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Connect to Protect

SESSION ID: PDAC-T09

Realities of Data Security

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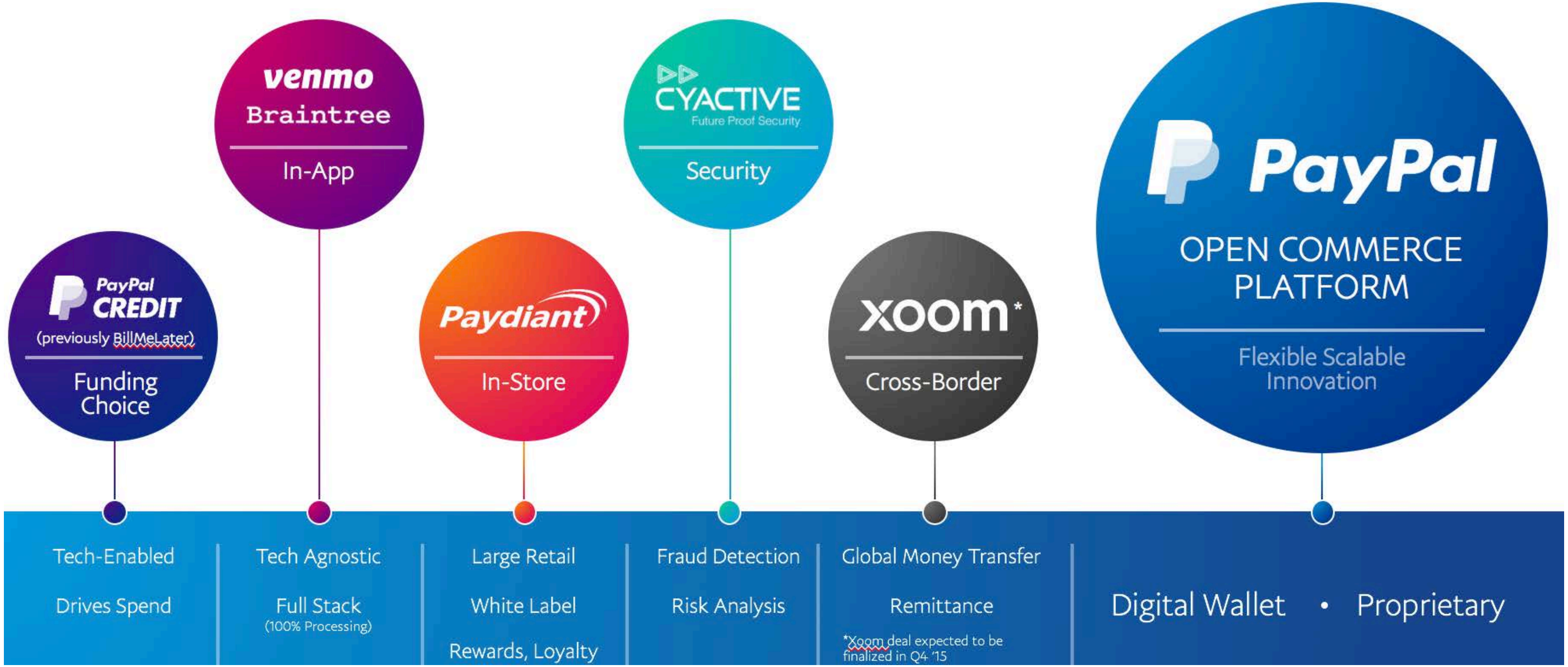
#RSAC

The Data Problem



PayPal CREDIT (previously BillMeLater)
Funding Choice
Tech-Enabled
Drives Spend

venmo Braintree
In-App
Tech Agnostic
Full Stack
(100% Processing)

Paydiant
In-Store
Large Retail
White Label
Rewards, Loyalty

CYACTIVE Future Proof Security
Security
Fraud Detection
Risk Analysis

xoom*
Cross-Border
Global Money Transfer
Remittance
*Xoom deal expected to be finalized in Q4 '15

PayPal
OPEN COMMERCE PLATFORM
Flexible Scalable Innovation
Digital Wallet • Proprietary

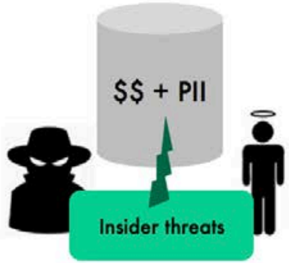
Why should we trust anyone with our Data?

