determine whether a current or future regulatory framework would provide adequate protection for consumers attracted by these products.

A review of Canadian legislation reveals that no framework has been adopted to specifically control the advent of new forms of payment on the market and their implementation. Although some of the new forms of payment that were identified in fact use traditional forms of payment to which new technologies are added and that, in such cases, the current regulatory frameworks for traditional forms of payment also apply, the specific risks that the new technology may represent involve no control or monitoring. In fact, we have already seen that some of the traditional forms of payment (debit cards, in particular) are not properly regulated. In the case of true new forms of payment, the regulatory frameworks are not clear, even non-existent.

It would further appear that Canadians do not necessarily wish to see new forms of payment introduced on the market.

The CBA recently conducted a survey to assess Canadians' usage of, and attitudes towards, the payments system. The results were telling. The overwhelming majority of Canadians (91%) believe that they have a sufficient amount of choice when it comes to making payments, and slightly over half (53%) believe there is a good deal or great deal of choice. Interestingly, this proportion increased as the age of the respondent decreased. This finding is consistent with the evolution of the payments system: new payments technologies are emerging to serve the internet economy, and the principal participants in that economy – the young – are the earliest adopters.²⁶⁸

The market niches in which some of these new forms of payment are found may, however, make them virtually indispensable; examples include PayPal, which is undeniably popular.

In short, some new forms of payment (we are excluding forms of payment that are not really new since they are only an improvement on traditional forms of payment or provide a new way of using them) appear more promising owing to the benefits they provide for consumers: RBC Mobex Mobile Payment and PayPal are two examples.

²⁶⁷ Ignacio Mas and Sarah Rotman, "Going Cashless at the Point of Sale: Hits and Misses in Developed Countries," CGAP, Washington, U.S., December 2008. [Online] <http://www.cgap.org/gm/document-1.9.7885/FN51.pdf> (Viewed on March 3, 2011).

²⁶⁸ Canadian Bankers Association, Submission to the Task Force for the Payments System Review, Ottawa, Canada, September 15, 2010. [Online] http://www.cba.ca/contents/files/submissions/sub_20100915_payments_en.pdf (Viewed on October 3, 2010).

The majority Canadians still believe that they have a sufficient amount of choice when it comes to making payments; will they be making purchases differently in a few years time? Would they like to have a wider range of forms of payment that are better suited to their new spending habits? Would it then not be advisable to consider as of now a standard type of regulatory framework, one that is technologically neutral and would define all current and future forms of payment?

Could we not go even further and suggest, based on studies that examined the correspondence between the needs of issuers and those of merchants, which match up with consumers' needs on several points, that a global debit system that is well designed and properly regulated could by itself favourably meet all the indispensable and sought-after features that everyone expects in a form of payment?

TNS Retail Forward, a consulting firm specialized in retail sales, led a study on the topic among 4,600 respondents in 8 countries (Canada, China, France, Germany, Japan, Spain, U.K., and U.S.). According to the survey, the respondents' favourite innovation proved to be biometric payment; Canadians, for their part, who in fact claimed to have a sufficient number of forms of payment, voted for interactive changing rooms:

60% of consumers worldwide expect that the use of biometric payment (using fingerprints) will be widespread.

Other innovations, including the 12 presented to the survey respondents, obtained better results. [...]

However, biometrics was considered as being "the most interesting" technology of all. Some 40% of respondents gave an excellent rating to the technology (8/10 or more). For their part, Canadians preferred interactive changing rooms, relegating biometrics to second place.

Mobile shopping, holographic sales people, and online shopping networks were given the lowest ratings overall.

Still some signs of reticence

Even though consumers expect that technology will make a massive entry in stores, that does not mean they are ready to use it.

Whereas the concept of biometric payment is appealing to many, only 26% of respondents said they would use this technology. In addition, barely 10% of respondents said they would consider speaking to a holographic salesperson.

In general, the Chinese and Spanish respondents said they were most likely to try out the new technologies designed to make shopping easier.²⁶⁹ [translation]

Hence, it would appear that Canadians will not be the first to confirm their purchases using their fingerprint, for instance. Some of the new forms of payment that we examined may, based on

²⁶⁹ Marie-Ève Fournier, *De quelle façon allons-nous magasiner en 2015?*, Journal de Montréal, Montréal, Canada, December 16, 2010. [Online] <http://argent.canoe.ca/lca/infos/quebec/archives/2008/07/20080707-211858.html> (Viewed on December 16, 2010).

the indicated benefits, interest some consumers, if only because of the novelty involved. As previously seen, young people are especially attracted by these new features in forms of payment: the fact that the greatest users are part of the most vulnerable group of consumers is even more reason to consider adequate regulations starting now.

