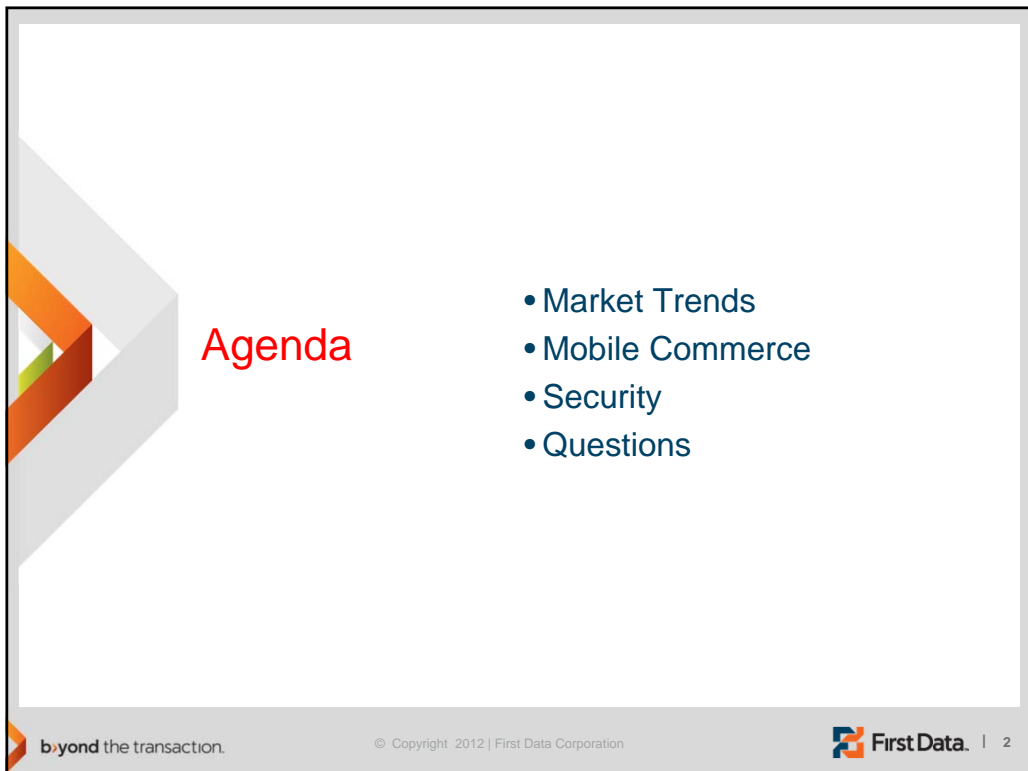# Office of State Controller Financial Conference

Stephanie Spencer-Director of Relationship Management
Rhonda Kirk-Relationship Manager

b›yond the transaction.

Agenda

- Market Trends
- Mobile Commerce
- Security
- Questions

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Market Trend

Today's Market Trends:

- *Spend Trends*
- *Anytime, Anywhere*

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Industry Spending Trends

SpendTrend® analysis for Thanksgiving/Black Friday 2013 compared to Thanksgiving/Black Friday 2012.

Black Friday lost some of its luster as retailers opened their doors earlier this year in order to vie for a piece of the holiday spending pie, especially with this year's shorter-than-usual window between Thanksgiving and Christmas. Year-over-year retail dollar volume growth during Thanksgiving and Black Friday was strong at 9.0%, and a significant increase compared to last year's growth of 5.6

The growth was also supported by the cold and dry weather across most of the nation, which attracted retail foot traffic for seasonal merchandise and offered consumers perfect holiday shopping weather. The Electronics sub-category saw a big jump with an increase of 9.1%, and Sporting Goods, Hobby, Book and Music Stores was the top performer with growth of 27.3%.

