Strategies to Effectively Manage Data Compromise Events

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Agenda

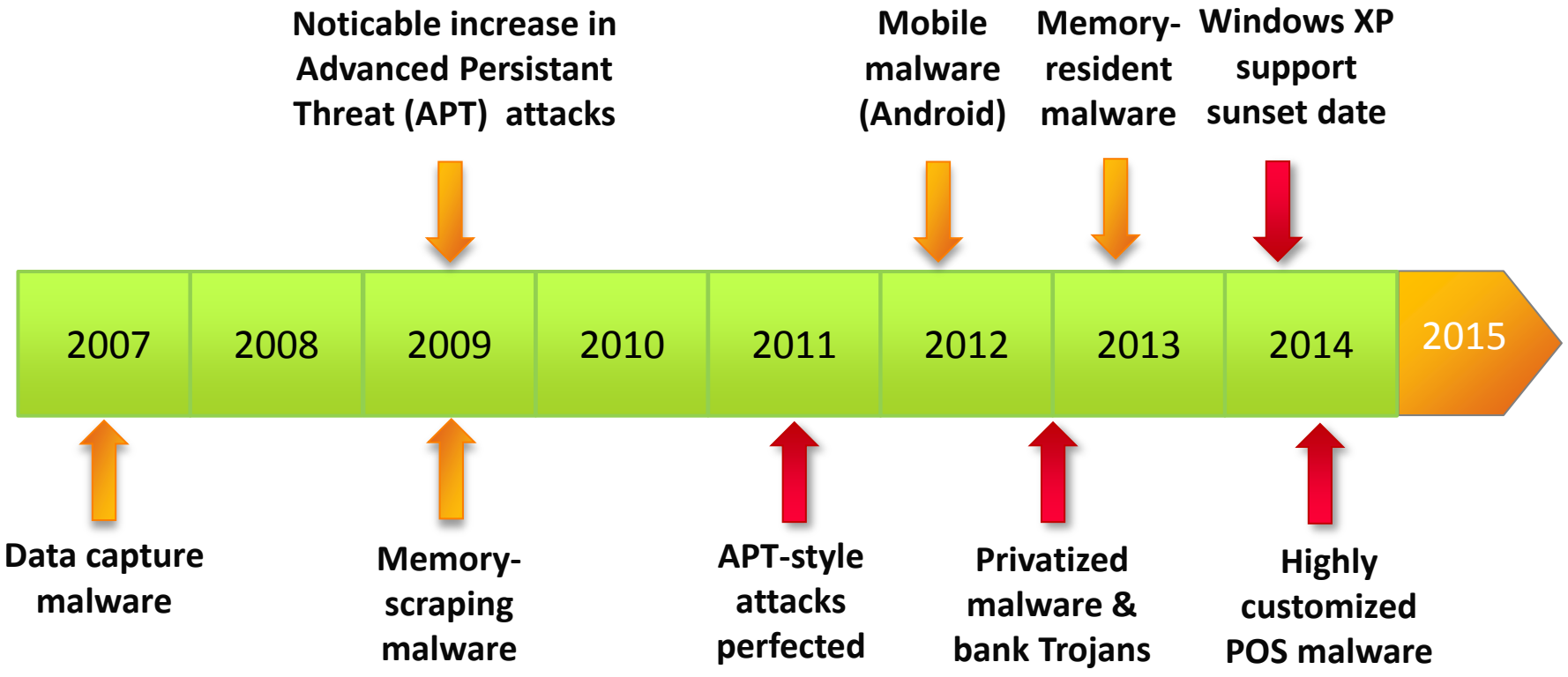
- Data Breach Landscape
  - Cyber Threat Landscape
  - Point-of-Sale (POS) Malware
  - Data Compromise Trends
- Investigation Process
  - Prevention and Detection Strategies
  - Investigation Procedures
- Upcoming Events and Resources

