The move towards a cashless Canada

Catherine Johnston of the Advanced Card Technology Association of Canada looks at how Canada is gradually becoming a cashless society.

Are we truly moving towards a cashless society in Canada? The answer is yes, and we have been doing so since shortly after Canada stopped using playing cards as currency and progressed to bank notes. Cheques, credit and debit have all eroded the use of cash because they provide a more convenient way to pay for goods and services. Yet in spite of this we still use cash.

There is comfort in holding it, counting it and maintaining our privacy when we use it. The same cannot be said of our growing use of unwieldy coinage.

Stored value and electronic cash are a natural evolution in the payment landscape. They were also once thought to be the 'killer application' for smart cards. In North America, Canada took a dominant lead in the introduction of stored value products on smart cards.

Smart cards – variation on a theme

Smart, or chip, cards are one technology that is changing banking in North America. Think back to mainframe computers. They changed the way we did business. From mainframes we went to mini computers, allowing distributed data processing, again changing the way we did business. From the mini we went to PCs and from PCs to laptops. Then came notebooks and palmtops. Then came smart cards; computers on pieces of plastic. The ability to put a computer, and for that matter, a distributed data centre, into your customer's wallet opens exciting new possibilities.

It comes as a surprise to many people that this apparently new technology is almost 30 years old. In 1969, early versions of smart cards were developed simultaneously in Japan and France. Each developer was unaware of the other's work, but was struggling to design a solution to a business problem. Over time the card has indeed become smarter, and has found acceptance in Europe, Pacific Rim countries and third world countries where mag stripe infrastructures do not exist.

Over the past 10 years smart cards have gradually found their way into North America, with Canada starting to show a strong lead in the introduction of smart card-based financial products. These include not only Mondex, Proton and VISACash, but also Bell Canada's highly successful Quick Change Card. This movement in Canada has attracted international scrutiny. Last year a group of European bankers met with the Advanced Card Technology Association (ACT) of Canada to discuss our marketplace and whether we believe there is room for additional electronic purses.

In addition to stored value and e-cash, Canadians now use smart card-based loyalty programmes at Boutique San Francisco, San Hubert and Le Normandin restaurants, among others. Electronic purses are used at Le Capitole in Quebec City, on the University of Toronto campus and by Parks Canada at Banff. McDonalds and other partners support the community-based Quebec Soccer Federation by using smart cards at partner locations. These are just a few of the existing implementations throughout Canada.

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There is no question that the technology is working its way into our payment landscape. Bell and Microcell are using the technology in telecommunications. Ajax, Pickering and Burlington Transits in Ontario are using smart cards for fare collection. Other Canadian implementations include physical access, time and attendance, parking payment, golf, electronic gift certificates and health care. Canadians will never be large volume users of these technologies, but we are very innovative in our development of applications and devices and have been responsible for many world firsts.

So how quickly is Canada moving towards a cashless society? To answer this question, we need to look at a business case and the lessons learned from our early stored value trials.

Business cases

Canada is acknowledged for its payment system, which is remarkable given the vast size of the country coupled with its very small population (just over 30m people in 4m square miles). To put these figures into context, Canada is 233,000 square miles larger than the US but has 237m fewer people. These numbers have continually challenged Canadian financial institutions, retailers, governments and others when it comes to business cases.

Also, one in five Canadians live within 100 miles of Toronto, one in three live in Vancouver, Toronto or Montreal, but all Canadians expect easy access to banking and payment services.

We have seen successful business cases built to introduce stored value and electronic cash, but these have not yet translated into successful cases for national rollouts. Mondex, Proton and VISACash have all been tested in Canada. Both VISACash stored value and Mondex e-cash are still in use and many valuable lessons have been learned from their use.