Currently, credit card associations have voluntarily agreed to adhere to a zero liability regime in the event of loss, while use of debit cards is governed by a voluntary code, the Canadian Code of Practice for Consumer Debit Card Services, which has been endorsed by the relevant industry associations and their members. Consumer organizations and other groups feel that, due to Canadians' increasing use of a variety of electronic transactions, there may be a need to clarify responsibilities in the event of a financial loss in order to protect consumers.²⁷⁰

If it is in fact advisable that traditional forms of payment be monitored, why not use the opportunity, as the European Union has done, to broaden this framework to ensure that the new forms of payment being developed are also adequately regulated?

On the one hand, we may wish to avoid making distinctions between forms of payment that could distort the market. On the other, we should possibly allow for differences between access to savings and access to credit, between electronic means of accessing conventional forms of payment (such as debit cards) and more purely conventional forms of payment (such as some chip cards). However, we consider that it would be preferable to harmonize, insofar as possible, the rules related to the "payment" aspect of all these instruments.²⁷¹ [translation]

A U.S. consumer association is of the same opinion and states that:

But while mobile payment technologies may offer a convenient new way to pay for goods and services, consumers could be at risk of losing money when mistakes are made by merchants and processors or as a result of fraud, according to Consumers Union, the nonprofit publisher of Consumer Reports.

"As mobile payments systems come to the U.S., product providers and regulators need to make sure that they are at least as safe for consumers to use as traditional credit card and debit card payments," said Michelle Jun, staff attorney for Consumers Union. "It is critical that mobile payment systems are covered by strong rules to protect consumers from losing money because of fraud, processor error or a dispute with a retailer."

Federal law protects consumers in the event that their credit card or debit card is lost, stolen or misused. But current protections are badly fragmented and don't apply to all new types of payments²⁷².

²⁷⁰ Department of Finance Canada, *An effective and efficient legislative framework for the Canadian financial services sector*, Ottawa, Canada, January 1, 2000. [Online] <http://www.fin.gc.ca/budget05/bp/bpa6-eng.asp> (Viewed on January 4, 2011).

²⁷¹ Jacques St-Amant, *Le cadre juridique des paiements électroniques au Canada: quand Fortune se fait virtuelle*, Option consommateurs, Montréal, Canada, November 2002. [Online] http://www.option-consommateurs.org/documents/principal/fr/File/rapports/services_financiers/oc_paiements_electroniques_fr_1102.pdf (Viewed on January 10, 2011).

²⁷² Consumer Union, *Mobile payment could leave consumers at risk*, New York, U.S., August 24, 2010. [Online] http://www.consumersunion.org/pub/core_financial_services/016790.html (Viewed on August 25, 2010).

The desired efforts aimed at harmonizing and updating the frameworks for forms of payments (both traditional and new) have begun. In fact, the mandate of the Task Force for the Payments System Review is broad but includes the following aspects:

Given the importance of a safe and efficient payments system and the need to ensure that the framework supporting the payments system remains effective in light of new participants and innovations, the government is appointing this task force to conduct a review of the payments system.

Specifically, the task force will:

- *Identify public policy objectives to be pursued in the operation and regulation of the payments system;*
- *Identify and assess the regulatory and institutional structures best suited to achieving these public policy objectives;*
- *Assess and report on the safety and soundness of the Canadian payments system; [...]*
- *Assess and report on whether consumers and merchants are well served by the domestic payments system.*²⁷³

At the time this is being written, we are unable to know what the Task Force's conclusions will be or the extent of its recommendations; we can only hope that its recommendations will go beyond questions on a regulatory framework for traditional forms of payment, and especially that they do not favour only voluntary codes of practices, which offer very little recourse to consumers who feel wronged, since nothing obligates issuers, companies or others to comply with them. The Task Force is expected to submit its final report by the end of 2011.²⁷⁴

²⁷³ Task Force for the Payments System Review, Mandate, Ottawa, Canada, 2010. [Online] <http://paymentsystemreview.ca/index.php/about/mandate/> (Viewed on March 20, 2011).

