The CERT Top 10 List for Winning the Battle Against Insider Threats

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Session Classification: Intermediate

Notices

Could this happen to you???

Actual insider incidents:

- *Night time security guard plants malware on organization's computers*
- *Programmer quits his job and takes source code back to his country of birth*
- *Group of employees work with outsiders to carry out lucrative fraud scheme*

These are only a few examples of the types of insider threats we are tying to prevent!!

Outline of the Presentation

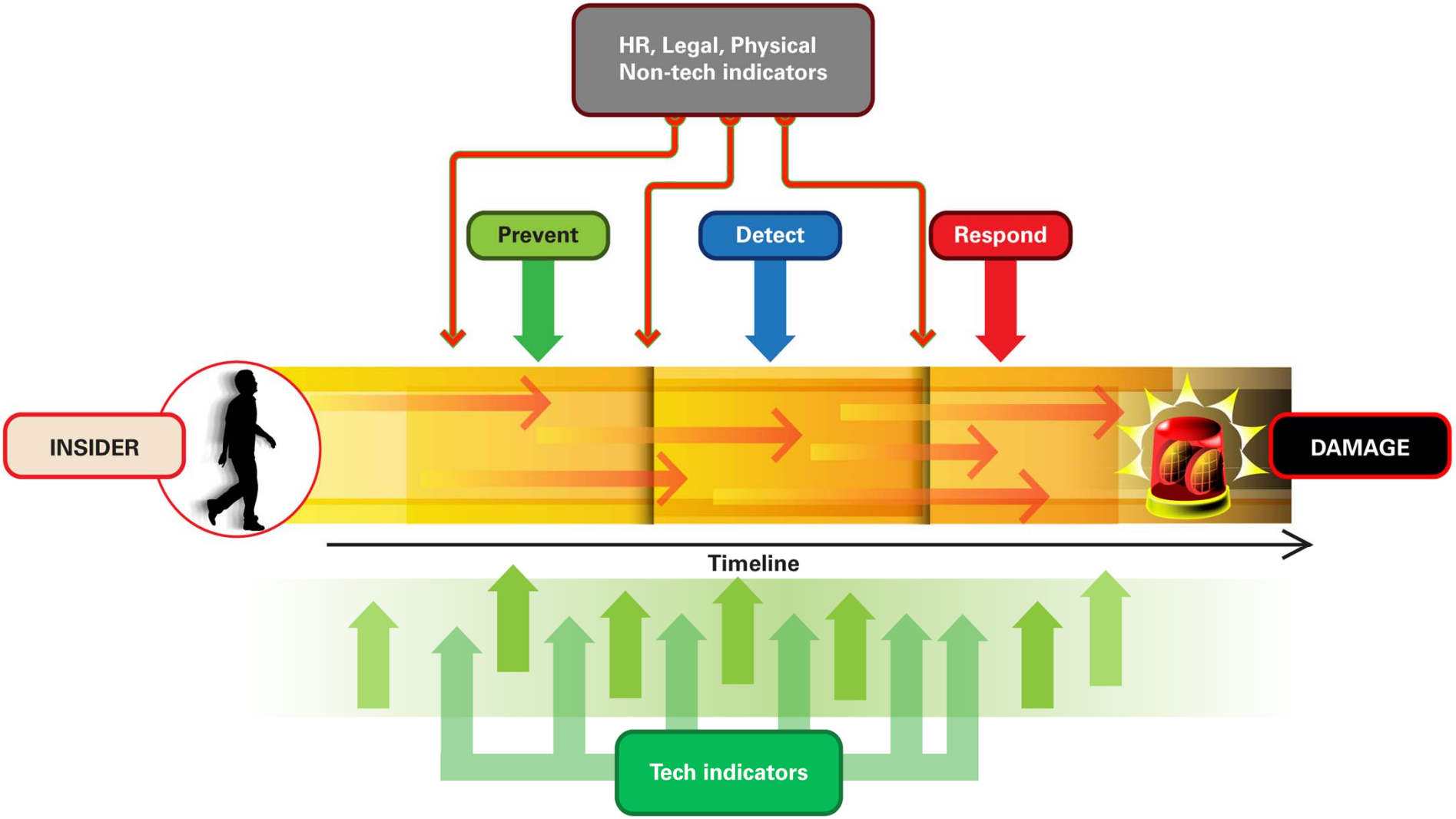
- Introduction
- Structure of this presentation
- Top 10 List
- Questions / Comments

What is the CERT Insider Threat Center?