Data Breach Landscape

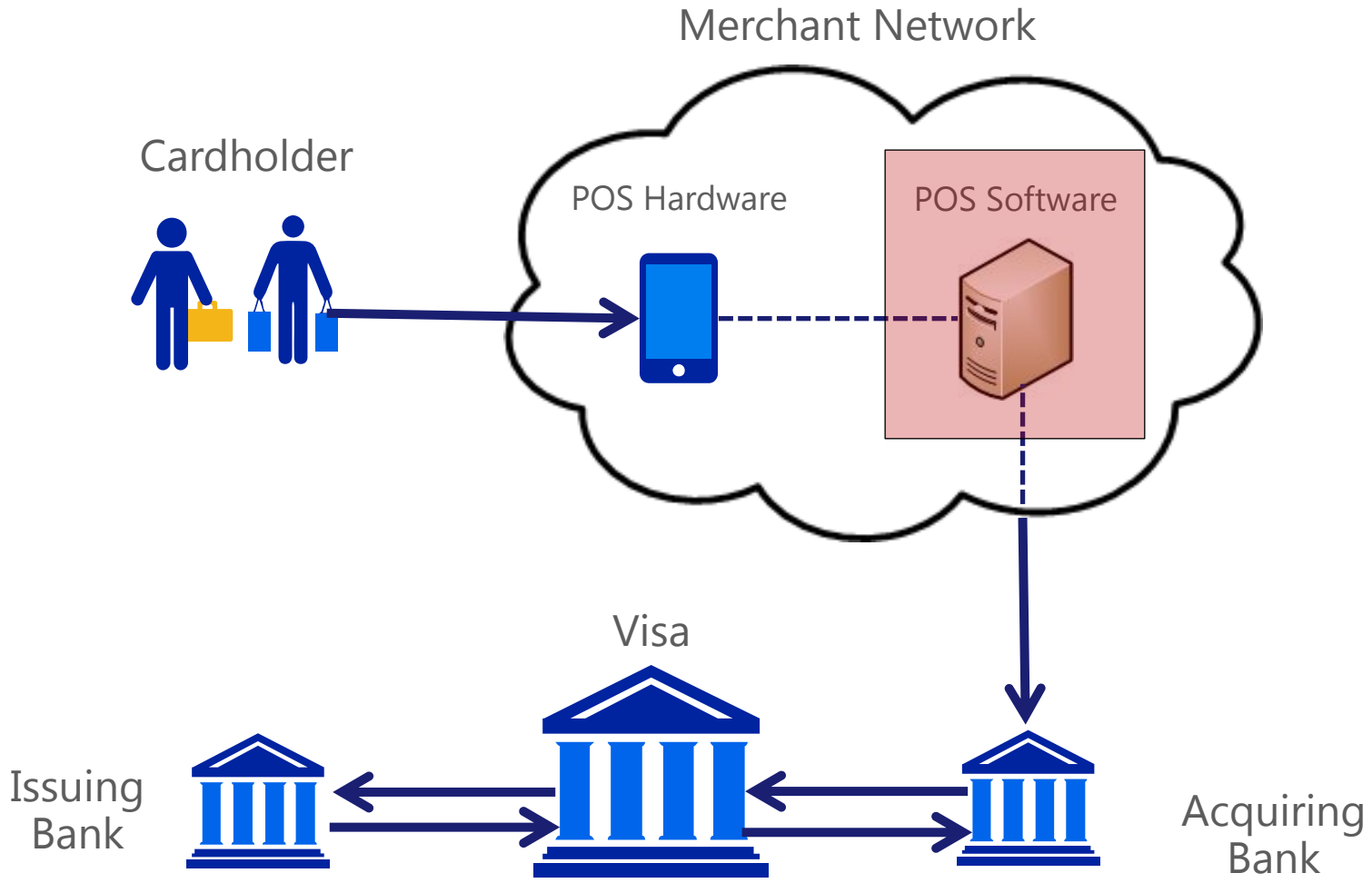
Glen Jones, Senior Director
Global Forensic Intelligence, Visa Inc.