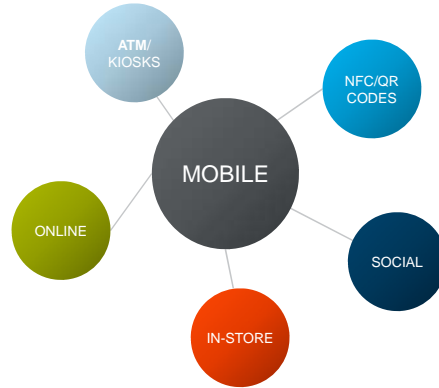| Overall Retail Growth Rates	CHANGE
Dollar Volume	+9.0%
Average Ticket	+3.8%
Transaction Count	+4.9%

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2

We're Entering the Age of Universal Commerce

The consumer is in control…

Personalized and value added services delivered anytime and anywhere!

ATM/KIOSKS

NFC/QR CODES

MOBILE

ONLINE

SOCIAL

IN-STORE

Moving from a multi-channel buying process to an integrated buying experience – **centered around mobile technology!**

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Seek Seamless

53%
Want seamless experiences

62%
Check online before going to store

65%
Have retailer apps on phone

45%
Use phone in-store to comparison shop

3

SEAMLESSanytime 🕐 anywhere

71%

expect real-time access to their financial accounts – they want to know balances and activity anytime anywhere

Over ½ bank online using their laptop and Over ¼ bank online using their smart phone

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More than a Transaction

My time is valuable 53%
Speed up the checkout!

Easy 45%
If technology is not easy the first time, I stop using!

Know me! 48%
Hope marketers get better at tailoring offers and ads

Social and Sharing

56%
Use social media prior to a purchase
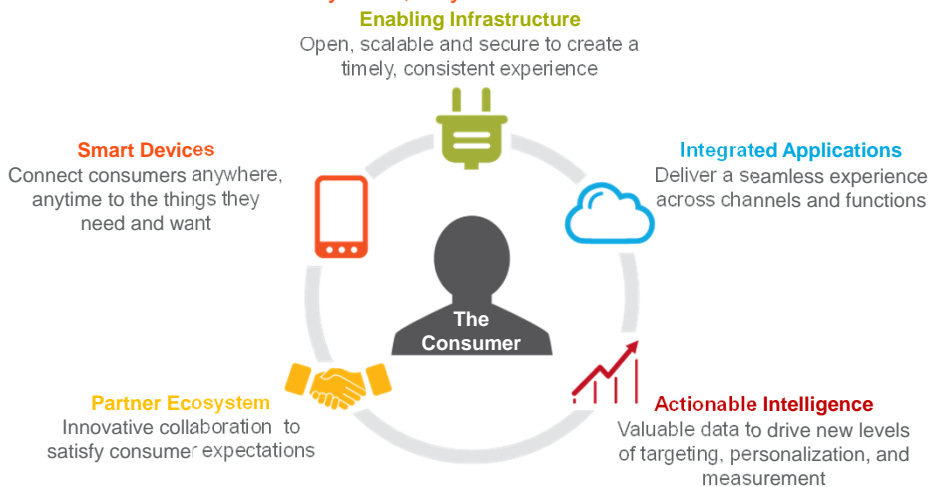
50%
Post reviews

47%
Prefer companies that are smart about social media and technology

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Universal Commerce – Key Enablers
Five essential ingredients to deliver the personalized experience that consumers desire any time, anywhere

Enabling Infrastructure
Open, scalable and secure to create a timely, consistent experience

Smart Devices
Connect consumers anywhere, anytime to the things they need and want

Integrated Applications
Deliver a seamless experience across channels and functions

The Consumer

Partner Ecosystem
Innovative collaboration to satisfy consumer expectations

Actionable Intelligence
Valuable data to drive new levels of targeting, personalization, and measurement

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Mobile Phones are Changing the Way We Manage Money

70%

of consumers believe the mobile shopping experience is very easy or easy

60%

of smartphone users would like a mobile wallet for storing and using coupons and offers

83%

of consumers wish companies would do a better job connecting offline/in-store and online/web

Source: Consumer Insights Summary
Source: eDigitalResearch and Portaltech Reply, 2012

Source: First Data uCommerce Consumer Tracker, 2012

Source: First Data uCommerce Consumer Tracker, 2012

Mobile Commerce

Today's Mobile Commerce Solutions:

- Mobile Application
- Wireless Terminals
- WIFI Terminals

Mobile Solutions from First Data

A Full Array of Choices

- **Highly Mobile, Wireless, Carrier-Agnostic**
  - **First Data Mobile Pay™**
  - **VeriFone PAYware Mobile**

- **Mobile, Wireless, Built for Purpose**
  - **First Data™ FD400^{GT}**
  - **VeriFone Nurit 8020**

- **Wi-Fi, Limited Mobility**
  - **First Data™ FD100^{Ti}**
  - **First Data™ FD200^{Ti}**
  - **First Data™ FD300^{Ti}**

Mobile Solutions from First Data

A comparison of features

First Data Mobile Pay™	VeriFone PAYware Mobile	First Data™ FD400^{GT}	VeriFone Nurit 8000 GPRS (AT&T)	First Data™ Ti Wireless Series
• Card swipe or browser-based	• VeriShield Protect	• Sprint and AT&T networks	• PCI PED approved	FD100^{Ti}/200^{Ti}/300^{Ti}
• Secure login	• Card swipe	• PTS- and PCI-PED compliant	• GPRS network	• Compact design
• Intuitive interface	• Real-time processing	• Large display	• Rechargeable lithium ion batteries	• Credit/debit/EBT/check
• Accepts credit cards	• Real-time reporting	• Touch screen		• Built-in printer
• Both card swipe and manual entry	• PA-DSS validated	• Three magnetic stripe reader	• Backlit keyboard	• Touch screen
• Real-time processing	• E-receipt at time of transaction	• Internal PIN pad	• Large LCD display	• Magnetic stripe reader
• Fraud protection tools	• AVS	• Thermal receipt printer	• Programmable quick keys	• Contactless support
• SSL encryption	• Access from any PC	• AVS	• Bi-directional mag card reader	• AVS
• Real-time reporting	• Stylus for customer signature	• Batch history	• Quiet graphic thermal printer	FD200^{Ti}
• E-receipt at time of transaction		• Credit/debit/EBT/check		• Integrated check reader/imager
				FD300^{Ti}
				• Multi-merchant

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Security & Compliance

Today's Security & Compliance Solutions:

- *TransArmor*
- *PCI Validation*
- *EMV*

Security & Compliance

TransArmor

The Costs of a Data Breach are Staggering

- Total average cost per breach: $5.5M
  - Average number of breached records: 28,349
  - Average cost per breached record – overall: $194

- Average annual *additional* customer churn - or loss due to a data breach - was 3.2%, or an additional $3.0M*

- 78% of consumers said they would stop shopping at a store if they believed the store had experienced a card data compromise.

78% of companies surveyed had already experienced a breach in prior years

---

Reduce the Risk of Payment Card Data Breach

- Support a multi-layered approach to payment card protection
- Reduce the number of places where card data exists
  - Point-of Sale systems
  - CRM systems
  - MIS databases / reports
- Transfer burden of storing payment card data from merchant to processor
- Reduce the Card Data Environment (CDE) and therefore PCI compliance efforts

The First Data® TransArmor® Solution

TransArmor Benefits

- Protects your brand's reputation

- Removes the risk of storing card data, transferring it to First Data

- Frees you to focus on projects that contribute to revenue

- Enables you to track consumer buying behaviors for sales trending and marketing/loyalty programs

How TransArmor Reduces Scope

TransArmor lowers the costs and minimizes efforts associated with PCI compliance in several ways

- Shrinks the card-data environment (CDE) by removing both store systems and corporate systems

- Simplifies which questionnaire you must answer and completely removes some requirements from scope

- Changes the answers of some questions to N/A

Security & Compliance

PCI Validation

Common Merchant Misconceptions about PCI Compliance

- *"Since I don't store credit card information, I don't have to be PCI compliant."*

- *"I don't process a large number of credit cards, so I'm not at risk of breach."*

- *"I use PayPal/Authorize.NET, therefore I'm already PCI compliant."*

- *"The PCI Data Security Standards is only a recommendation and not a requirement."*

- *"PCI compliance ends with a successful assessment."*

The Impact of <u>Not</u> Becoming PCI-Compliant can be Devastating

- ✓ Brand damage, loss of customer trust and loyalty

- ✓ Ongoing compliance effort and costs to maintain systems, resources, etc.