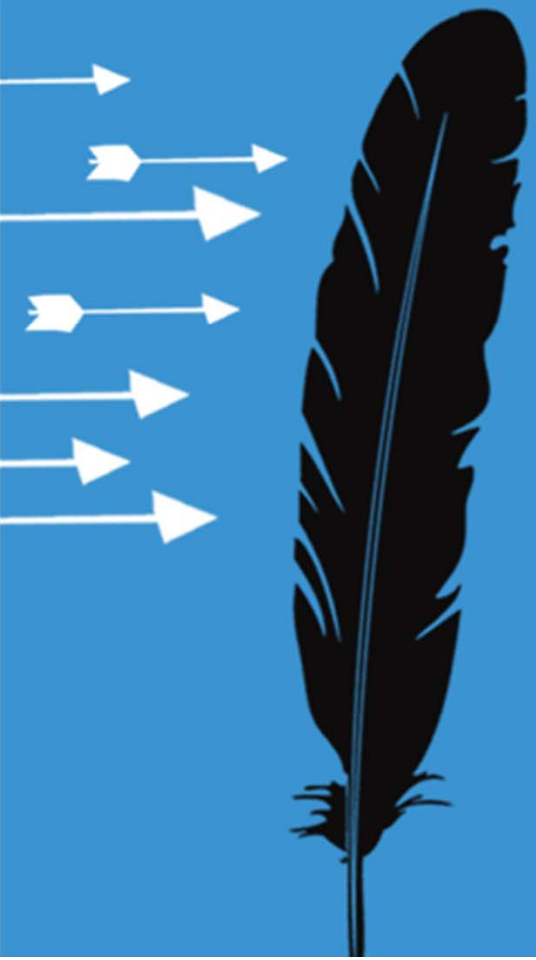
Center of insider threat expertise established in 2001

Our mission: ***The CERT Insider Threat Center conducts empirical research and analysis to develop & transition socio-technical solutions to combat insider cyber threats***

CERT Insider Threat Center Objective



Opportunities for prevention, detection, and response for an insider attack



Structure of the Presentation

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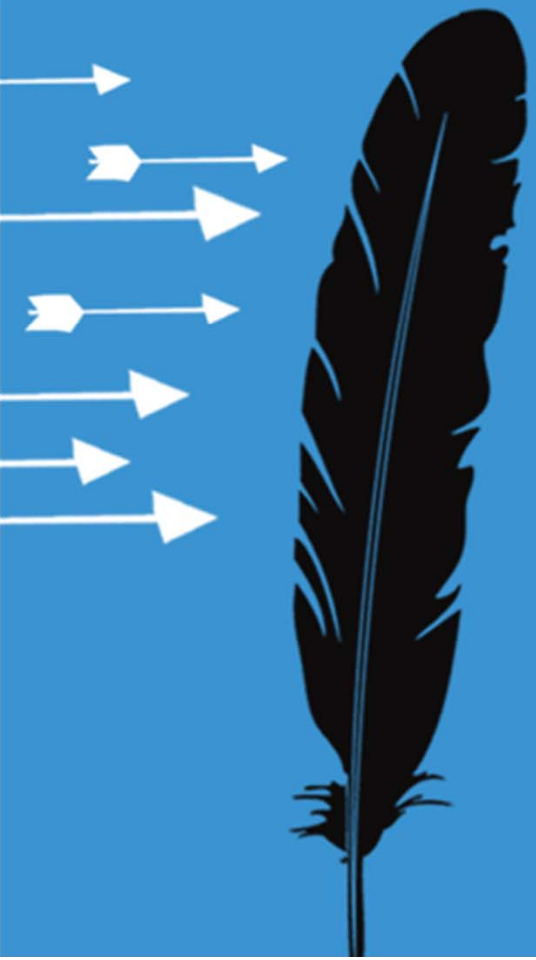
Compelling real case examples to reinforce why each item made the Top 10 list and ***WHY YOU SHOULD CARE!!***