Cyber Threat Landscape

Payment card data theft over last 8 years



Point-of-Sale (POS) RAM Scraping



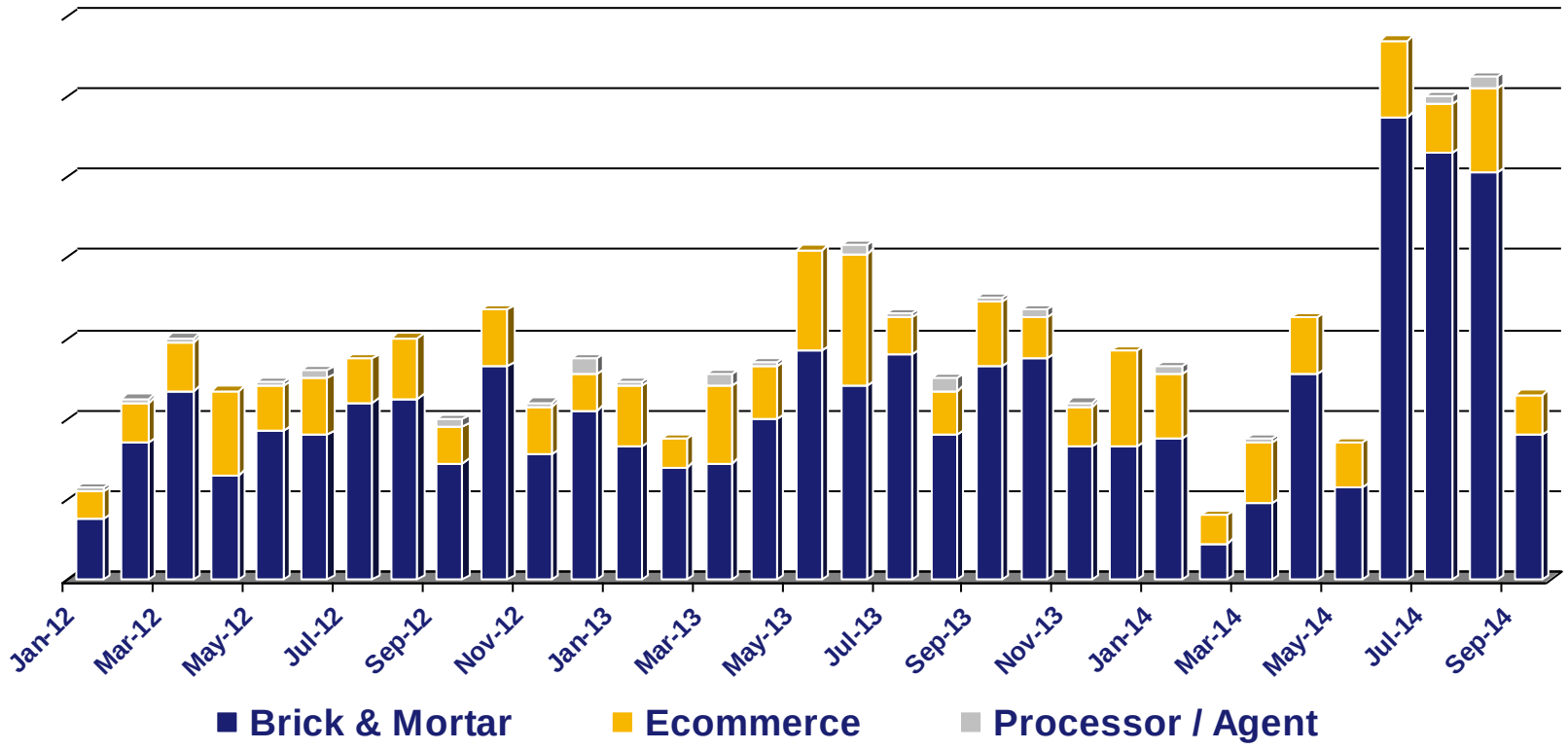
Point-of-Sale (POS) RAM Scraping (cont.)

