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Information Risk Management

Innovating Security with
Big Data Analytics…and Attacker TTPs

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Advanced Cyber Threat Management Services

Audience

If you are an Organization that does NOT:

- Have specific unique information assets (e.g. Intellectual Property)
- Have competitors (or opponents) that can gain an advantage by obtaining access to internal, confidential information of yours
- Provide the opportunity to criminals for direct/indirect financial gain, by acquiring access to your data/services
- Manages Critical Information or Critical Infrastructures
- Have customers (and access to corresponding data) that belong to the above criteria

Then you don't care about handling Targeted Cyber Threats…and this presentation

Security Facts

- Targeted Cyber Attacks have shed light on the actual effectiveness of the current Security (Prevention/Compliance-oriented) Paradigms

- **The outcome: “The Emperor is naked!”**

- The “APT” and especially the “Advanced” nature of the Threat rattling is used as an excuse for security failures

- The fact is:
  - The threat is very real
  - It’s not the threat that is advanced
  - It is our current Security paradigms and corresponding Tactics, Techniques & Procedures that are misfit… and totally predictable

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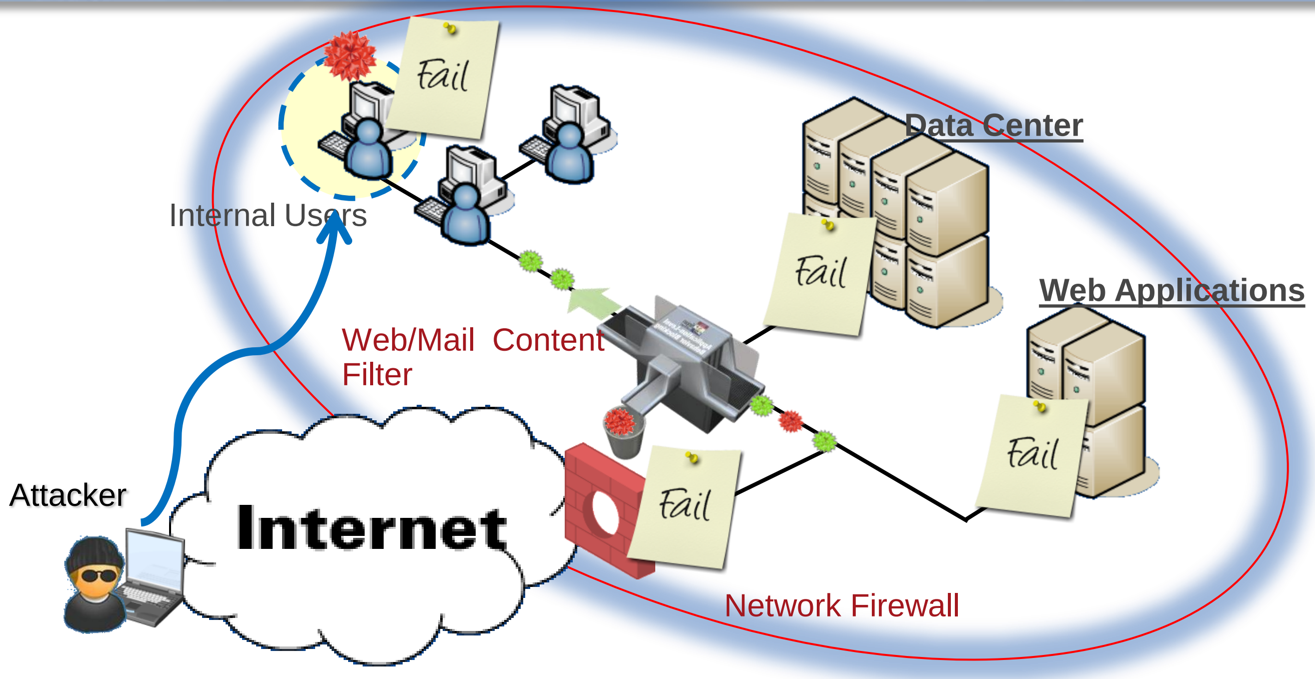
Targeted Cyber Threats aka. APT

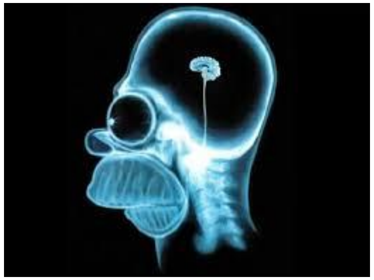
Today adversaries run persistent attack campaigns against specific targets

