

Philosophy and Practice in Fraud Detection Analysis

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May 9th, 2012

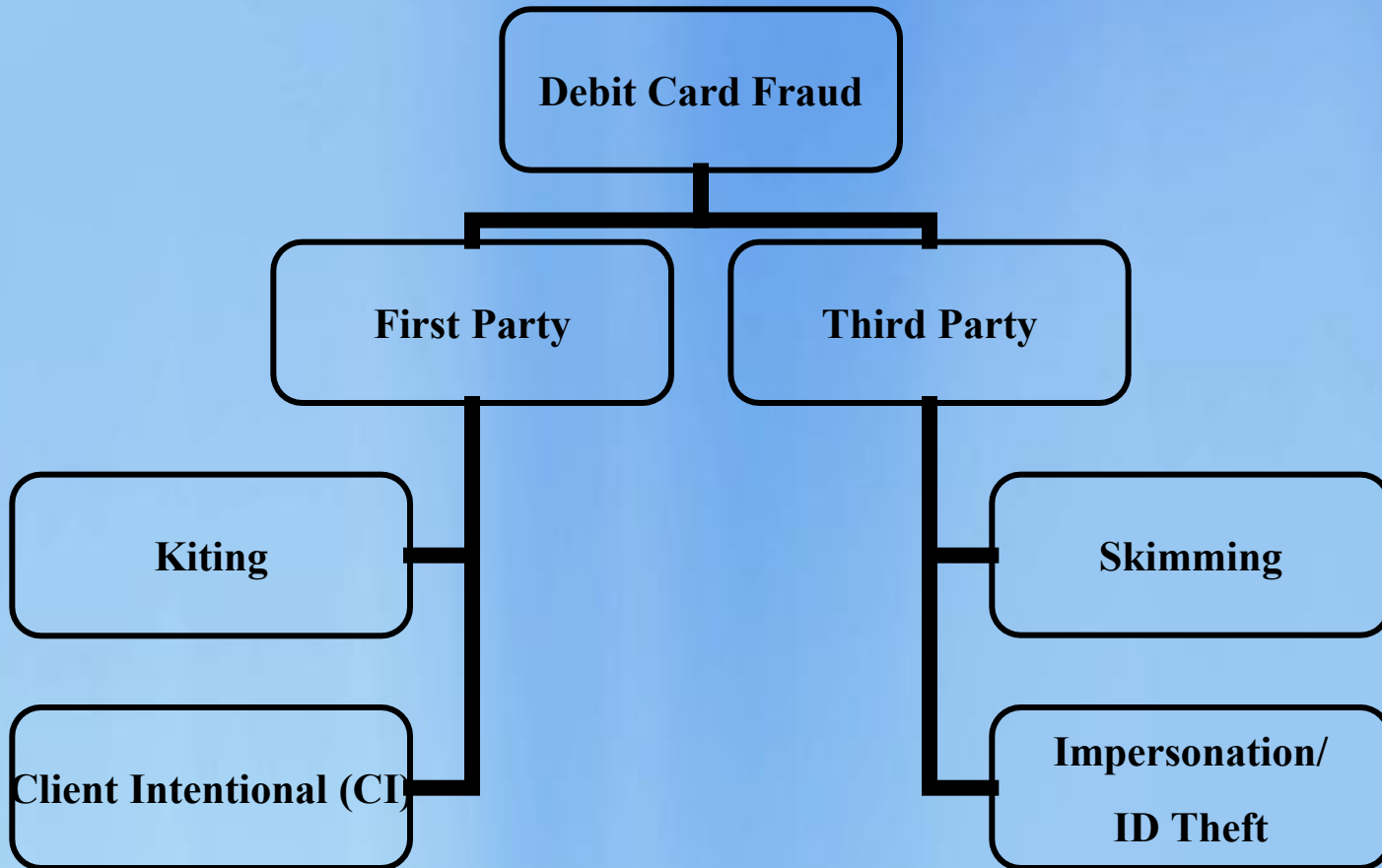
Agenda

- Fraud detection in bank environment
- Debit card fraud
 - Debit fraud categories
 - Skimming fraud life cycle
- Fraud detection philosophies and practice
 - Where and what we can/can't do?
 - What we really want to do?
 - How we can do it better?
- Q & A

