PCI For Developers

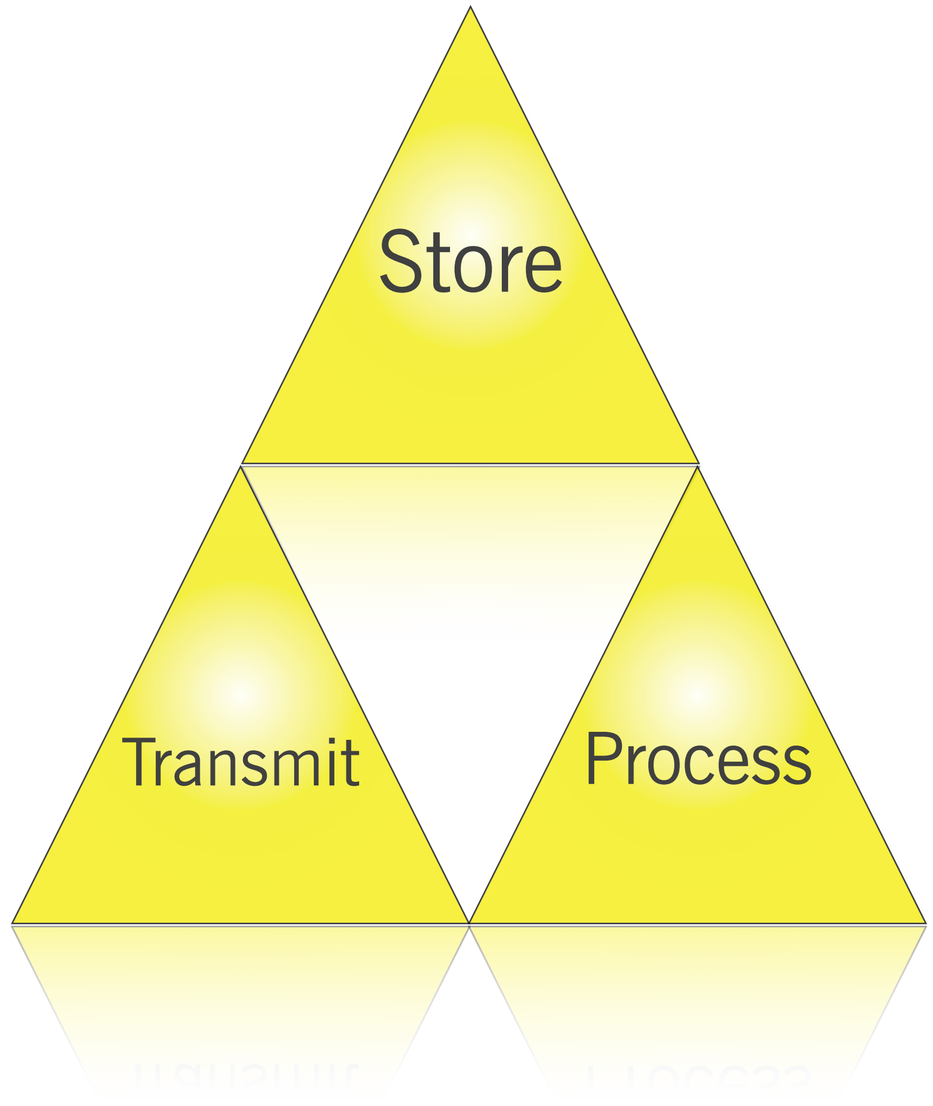
Trevor Hawthorn

stratum//security

Innovative Risk Solutions

Compliance will come out security, not the other way around.