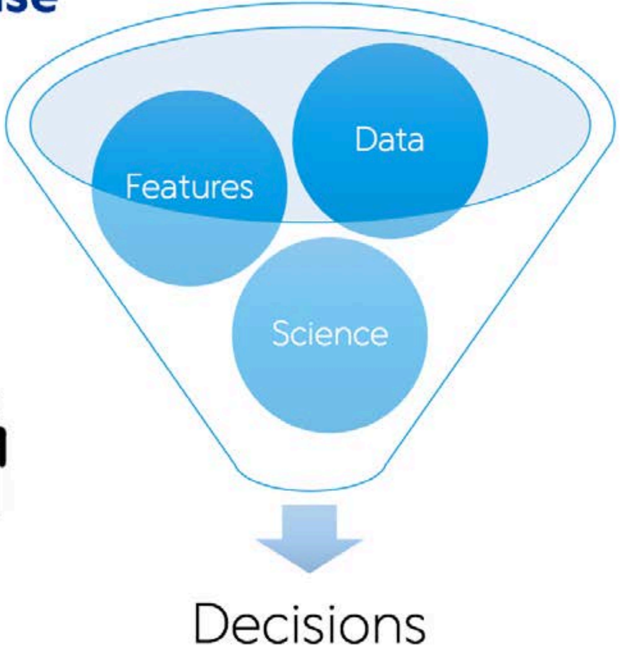
People actually need data to do their job

Email Marketing
Customer Support
Business Analytics
Financial Analyst
Cross Marketing

Software Developer
Network Operations
Security Operations
HR / Payroll
Fraud Control