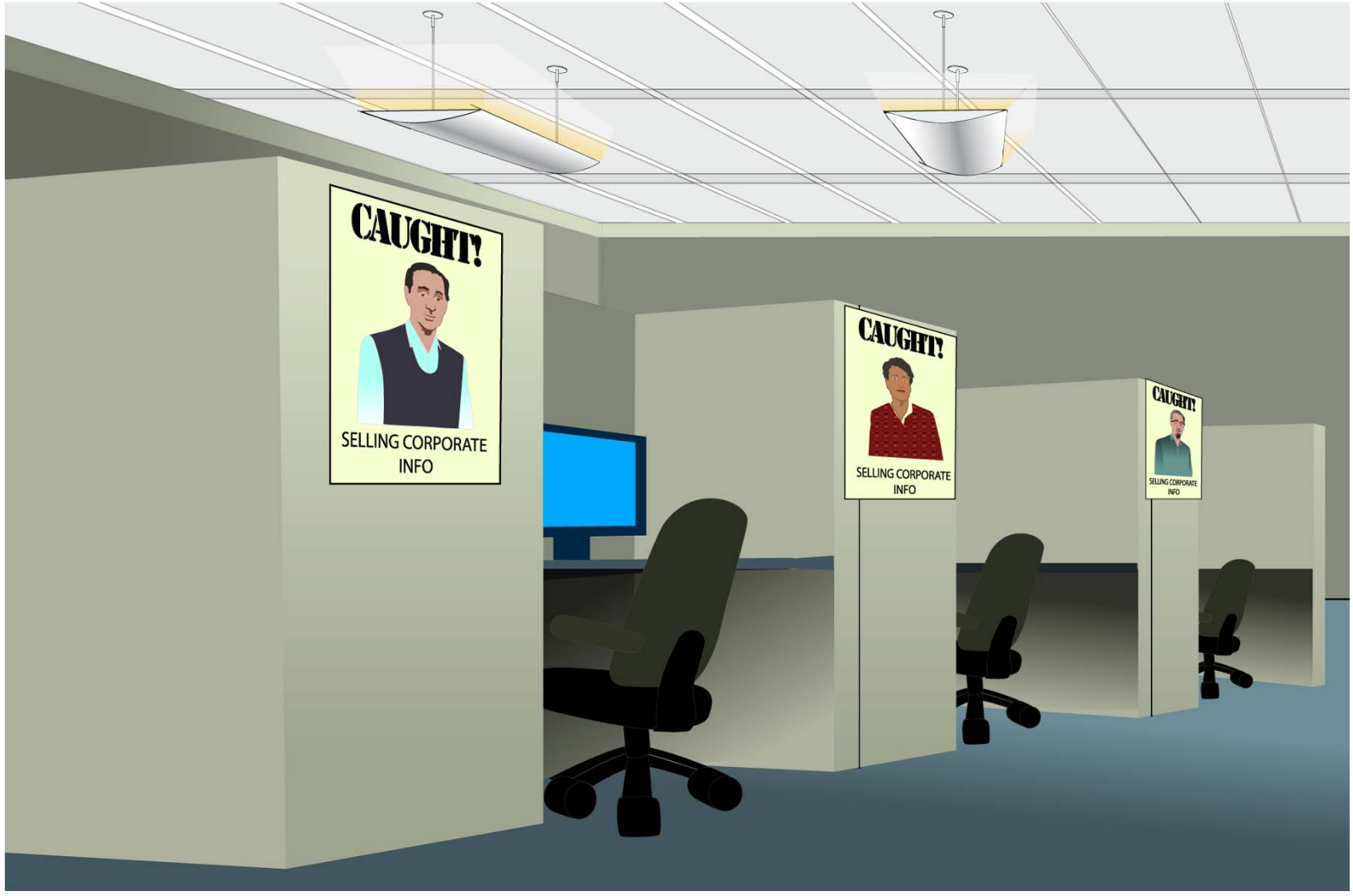
Explanation of each mitigation strategy

- What other organizations are doing
- Details you need to consider



Top 10 List….

