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Protecting Critical Data on a z/OS Mainframe: A New Attitude

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AGENDA

Introduction

1 This part of the presentation discusses the current threat landscape and how enterprises are dealing with the challenges.

Challenges for z/OS

2 This part of the presentation discusses the challenges enterprises face with interpreting with integrating z/OS into their overall Security Intelligence Architecture and Operations.

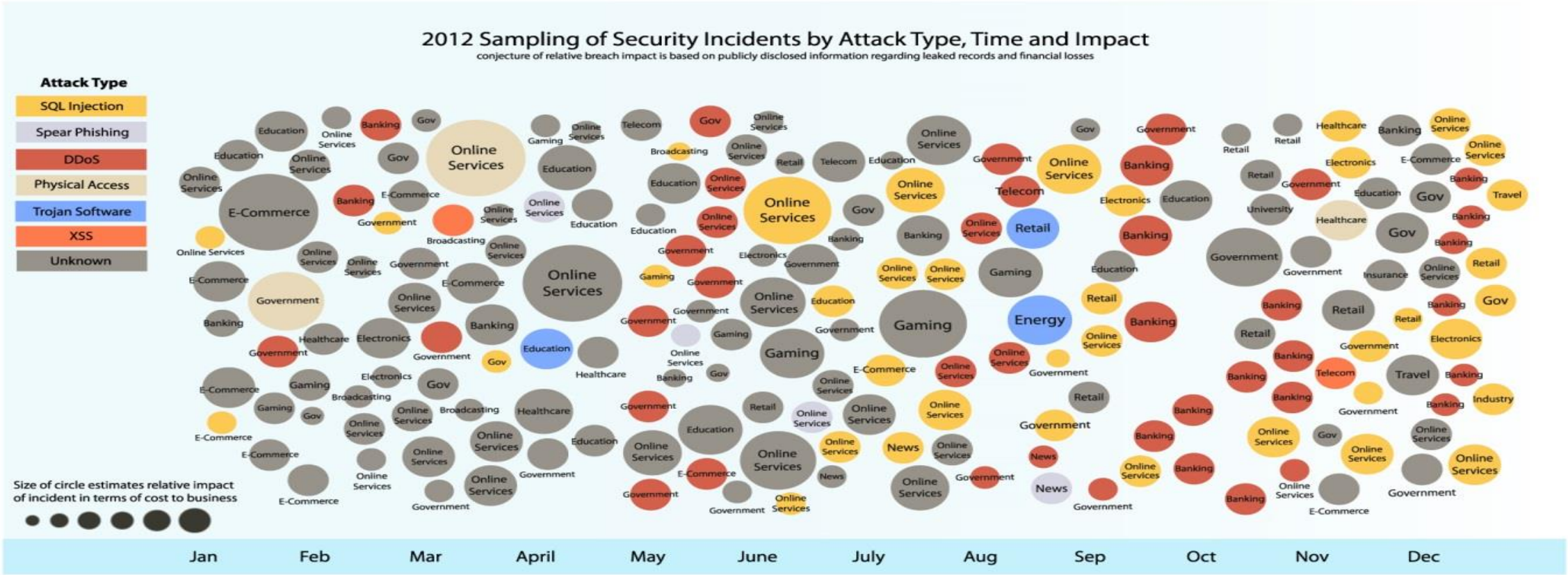
z/OS Security Intelligence Maturity Model

3 This part of the presentation shows how Vanguard looks at security intelligence and a proposal for a framework and maturity model for z/OS Security Intelligence.