Insider Misuse





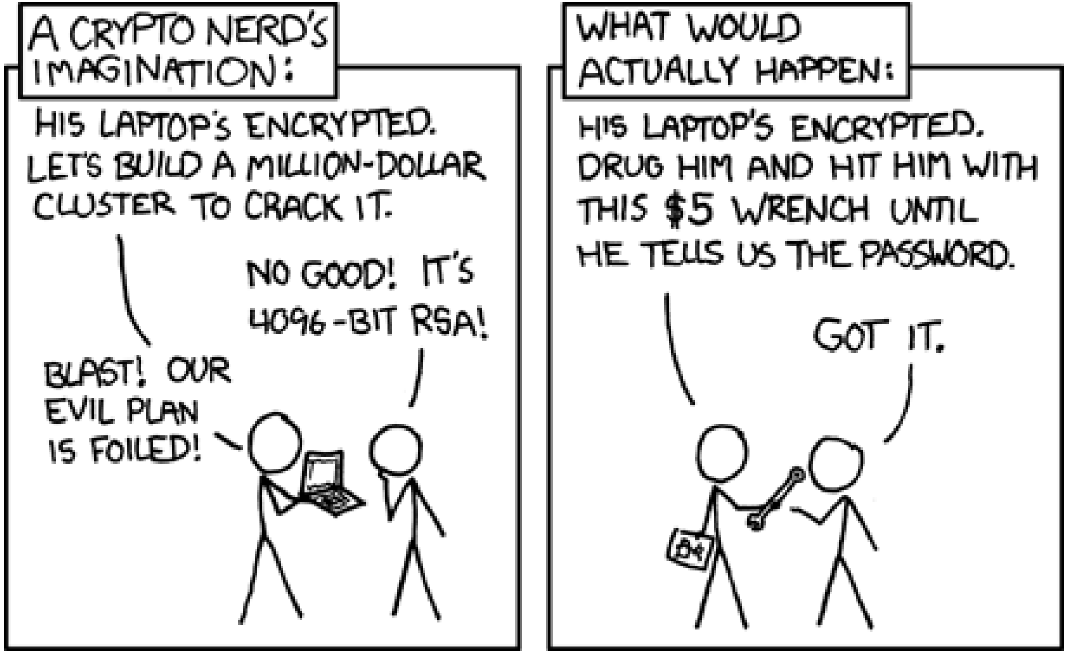
55%

THE TOP ACTION WAS PRIVILEGE ABUSE—AT 55% OF INCIDENTS—WHERE INTERNAL ACTORS ABUSE THE ACCESS THEY HAVE BEEN ENTRUSTED WITH.

Source: Verizon 2015 DBIR

The People Problem

> “Think of how stupid the average person is, and realize half of them are stupider than that.”
>
> -- George Carlin


A CRYPTO NERD'S IMAGINATION:
HIS LAPTOP'S ENCRYPTED. LET'S BUILD A MILLION-DOLLAR CLUSTER TO CRACK IT.
NO GOOD! IT'S 4096-BIT RSA!
BLAST! OUR EVIL PLAN IS FOILED!
WHAT WOULD ACTUALLY HAPPEN:
HIS LAPTOP'S ENCRYPTED. DRUG HIM AND HIT HIM WITH THIS $5 WRENCH UNTIL HE TELLS US THE PASSWORD.
GOT IT.

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So Now What ??

You don’t just have a Data problem, you have an Everything problem….

The reality is… you can’t just worry about the data…

Its not just about the Data

Find It

Data repositories with restricted/PII data
Business work flows & data flows
Identify owners, does data leave your network

Secure It

Delete or move into a secure network zone Encrypt data when it is found insecure
Create access rights controls & fix bad process

Monitor It

Ongoing monitoring with $tool – users & systems
Data scanning tools for compliance
Inbound/outbound flow monitoring
kill data streams & wall of shame

Find It

Ask

- Hey, where is our data?
- Where did this come from? Where is it going?
- Where Else could It be ?
- Are you caching anything ?
- How many copies are there?
- Has anyone taken it home?
- Did anyone stick it “in the cloud”

Validate

- Buy Stuff or Build Stuff
- Data tools haven’t caught up with data systems
- You cannot find everything with Tagging, sometimes you have to sniff it out
- Don’t forget your logging systems, file shares, and desktops
- To sample or not to sample

Secure It

Zones

Build network zones in the right places to house the data where it needed

Separate employee zones from customer zones from analytics zones

If zones exist, uplift controls to match your new standard

Build a common Bill of materials & definition of “Run the business”

Encrypt

Deploy Hardware Security Modules (HSM) where required

Make sure your tools can decrypt where appropriate

Keys should be as unique as you need them to be

once you encrypt the data, make sure that the data entry point is encrypted too

Monitor It

Logging

Build use cases

“Log all activity from DBA’s and watch for select from application tables”