²⁷⁴ At the time this is being writing, the Task Force still states on its website that "It is still too early to anticipate what the final recommendations will be." Task Force for the Payments System Review. [Online] <http://paymentsystemreview.ca/index.php/news-and-articles/the-comment-period-has-closed-2/>

RECOMMENDATIONS

- Whereas new forms of payment are increasing in number;
 - Whereas new forms of payment are often only new ways to use traditional forms of payment or new instruments to do so;
 - Whereas new forms or instruments of payment are virtually unregulated;
 - Whereas new forms or instruments of payment may involve different and/or additional risks;
 - Whereas new forms or instruments of payment do not all provide equivalent and adequate protection to consumers;
 - Whereas the regulatory framework for traditional forms of payment is already deficient in some respects;
 - Whereas there is a lack of consistency in how the forms of payment are regulated;
 - Whereas consumers should benefit from adequate and equivalent protection, regardless of the form of payment they choose or that is offered to them;
 - Whereas the problems consumers may experience in distinguishing which protection they will benefit from based on the various forms of payment or in assessing the risks they are likely to present;
 - Whereas foreign jurisdictions have agreed to adopt regulatory models likely to solve these problems;
 - Whereas it is important that the Canadian government provide adequate and equivalent guarantees to consumers regardless of the form of payment they are using;
 - Whereas these foreign regulatory approaches which consistently regulate all forms of payment, regardless of the technologies or instruments on which they are based or may use, may serve as a model for a Canadian approach;
1. Union des consommateurs recommends that a framework regulation be adopted by the federal government to regulate the various forms of payment;
 2. Union des consommateurs recommends that this framework regulation be technologically neutral;
 3. Union des consommateurs recommends that provincial governments provide consumers, in the regulations related to their fields of expertise, with adequate and equivalent protection regardless of the form of payment they are using;
- Whereas the codes of practice established for the purpose of regulating forms of payment are applied on a voluntary basis;
 - Whereas the various players do not all follow these codes of practice to the same extent or with the same diligence;
 - Whereas the voluntary codes do not provide consumers with as high a level of protection as legislation;
 - Whereas the voluntary codes do not provide consumers or government authorities with recourse as efficient as laws and regulations;
 - Whereas the coexistence of laws and voluntary codes is likely to add to consumer confusion when comes time to determine the rules applicable to a given form of payment or to different aspects or problems related to a given form of payment;
 - Whereas voluntary codes may provide for normative rules designed by and for the industry in order to regulate technical interrelations between the various players involved in the payments systems;
 - Whereas the voluntary codes may include elements that directly or indirectly affect consumers;

- Whereas consumers and government authorities would have an interest in having efficient tools for enforcing the application of the rules found in voluntary codes or to ensure that sanctions are imposed if they are not observed;
4. Union des consommateurs recommends that provincial and federal legislators, in their respective fields of expertise, integrate via regulation the normative contents of the practical rules that directly or indirectly affect consumers or relations between the payment system players and consumers;
- Whereas it is virtually impossible for consumers to be aware of the protection they have and the risks to which they may be exposed when using a given form of payment;
 - Whereas new players are playing a greater role in the payments system;
 - Whereas many of these new players are not financial institutions;
 - Whereas to use the e-wallet some of these companies are offering, consumers must deposit money with them;
 - Whereas only deposits made with a financial institution that is a member of the Canada Deposit Insurance Corporation (CDIC) benefit from the protection offered through this insurance;
 - Whereas the deposits made with these new players present greater risks for consumers;
 - Whereas consumers should be given equivalent protection, regardless of the form of payment they choose or that is offered to them;
 - Whereas one of the models adopted by different jurisdictions to insure consumers against the losses they would incur as a result of a default on the company's part is that of the compensation fund;
5. Union des consommateurs recommends that the applicable frameworks and risks inherent in the form of payment proposed to consumers be clearly disclosed to them when they use a form of payment;
6. Union des consommateurs recommends that competent authorities study the devices that could be implemented to guarantee the sums deposited by consumers with companies not members of the CDIC (such as sector compensation funds) when using a given form of payment;
- Whereas consumers do not necessarily know the costs associated with the use of a given form of payment;
 - Whereas the fact for consumers of being informed of the costs charged for using the various forms of payment and that they will likely have to assume, directly or indirectly, may influence their choice of form of payment;
 - Whereas it is important that the consumer's choice of a given form of payment be done in an informed manner;
7. Union des consommateurs recommends that the competent authorities require that companies, financial institutions and others be totally transparent regarding the costs involved in the use of a form of payment, both in terms of the costs incurred by merchants as those directly imposed to consumers.
- Whereas biometric payments often bring up specific questions and concerns;
 - Whereas the specific features of this form of payment raise issues related to privacy and personal information;