Common techniques cover targeting the end user - taking control of its workstation bypassing all commonly used security technologies

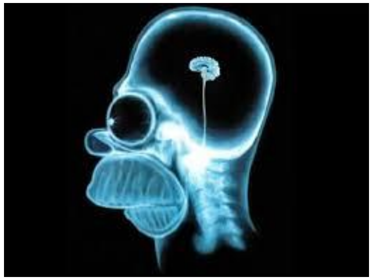


These threats are referred as Targeted Cyber Threats or **Advanced Persistent Threats (APT)**

Malware Problem vs. Targeted Cyber Attack/APT Problem

Threat	"Intelligence" Level	Scope & Objectives
 Malware Infection - Autonomous/Automated	 "basic survival instincts"	 Endpoint – local data, Financial Fraud…
 APT – Remote Access Tool/Foothold	 Human Operator/ Hacker	 IT environment – Data exfiltration, sabotage, fraud…

Malware Problem vs. Targeted Cyber Attack/APT Problem

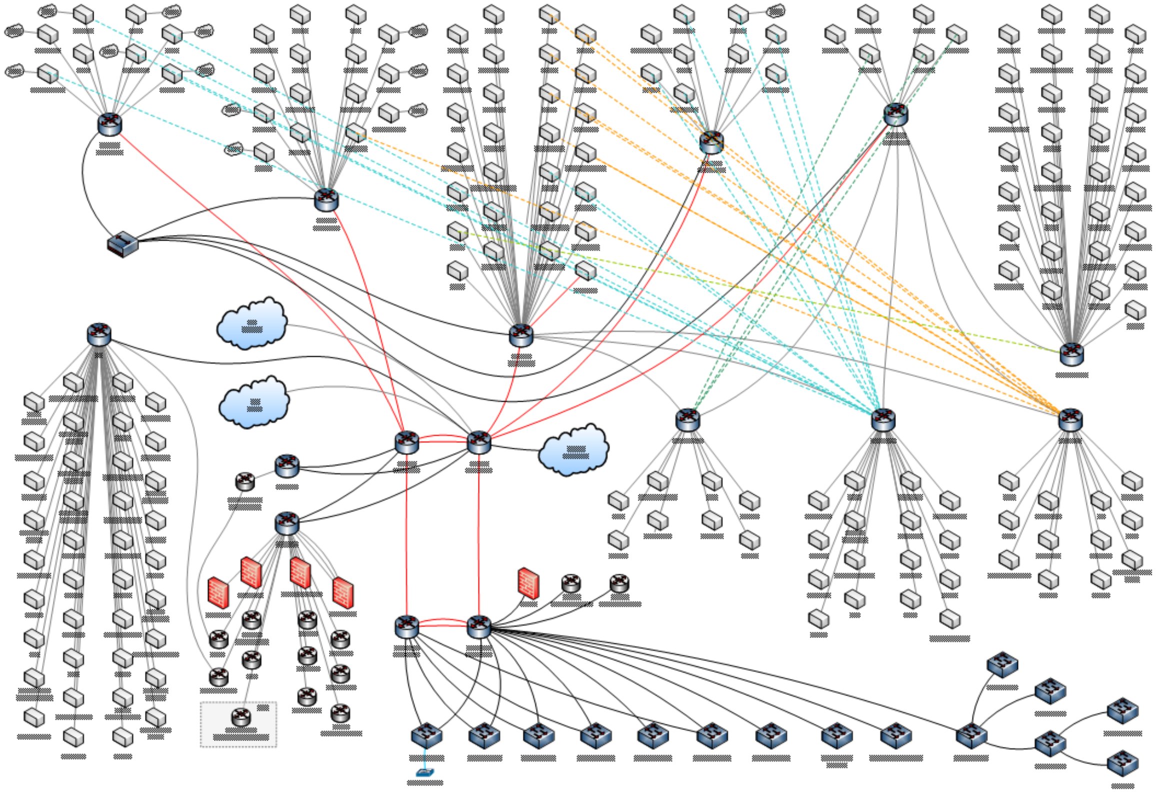
Threat	“Intelligence” Level	Current Defenses	“Intelligence” Level
Malware Infection - Autonomous/Automated	 “basic survival instincts”	FW, AV, IPS, SxG… - Autonomous/Automated	“ameba”
APT – Remote Access Tool/Foothold	Human Operator/ Hacker	FW, AV, IPS, SxG… - Autonomous/Automated	“ameba”