Log All the Things; keystroke log if required

positive & negative testing required for tools

tap, syslog, integrated, custom, modules, …

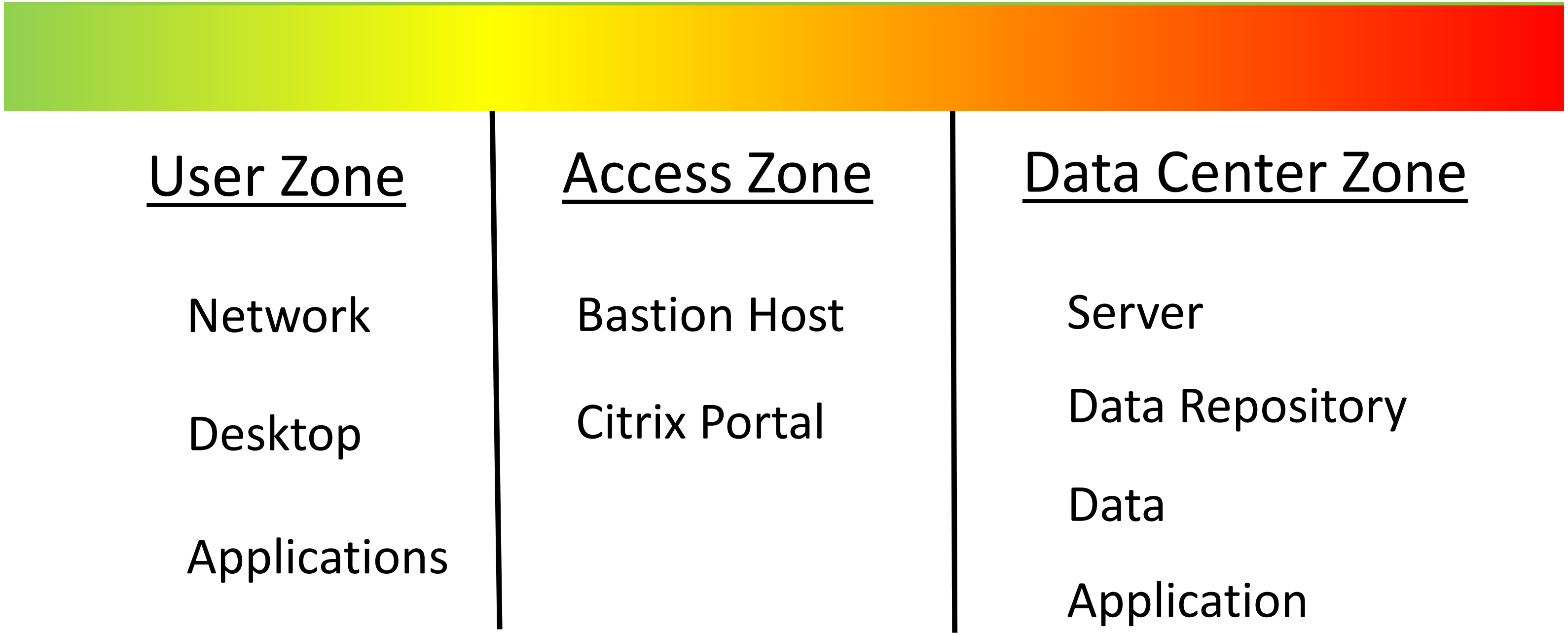
In-Line Detection

decrypt data if required

deploy at all ingress and egress points that matter

tap, DLP, proxies, email, …

Multi-Layer Trust Model



User Zone

- Network
- Desktop
- Applications

Access Zone

- Bastion Host
- Citrix Portal

Data Center Zone

- Server
- Data Repository
- Data
- Application

Controls required around Data

Centralized Logging	N, H, A
Vulnerability Scanning	N, H, A
Intrusion Detection	N
Patching Updates	N, H, A
Web Proxy	N
Anti-Malware	N, H
Time Synchronization	N