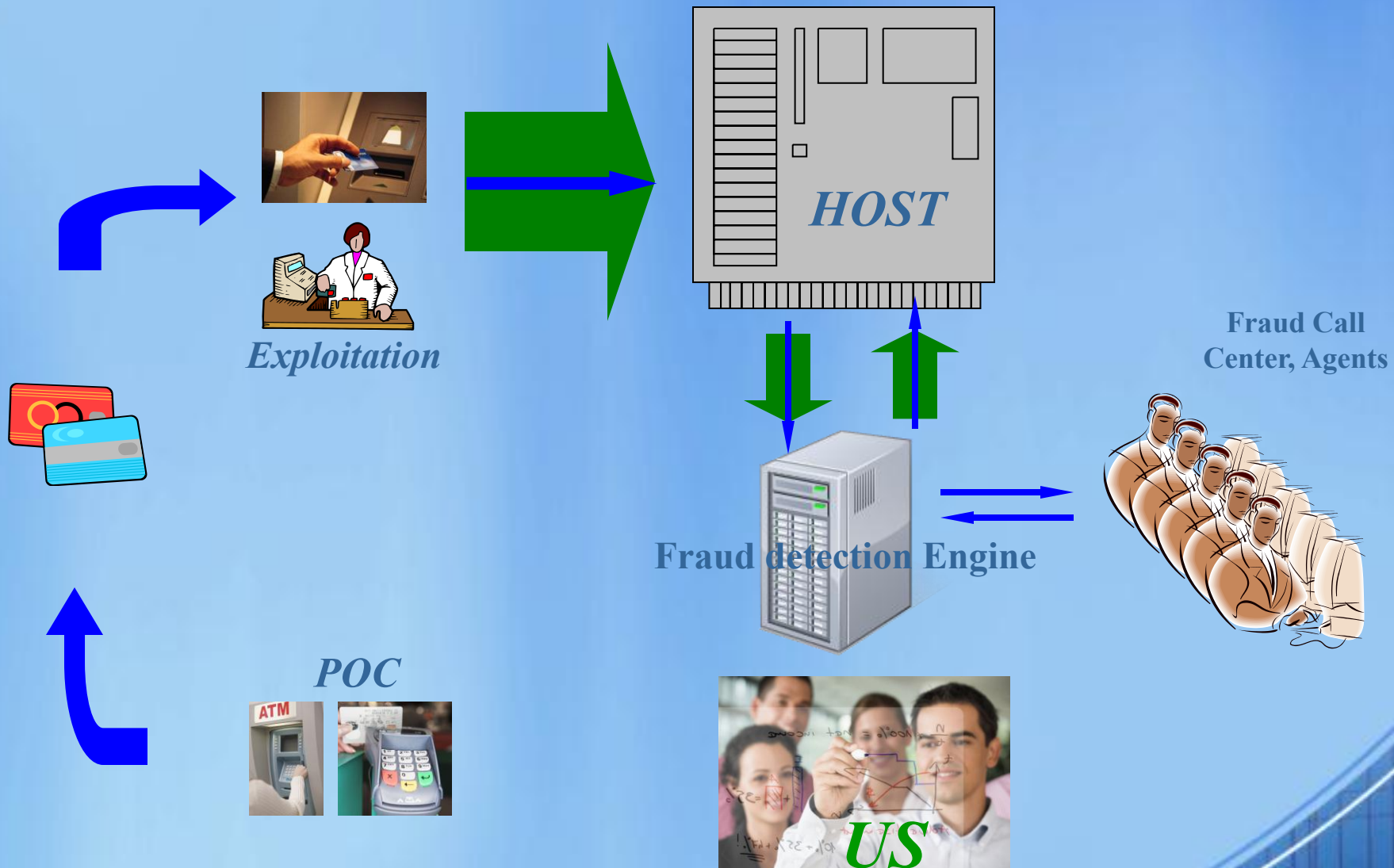
Fraud in bank environment

- “In criminal law, a **fraud** is an intentional deception made for personal gain or to damage another individual.” -- Wikipedia
- “Fraud” activity can be both **internally** and **externally** for bank and other organization.
- **Bankcard fraud**, one type of external fraud, is an global problem for decades.
- In Canada, bank or financial institute normally absorb the loss related to fraud, not the customer, so teams are built to control and mitigate **debit card** and **credit card** fraud loss.