We have already a mismatch

The APT "Breach Game"

They have to compromise this

Advantage



You have to defend this

Challenge

and the mismatch goes on…

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The APT "Breach Game": Your Opponent…or Adversary

They are:

- knowledgeable
- well trained
- well sourced
- persistent
- mobile
- adaptable
- agile
- swift

They will:

- Profile/Recon
- Deceive
- Evade
- Infiltrate
- Escalate
- Persist
- Adapt

The APT "Breach Game": You … a sitting duck

The perfect mismatch

You are:

- knowledgeable
- well trained

…but also

- Understaffed
- Underequipped
- Under-budgeted
- Overwhelmed
- Reactive
- Unmoving

You try to:

- Prevent
- Respond
- Remediate

…

- Be Compliant
- Be in budget
- Be on Time

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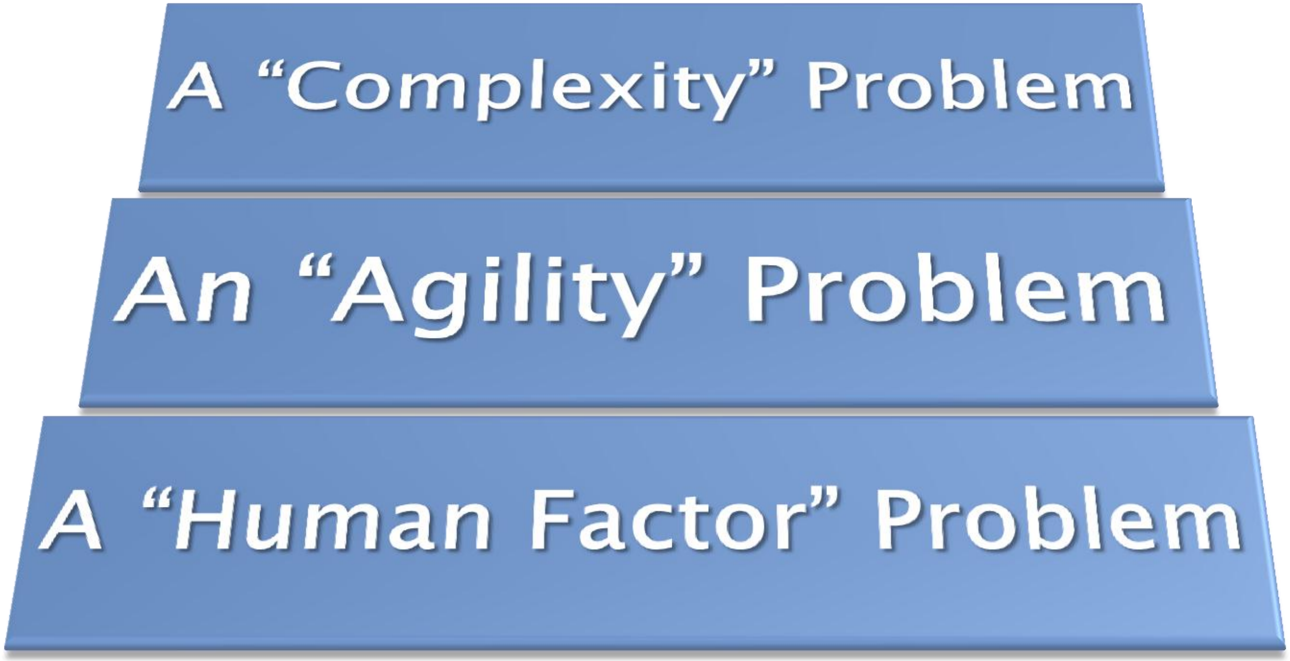
Innovating Security with Big Data Analytics & Attacker TTPs

Redefining the APT Problem

We believe it is 3-fold problem:

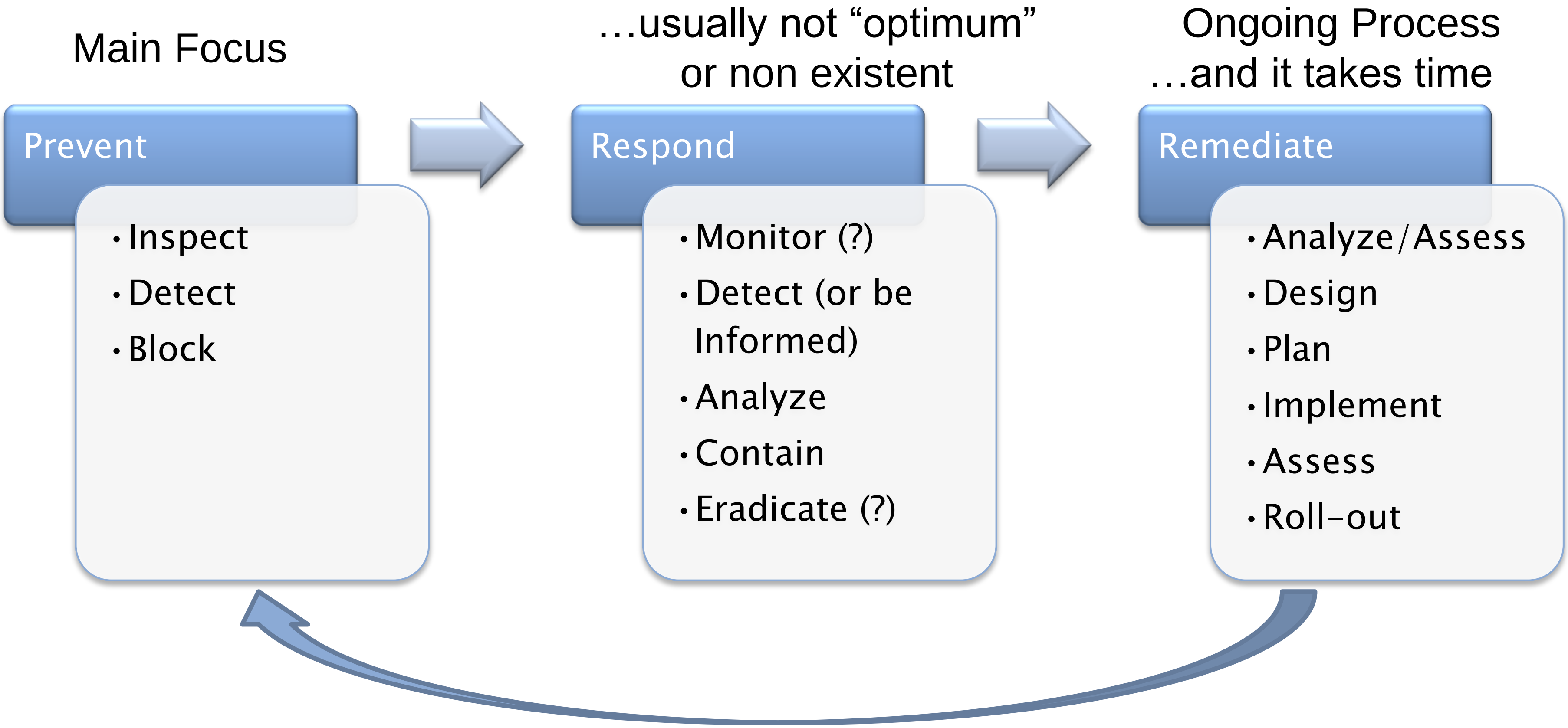


A "Complexity" Problem

An "Agility" Problem

A "Human Factor" Problem

Current Cyber Security Defense TTPs



Main Focus

Prevent

- Inspect
- Detect
- Block

…usually not "optimum" or non existent

Respond

- Monitor (?)
- Detect (or be Informed)
- Analyze
- Contain
- Eradicate (?)

Ongoing Process …and it takes time

Remediate

- Analyze/Assess
- Design
- Plan
- Implement
- Assess
- Roll-out

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…don't expect to "win" with this!

Learning from the Attacker’s TTPs …and Sun Tzu

- **Profile – *“If you know the enemy and know yourself…”***
  - Continuous modeling of your IT environment
  - Internet Access, Endpoint Activity, Intranet Access…
  - Building statistical models & Measuring Deviations
  - Detecting Generic Threat Patterns, based on attacker’s TTPs
  - Calculating “Threat Scores” by combing the two (Deviations + Patterns)

- **Adapt – *“Move swift as the wind…”***
  - Adapt your responses according to the “Threat Score”
  - Automatically Inspect suspicious Endpoint Activity
  - Mobilize your Security experts to analyze suspicious activity
  - “Stealthily” Contain & Monitor a confirmed incident/attack under way
  - Eradicate the threat only when you have a complete picture…and before having a (serious) impact