Current Threat Landscape

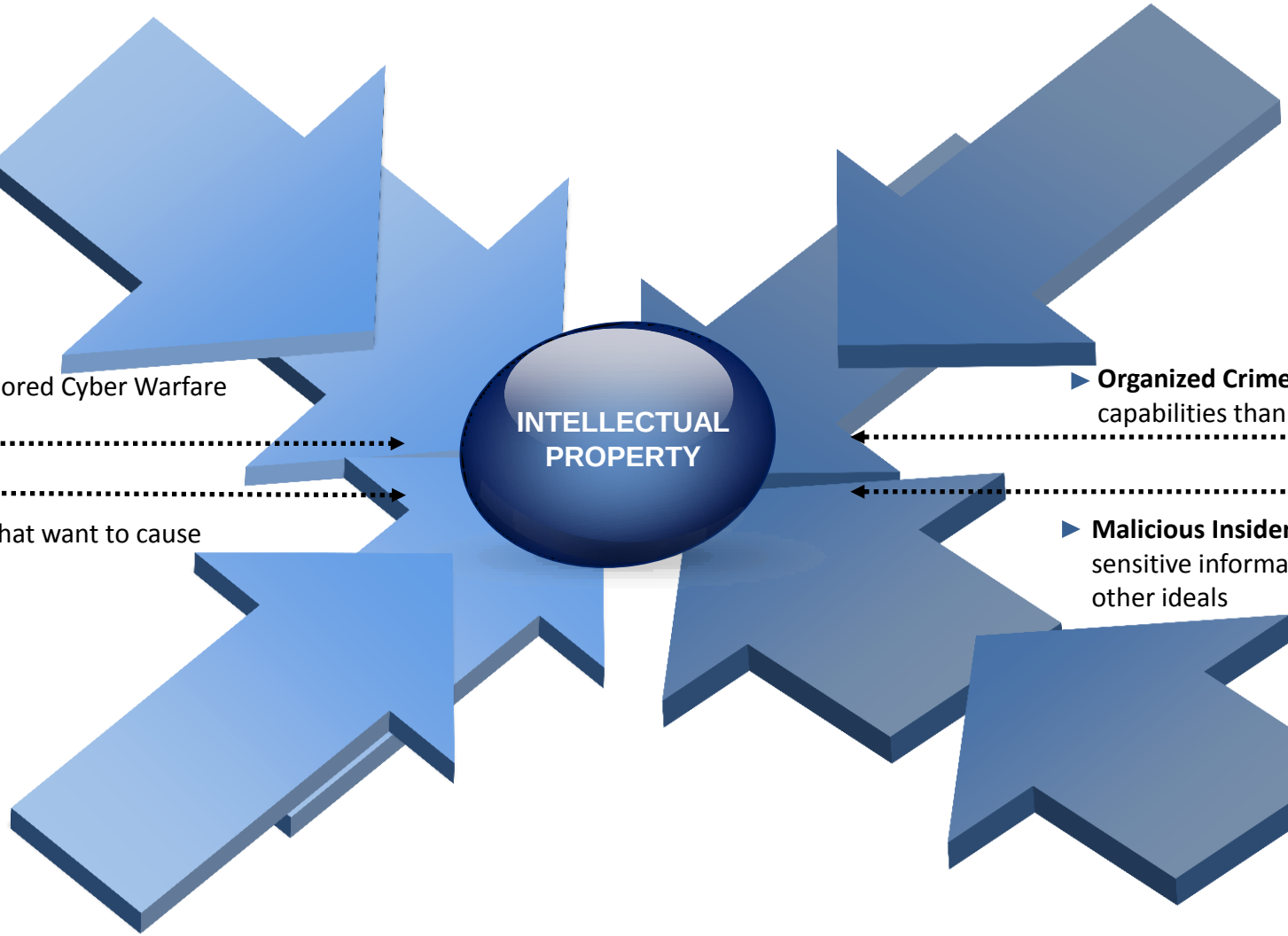
INTRODUCTION

Attack Statistics



Source: IBM X-Force® Research and Development

Threat Actors



- **Nation States:** State sponsored Cyber Warfare
- **"Hacktivism":** Individuals that want to cause harm for social reasons
- **Organized Crime :** less expensive using digital capabilities than physical
- **Malicious Insider:** people with access to sensitive information and using it for profit or other ideals

Sophistication

Low Level

- **Motivation:** Fun, nothing else to do;
- **Target:** anybody
- **Funding**: None