Understanding PCI

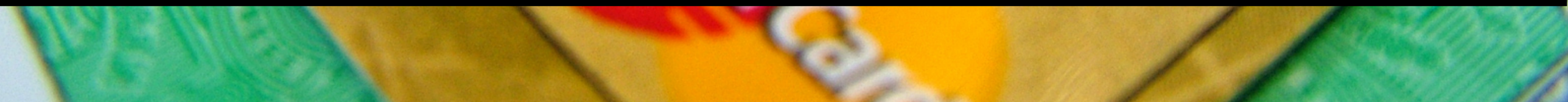

Store
Transmit
Process

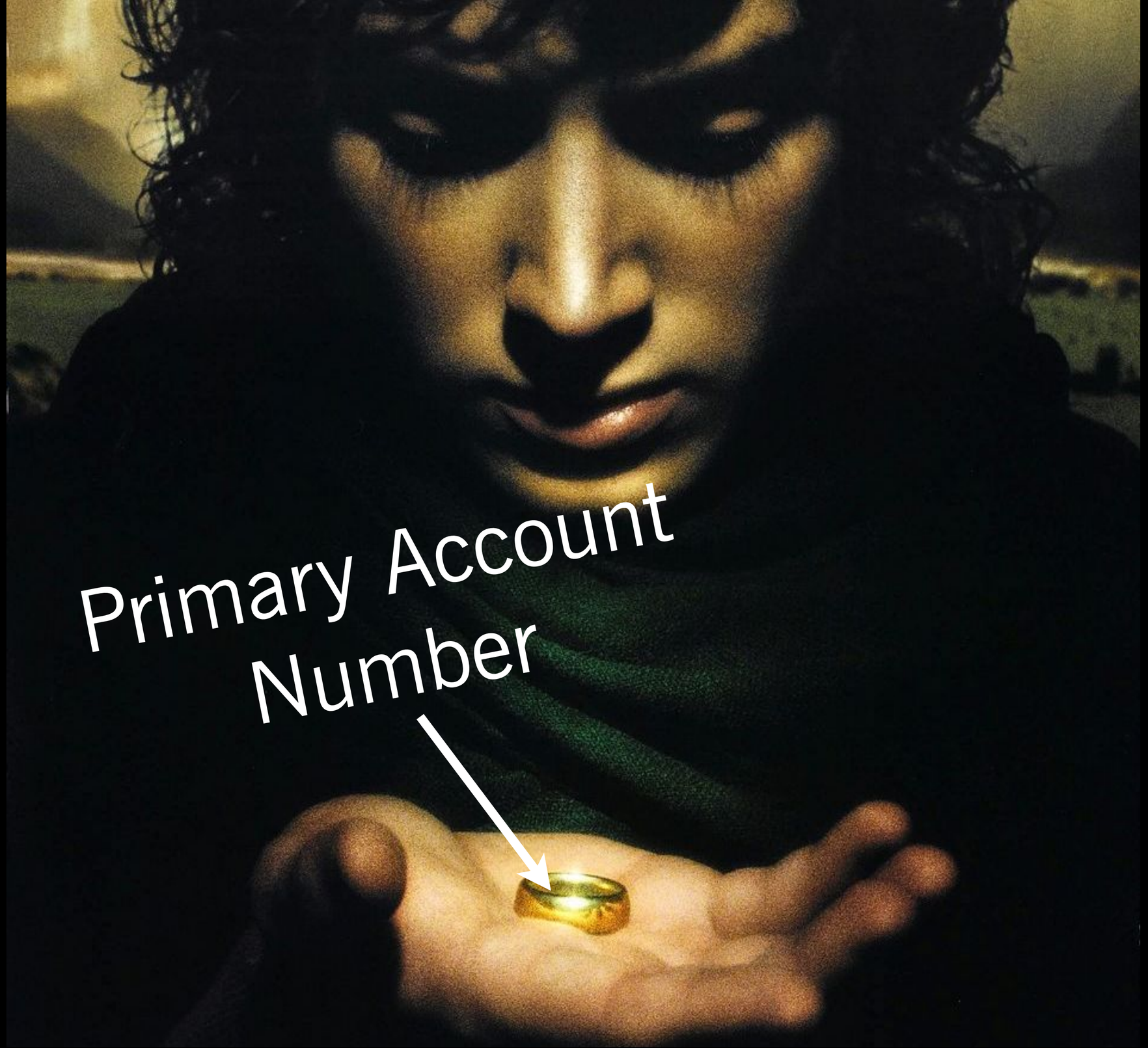
Determine Scope

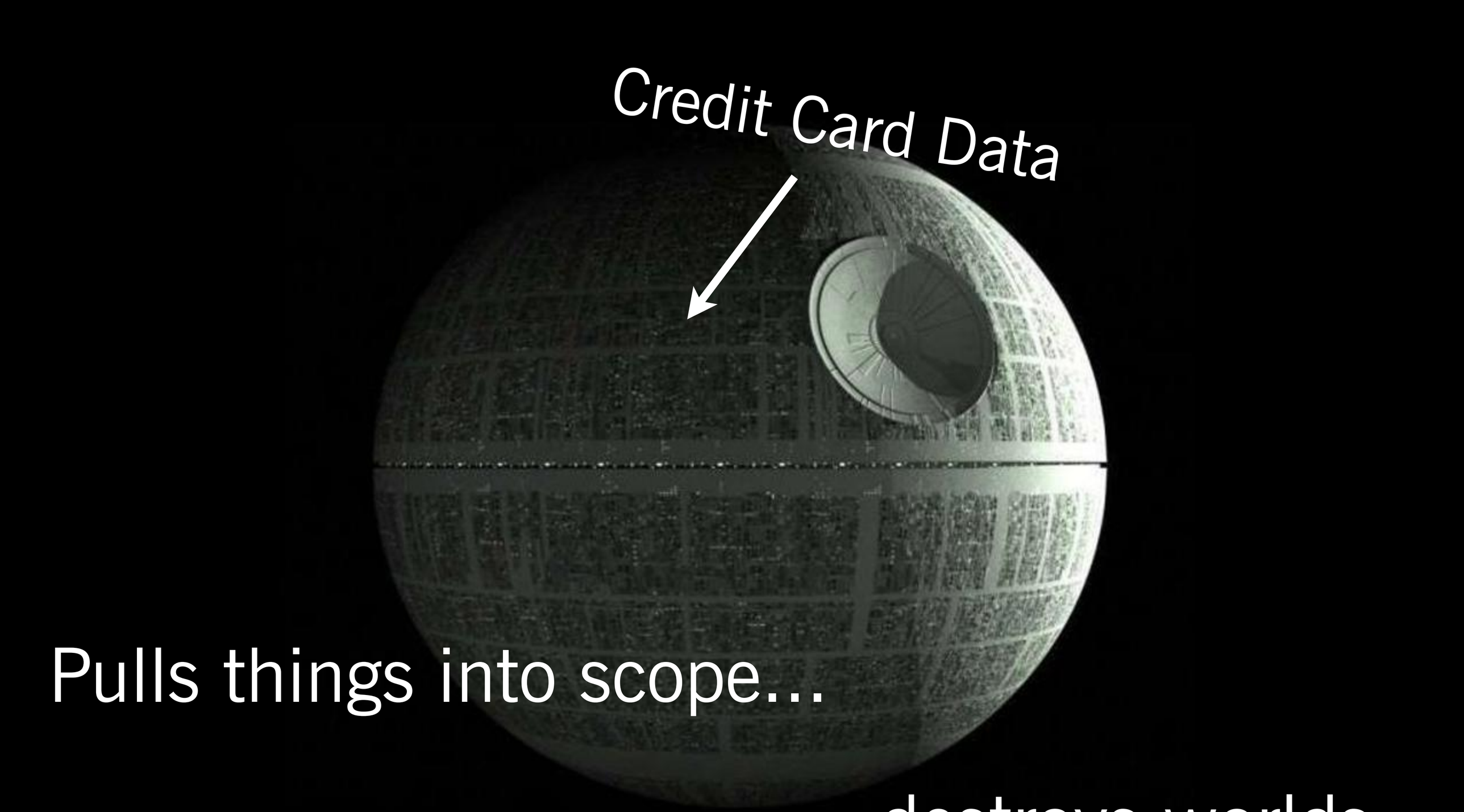
Cardholder Data

Card Holder Data (CHD) = Full mag strip OR PAN (Primary Account Number)
(4XXX XXXX XXXX XXXX)

NO PAN = NO CHD




Primary Account Number



Pulls things into scope...