Lessons learned

VISACash has been running in Barrie, Ontario for more than a year. Over that period it has expanded its single stored value application and added a loyalty programme. It is used by the local transit for bus fares and throughout the college campus as a student ID, library card and facility access. Mondex was initially implemented in Guelph, where it ran for more than a year. This summer, two of the Mondex Canada members launched a multi-application system in Sherbrooke, Quebec. The Mondex e-cash application resides on the chip coupled with debit on the magnetic stripe. Proton, under the name EXACT, was piloted in Kingston, Ontario. The following lessons were learned:

- critical mass is a prerequisite for success. Consumers need a critical mass of merchants who accept the new payment cards and merchants need a significant number of electronic transactions;
- it is very difficult to introduce stored value in a geographically bound area unless the population conducts its day-to-day business in that area. If consumers commute into or out of the area it means that they also shop elsewhere. When that happens they require cash and as a result they limit the amount of money they are willing to carry electronically; and
- the most promising applications have turned out to be stored value in closed environments and unattended point of sale. Consumers readily understand the benefits of UPOS devices such as parking meters, vending machines and coin laundries. This in turn promotes their acceptance of stored value in other transactions. Closed environments can be campuses, shopping malls, airports or any area that is geographically bound in terms of locations in which consumers will acquire products or services.

Some elephant traps

Unfortunately, there is no killer application. The reality is that too many North American organisations are hanging back waiting for the 'spreadsheets of smart cards'. However, there is no going back to the time when one application could drive the introduction of a new computing platform. Consumers and corporations are now all accustomed to product bundles.

> If Canadians lost confidence in credit and debit, there would be neither enough tellers nor bricks and mortar to return to payment by cheque. What impact would that have on treasury management?

We need to determine which are the early successes in applications for smart cards and then bundle them for specific groups. Is it transit fares with stored value and loyalty? Is it data and internet security with smart credit and secured ID? Each issuer will have to determine which bundle is best suited for their needs and opportunities.

The results of the pilots were that:

- the amount of support required for retailers will exceed expectations and must be available round the clock. When a shop worker is closing up at midnight and has a question, an answer may be required to cash out. In addition to retailer support, a lot more consumer and press education is required than you would realistically expect; and
- reload points provided another lesson. In Guelph, the reload devices consisted of ATMs, and domestic and public telephones. We learned that domestic telephones were very popular with approximately half the reloads done by these home devices. Public telephones, however, were rarely used as load devices. Convenience drove the use of the home telephone as a way to load e-cash onto the cards.

Another elephant trap concerns business cases and the first lesson not yet learned by enough financial institutions.

You cannot build a business case for chip (Smart) cards for a single product. Chip must be seen as a strategic platform for the delivery of many new and future products and services. Chip offers the enhanced security and flexibility required to redefine service delivery, both retail and commercial. Only when you accept chip as a strategic tool can you build the case for the infrastructure costs. If you try to justify the cost of the infrastructure for a single product you are not likely to succeed unless the deployment of devices is very limited.

This is also partly true for governments, but is less of an issue for retail applications, which operate in somewhat closed environments.

The driving forces

Fraud has an effect on business people and consumers. In 1997, credit card fraud losses in Canada amounted to $126.5m. In 1998 that figure increased by over 20%.

Last December, the Royal Canadian Mounted Police (RCMP) conducted a raid in Toronto and seized 5,000 gold VISA cards. Each of those cards could have generated approximately $3,000 in revenue for the counterfeiters. During the raid the RCMP also seized citizenship card templates, Government of Canada cheque plates, blank driver's licences and social insurance number card templates. The crooks were also engaged in debit card skimming, a process which involves reading information from valid debit cards to create counterfeit cards.

Debit cards are also a growing target for fraud. In the Toronto raid, two organised crime groups were working together; one to supply the numbers and data and the second to build the cards. There is no doubt that card fraud is no longer casual or random, but has become a highly profitable business endeavour for organised crime. We have also seen the first pinpad device that was equipped with a built-in camera to capture the user's pin. When you see this trend, combined with the fact that approximately 45% of existing credit card fraud comes from counterfeiting, you might understand why there is a strong business case for smart credit and debit.

Nevertheless, we are not seeing recognition of this fact in the North American marketplace. The UK, however, has reacted to this situation and is moving to smart credit and debit, rather

than run the risk of losing consumer confidence.

