



# Credit Union Central of Canada



## *Chip Technology 101*

November, 2005

# Presentation Overview

1. Purpose of this presentation
2. Background
3. Introduction to Chip Technology
4. Questions

# Purpose of this Presentation

- To provide the credit union system with an understanding of chip technology
- To enable credit union management to start incorporating chip technology plans into budgets and resourcing considerations
- To keep the credit union system aware of the latest developments in the Canadian payments arena

# More Than Just Another Card Gimmick!

- Chip card technology is not just another delivery mechanism for card products
- This “new” technology will revolutionize the way card products are developed and will change the card payments business as a whole
- Already in use in many parts of the world, these cards as known as “chip cards”, “smart cards” or “EMV cards”

# Background

- Visa Canada announced their mandatory move to chip technology in 2004
- Debit and credit card fraud grew rapidly in 2004
- Card fraud publicity grew in 2005, especially with W5 program aired in January 2005
- Interac Association announced their support for a migration to chip technology in February 2005
- Visa and Interac have chosen the EMV international standard for smart cards
- CUETS, Desjardins and some banks have announced movement to chip technology
- MasterCard has not made chip technology mandatory for their members, but has announced its chip readiness

# What is a chip card?

- A debit or credit card with a microcomputer embedded in it.
- Uses a PIN to authenticate the cardholder



# Chip Cards vs. Mag Stripe Cards

## **Mag Stripe Card**

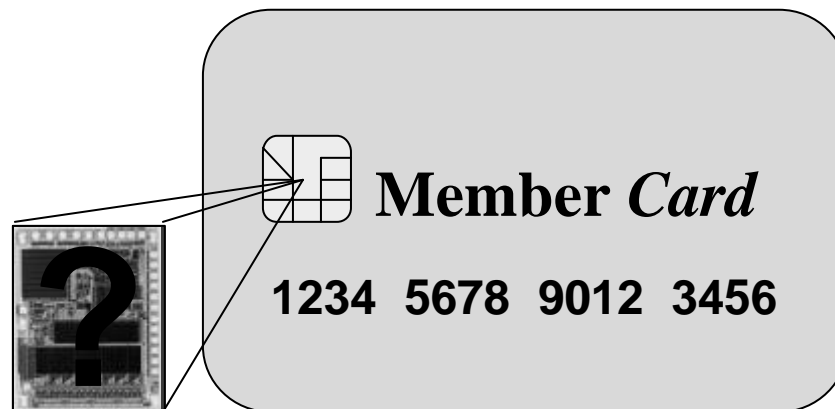
- read-only data
- limited storage
- data can be easily read duplicated
- sensitive to physical wear and tear
- at the end of its life cycle

## **Chip Card**

- read/write data
- greater storage
- enhanced data and security
- durable
- combined cards are more portable/convenient
- offers offline transaction capability

# Is a chip card secure?

- Unlike today's magnetic stripe cards that are easily "skimmed" (copied) and counterfeited, chip cards are extremely difficult to counterfeit.
- Each card contains unique encryption that makes it difficult and inefficient for fraudsters to duplicate.



# What can a chip card do?

- Data storage
- Identification
- Authentication
- Security
- E-purse



\*Payment Selection Environment

11/21/2005

# What is EMV?

- International standard and technical specifications for chip cards and chip card-accepting devices
- Developed by **E**uropay, **M**asterCard and **V**isa
- EMV specifications ensure the global interoperability needed for payments products

# Is the rest of world moving to EMV too?

## EMV Compliance Dates



- \* CEMEA - Central and Eastern Europe, Middle East and Africa
- \* LA - Latin America
- \*\* AP - Asia Pacific

# Will chip cards work in countries that do not support EMV?

- Yes! Cards will retain a magnetic stripe and embossed numbers that can be used in countries that do not support EMV
  - Example: The USA has no immediate plans to move to EMV.
    - American cards will use their magnetic stripes for transactions in Canada
    - Canadian cards will use their magnetic stripes for transactions in the USA

# So EMV cards will have both a magnetic stripe and a chip?

- Yes! Magnetic stripes will continue to be used **as necessary** for some time:
  1. EMV card is presented at chip-enabled device: Chip on card is used to process transaction.
  2. EMV card is presented at non-chip device: Magnetic stripe on card is used.
  3. Magnetic stripe only card is presented at chip-enabled device: Magnetic stripe is used.
  4. Magnetic stripe only card is presented at non-chip device: Magnetic stripe is used.
  5. EMV card is presented at chip-enabled device, chip on EMV card is not functioning: **Transaction fails. Magnetic stripe “fallback” is not allowed.**

# Why move to EMV?

- The Big 5 Banks based their business case on:
  - Fraud reduction
  - Value-added opportunities
  - Low value offline payments
  - Confidence in the Canadian payment system
- There is **no** business case for most credit unions based on fraud reduction yet

# So...why move to EMV?

1. Remain competitive with other FIs
2. Avoid fraud migration to weakest targets
3. Retain access to payment systems
4. Opportunities for new card-based offers

# So...why move to EMV?

## Remain Competitive with Other FIs

If competitors move to EMV and credits unions don't:

- Our reputation for innovation may be damaged
- The security of our payment systems may be questioned
- We may fall permanently behind in technology development
- Operating costs will increase as Interac financial sanctions for non-compliance begin after 2010
- As other FIs offer new card innovations, credit union members may leave for more attractive product offers

# So...why move to EMV?

## Avoid Fraud Migration to Weakest Targets

If competitors move to EMV and credits unions don't:

- Thieves will focus their efforts on the cards and systems that are easiest to compromise: Institutions that still rely on magnetic stripe technology
- Fraud losses at credit unions will be relatively higher compared to competitors
- Operational efficiency (cost ratios) will lag behind other FIs