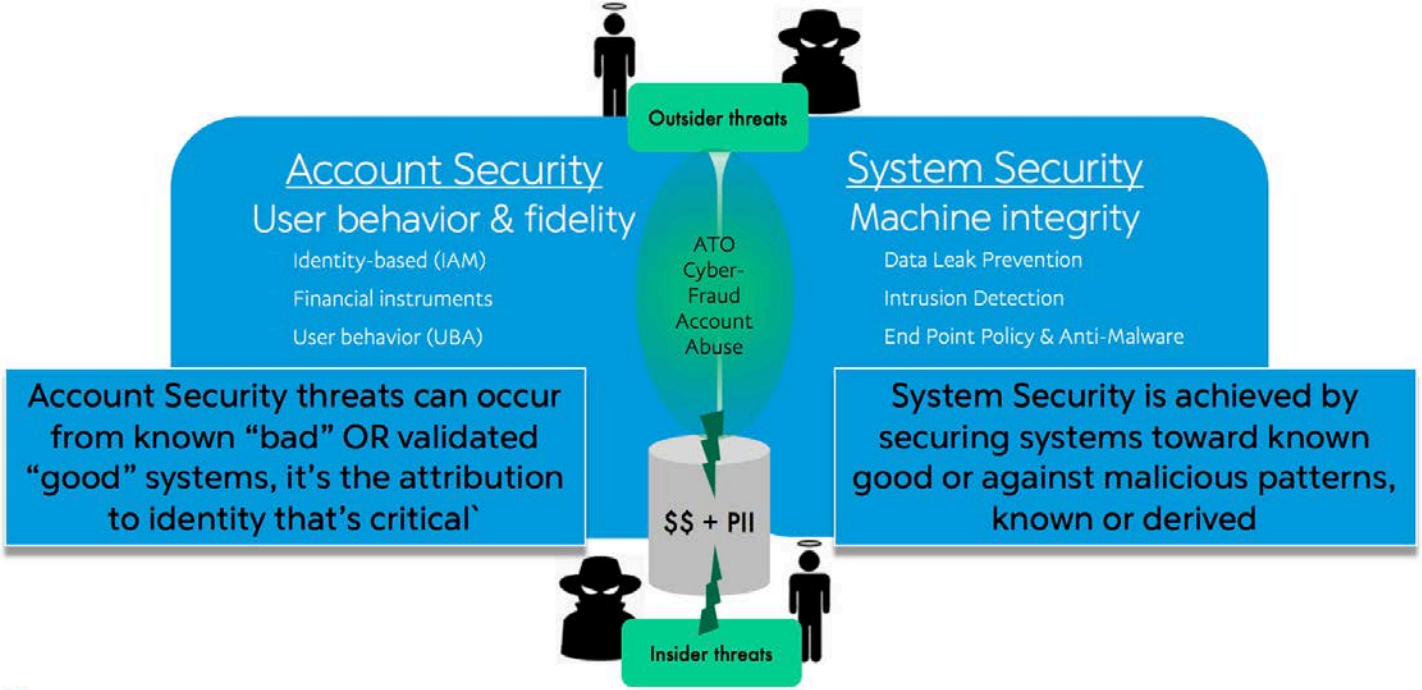
Data Loss Prevention	N
Firewalls	N
Role-Based Access	N, H, A
VDI / Citrix / Bastion	N
Packet Capture	N
File Integrity	H
Configuration Control	H

N=Network H=Host A=Application

Risks of Direct Data Controls

- No one can use the data if its always encrypted
- Tagging Data on Content? Good luck with that
- Tagging Data with Users? Easier, but still
- DLP is only as good as your Regex foo
- Be ready to customize for NoSQL Solutions
- Vendors design for “most common”.. Know anyone like that ?

Monitor the human too



Account Security

User behavior & fidelity

Identity-based (IAM)

Financial instruments

User behavior (UBA)

System Security

Machine integrity

Data Leak Prevention

Intrusion Detection

End Point Policy & Anti-Malware

Account Security threats can occur from known "bad" OR validated "good" systems, it's the attribution to identity that's critical`

System Security is achieved by securing systems toward known good or against malicious patterns, known or derived

Threat Behavior Buckets

Never Anyone (Always Prohibit)

- No one should EVER do this
- No machine should EVER do this

Never This (Point Prohibit)

- This type of person should never do
- This type of machine should never do
- This type of data should never go

Never Seen (Watch and React)

- (Source Location)+(Source Machine)+(Source Person)+(Target)+(Action)
- One of these items is irregular

Don’t say NO

Say HOW

Data Security is not a permanent state

Data Security can not work effectively unless you have agility

(there’s nothing static about data)

Pulling it all off

- Build technical and business standards related to use of data and control of data - “The Law”
- Build technical standards related to the controls expected of secure, restricted zones & related to the encryption / access to data – “The How”
- Find restricted data throughout the company, and scan for locations that should have NO data
- Identify method to protect the data once found – delete / relocate / protect / encrypt & execute
- Implement technical controls at the endpoint and network and repository
- Apply continuous monitoring controls to data & people

Build solutions and processes that outlast the people building them

For more information, please contact:

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