- Authorization data is temporarily stored in clear text system memory
- Cybercriminals attack memory space as it's the easiest path to the data
- RAM scrapers generally use logic to identify track 1 and 2 data
- Some malware use the Luhn algorithm to validate payment card data
- Captured data is pulled out of memory as it's passing through the payment processing environment
- Data is often found to be briefly stored on the system it was captured from

Point-of-Sale (POS) Malware Characteristics

- Core Functionality:
  - RAM-scraping
  - Key logging
  - Command-and-Control communications
  - Data exfiltration
- Additional Botnet Functionality:
  - Upload
  - Download
  - Run
  - Self-deletion capability (reported in recent versions)

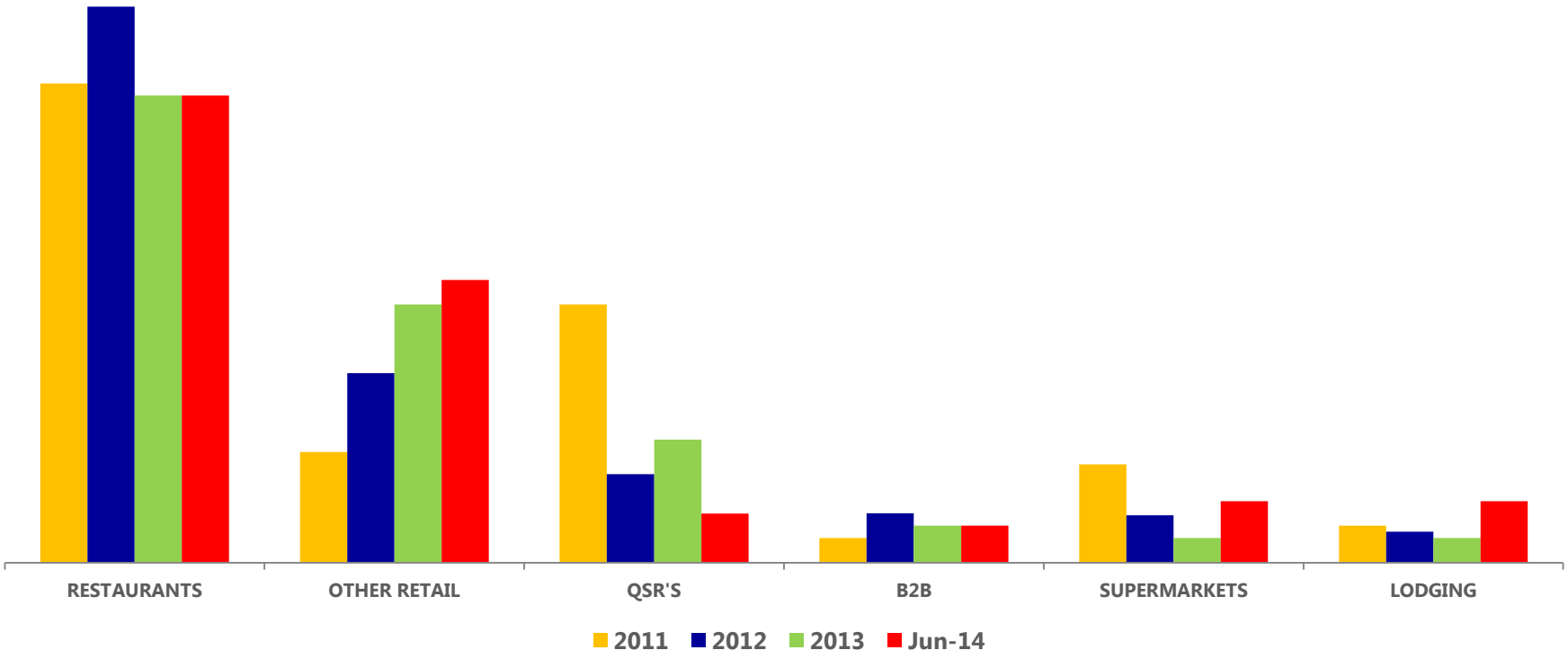
Visa Inc. CAMS Compromise Events – Entity Type by Month



Source: Compromised Account Management System (CAMS) – Original 'IC' and 'PA' Alerts for Visa Inc. *Reporting as of September 2014

Visa Inc. CAMS Compromise Events
Top Market Segment* (MCC)

- Restaurants and retailers are leading market segments in 2014
- Insecure remote access and poor credential management continue to be attack vectors