...destroys worlds

Compliant

Not Compliant

Risk

Validation

PCI DSS Requirements	Testing Procedures	ROC Reporting Details (For In-Place Requirements)	Reporting Methodology: Observe system settings, configurations	Document reviews	Interviews with personnel	Observe process, action, state	Identify sample
6.6 For public-facing web applications, address new threats and vulnerabilities on an ongoing basis and ensure these applications are protected against known attacks by *either* of the following methods: • Reviewing public-facing web applications via manual or automated application vulnerability security assessment tools or methods, at least annually and after any changes • Installing a web-application firewall in front of public-facing web applications	**6.6** For *public-facing* web applications, ensure that *either* one of the following methods are in place as follows: • Verify that public-facing web applications are reviewed (using either manual or automated vulnerability security assessment tools or methods), as follows: – At least annually – After any changes – By an organization that specializes in application security – That all vulnerabilities are corrected – That the application is re-evaluated after the corrections • Verify that a web-application firewall is in place in front of public-facing web applications to detect and prevent web-based attacks. ***Note:*** *"An organization that specializes in application security" can be either a third-party company or an internal organization, as long as the reviewers specialize in application security and can demonstrate independence from the development team.*	• For each public-facing web application: i. Identify which of the two methods are implemented (web application vulnerability security assessments, web application firewalls, or both).				✓	
		• If application vulnerability security assessments are performed: i. Describe the tools and/or methods used (manual or automated, or a combination of both). ii. Describe how it was observed that assessments are performed: o At least annually o After any changes iii. Identify the organization(s) performing the assessments. iv. Identify the responsible personnel interviewed, and describe how those reviewing the applications were confirmed to: o Specialize in application security o Demonstrate independence from the development team v. Describe the observed process which confirm that: o All identified vulnerabilities are corrected. o Applications are re-evaluated after the corrections are applied.			✓	✓	

Observe settings and configuration

Document Reviews

Personnel Interviews

Observe

Process | Action | State

Section 6.3 - SDLC

// Is your SDLC mature? Is it documented?

// Does the SDLC include security and PCI considerations? It must.

Observe systems settings, config	Document Reviews	Interviews	Observe process, action, state

Section 6.3.1 - Remove Custom App Accounts

// Remove non-production accounts before the app goes into production

Observe systems settings, config	Document Reviews	Interviews	Observe process, action, state

Section 6.3.2 - Code Review

// Code review policies and procedures (documentation)

// Review past code reviews and application changes (proof that it's being done)

// You should be reviewing other developer's code before it goes live

Observe systems settings, config	Document Reviews	Interviews	Observe process, action, state

Section 6.4 - Change Control

- Non-prod and prod separation
- Separation of duties
- Don’t use live PANs for testing
- Remove test data and non-prod accounts
- Change control procedures
- Documented impact
- Authorization
- Testing
- Back-out

Observe systems settings, config	Document Reviews	Interviews	Observe process, action, state

Section 6.5 - Develop Secure Software

// Develop software based on secure coding guidelines

// Developer interviews

// Policy that requires training (best practices aka OWASP)

// Address the OWASP Top 10

Observe systems settings, config	Document Reviews	Interviews	Observe process, action, state

Section 6.6 - Security Testing

- Web application vulnerability assessment for *public-facing* web applications
  - Manually or Automated tools
  - At least annually or after “any changes”
  - By firm that specializes in application security (or qualified non-conflicting internal resource)
  - All vulnerabilities are fixed
  - Re-tested after fixed
- Or, a web application firewall* in front of the app

Observe systems settings, config	Document Reviews	Interviews	Observe process, action, state

Case Study: Start Up

// Nov 2010 they were a Level 4 merchant

// March 2011 they were a Level 1 merchant

// Several times when they do over 1M transactions in 24 hours

// One of the top dev shops in the world

// Great security posture

// Doing almost everything right, just no policies, no formal procedures

Case Study: Airline

// Strong process and procedures

// Good policies

// Security totally not involved in development, until now

// Poor technical implementation in some areas

// Developers who thought they were out of scope, turns out were in scope

How do we get there?

- Make security part of the SDLC - document it
- Checklists reduce risk. Ask someone in the air transportation industry
- Bolt PCI on to your SDLC - document it
- Train your developers to write secure code. Ask Sony about this.

Or... dodge the bullet

// Explore outsourcing payment process to 3rd party

// <iframe>

// billing.companyname.com - DNS

// Technical and branding limitations

stratum//security

Innovative Risk Solutions

trevor.hawthorn@stratumsecurity.com

www.stratumsecurity.com