- ✓ Fines from regulatory agencies

- ✓ Legal fees

- ✓ Financial institution fees

- ✓ Disruption in day-to-day delivery of goods and services

- • Total average cost per breach: $5.5M

  - • Average number of breached records: 28,349

  - • Average cost per breached record – overall: $194

  - • 78% of consumers said they would stop shopping at a store if they believed the store had experienced a card data compromise.
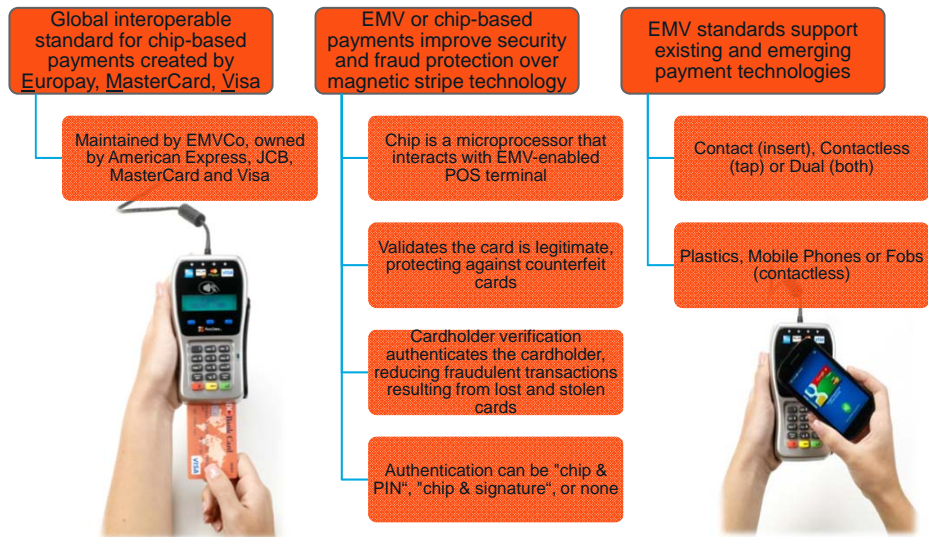
    [1] "2011 Cost of a Data Breach Study: United States" published Mar. 2012
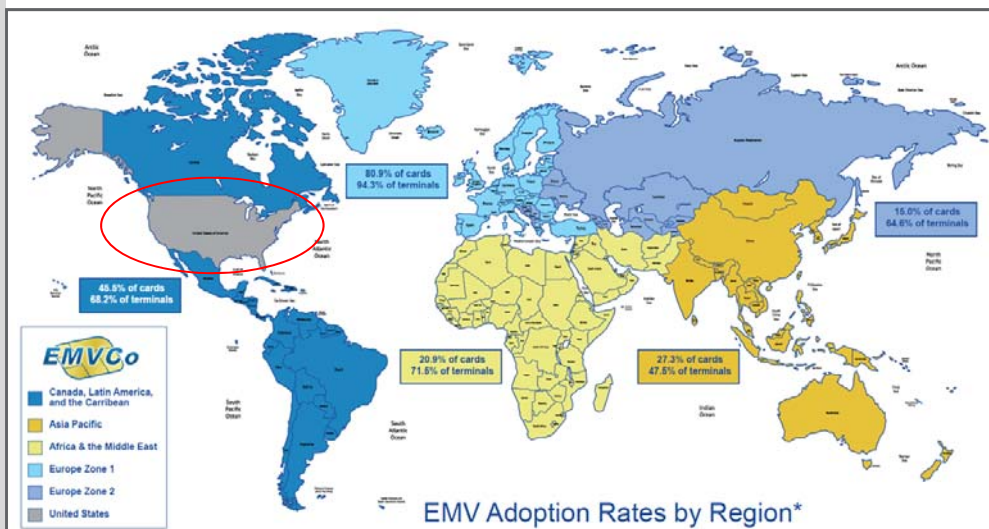
Security & Compliance

EMV

WHAT IS EMV?

