

The Chip Revolution: Coming Soon, to a Merchant Near You



By Jo Burek

On March 13th, 2006, the organizations that comprise the Canadian payment card industry announced their firm commitment to migrate our familiar magnetic stripe card to the newer and more secure chip technology.



Jeff Gynane, UK

This action is in response to the escalating instances of Canadian credit and debit fraud, such as skimming (the act of illegally securing cardholder debit and pin information, and the subsequent unauthorized withdrawal of funds). By adopting the EMV (EuroPay, MasterCard, and Visa) chip card and device standard, the Interac Association, MasterCard Canada Inc., Visa Canada Association and their partner banks and payment processors, anticipate that they will reap chip's benefit by an almost immediate reduction of fraud events, as experienced by the earlier European adopters. For example, in 2005, UK Chip and Pin

reported an astounding 24% reduction in counterfeit and fraud on lost and stolen cards as compared to occurrences within 2004 (Source: www.chipandpin.co.uk).

Our new "chip card" uses the familiar plastic form, but instead of the magnetic stripe, it carries an embedded microchip with processing capabilities and highly secure data storage. Both the chip and magnetic stripe versions contain the cardholder name, card number, and expiry date, but chip extends its memory and functionality by also carrying an operating system, additional applications, and settings specific to the card and the cardholder.

So What Does That Mean?

Today, over 56.5 million credit and 20.5 million debit magnetic stripe cards reside within the collective Canadian wallet, and they **all** need to be changed to chip. In addition, and using the same 2005 numbers, point-of-sale terminals / pin pads, automatic banking machines, and automatic fuel pump dispensers (summarized in **Table 1**) who "take the swipe" need to be replaced by chip reader technology.

The conversion of both wallet and reader technology is a huge undertaking, with daunting numbers and limited timeframes, considering the length and breadth of the Canadian success with payment cards.

In order to welcome chip into the business, merchants need to change the way they process payment cards. The published chip migration targets for those hardware and cards are shown in **Table 2**.

Chip readers (and cards) are not available to the merchant or consumer today—trials are only beginning in mid-2007 in central Ontario—but the merchant should take the IP network step, thus minimizing the urgency and quantity of change for the future.

Merchants have been regularly adopting IP networks within their retailer infrastructure over the past few years. And, there are some fairly compelling reasons, such as:

- Network cost savings
- Datapac's price increases and impending discontinuation
- Improved transaction speeds (from as much as 20 seconds to 4 seconds)
- Improved operations (such as new applications supporting Web-ordering, surveillance and alarming, private radio), and
- Lowered IP applications cost

But even if we estimate that 12% of the merchant locations (representing 71,000 merchant terminals) are currently IP-based, that leaves a whopping 500,000 merchant terminals to migrate between now and the end of 2015. And, that quantity doesn't even consider any new merchant or site/terminal growth over the next 8 years.

We all know our love for change. It's never the right time to change networks or process, and the concern of the IP providers (and organizations within the payment industry) is how we could assist the merchant in preparing their business for chip at their leisure, at their timing rather than through frantic efforts during the last days of the conversion window.

	2005 Statistics
IDP (Interac Direct Payment) Merchants	391,264
IDP Terminals	571,353
SCD (Stored Cash Dispenser) / Automatic Banking Machines (ABMs)	51,097 of which 34% are bank-owned.

Source: www.interac.ca and www.cba.ca

Table 1.

Segment	December 31 st , 2010	December 31 st , 2012	December 31 st , 2015
Deposit-taking ABMs	90%	100%	-
Other ABMs	50%	100%	-
Point of Sale Devices (Card Swipe) excluding Automatic Fuel Dispensers	35%	60%	100%
Automatic Fuel Dispensers	0%	25%	100%
Debit Cards with PINs	65%	100%	-

Source: Interac Association Chip Information Session November/December 2005

Table 2

A simple math exercise suggests that even if every non-IP Canadian merchant took their place in line and started their IP migration—not chip adoption yet, but merely preparing their network by migrating to IP—the following would be required:

- **For 2007–2010:** 210 merchant terminals (or sites) convert to IP, per day
- **For 2011–2012:** 350 merchant terminals (or sites) convert to IP, per day, and
- **For 2013–2015:** 275 merchant terminals (or sites) convert to IP, per day.

Assumption: Merchants replace non-IP services, such as frame relay, Datapac, ISDN or dial services with IP (DSL) connectivity and replace existing non-IP payment terminals with IP payment terminals during 190 available business days per year (considering Christmas/busy season implementation embargos.)

From a network provider perspective, we're not at that rate today, so someone is going to get rushed.

That being said, and despite the chip's mandated necessity, chip's advantages of security and additional applications by far outweigh the bother of change. Beyond its security allure, chip's 'one card does it all' is one example of its power, where all cardholder applications (multiple debit and credit accounts, driver's and fishing licenses, gift/loyalty memberships, social insurance numbers and provincial health programs) could reside on the same chip real estate and the cardholder prompted with a list of payment or activity options.

Jo (Joan) Burek has designed and implemented systems and communications solutions for retail, finance, government, manufacturing, oil/gas and Internet companies for over twenty years. Ms. Burek has held technical and management positions at Radiant Communications, Ameritech (SBC), Canadian Satellite Communications, Bell Canada, Sprint Canada, and Motorola; and now works for TELUS. Gateway or IP networking questions? Please contact Jo at 416 455 9721 or joan.burek@telus.com.

And, now for my request... I would like to survey System i members on their IP adoption plans.

- If you have implemented IP, was it to prepare for chip, or for other reasons?
- If you use an alternate network technology (frame, dial, Datapac, etc.), does IP exist as a plan and is chip your reason to move from (or stay with) your current technology.

Please send a quick email to joan.burek@telus.com. I plan to publish the results of this informal survey in the next edition of the TUG magazine. 



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