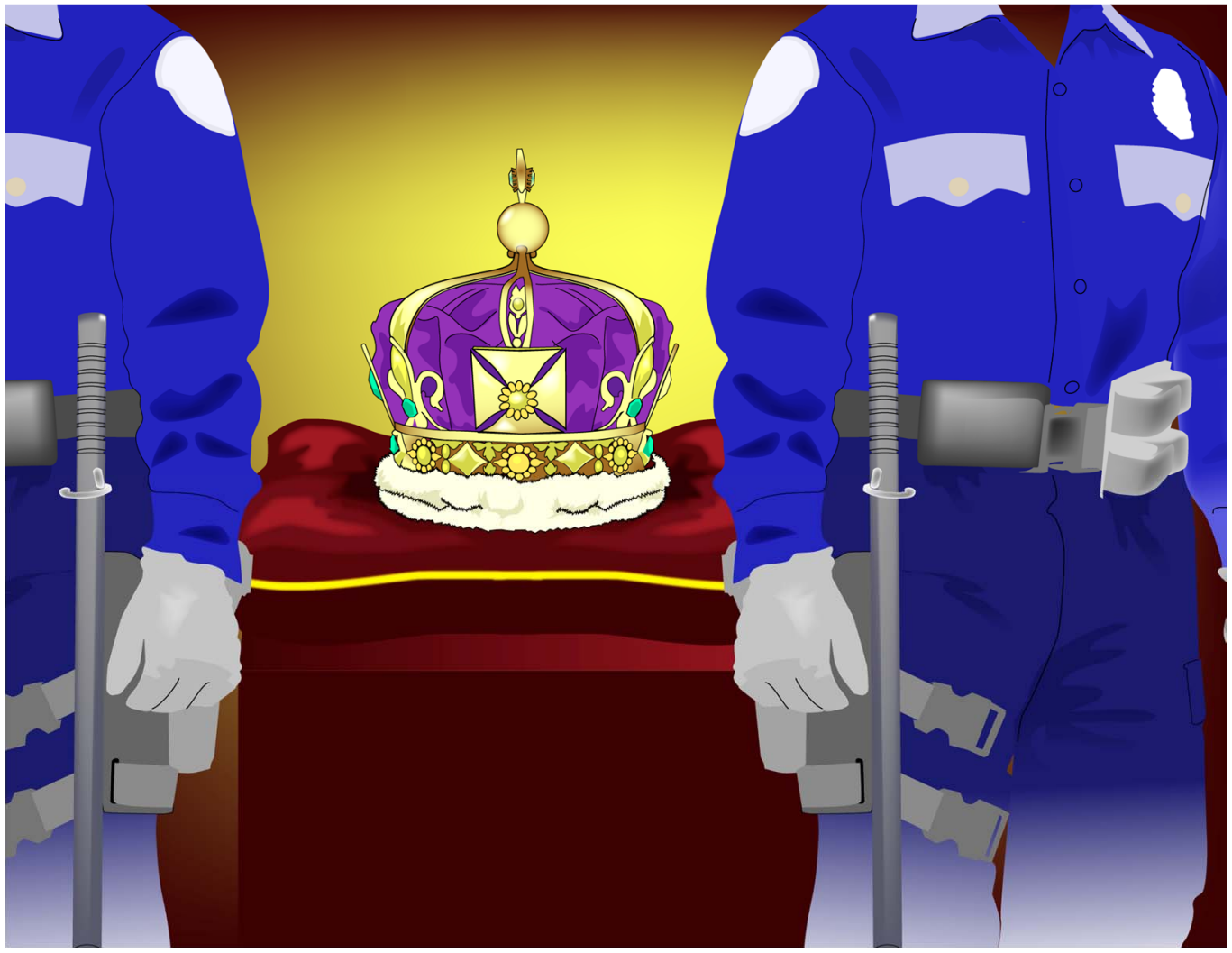
#10: Learn from past incidents



#10: Learn from past incidents

- Some organizations experience the same types of insider crimes more than once
- When you have an attack, implement controls to catch it next time
- Some organizations:
  - Create formal teams to examine past incidents and implement new controls

#9: Focus on protecting the crown jewels



#9: Focus on protecting the crown jewels

- One third of CERT's insider theft of IP cases involve a foreign government or organization
- What would happen if your IP was stolen and taken out of the country???
- Most insiders use authorized access to steal IP
  - But they don't always require the access!
- Some organizations:
  - Implement extra controls for THE most critical IP
  - Protect against "erosion of access controls"

#8: Use your current technologies differently

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- Some organizations
  - Create an insider threat team or train Security Operations Center (SOC) staff about insider threat
  - Use Intrusion Detection Systems (IDS) to examine data going out as well as in
  - Tailor use of tools to reduce information overload (Data Leakage Protection, host based controls, change controls)
  - Create signatures in Security Information and Event Management systems (SIEMs) / log correlation tools to detect suspicious insider activity
    - After-hours reconnaissance activity by privileged system users who are “on the HR radar”
    - Exfiltration via email within 30 days of resignation

#7: Mitigate threats from trusted business partners

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- Trusted Business Partners (TBPs) include
  - contractors
  - outsourced companies
- Some organizations:
  - Specify information security controls in contracts
  - Require the same controls for their TBPs as they require internally
  - Audit TBP policies and procedures
  - Require same policies and procedures for contractors as for employees