Global interoperable standard for chip-based payments created by Europay, MasterCard, Visa

EMV or chip-based payments improve security and fraud protection over magnetic stripe technology

EMV standards support existing and emerging payment technologies

Maintained by EMVCo, owned by American Express, JCB, MasterCard and Visa

Chip is a microprocessor that interacts with EMV-enabled POS terminal

Contact (insert), Contactless (tap) or Dual (both)

Validates the card is legitimate, protecting against counterfeit cards

Plastics, Mobile Phones or Fobs (contactless)

Cardholder verification authenticates the cardholder, reducing fraudulent transactions resulting from lost and stolen cards

Authentication can be "chip & PIN", "chip & signature", or none

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EMV Card and Terminal Adoption

EMVCo

Canada, Latin America, and the Carribean
Asia Pacific
Africa & the Middle East
Europe Zone 1
Europe Zone 2
United States

EMV Adoption Rates by Region*

*Figures reported as of Q2 2012and represent the latest statistics from American Express, JCB, MasterCard and Visa as reported by their member financial institutions globally. Figures do not include data from the United States

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EMV Helps Prevent Fraud at the POS

- EMV payment cards improve security over magnetic stripe technology through an embedded computer chip

EMV Fraud Prevention Features	U.S. Card Fraud Losses[1]	Functionality
Card Authentication	$1.3B or 16%	• Validates that the card itself is the original, issuer-produced card • Protects against Counterfeit Fraud • Transactions require an authentic card that is validated either online or offline
Cardholder Verification Method (CVM)	$1.4B or 17%	• Ensures that the person attempting to make the transaction is the true cardholder • Protects against Lost and Stolen card fraud, particularly with a cardholder PIN • Four options that are typically prioritized on the chip to confirm the cardholder's identity include Offline PIN, Online PIN, Signature or no CVM
Transaction Authorization	$2.8B or 32%	• Issuer approval of the payment amount (transaction) • Combats Counterfeit and Lost/Stolen Fraud • EMV transactions are authorized by the issuer based on security parameters they have established

Source: 1 Aite Group, LLC, "Card Fraud in the United States: The Case for Encryption", January 2010

International Experience Supports a Chip and PIN Model

Netherlands saw a similar situation to current U.S. state - low fraud rates and slow to adopt EMV, even as Europe was migrating to chip-and-PIN[1]

- Fraud rate in 2005 was .02%; .05% by 2009 – a **150+%** increase

- With Canada and Mexico already adopting EMV standards, US is in similar situation

U.K. experience indicates Chip & PIN provides better fraud protection[2]

- Between 2005 & 2010, total card purchase volume grew 32%, while total card fraud decreased 17%

- Lost and stolen card fraud is at its lowest level since the 1990s

- Counterfeit card fraud is at its lowest level since 1998

1. Retail Payments Risk Forum, "Chip-and-PIN: Success and Challenges in Reducing Fraud", Douglas King, January 2012.
2. Financial Fraud Action UK, Working Together to Prevent Fraud Euromonitor Data)

Why Should Merchants Care?

- Additional benefits to enabling EMV:
  - Reduce chargeback liability and associated oversight costs of fraud
  - Enable more payments from international travelers using EMV-enabled payment cards
  - Reduces fraudulent card use on card present transactions
  - US consumer card will now be chip enabled for use all over the world
  - Speed up checkout lanes with contactless transactions
  - Dual-Interface Chips (Contact & Contactless) - Let consumers pay the way they want – card, phone, insert, wave/tap

EMV could eliminate 95% of lost/stolen card fraud and 90% of counterfeit card fraud[1]