Debit card fraud



Skimming cycle



Fraud analysis philosophies

➤ What we can do...

- Stopping the fraudulent transaction, by decline the transaction request or disable high risk card.
- Improving detection engine
- Improving detection logic, rule/model.
- Suggesting payment system security upgrade

➤ What we can't do...

- Can NOT catch the bad guy on site

➤ What we really want do...

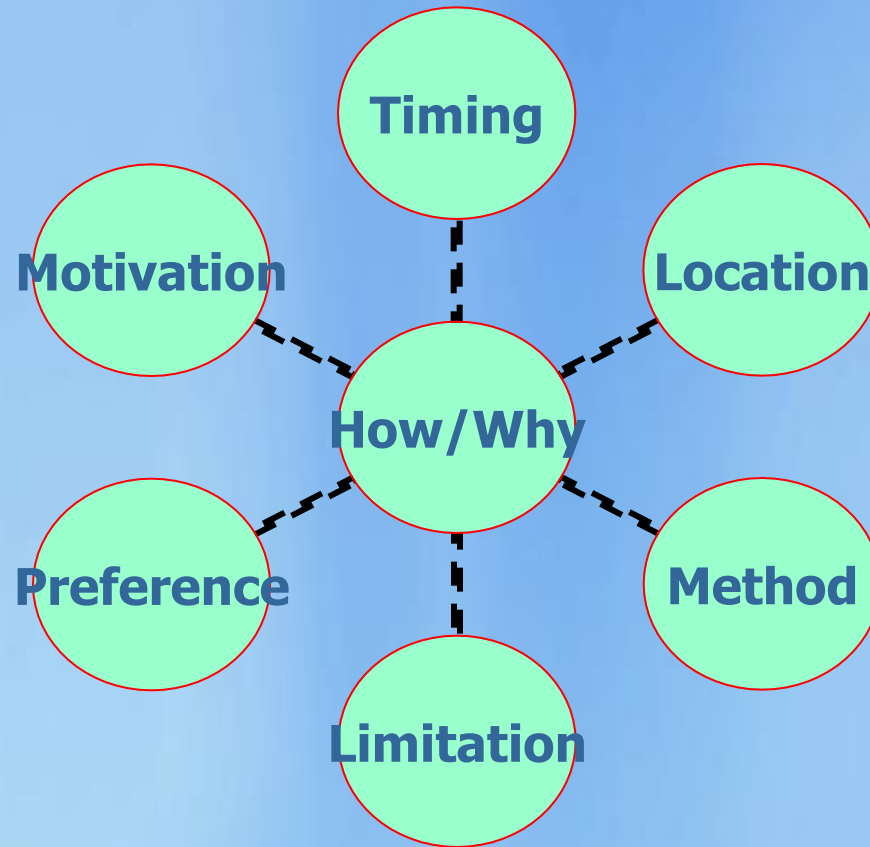
Destroy fraudster's confidence

Fraud analysis philosophies

- Same the general principle of pattern recognition.
- Special feature of Fraud analysis
 - Determining features could be very effective.
 - Game change fast!
 - Interaction between you and fraudsters.
- Special requirement of Fraud analysis
 - Quick response
 - Proactive

Fraud analysis philosophies

- Understand the fight first.
- Both fraudulent and legitimate activities.



Fraud analysis practices

- Take the full advantage of your proprietary data and use it flexibly.
 - Transaction level and customer level
- The trends looks keep changing, but look for the keys that not or hard to change.
 - Factors that beyond just the time and location.
 - How and why the fraud transactions happen.
- Catch the big fish first, prioritize major focus.
 - "Street fight effect".
- No need to be perfect, but need to take action quickly.

Fraud analysis practices

- Model VS. Rules debate
 - Fraud analysis are widely recognized as rule based domain.
 - Model ? VS Rules ?
 - Rules is a simplified model.
 - Model is a set of complicated rules.
- Key needs:
 - Flexibility.
 - Quick adjustment ability.