ART OF DECEPTION

- **Deceive – *“Engage people with what they expect…”***
  - Turn your “weaknesses” to “advantages”
  - “Give an end-user an endpoint and he will never fail to get compromised” (or “owned” in the hacking terminology)
  - “Give an attacker (plausible) “low hanging fruits” and he will never fail to grab them”

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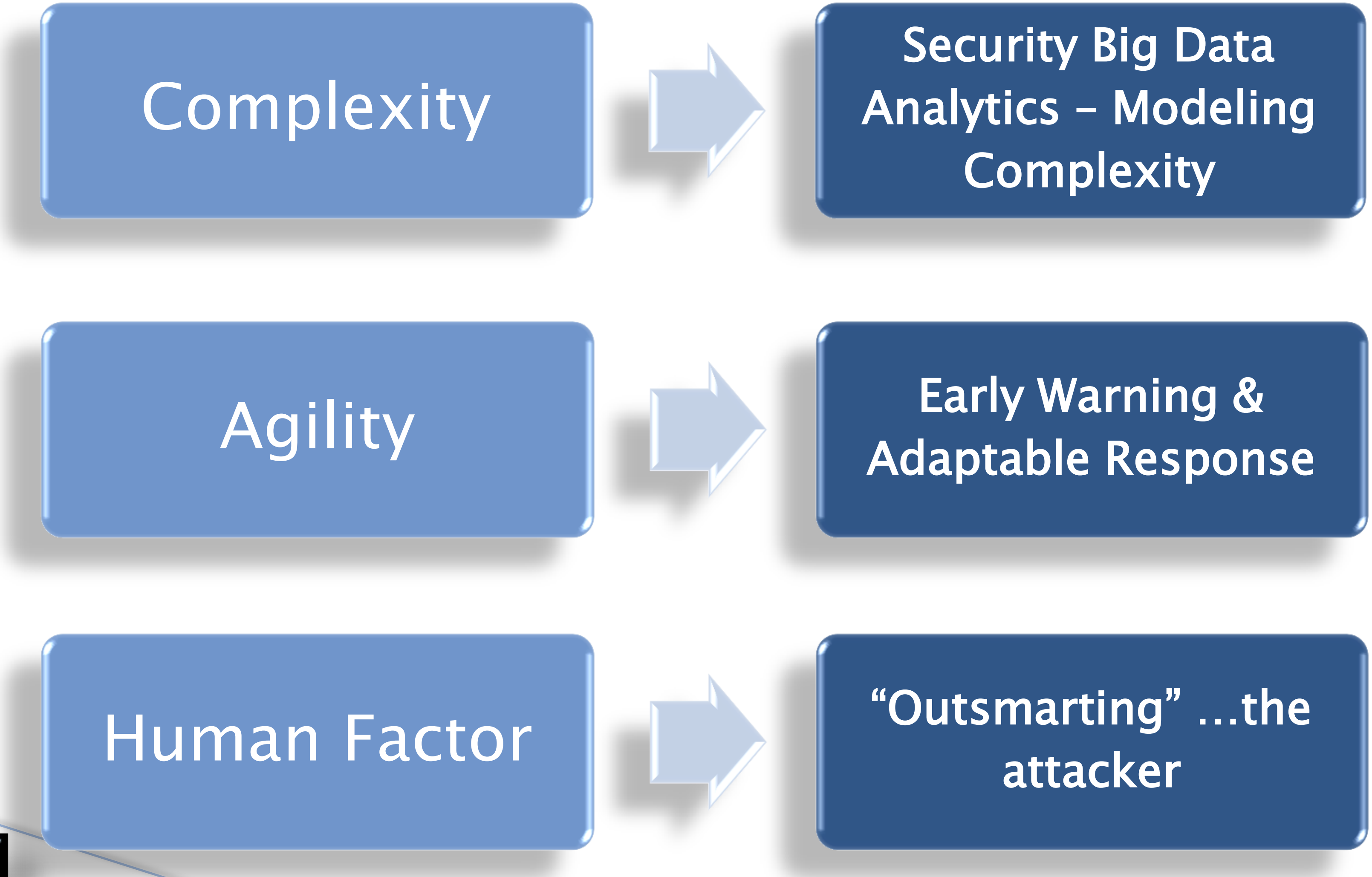
Solving the APT Problem