* Market Segment based on Acceptance Solutions MCC "Market Segment" category

Source: Compromised Account Management System (CAMS) – Original "IC" and "PA" Alerts

Investigation Process

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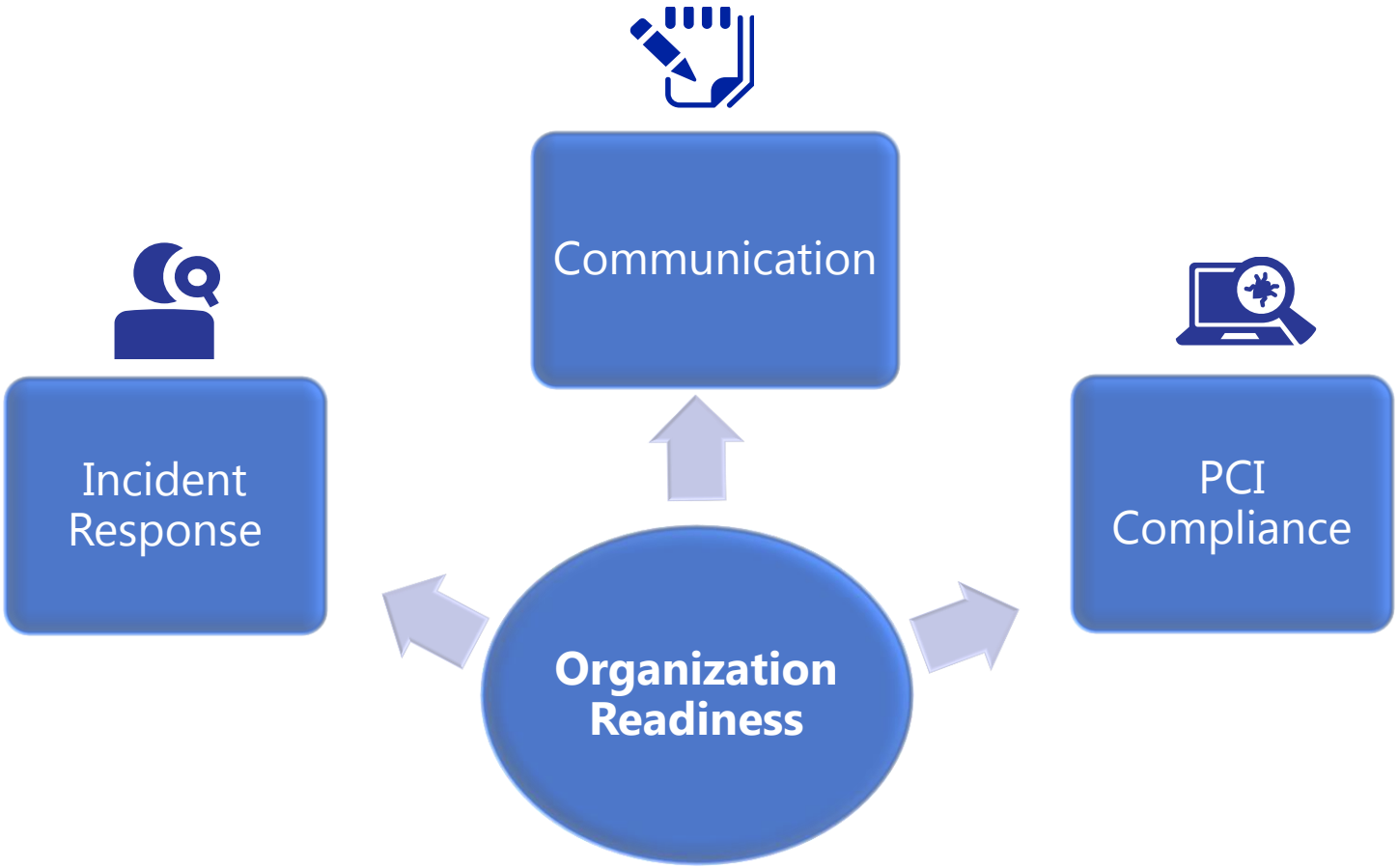
Prevention and Detection Strategies



Remain vigilant and be prepared!!!