# So...why move to EMV?

## Retain Access to Payment Systems

If credits unions don't move to EMV:

- We risk being “cut off” existing payment systems if the various payment associations make EMV compliance mandatory
- Market forces may simply ignore payment systems that are not considered secure

# So...why move to EMV?

## Opportunities for New Card-Based Offers

If credits unions implement EMV technology:

- We may be able to differentiate our card products by offering innovative applications on our cards
- Partnerships with popular loyalty program providers, government or other entities may give credit unions a sustainable competitive advantage in the card market

# Interac Association

- Interac's infrastructure to support chip transactions will be in place by the end of 2006
- Interac plans on receiving the first chip transactions in 2007
- All new Interac devices must meet the chip specifications after Dec 31, 2007.
- SCD cash withdrawals using magnetic stripe will not be allowed after Dec. 31, 2012.
- IDP magnetic stripe transactions will not be allowed after Dec. 31, 2015.

# MasterCard Canada

- In February 2005 MasterCard Canada announced that its chip card capability and smart card platforms are ready for immediate implementation
- MasterCard Canada has no current plans to mandate a migration to chip technology, but is prepared to assist any member that decides to move to chip

# Visa Canada

- Visa Canada announced its intention to move to chip technology in 2004
- Visa will use fraud liability shift in 2010 to encourage merchants to adopt chip technology for more secure transactions
- Visa, MasterCard, American Express and Interac are coordinating efforts to hold a “technical launch” (pilot) in mid-2007.

# Who is helping industry migrate to chip technology?

- **Interac Chip Strategy Group**
  - Managed by Interac Association
  - Made up of representatives from major Canadian card issuers, acquirers and national merchants
  - Credit Union Central of Canada represents credit unions on this group
  - Focuses on chip migration strategy for debit cards, Interac Direct Payment (POS devices) and Shared Cash Dispensing (ATMs).

# Who is helping industry migrate to chip technology?

- **Multilateral Chip Coordination Group**

- Managed by Interac, Visa, MasterCard and American Express
- Made up of representatives from major Canadian card issuers, acquirers and national merchants
- Credit Union Central of Canada represents credit unions on this group
- CUETS represents credit union MasterCards
- Focuses on coordinating chip migration strategies among payment associations

# Who is helping credit unions migrate to chip technology?

- **Chip Strategy Task Force (CSTF)**
  - Facilitated by Credit Union Central of Canada
  - Made up of representatives from Provincial Centrals, Credit Unions and key Suppliers to the credit union system
  - Focuses on developing a chip migration strategy for the Canadian credit union system

# Who is my CSTF representative?

## **Members**

Howard Bogach  
Oscar van der Meer  
Linda Copland  
Anil Risbud  
Bev Maxim  
Adrian Legin  
Barry Lundin  
Susan McNulty  
Scott Ferguson  
Rosemarie Mercier  
Donna Baranowski  
Sharon Butterfield  
Steve Mills  
Ian MacNeil  
Tom Kindred  
Shaun Iversen  
Brian Guillemin  
Carlo Tuzi  
Sheryl Britton

## **Representing**

Chair  
British Columbia Central  
VanCity CU  
CUCA, CUCM & Alberta C.U.s  
Saskatchewan Central  
Conexus CU  
Altona CU  
Ontario Central  
St. Willibrord CU  
l'Alliance  
New Brunswick Central  
Nova Scotia Central/Atlantic  
League Data  
League Data  
CUETS  
CUETS  
UNPS  
CGI  
Everlink

## **Telephone**

905-238-9400  
604-730-6329  
604-877-7953  
403-692-2720  
306-566-1547  
306-780-1715  
204-324-2250  
905-629-5543  
519-672-0130 x323  
705-474-5634  
506-857-8184 x108  
902-454-3128  
902-454-3113  
902-493-2705  
306-566-7628  
306-566-1448  
306-566-1253  
905-858-7100 x7364  
306-781-0130

## **Email**

[hbogach@cuco.on.ca](mailto:hbogach@cuco.on.ca)  
[ovandermeer@cucbc.com](mailto:ovandermeer@cucbc.com)  
[linda\\_copland@vancity.com](mailto:linda_copland@vancity.com)  
[anil.risbud@celero.ca](mailto:anil.risbud@celero.ca)  
[bev.maxim@cucs.com](mailto:bev.maxim@cucs.com)  
[adrian.legin@conexuscu.com](mailto:adrian.legin@conexuscu.com)  
[barryl@altonacu.mb.ca](mailto:barryl@altonacu.mb.ca)  
[smcnulty@cuco.on.ca](mailto:smcnulty@cuco.on.ca)  
[sferguson@mycu.com](mailto:sferguson@mycu.com)  
[rmercier@acpol.com](mailto:rmercier@acpol.com)  
[db@cucnb.nb.ca](mailto:db@cucnb.nb.ca)  
[sbutterfield@cucns.ca](mailto:sbutterfield@cucns.ca)  
[smills@leaguedata.ca](mailto:smills@leaguedata.ca)  
[imacneil@leaguedata.ca](mailto:imacneil@leaguedata.ca)  
[kindreto@cuets.ca](mailto:kindreto@cuets.ca)  
[iversesh@cuets.ca](mailto:iversesh@cuets.ca)  
[guillebr@cuets.ca](mailto:guillebr@cuets.ca)  
[carlo.tuzi@cgi.com](mailto:carlo.tuzi@cgi.com)  
[sheryl.britton@everlink.ca](mailto:sheryl.britton@everlink.ca)

# Questions?

For further information, please contact your  
Chip Strategy Task Force representative.