Complexity → Security Big Data Analytics – Modeling Complexity

Agility → Early Warning & Adaptable Response

Human Factor → “Outsmarting” …the attacker

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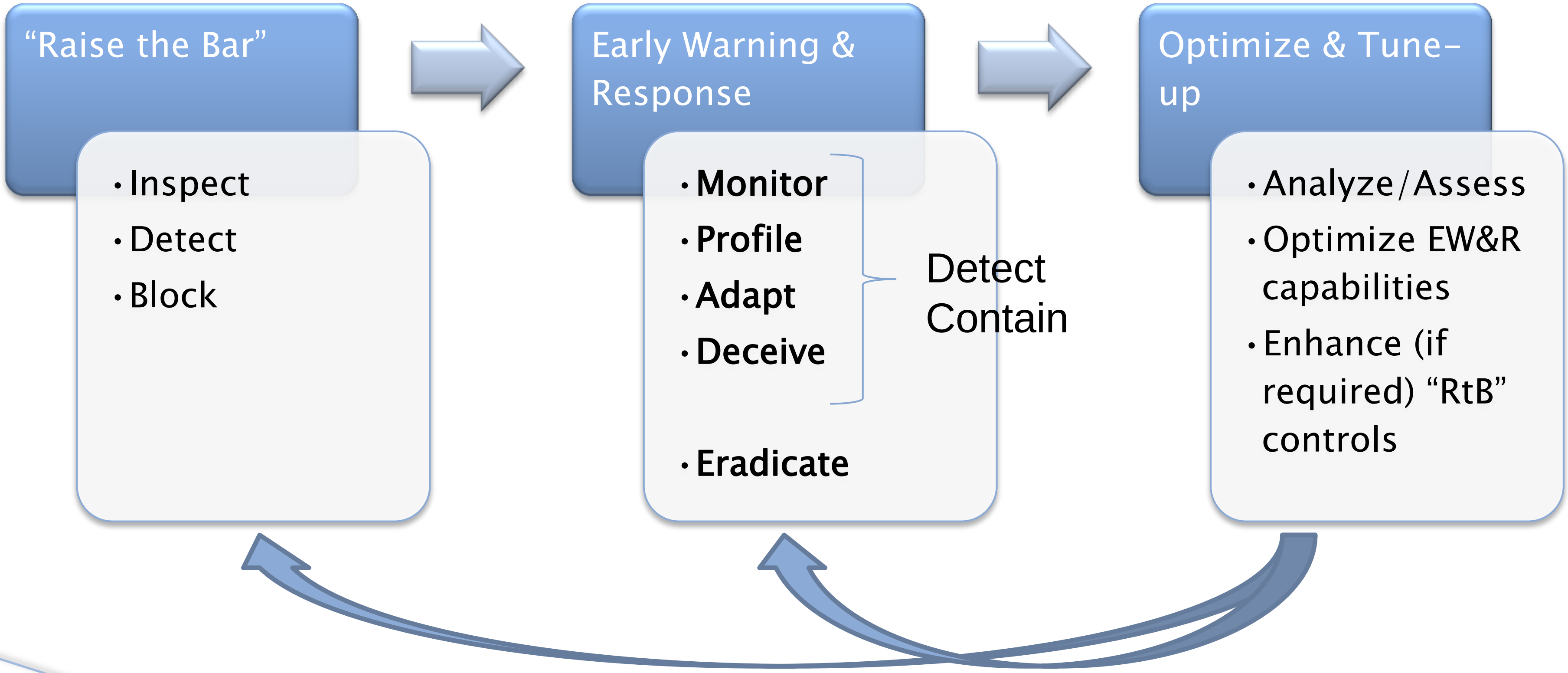
Redefining your Cyber Strategy

It is not Prevention… it is just "Raising the Bar"

Main Focus

Ongoing Process



"Raise the Bar"

- Inspect
- Detect
- Block

Early Warning & Response

- **Monitor**
- **Profile**
- **Adapt**
- **Deceive**

Detect
Contain

- **Eradicate**

Optimize & Tune–up

- Analyze/Assess
- Optimize EW&R capabilities
- Enhance (if required) "RtB" controls

"Strategy without tactics is the slowest route to victory. Tactics without strategy is the noise before defeat." - Sun Tzu, The Art of War

Questions & Answers

Answer#1 : NO, YOUR SIEM CANNOT DO THIS

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