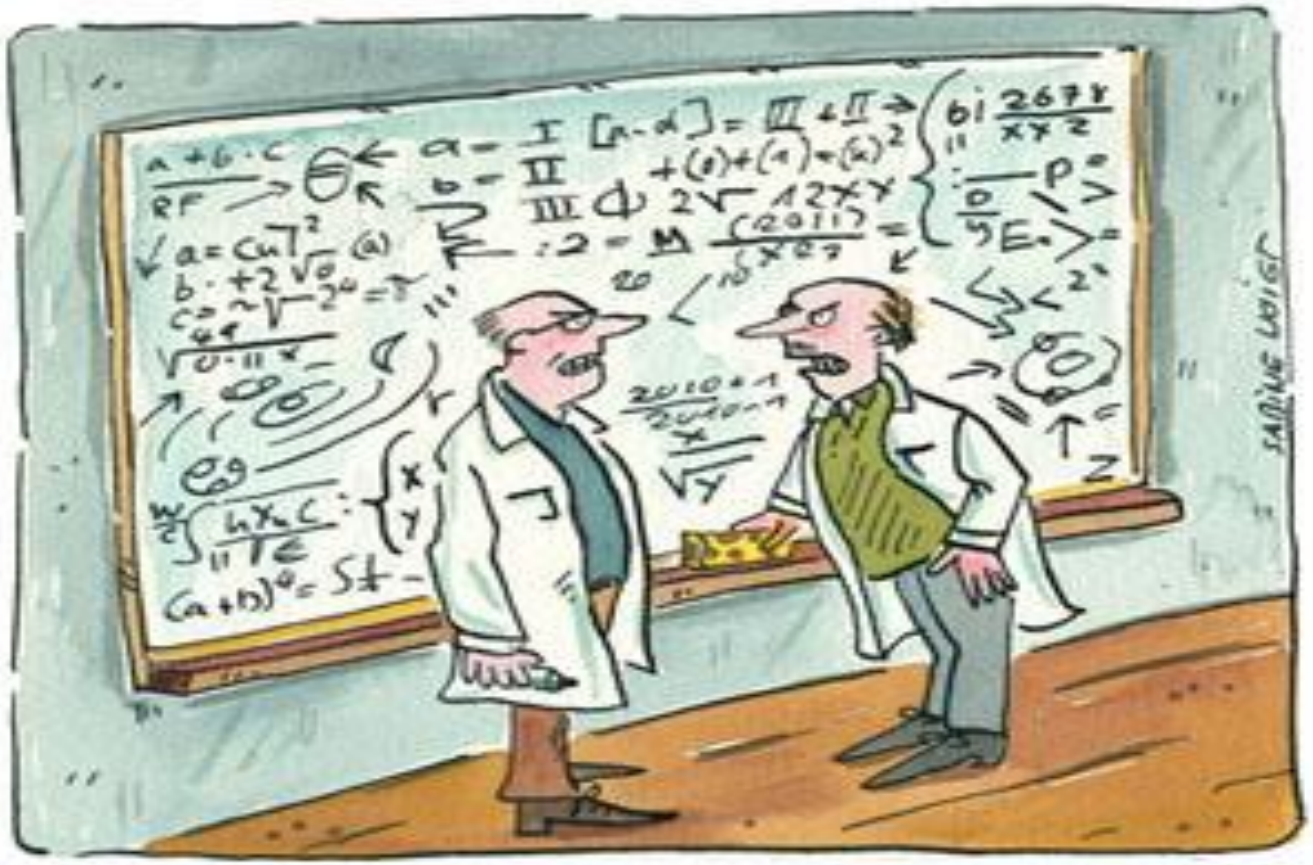
Medium Level

- **Motivation:** Reputation or Social;
- **Target:** Corporations, Governments, High Profile People;
- **Funding**: Limited funds but deep expertise;

High Level

- **Motivation:** Espionage, Influence, Trade Secrets, Inside Information;
- **Target:** Government Agencies, Contractors, Think Tanks, Corporations
- **Funding**: Well funded and deep expertise;

Sophistication



"If you think this is advanced, how do you expect to deal with APT?"

Traditional Security - Set of Layered Defenses

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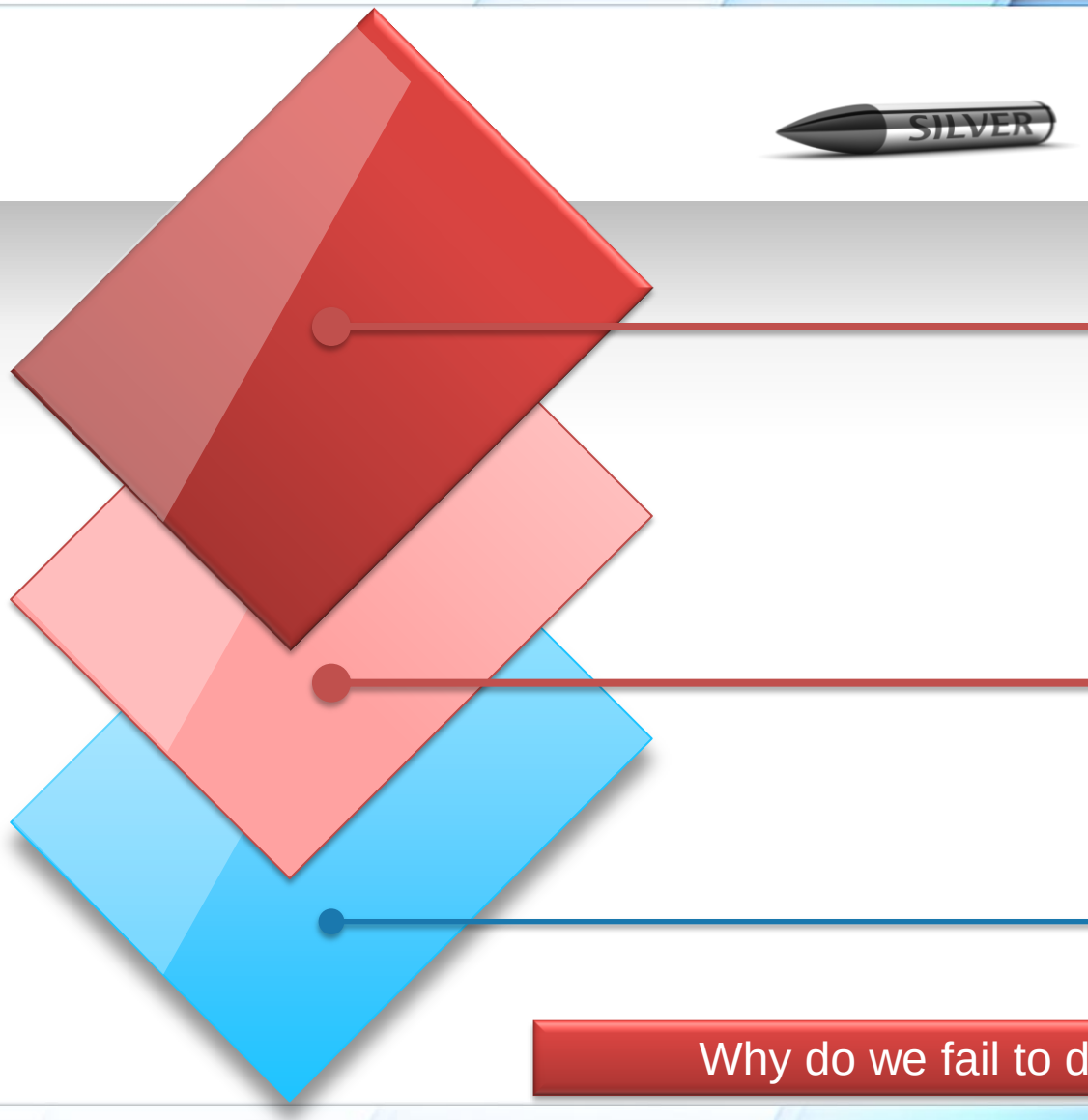
Enterprise Security Software



Preventive Controls
FW, IPS, WAF, DDoS, Awareness, Training

Detective Controls
IDS, AV, SIM, VA, etc

Corrective Controls / Response Procedures
IR Plans, BCP, DDoS

Why do we fail to detect / prevent APT type attacks?