In June 1999, Derek Fry, president of VISA Canada, said that if the financial institutions in Canada were to share debit fraud information, as we do credit, we would be far more concerned. He went on to say that if Canadians lost confidence in credit and debit, there would be neither enough tellers nor bricks and mortar to return to payment by cheque. What impact would that have on treasury management?

There are indications that Canadian financial institutions (FIs) are beginning to look at this situation. They are also now determining what it would take to build a national infrastructure.

One last note on business cases for stored value. Traditionally, we have failed to tell retailers and consumers about the cost of handling cash. Although the cost to FIs has been present in each business case, it is time to share that information with the payment system stakeholders. Our next driver is the technology itself.

Smart cards are a very rich facilitation tool. They allow FIs and retailers to offer a myriad of new products and services, with a level of security never before available on a consumer carried card. This technology should be viewed as a network device. Thinking back to the introduction of ATMs, it was when FIs agreed to network and share ATMs that consumers really adopted the service. Again, it is the network of merchants and POS devices that have made credit and debit globally successful.

We have learned that this technology redefines competition, often promoting or even forcing new partnerships: FIs with governments; transit authorities and FIs; retailers and FIs, among others. For example, transit authorities that in the past have paid FIs to process their cash, are now approaching those same FIs and offering to rent them space on their Smart transit cards. A transit system such as Toronto that issues millions of cards will reach consumers from every major bank and can now charge to be a delivery channel for bank, retail and even government applications.

Another lesson learned in the area of the technology is that North American organisations must develop some expertise. This means that we cannot afford continually to build our plans around emerging technologies such as new operating systems, evolving platforms or next year's devices. It is important to drive a stake in the ground. You should pilot or implement a basic application and grow from there. This is where you will learn lessons that will contribute significantly to the success of your long-term plans.

One of the reasons this is so important is that smart card standards and technology continue to evolve at a rate comparable to the rest of the computing world.

Standards

I am often asked about standards. There are a myriad of standards around cards, devices and applications. What is lacking, however, are standards that would promote the vision of any card/any application coupled with any card/any terminal and any application/any terminal. There are groups working on these issues. The Open Card Framework and NIM have started to address these visions, but all parties must move to build, promote and adopt standards that will bring a richer mix of devices and users.

We have learned that unattended point of sale is an early winner, but there is a need for standards that would allow vending devices to move to stored value payment. Unfortunately there are many machines out there that are 30 years old and have been built to varying specifications. Not only that, but many machines are modified in the field, making retrofits difficult, expensive and sometimes impossible.

Progress will be made when each sector focuses on its core expertise to define the standards and technology required to support its strategic plans and products. This must happen before integrators can put together the pieces to support multi-application card systems.

A dangerous stance

In conclusion, I would say that we have taken an understandable but dangerous stance in North America. We did not implement smart cards for telecommunications as quickly as other countries because we didn't have the same problems. We didn't implement smart cards for credit and debit, because again we didn't have the same problems. We have not moved as quickly as many third world countries, because we have an existing, functional infrastructure that would be expensive to replace. All this was not a problem 20 years ago when smart cards started to work their way into use elsewhere. But in a world that is becoming increasingly borderless, where the internet makes global commerce available to the average consumer and where fraud is the growth industry of the decade, we are falling behind.

Canadians have proved to be avid users of the products and services offered by payment cards. Thirty million Canadians carry more than 60m credit cards and last year Canada processed more debit card transactions than the entire population of the US. With this type of receptive market, you cannot afford to wait. The planning, development and implementation cycles run from months to years, so it is important to look at risks and opportunities now.

ACT Canada will continue to monitor this subject. We are now in our 12th year of studying the emergence of these technologies.

In the words of William Blake:

"What is now proved was once only imagined." ■

Catherine Johnston is president & CEO of the Advanced Card Technology Association (ACT) of Canada.

A glossary of terms

Smart, or chip, card	A PC on a piece of plastic, complete with an operating system, application software and application data. Can also be thought of as distributed data centres
Stored value	Electronic value that resides on the chip and can be spent at participating merchants
E-cash	Stored value, which can also be transferred between individuals, thus emulating cash
FIs	Financial institutions; a term that includes banks and credit unions