



Preparation For EMV Chip Technology

Presented by:
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Agenda

- Trustwave's Payment Application Practice
- What is EMV
- The EMV Mandate
- Preparing for EMV
- Questions

Trustwave's Payment Application Practice

Trustwave's Payment Application Practice

- Keith Swiat
 - *19 years experience in info-sec*
 - *10 focusing on payment card security*
- The Team
 - *15 PA-DSS Assessors*
 - *5 continents*
 - *Nearly 1/3 of all applications listed on the PCI-SSC validated application list have been validated*
- Services
 - *PA-DSS Assessments*
 - *P2PE Assessment*
 - *PCI Mobile Application Security Guidelines Review*

What is EMV?

EMV At A Glance

- Joint effort between Europay, MasterCard and Visa to provide globally interoperable and secure payments.
- First version of EMV standard published in 1996.
- Currently managed by EMVCo.
- Holds payment data on an integrated circuit or “chip” rather than on a mag stripe.
- Chips can contain RFID capabilities to enable “tap” transactions.



EMV Technology Overview

- Solutions are comprised of two components:
 - *Microprocessor, usually embedded in a payment card*
 - *EMV-enabled POS (contact or contactless)*
- Transaction Flow
 - *Card Authentication*
 - Cardholder offers card to reader
 - *Cardholder Verification*
 - Cardholder enters PIN or signature
 - *Transaction Authorization*
 - Transaction is approved, card is removed



Current EMV Usage

- EMV has a very strong foothold internationally.
 - *EMV terminals in use (estimated):*
 - Europe – 11,000,000
 - APAC – 3,500,00
 - Africa/Middle East – 350,000
 - Americas – 3,900,000
 - Does not Include the U.S.

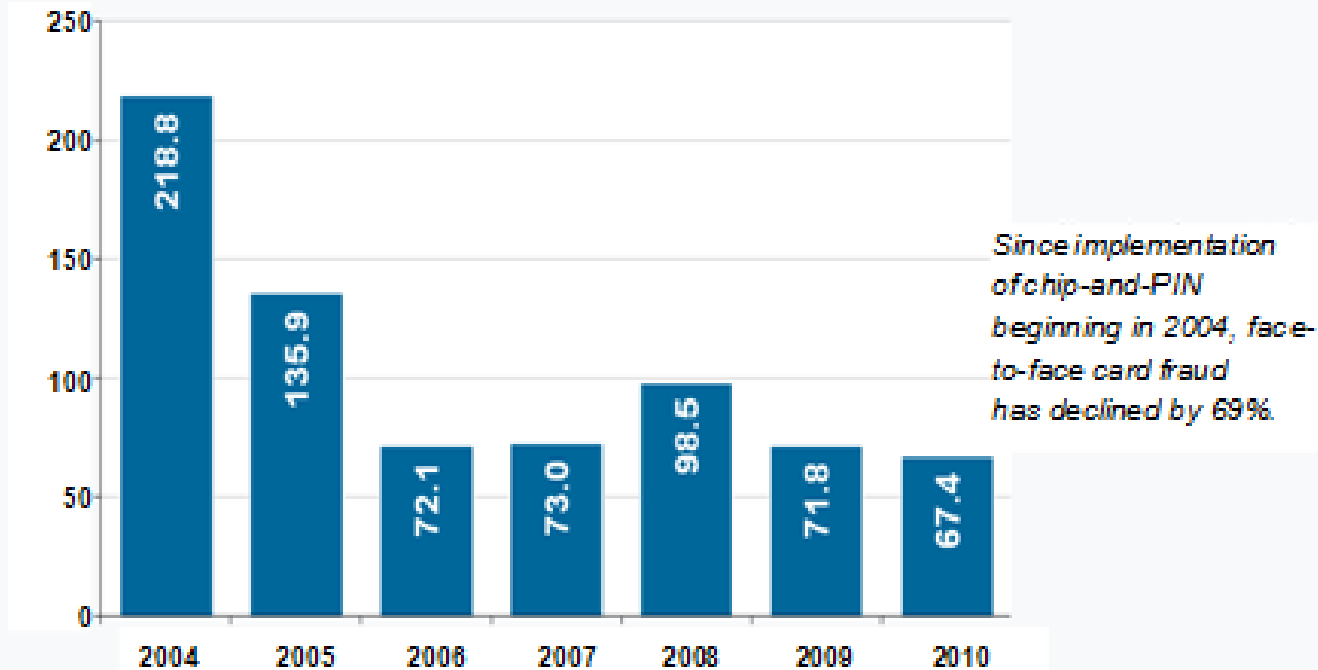
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 - Does not Include the U.S.
- Countries that adopt EMV show a sizable reduction in “card present” fraud.

Current EMV Usage

Fraud Losses on UK-Issued Cards at UK Retailers (Face-to-Face Transactions)

(million Pounds)



Source: Financial Fraud Action UK, Fraud The Facts, 2011

EMV and PCI-SSC P2PE

- The PCI-SSC has recently released their P2PE standard.
- P2PE addresses security concerns for a different type of transaction: static payment data.
- Aims to protect card holder data used in mag stripe transactions during both transit and storage between the merchant and acquirer.
- P2PE can provide a good mechanism to secure cardholder data while EMV is adopted in the U.S.

EMV and NFC

- Near Field Communication (NFC) is a derivative of the RFID that is used in EMV chips.
- NFC can only deliver data over a few centimeters as opposed to RFID's which can transmit over a few meters.
- Card-based implementations are passively powered, while Smartphone solutions are powered by the device.
- Inclusion of NFC in many mobile devices may cause a shift to mobile wallets.