Verizon Data Breach Report 2013

- Recommendations:
  - ***Ensure essential controls are met; regularly check that they remain so;***
  - Collect, analyze and share incident data to create a rich data source that can drive security program effectiveness;
  - Collect, analyze, and share tactical threat intelligence, especially Indicators of Compromise (IOCs), that can greatly aid defense and detection;
  - ***Without deemphasizing prevention, focus on better and faster detection through a blend of people, processes, and technology.***
  - Evaluate the threat landscape to prioritize a treatment strategy. Don't buy into a "one-size fits all" approach to security.
  - If you're a target of espionage, don't underestimate the tenacity of your adversary. ***Nor should you underestimate the intelligence and tools at your disposal***.

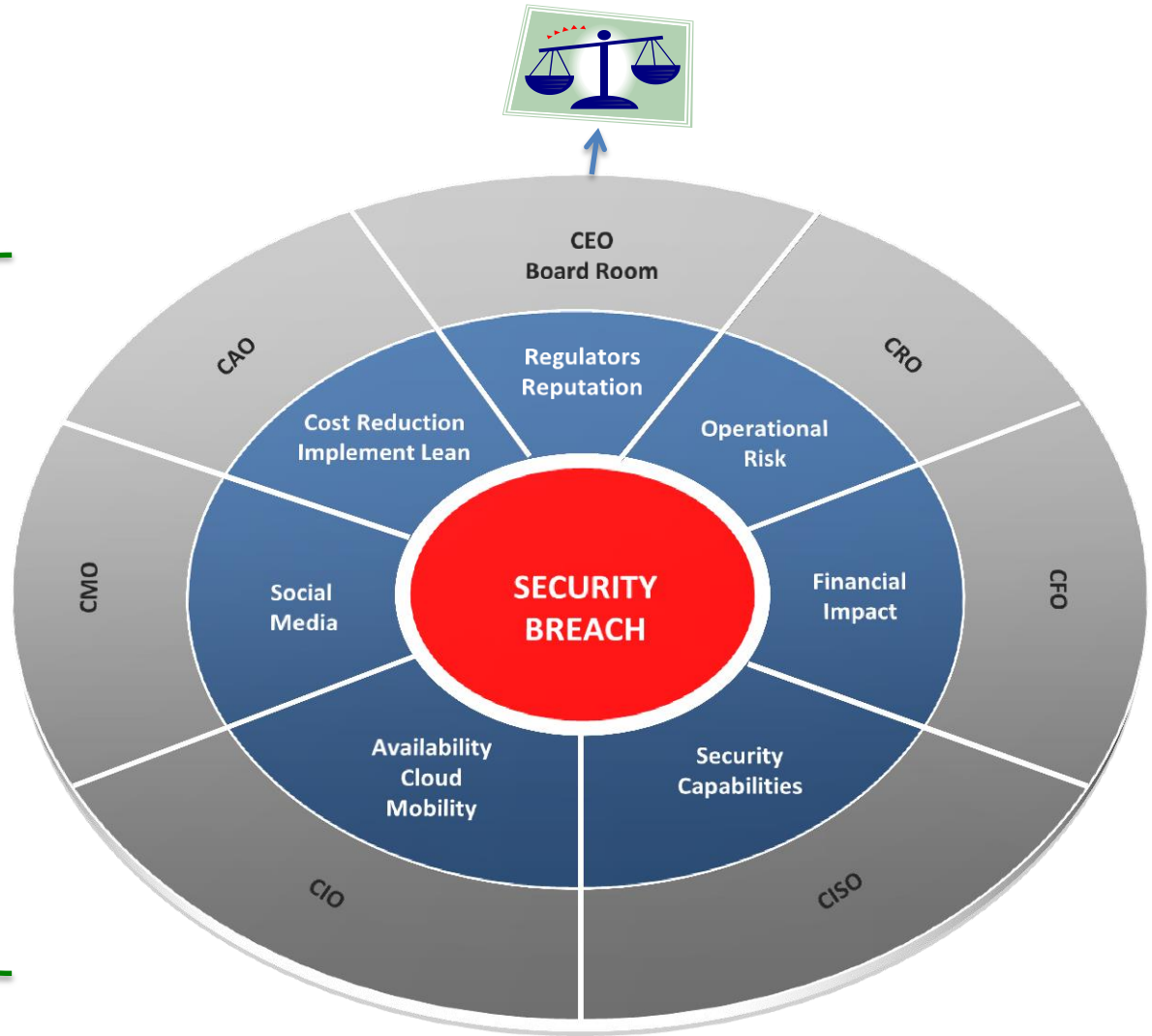
Note: subset of all recommendations

Security Intelligence and the z/OS Platform

ENTERPRISE CHALLENGES

Enterprise Challenges

Changes



Impacts

Security Challenges

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Virtualization/Cloud
- Dynamic Workloads
- Cloud Bursting
- Elasticity

Security Intelligence
- Who wants to harm me
- What are they after?
- What methods are used?