What To Do ***Before*** You Are Compromised*

- **Review and understand the fraud investigation procedures: *What To Do If Compromised***
  - Located on the Protect Your Business section under Merchants on Visa.com
  - http://usa.visa.com/download/merchants/cisp-what-to-do-if-compromised.pdf

- **Actively review Alerts, Bulletins, & Webinars**
  - *SSL 3.0 "Poodle" Vulnerability* – 29 October 2014
  - *Fraudulent Credits Trend: ATM Reversals* – 14 August 2014
  - *Insecure Remote Access and User Credential Management* – July 2014

- **Ensure an Incident Response (IR) plan is in place**
  - Prepare and regularly test plan
  - Know your business
  - Know what steps to take
  - Know who and when to call

*Summarized from *What To Do If Compromised* (WTDIC). For more comprehensive information, please refer to WTDIC, located on www.visa.com/cisp

What To Do ***Before*** You Are Compromised* (cont.)

- **Designate and empower an internal breach response team**
  - Educate employees on indicators of compromise and how to respond
  - Create mock exercise to test and refine procedures
  - Develop breach response communications

- **Identify and establish relationships and/or agreements with federal law enforcement (i.e., USSS, FBI) and key vendors**
  - Electronic Crimes Task Force (ECTF)

- **Establish and maintain an ongoing PCI DSS compliance program**

*Summarized from *Responding to a Data Breach: Communications Guidelines for Merchants*, located on www.visa.com/cisp

What To Do *If* Compromised*

- **Indicators of a Data Breach**
  - Visa notification of Common Point of Purchase (CPP) identification
  - Customer complaints of fraudulent activity on payment cards
  - Law enforcement notification
  - Bank reports of fraud after legitimate use
  - Abnormal activity/behavior of Point of Sale (POS)

- **Requirements for Compromised Entities** (pages 7-9 of WTDIC)
  - Immediately contain and limit the exposure
  - Preserve evidence and facilitate the investigation
  - Alert all necessary parties
  - Contact the appropriate law enforcement agency
  - If deemed necessary, an independent forensic investigation will be initiated

*Summarized from *What To Do If Compromised* (WTDIC). For more comprehensive information, please refer to WTDIC, located on www.visa.com/cisp

What To Do *If* Compromised* (cont.)

- **Notification**
  - Immediately report suspected or confirmed unauthorized access or data exposure to the Visa Risk group

    Visa Cyber Intelligence & Investigations

    usfraudcontrol@visa.com or **650-432-2978, option 4**

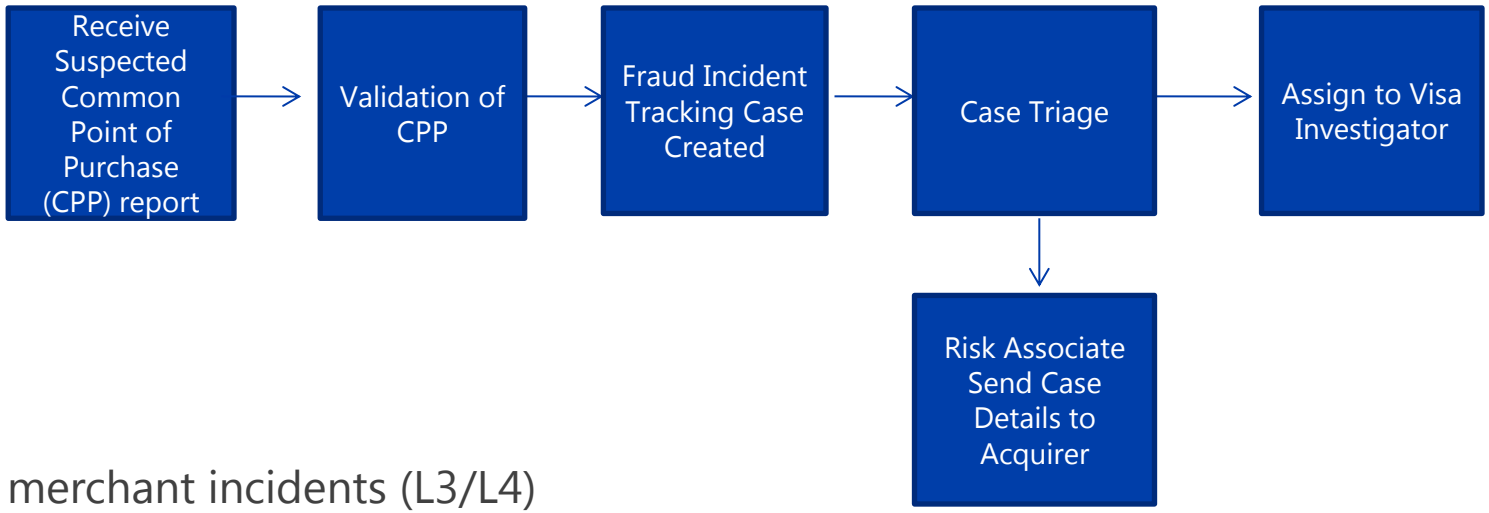
- **Evidence preservation** (page 7 from WTDIC)
  - Do not access or alter compromised systems
  - Preserve all evidence and logs