1 Aite Group, LLC, "Card Fraud in the United States: The Case for Encryption", January 2010

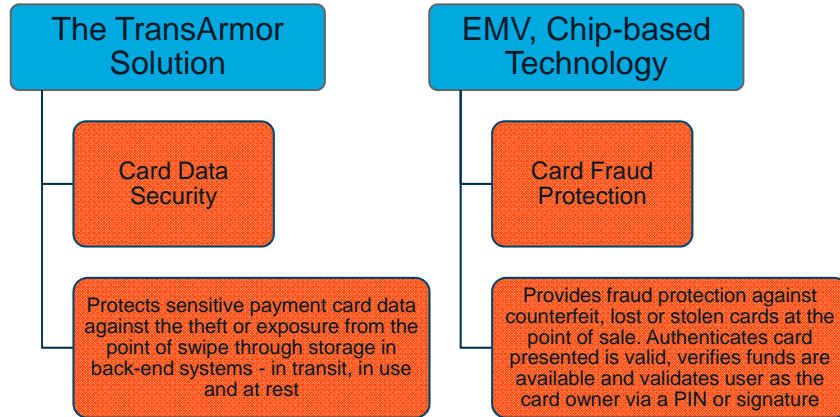## A Multi – Layered Approach to Security

EMV does help
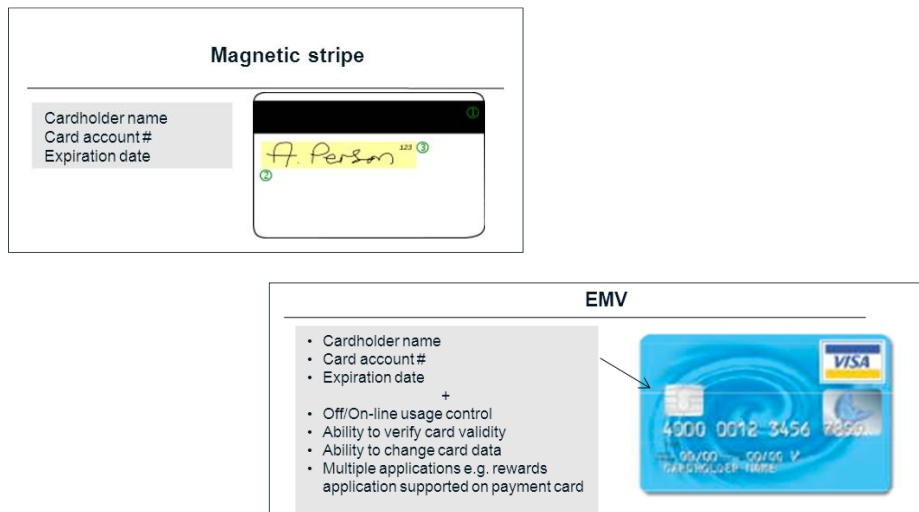- Mitigate fraud at the POS

EMV does not
- Protect cardholder data once the payment method and consumer are validated
  - Card and cardholder data still sent "in the clear"

EMV and the TransArmor® Solution

- A strong encryption and tokenization (TransArmor) solution can bolster the security of the entire payment transaction

The TransArmor Solution	EMV, Chip-based Technology
Card Data Security	Card Fraud Protection
Protects sensitive payment card data against the theft or exposure from the point of swipe through storage in back-end systems - in transit, in use and at rest	Provides fraud protection against counterfeit, lost or stolen cards at the point of sale. Authenticates card presented is valid, verifies funds are available and validates user as the card owner via a PIN or signature

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Magnetic Stripe vs. EMV Card

Magnetic stripe

Cardholder name
Card account #
Expiration date

A. Person ¹²³

EMV

- Cardholder name
- Card account #
- Expiration date
  +
- Off/On-line usage control
- Ability to verify card validity
- Ability to change card data
- Multiple applications e.g. rewards application supported on payment card

VISA
4000 0012 3456 7899
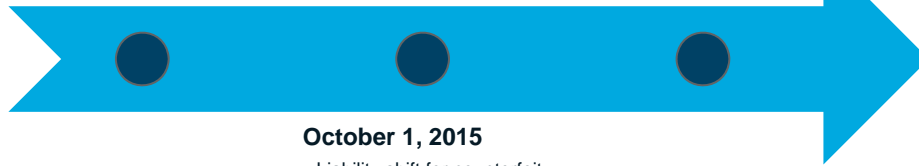00/00   00/00 V
CARDHOLDER NAME

EMV Industry Milestones

April 1, 2013 –
First Data Deadline
- Acquirer processors and sub-processors must certify support for and accept Visa EMV chip contact and contactless transactions