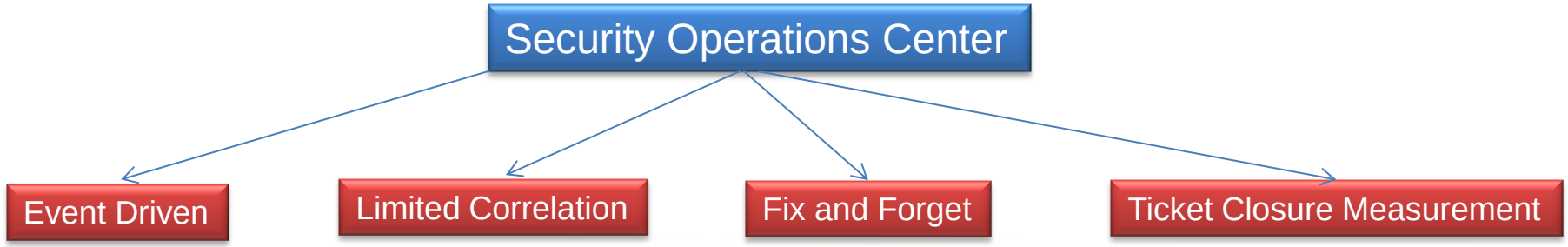
Mobility/BYOD
- Explosion mobile devices
- BYOD seen as cost saver
- Data Loss inevitable

Impact
- Where is my “data”?
- Requires *Dynamic* Security Controls
- High Audit Requirements

Impact
- Where is my IP?
- How is it protected and monitored ?
- Data Loss Prevention (DLP)

Impact
- Requires different set of IT services;
- Accelerates Cloud Adoption (Dropbox etc.)

Security Operations versus Security Intelligence (1)



Security Operations versus Security Intelligence (2)

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SECURITY INTELLIGENCE .COM

sec•ur•ity in•tell•i•gence

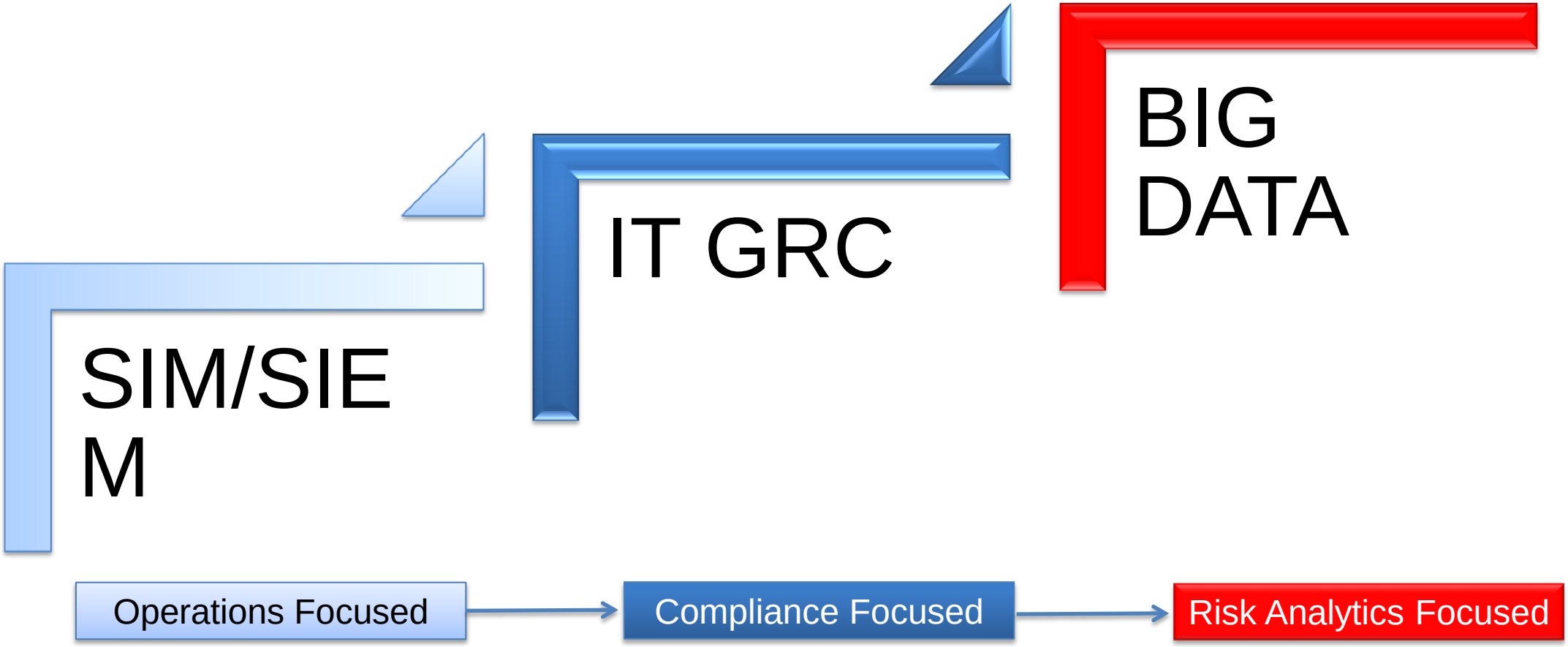
–noun 1. The real-time collection, normalization and alalytics of the data generaeted by users, applcations and infastructre that impacts the IT security and risk posture of an enterprise.