- Whereas certain foreign jurisdictions, concerned about the specific risks that this form of payment presents, have considered having this technology strictly monitored, or some of its uses revoked or prohibited;
8. Union des consommateurs recommends that the federal government have the risks inherent in a biometric form of payment reviewed by an independent specialized organization;
 9. Union des consommateurs recommends that any approval to implement this form of payment in Canada be revoked until the organization has submitted a detailed report on the risks that the technology represents to the payments system and, in such a case, that a strict framework be drawn up based on the organization's recommendations;
- Whereas the risks represented by certain forms of payment regarding the fact that the consumer can no longer keep a budget;
 - Whereas it has been acknowledged that the use of certain forms of payment are likely to incite consumers to spend more;
 - Whereas it is important that consumers be adequately informed of these risks and that they keep tight control over their budget;
 - Whereas the dangerously high level of debt of Canadians;
 - Whereas community groups specialize in money and debt management in providing consumers with information and increasing their awareness;
10. Union des consommateurs recommends that community groups specialized in money and debt management take the time to inform consumers and make them aware of the problems related to forms of payment and more specifically the choices they are making;
 11. Union des consommateurs recommends that competent authorities ensure that they provide adequate funding to such groups so that they can pursue their information and awareness efforts.

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ANNEX 1: APPLICABLE FEES – ZOOMPASS²⁷⁵

FRAIS			
Frais de compte			
Ouvrir un compte Zoompass			Gratuit
Envoyer de l'argent			Gratuit
- Du compte Zoompass			3,5%
- De la carte de crédit			Gratuit
Recevez de l'argent			Gratuit
Ajouter des fonds du compte bancaire			Gratuit
Withdraw FundsRetirer des fonds à votre compte bancaire			0,50 \$
Fonds insuffisant			10,00 \$
Frais de carte MasterCard prépayée Zoompass (la carte est facultative)			
Retrait à guichet automatique – Domestique			1,50 \$
Retrait à guichet automatique – International			3,50 \$
Demande de solde au guichet automatique			0,50 \$
Transaction en devises étrangères			3,5 %
Effets contrepassés frais (le différénd invalide)			10,00 \$
Carte de remplacement			9,95 \$
Limites			
Financement de Compte	Montant maximal d'une transaction		
	Quotidien	Hebdomadaire	Mensuel
Débit Pré autorisé (DPA) ¹	500 \$	1000 \$	2500 \$
Paiement de Factures ²	2500 \$	5000 \$	7500 \$
Total Débit Pré autorisé (DPA) + Paiement de Factures	2500 \$	5000 \$	7500 \$
Retrait de Zoompass à Compte bancaire ¹	750 \$	1000 \$	2500 \$
Transactions de Compte Zoompass			
Envoyez de Compte de Zoompass ¹	750 \$	1000 \$	2500 \$
Envoyez de Zoompass par Carte de Credit ¹	50 \$	100 \$	250 \$
Demandez fonds de Compte de Zoompass ¹	2500 \$	S/O	S/O
Recevez fonds a Compte de Zoompass ¹	2500 \$	S/O	S/O
Transactions de carte MasterCard® prépayée Zoompass			
Quantité quotidienne maximale d'achat PDS	2500 \$		
- 5 par jour			
Quantité quotidienne maximale de retraits au guichet automatique	250 \$	S/O	S/O
- 2 par jour			
Total PDS + Guichet Automatique	2500 \$		
Solde de Compte Maximal: 2500 \$			
¹ Valeur de transaction minimale 1,00 \$			
² Valeur de transaction minimale 0,01 \$			
Il est possible que votre fournisseur de service aille ajouter ses propres frais pour des transferts et messages SMS en utilisant Zoompass sur votre portable.			

²⁷⁵ Zoompass, Fees, 2010. [Online] <https://www.zoompass.com/info.jsp?content=fees> (Viewed on November 5, 2010).

ANNEX 2 : SECURITY – ZOOMPASS²⁷⁶

SÉCURITÉ



Zoompass a très à coeur la sécurité de chacun de ses utilisateurs. Nous utilisons des technologies de pointe pour les protéger contre les transactions et les accès non autorisés à leurs données.

Voici comment nous offrons une technologie de chiffrement sécuritaire

à la fine pointe : Zoompass utilise plusieurs couches d'algorithmes cryptographiques de pointe pour empêcher l'interception et la compromission des transmissions de donnée. La technologie cryptographique est utilisée pour assurer la sécurité des transactions entre l'application mobile Zoompass et le compte des utilisateurs ainsi que les données transmises par réseau cellulaire.