- **Payment Card Industry Forensic Investigation may be required** (page 9 from WTDIC)

- **Communication Plan**
  - Merchants can consult with Visa Corporate Communications for assistance in preparing a public breach response
  - *Responding to a Data Breach: Communications Guidelines for Merchants*

*Summarized from *What To Do If Compromised* (WTDIC). For more comprehensive information, please refer to WTDIC, located on www.visa.com/cisp

Initial Investigation Process



- Small merchant incidents (L3/L4)
  - Visa will notify merchant's acquirer
  - CAMS (PA) alert sent for incidents with ≥ 2 CPPs
  - Acquirer responsible for investigation/containment
  - Acquirer responsible for merchant's PCI compliance

- Visa investigated incidents
  - L1/L2 merchants
  - VisaNet processors/gateways/agents/integrators
  - Regional or national multi-store chains (≥ 25 locations)
  - Any other incident deemed by Visa management to be material

Merchant Responsibilities*

- **Notification**
  - Alert your acquiring bank immediately
- **Initial Containment**
  - Immediately contain and limit the data exposure and minimize data loss
- **Preservation**
  - Preserve evidence and facilitate the investigation
- **Forensic engagement**
  - Visa may require an onsite forensic investigation for any merchant that has not contained the initial event
    - Avoid Conflicts of Interest (COI) - QSA vs PFI
- **Validate PCI Compliance**

*Summarized from *What To Do If Compromised* (WTDIC). For more comprehensive information, please refer to WTDIC, located on www.visa.com/cisp

Acquirer Responsibilities

- **Notification**
  - Report any suspected breach to Visa immediately
- **Coordinate the investigation until its completion**
  - Organize conference calls with merchant / acquirer / Visa
  - Provide ongoing updates
- **Forensic engagement**

  Work with the merchant to obtain an approved PCI Forensic Investigator (PFI)
  - Provide the PFI identity to Visa
  - Avoid Conflicts of Interest (COI) - QSA vs PFI
  - PFI must be onsite to conduct a forensic investigation as soon as possible from the date the contract agreement is signed
  - Confirm with PFI that incident is fully contained
  - Provide a copy of the completed forensic report as outlined in the PFI program guide.
- **Provide Visa with potential at-risk accounts for distribution to impacted issuing banks**

Upcoming Events and Resources

Upcoming Webinars – Training tab on www.visa.com/cisp

- "BlackPOS" Malware Deconstructed
  - 10 December 2014, 10 am PST
- Secure Technologies for Payments
  - 21 January 2015, 10 am PST

Visa Data Security Website – www.visa.com/cisp

- Alerts, Bulletins
- Best Practices, White Papers
- Webinars

PCI Security Standards Council Website – www.pcissc.org

- Data Security Standards – PCI DSS, PA-DSS, PTS
- Programs – ASV, ISA, PA-QSA, PFI, PTS, QSA, QIR, PCIP, and P2PE
- Fact Sheets – ATM Security, Mobile Payments Acceptance, Tokenization, Cloud Computing, and more…

Questions?