- Networks
- *Mainframes* & Servers
- Databases
- Applications
- Users & Identities
- Cloud
- Mobile

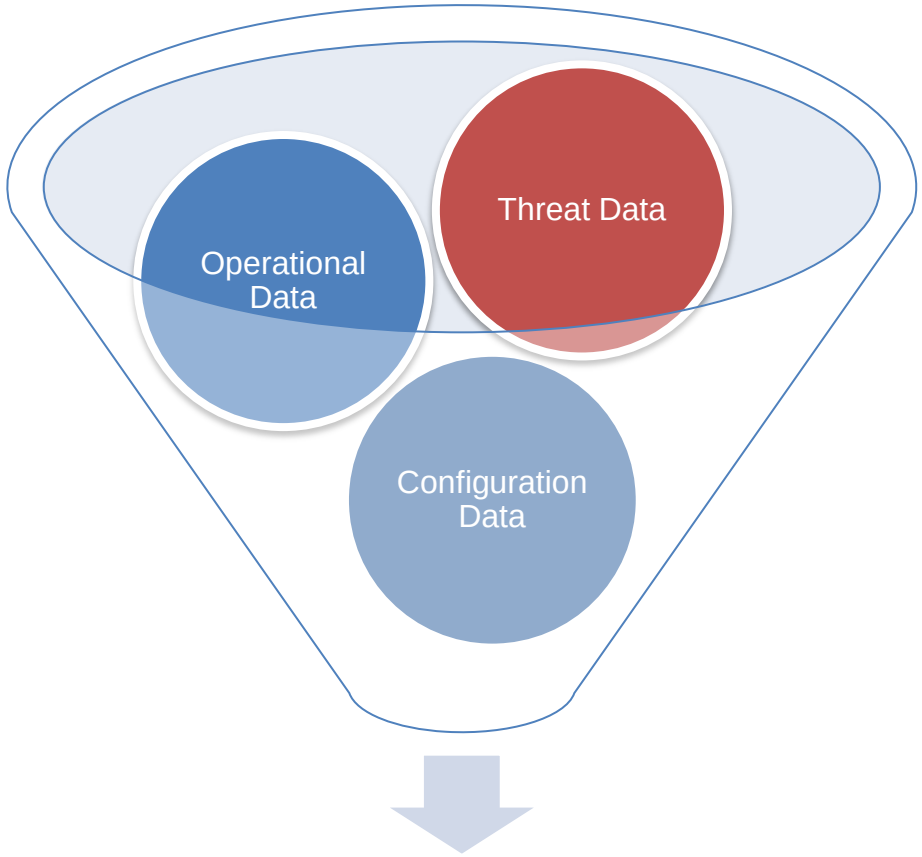
Security Intelligence:

- Contextual aware;
- Correlated and aggregated event;
- Isolate and understand attack behavior;

Security Operations versus Security Intelligence (3)