October 1, 2017
- Liability shift applies to Petro Merchants at the pump

October 1, 2015
- Liability shift for counterfeit POS fraud will be assessed to merchants not accepting EMV transactions

Associations Have Not Announced Interchange Adjustments For Chip-based Transactions

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Liability Shifts

In U.S. today	In most card present environments, fraud is absorbed by the Bank/Issuer unless the merchant fails to meet POS acceptance requirements or fails to defend through the "chargeback process"

Visa: 2015	• Liability will fall on the entity that has not upgraded to chip, whether it's the issuer or the retailer
	   • If both have chip, then the issuer will be responsible
	   • If the issuer has upgraded and the retailer has not, then the retailer will bear the liability costs

MasterCard: 2015	• Liability shifts to merchants who have not upgraded their POS terminals to process EMV card transactions and fraud occurs
	• Whichever party (issuer or merchant) offers the least secure cardholder verification method (CVM) be held liable for a fraudulent transaction
	   • Mag-stripe card is least secure
	   • Chip-and-signature
	   • Chip-and-PIN is most secure

Discover: 2015	• Fraud Liability Shift for Discover Network (in the U.S., Canada and Mexico) and PULSE (in the U.S.) • Policy will be a risk-based payments hierarchy that benefits the entity that leverages the highest level of available payments security

EMV Chip Cards are being issued…

U.S. credit and debit card issuers who are issuing or announced plans to issue EMV payment cards include[5]:

- American Express
- Andrews Federal Credit Union
- Bank of America
- Chase
  - JPMorgan Palladium Card
  - JP Morgan Select Visa Signature card
  - Chase Hyatt Visa Signature Credit Card
  - Chase British Airways Visa Signature Credit Card
- Citi
  - Citi Commercial Cards
  - Citi ExecutiveSM / AAdvantage® Card

- Fifth Third Bank
- Jack Henry & Associates Payment Processing Solutions
- PSCU Financial Services
- Silicon Valley Bank
- Star One Credit Union
- State Employees Credit Union
- Travelex Cash Passport
- United Nations Federal Credit Union
- U.S. Bank
- Wells Fargo

5. EMV Connection, A Smart Card Alliance Site, http://www.emv-connection.com/u-s-emv-issuers/

Consumer Education & Customer Support

- Help employees learn to think 'chip'– cards, mobile phones, contact, and contactless
  - Chip cards vs. current magnetic stripe
  - Changes to transaction handling
  - How to answer consumer questions about EMV

- Consider consumer-facing educational materials
  - Promote "EMV payments accepted here"
  - Reminder to leave card inside reader during the entire transaction (contact)
  - Prompt to take card out of reader when transaction is complete

Appendix

First Data™ Terminal vs. Mobile Solutions

	FD400^GT Terminal Hand-held terminal that connects via AT&T GPRS or Sprint CDMA	First Data Mobile Pay 2 solutions: 1) App –based version with audio jack card reader , and 2) browser-based version for hand-keyed transactions	VeriFone PAYware Mobile Web-enabled iPhone slips into a special sleeve/card reader
Target Profile	Merchants who need to accept multiple payment options; those with higher transaction volumes who need the ability to make adjustments to transactions	**Existing Web-enabled smart phone users: iPhone, iPad, iPod Touch or Android smart phone**	Merchants with price sensitivities who wish to use their existing iPhone
Supported mobile platforms or 3G network	AT&T GPRS or Sprint CDMA	**Existing Web-enabled smart phone: iPhone, iPad, iPod Touch or Android smart phone**	Apple iPhone
Requirements	Merchant account with First Data and with Apriva gateway	Merchant account with First Data and with Apriva gateway	Merchant account with First Data and with VeriFone gateway
Virtual or hand-held terminal	Hand-held terminal only	Both	Both
Resident application	Yes	Browser- and app-based versions available	Yes
Hosted data access (back-office)	Apriva	Apriva	VeriFone gateway
Receipt capability	Yes, built-in thermal printer	Display/email	Display/email
Magnetic stripe capability	Yes	Yes (app-based version only)	Yes
Check conversion	Manual personal paper	No	No
On-screen signature capability	No	Yes (app version only)	Yes
Application download capability	Download from First Data	Yes	Yes – App store
Multi-user configuration	No	Yes, browser-based version only	No
Security	• Encryption occurs after the card swipe • AVS support included • Card security code supported • Account number truncation included	• Encryption at the MSR (app version) • Encryption upon card # entry (browser version) • AVS support included • Card security code supported • Account number truncation included	• Encryption at the MSR • AVS support included • Card security code supported • Account number truncation included

