POS Terminals —
Emerging Trends & Technology

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Security
Security Is Not A Destination, It’s A Journey

From Zero Security, to Not Secure Enough

- The driving force behind all payment trends
- We automate a process and it must be secure

Security “Whack-A-Mole”

2004: Database Hack (BJ’s)
2005: Network Hack (Card Systems)
2006: Back-up Tapes (Citi Financial)
2007: Wireless LAN breach (TJX)
2008: Data in Transit (Hannaford)
2009: Network Hack? (HPS), ...?
Payment Card Industry Security Standards

Security — A Major Churn Point And Driver Of New Products

**PCI PED**
Device characteristics impacting security of PIN Entry Device (PED) during financial transactions

**PCI PA-DSS**
Software vendors and others who develop payment applications that store, process, or transmit cardholder data as part of authorization or settlement, where those applications are sold, distributed, or licensed to third parties.

**PCI DSS**
Any entity that stores, processes, and/or transmits cardholder data, and specifically to those system components included in or connected to the cardholder data environment (the part of the network with cardholder data).

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*PCI PED applies - PED device only*
*PA DSS may apply*  
KW DSS applies – systems & networks

Copyright PCI SSC 2008
A definition that really matters:

**End-to-End Encryption** means encrypting card holder information at the exact instant of acceptance inside a secure, trusted device and keeping it encrypted throughout an enterprise.
Emerging Trends: End to End Encryption

VSP and Semtek providers — End-to-end AES

- Solving the basic incompatibility of encryption
  - Reworking the entire POS and back office infrastructure is not an option
- Solving the “last mile” problem
  - Securing card data at the true point of entry
- Observing the Security Cycle
  - Closing the loop with real-time monitoring and definitive mitigation
Current Day Retail Scenario ...
Full card track data traverses network in the clear until last connection to the processing host.
What if the data could be encrypted at the payment device and delivered through same transaction channel without upgrade to current system?
Track Data is encrypted at PINpad in a manner that allows it to use current POS infrastructure.

PIN pad secured by End-to-End Encryption

The encrypted data is then decrypted at the processing host.
Current Payment Media

2009: Integrated Magnetic Stripe, Chip, Contactless

- MSR, Smart Card (now, soon), CTLS (deploying), NFC (coattails), biometrics (ever?)
  - Smart Card adopted by EMV countries
- United States will leapfrog from MSR to CTLS/NFC, bypassing Smart Cards
Payment Media Trends

NFC

• Interest ramping globally, business cases painfully slow to solidify

Open Payments

Closed Loop Schemes

Alternative Payments??

• Proliferation of NFC devices will force the traditional players to innovate and reinvent their offerings
Biometric Payments

- Human Media
- A global survey conducted by Unisys last year found that **72% of U.S. citizens would be willing to undergo fingerprint scans** to verify their identities when dealing with banks and government organizations
- Revocable Biometrics?
- Years from deployment...
Wireless
Context - Mobile Handset History

- Voice
- SMS
- PDA
- WAP
- E-Mail
- M-Banking
- Navigation
- Music
- Camera
- Gaming
The Need to Communicate has Trumped All Other Needs

- Secure payment can now be located nearly anywhere on Earth
- VeriFone wireless products are certified and sold in over 90 countries
- Certified with over 100 carriers

Increasing Volumes, Decreasing Price of Wireless

GPRS
- Faster, cheaper, more reliable networks
  - As consumer markets expand, commercial applications ride coattails
- Taken off for portable, and countertop
- Fast, no need for a 15 second dial transfer
Balance Stakeholder Interests

- Mobile Network Operators are trending towards HSPA/3G networks
- Customers’ GPRS connection serves them well
  - Currently difficult to see value in a HSPA radio with \(~3x\) the cost of GPRS

Carriers Are Moving to 3G, Are Customers?

- Some carriers only certifying 3G devices
- Always a timing issue with embracing technologies
  - Data intensive vertical applications help show value?
Secure Handsets

NFC Handsets as Acceptance Devices = Explosive Payments Growth

• If an NFC handset becomes an acceptance device will merchants favor high end portables for secure value + payment?

• Where is the line drawn?

Secure Handset – a New Concept?

• Micro payments - Key for the unbanked
Verticals
Vertical Markets – More than Payment

Not just a payment device …

- Taxi
- Price Checker
- Lottery
- Check-out Counter
- Pharmacy
- Banking
- Instant Credit
- Information Kiosks
- Product Demonstrations
- Movie Rental Preview
- Self-Service Kiosks
- Product Locator
- Customer Surveys

Enabled by:

- IP Support
- Linux Operating System
- MX family SDK
- Secure Opera Web Browser
Verticals = Value + Payment

Payment - No Longer a Dial Up Countertop

- Divergence between Core Financial, Verticals

War Against Cash, War Against Fraud

- Explosive growth of various entities wanting to accept secure, electronic payments

Complimentary Market to Payment

- Push toward Linux to enable 3rd party development
  - Navigation, Fleet/Inventory Management, Queue Busting,...
- Application Certification Process to Validate Partners
  - “AppStore” Development Model
- “Certified Peripheral”
  - Community of 3rd Party Attachments
    - Biometrics, 3D Barcode, Camera, etc.
Future Trends
Future Trends

More and More Features

- As consumers continue to purchase new technologies, the production and acquisition costs decrease
  - Payments will continue to ride on the coattails of consumer electronics

Green Products

- Green is popular, the question is how green are you?
  - DC system power, ROHS, WEE standards are all implemented
  - The demand side determines how green companies go

User Interface

- Customizable Payments UI?
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Questions?
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