Security Intelligence

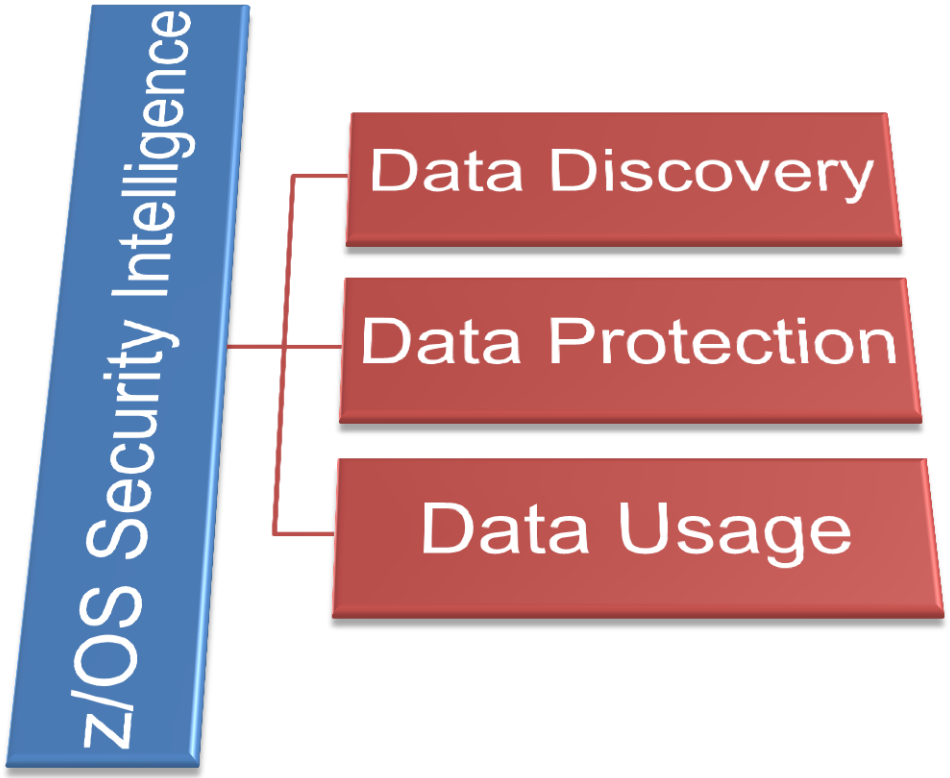


Security Intelligence

Framework and Maturity Model

Z/OS SECURITY INTELLIGENCE

Security Intelligence and z/OS – How do they fit together?

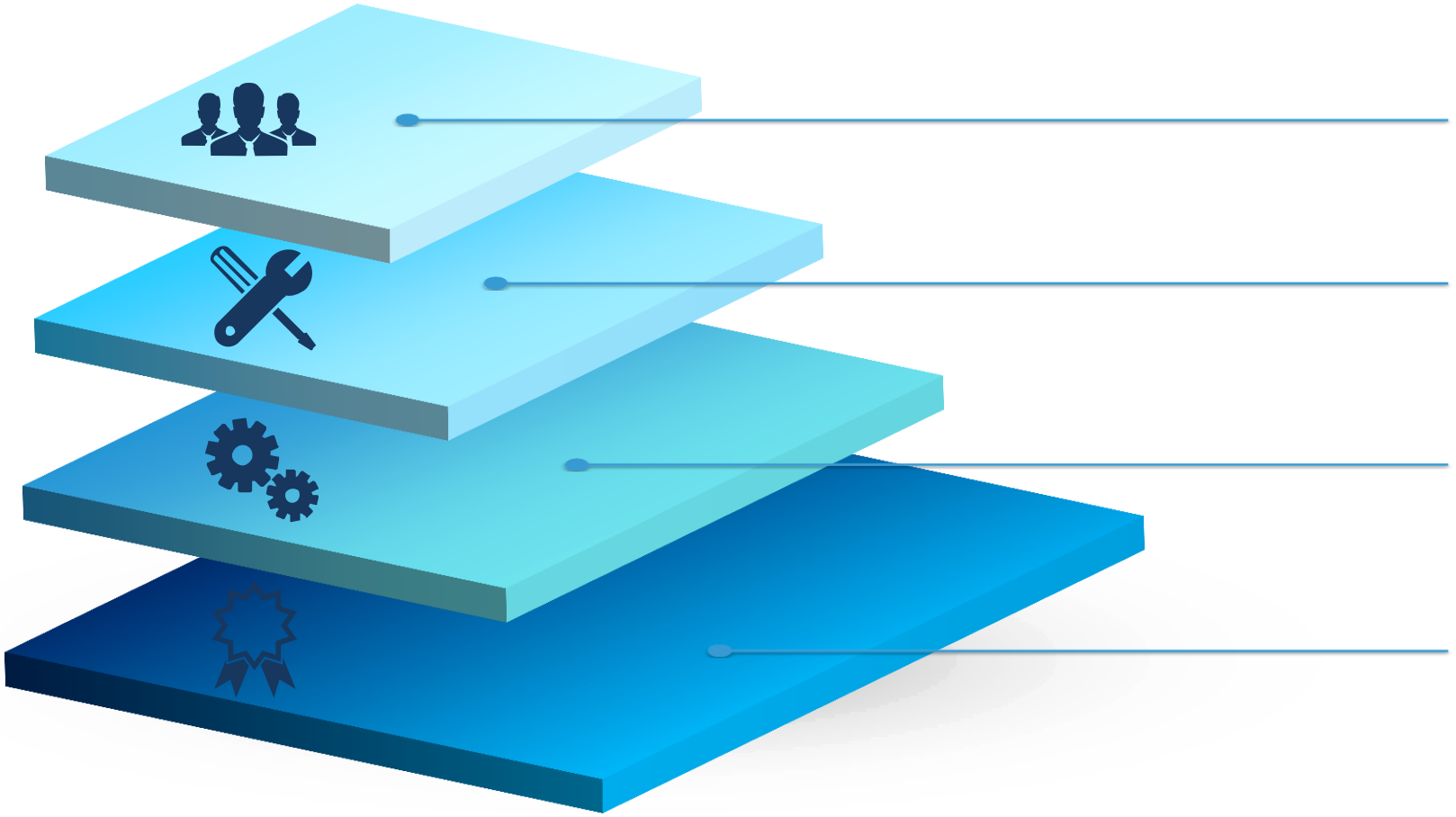


Do you know where you sensitive data is stored ?

Do you know how your sensitive data is protected and stays protected ?

Do you know who is accessing your sensitive data ?

z/OS Security Intelligence Framework



(1) Security Operations Staff

(2) Data Discovery Tools

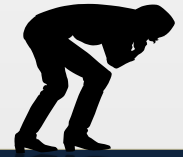
(3) Policy Enforcement

(4) Provenance

z/OS Security Intelligence Maturity Model

Productivity

First step in the z/OS Security Intelligence Maturity Model is establishing an I&AM framework to properly provison and deprovision access to z/OS resources and enhance the productivity of the oragnization through Role Based Access models.