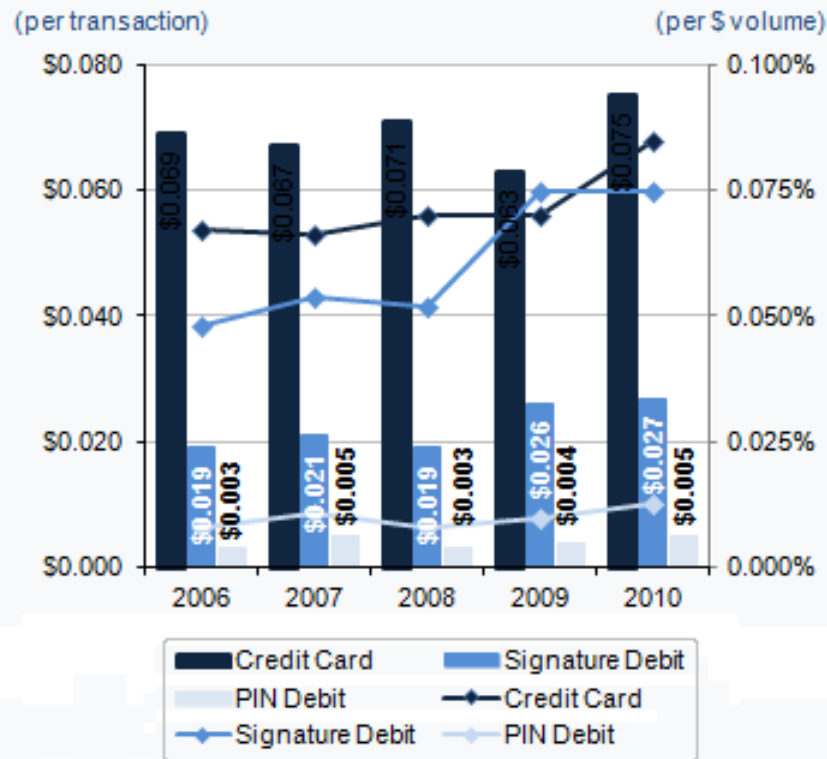
The EMV Push

Who are the players?

- Visa and MasterCard are taking different approaches to mandating EMV use.
- Visa
 - *Expand its Technology Innovation Program to allow Merchants forego the need to undergo PCI compliance if at least 75% of transactions come from chip-enabled terminals.*
 - *Require U.S. acquiring banks and sub-processor service providers to support merchant acceptance of chip transactions.*
 - *institute a U.S. liability shift for domestic and cross-border counterfeit card-present point-of-sale (POS) transactions.*
- MasterCard
 - *Extend its existing EMV liability shift program for inter-regional Maestro ATM transactions*

What are the drivers?

**Estimated Per Unit Fraud Losses by Payment Type
Incurred by U.S. Financial Institutions**



Source: PaymentsSource, Pulse Issuer Debit Study, The Nilson Report.

What are the drivers? (Cont.)

- Losses from card-present fraud are increasing year after year.
 - *EMV can help mitigate this.*
- Gross dollar volume for mobile payments is rapidly growing.
 - *Some groups estimate mobile payments will reach \$214 billion in gross dollar volume by 2015, up from \$16 billion in 2010.*
 - *EMV can aide in securing these mobile payments.*
- Travel between EMV-enabled countries and non-EMV-enabled countries is becoming more difficult.
- The European Payments Council has considered banning use of magnetic stripe cards.

EMV Timeline

- **OCTOBER 2012** – PCI AUDIT RELIEF FOR MERCHANTS
 - *PCI Data Security audit fee waiver for EMV-ready merchants (75%+ transactions are EMV) from VISA and MasterCard*
- **APRIL 1, 2013** – ACQUIRER AND SUB-PROCESSORS SUPPORT EMV
 - *VISA and MasterCard acquirer processors must support EMV transactions.*
- **OCTOBER 2013** – ADC RELIEF FOR MERCHANTS (50%)
 - *MasterCard EMV-ready merchants (75% of POS transactions) receive 50% Account Data Compromise relief.*
- **OCTOBER 1, 2015** – FRAUD LIABILITY SHIFT
 - *VISA and MasterCard shift fraud liability to least secure entity.*

EMV Timeline

- **OCTOBER 2015** – ADC RELIEF FOR MERCHANTS (100%)
 - *MasterCard EMV-ready merchants (95% of POS transactions) receive 100% Account Data Compromise relief.*
- **OCTOBER 2016** – FRAUD LIABILITY SHIFT FOR ATMS
 - *MasterCard shifts EMV liability to ATM hosts for inter-regional Maestro ATM transactions.*
- **OCTOBER 2017** – FRAUD LIABILITY SHIFT FOR AUTOMATED FUEL DISPENSERS
 - *Extended liability deadline ends for fuel dispensers.*

Preparing for EMV

Implications For Merchants

- Shifting compliance stances
 - *There are NO government-enforced mandates for EMV at this time.*
 - *The announcements by MasterCard and Visa are only the first.*
 - *Additional announcements may impact merchants who are early adopters.*
- Cost
 - *Almost all merchants in the U.S. will have to make a sizable investment to implement EMV acceptance.*
 - *Merchants will have to balance the hard and soft costs of upgrading systems to support EMV with potential fraud liability costs.*



Implications For Merchants (Cont.)

- Determine how much of your transactions are card present.
 - If you are 100% card-not-present EMV may not apply.
- How many terminals do you currently employ?
- Does your current terminal vendor offer an EMV upgrade path?
- How long did it take for your last terminal upgrade?

Questions?

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