Système de vérification utilisant un NIP : Nous assurons une protection contre une utilisation non autorisée grâce à un système architecturé autour du NIP. Les utilisateurs choisissent leur propre NIP Zoompass pendant l'enregistrement et ils ne peuvent compléter celui-ci tant qu'ils ne l'ont pas programmé. Le NIP Zoompass est requis pour ouvrir une session dans l'application mobile Zoompass ainsi que sur le site mobile. En outre, il doit être entré pour authentifier les transactions (envoi, demande ou transfert d'argent) lorsque l'utilisateur utilise son portable. Il est important que l'utilisateur s'efforce de protéger son NIP Zoompass en tout temps.

Inscrivez les justificatifs d'identité : Lorsqu'ils utilisent le site Web Zoompass, les utilisateurs doivent ouvrir une session dans leur compte avec le nom d'utilisateur et le mot de passe unique qu'ils ont choisis lors de leur adhésion. Pour utiliser l'application mobile Zoompass ou le site mobile, les utilisateurs doivent ouvrir une session dans leur compte avec leur nom d'utilisateur et leur NIP Zoompass. Les utilisateurs Zoompass ne doivent pas partager leur nom d'utilisateur, leur mot de passe ou leur NIP Zoompass avec quiconque. Personne chez Zoompass n'aura à demander pour un mot de passe ou un NIP Zoompass lors d'un entretien courant de son compte.

Protection de la carte : Votre carte MasterCard® prépayée Zoompass vient avec **la protection Responsabilité zéro**, c'est-à-dire que les utilisateurs ne sont pas responsables de toute utilisation non autorisée de leur carte. La non-responsabilité couvre tous les achats effectués avec la carte MasterCard prépayée Zoompass dans un magasin, en ligne ou au téléphone. Conditions générales applique.

²⁷⁶ Zoompass, Security, 2010. [Online] <https://www.zoompass.com/info.jsp?content=securityMessage> (Consulted on November 2, 2010).

Technologie de protocole SSL sécurisée (SSL) de 128 bits : Pour accéder à leur compte sur le site Zoompass, les utilisateurs doivent utiliser un navigateur qui peut gérer le protocole de chiffrement SSL de 128 bits, la méthode de sécurité des transactions par Internet la plus répandue et utilisée de nos jours. Après l'ouverture de session, toutes les pages utilisant la technologie SSL sont protégées comme indiqué par « https » dans l'adresse du site Web ou URL.

Pare-feu : Les ordinateurs et les serveurs qui exploitent le service Zoompass sont protégés par des pare-feu. Ces systèmes de pare-feu empêchent les accès non autorisés au réseau Zoompass et ils sont constamment surveillés pour prévenir les brèches à la sécurité. .

Temps morts : Chaque session Zoompass prendra fin automatiquement ou passera en « temps mort » si aucune activité n'a eu lieu pendant un certain temps. Pour reprendre la session, les utilisateurs doivent entrer de nouveau leur mot de passe ou leur NIP Zoompass.

Avis d'alerte : Zoompass vous envoie des messages texte et des courriels lorsqu'il s'agit de vous informer de certaines actions comme la réception d'argent, les demandes de fonds, les transferts et les modifications au mot de passe ou au NIP.

Pour plus de sécurité, nous recommandons que les utilisateurs surveillent l'historique de leurs transactions. Celles-ci peuvent être vues grâce à l'application mobile Zoompass ou le site mobile sur leur portable ou sur le site Web Zoompass.

Ces mesures de sécurité sont toutes intégrées dans le service Zoompass et elles sont fournies automatiquement. Vous pouvez donc utiliser Zoompass en toute confiance. Pour toute question ou préoccupation à propos de la sécurité de vos renseignements ou de votre compte Zoompass, veuillez communiquer avec nous à support@zoompass.com ou appelez au **1-888-ZOOM 2 GO (1-888-966-6246) ou 416-646-6300.**

Pour plus d'information sur la façon dont nous protégeons vos données personnelles, cliquez [ici](#) pour voir notre Déclaration sur la protection des renseignements personnels.

Signalez toute transaction non autorisée

Si vous avez des raisons de croire que votre compte Zoompass n'est plus sécuritaire (par exemple, dans le cas d'une perte, d'un vol ou de la divulgation non autorisée de votre nom d'utilisateur, de votre mot de passe ou de votre NIP Zoompass) **appelez-nous immédiatement au 1-888-ZOOM 2 GO (1-888-966-6246) ou au 416-646-6300.**

Vous ne serez pas tenu responsable d'une utilisation non autorisée de votre compte si cela survient après nous avoir avisé. Pour plus d'information, consultez les [Conditions d'utilisation](#).