Monitor

Second step in the z/OS Security Intelligence Maturity Model is establishing a security operations monitoring framework that effectively monitors the z/OS environment for intrusions and misuse of resources.

Integrity

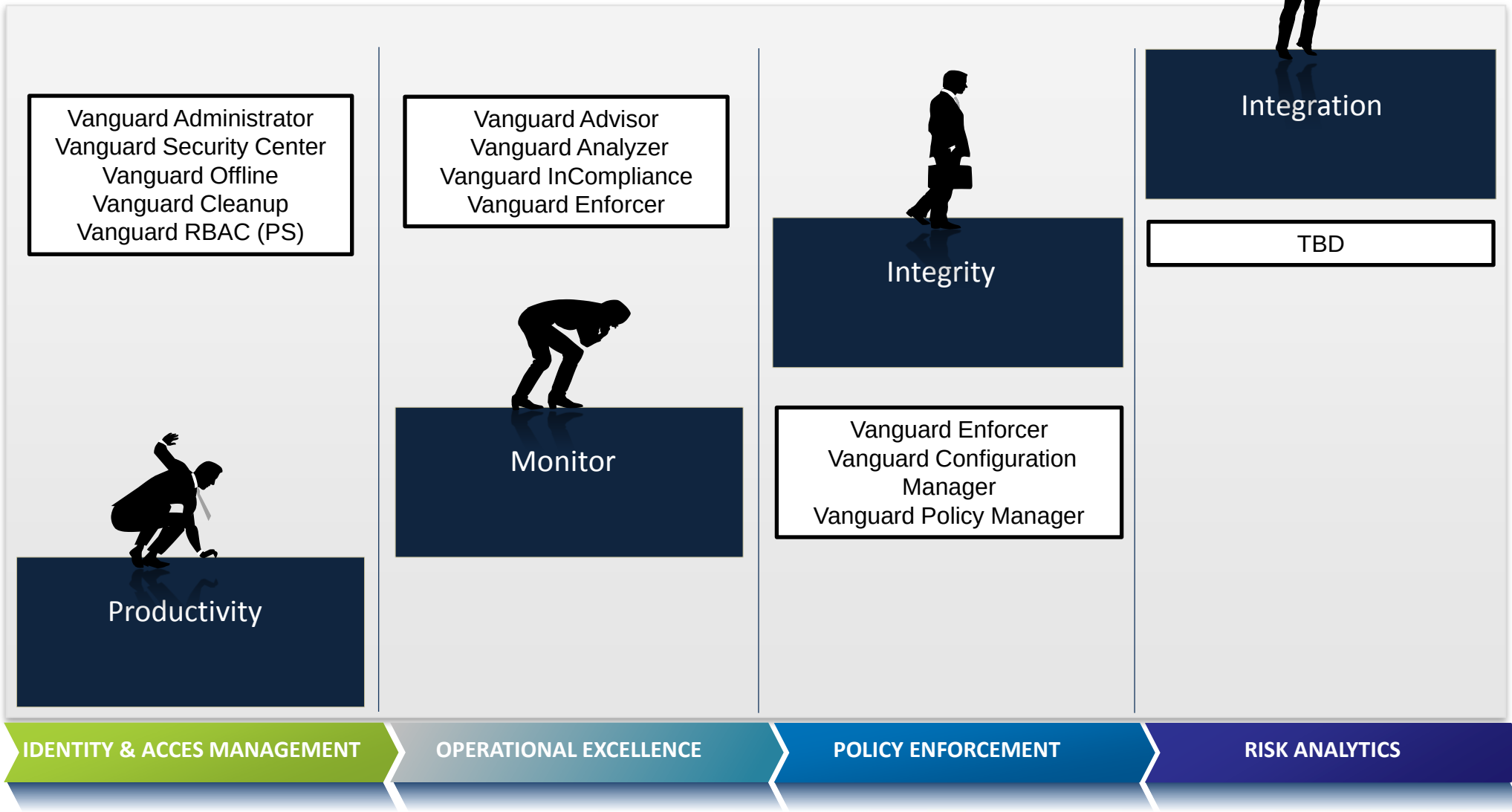
Third step in the z/OS Security Intelligence Maturity Model is establishing a security policy for z/OS and ensuring the policy is enforced at all times to ensure the integrity of the z/OS platform.

Integration

Fourth step in the z/OS Security Intelligence Maturity Model is establishing integration the data security wharehouse where risk analysis is performed to determine unusual data usage patterns that may be an indication of a security breach or fraud.

IDENTITY & ACCES MANAGEMENT | OPERATIONAL EXCELLENCE | POLICY ENFORCEMENT | RISK ANALYTICS

z/OS Security Intelligence Maturity Model versus Vanguard Solutions



New attitude

- The Mainframe is NOT an island > Integrate
- Understand where you data is (or was)
- Bad things happen to mainframes too !
- Understand the key (security) events on a mainframe
- Mobile will have major impact how data is accessed

Thank You
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