Mobile Solutions for the Smart Phone

	Pogo>™	Square	Intuit	PayAnywhere	PayPal	Groupon
# of Card Readers in the North American Market	Over 1,000 accounts	2 Million	*Trying to enable 9 million of the 23 million merchants using QuickBooks to accept GoPayments	Estimated run rate of 300/ month	Nothing public 300K Pre-Registered in early 2012	Nothing Public 250,000 Merchant relationships world wide 36.9 active consumer customers in 1Q 2012
Processing	Over $500k	$10 billion annually	Intuit as a whole $21 billion annually	Powered by North American Bancard $12 billion annually	$10 billion up from $4 billion 2011 (total mobile)	NA
Dongle Price Purchased Online	Free	Free	Free	Free	Free	Dongle Free Case Sleeve $100
Dongle Price Purchased in Stores	NA	$9.95 Credit $10.00 back to account when activated	$9.95 Credit $10.00 back to account when activated	$9.95 Credit $10.00 back to account when process $150	$14.95 Credit $15.00 back at sign up	NA
Consumer Offer	NA	NA	NA	First $1,000 in Transactions processed free	NA	Guaranteed lowest rates
Monthly Fees	0–$5.95	$0 Pay as you Go $250 per month	$0 Pay as you go Plan $12.95 High Volume Plan	$0	$0	$0
Transaction	Competitive varies by channel	Swipe 2.75% Keyed 3.5% + $.25 or $275 per month for $250,000 swiped transactions or less AMEX, DC, V, MC	Swipe 2.75% Keyed 3.75% + .15 or $12.95 per month service fee Swipe 1.75% Keyed 2.75% + .15 Chargeback fees $25 (an increase of $.05 per $100 charged for all transactions) AMEX, DC, V, MC	Swipe 2.69% Keyed 3.49% + $.19 Retrieval Fee: $15.00 Chargeback: $25.00 NSF: $25.00 AMEX, DC, V, MC	Swipe: 2.7% Keyed 3.5% + .14 MC-branded debit card that returns 1% on purchases. AMEX, DC, V, MC, PayPal, Check	Groupon Merchants Swiped 1.8% + $.15; Keyed 2.3% + $.15 Non-Groupon Merchants Swiped 2.2% + $.15 Keyed 2.7% + $.15 AMEX, DC, V, MC
Mobile Operating System	iOS & Android	iOS & Android	iOS & Android	iOS, Android & Blackberry	iOS & Android	iOS & Android
Customer Support	24/7 Call Email Chat	24/7 Twitter – Chat Email	24/7 Call Online Chat	24/7 Call Email Chat	24/7 Call Email Chat	24/7 Call
Limitations	Restrictions apply depending on the channel by credit card volume, F2F, MCC, avg ticket size		No limitations just recommendations: A free subscription with higher transaction rates (recommended if you process less than $1,000 per month) $12.95 per month subscription with lower transaction rates (recommended if you process more than $1,000 per month)	If purchase dongle is stores for $9.95 account will be credited back only when the merchant processes more than $150.	Merchants who key-in more than $1,000 in sales within any rolling seven day period will have the funds over $1,000 held in a reserve for 30 days before they are released.	Valid only to Groupon Merchants located in the US. Merchant must provide proof of existing payment processor's rates to qualify for the lower pricing from Groupon.

Key Resources

- First Data.com
  - Merchant Solutions → Security & Fraud Solutions

- MerchantInsider.com

- PCI Standards Council
  - www.pcisecuritystandards.org

- Visa Compliance validation details for merchants:
  - www.usa.visa.com/merchants/risk_management/cisp_merchants.html

- MasterCard Site Data Protection and PCI:
  - www.mastercard.com/us/sdp/index.html