#6: Recognize concerning behaviors as a potential indicator

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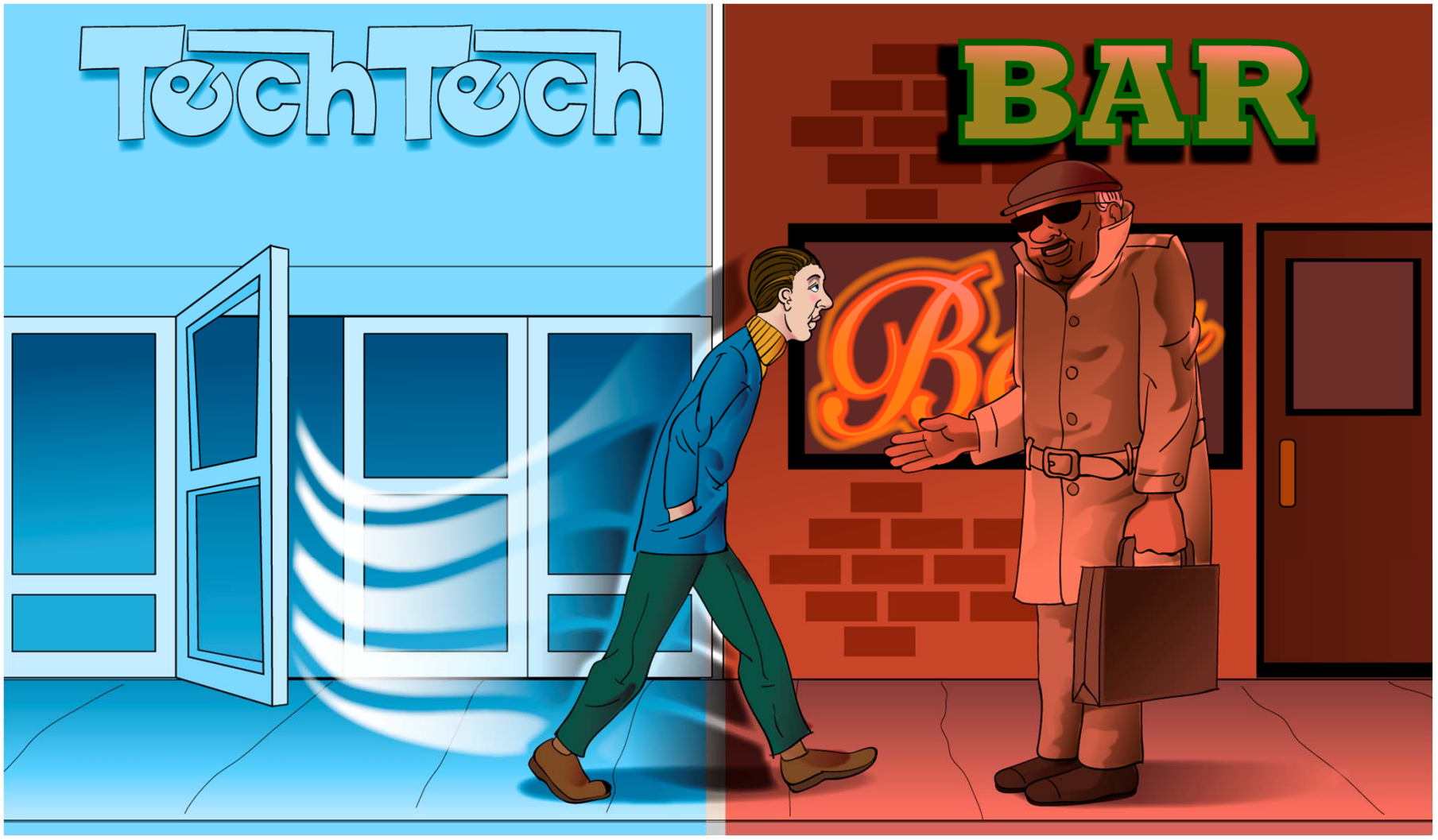
- Concerning behaviors are the 4th most common issue of concern in the CERT Insider Threat Database
- Negative employment issues are the 8th
- Most prevalent in insider IT sabotage and theft of IP
- Some organizations
  - Educate management staff on insider threat indicators
  - Communicate employees “on the HR radar” to security staff
  - Integrate cyber insider threat mitigation with their workplace violence program

#5: Educate employees regarding potential recruitment



#5: Educate employees regarding potential recruitment

- Recruitment is the 3rd most common issue of concern in the CERT Insider Threat Database
- Carefully consider: do you have any systems or data that an insider could be paid to steal or modify?
  - Financial, Personally Identifiable Information (PII), identity documents, utility bills, food stamps, credit histories ,…
- Some organizations:
  - Perform periodic background checks for existing employees

#4: Pay close attention at resignation / termination!

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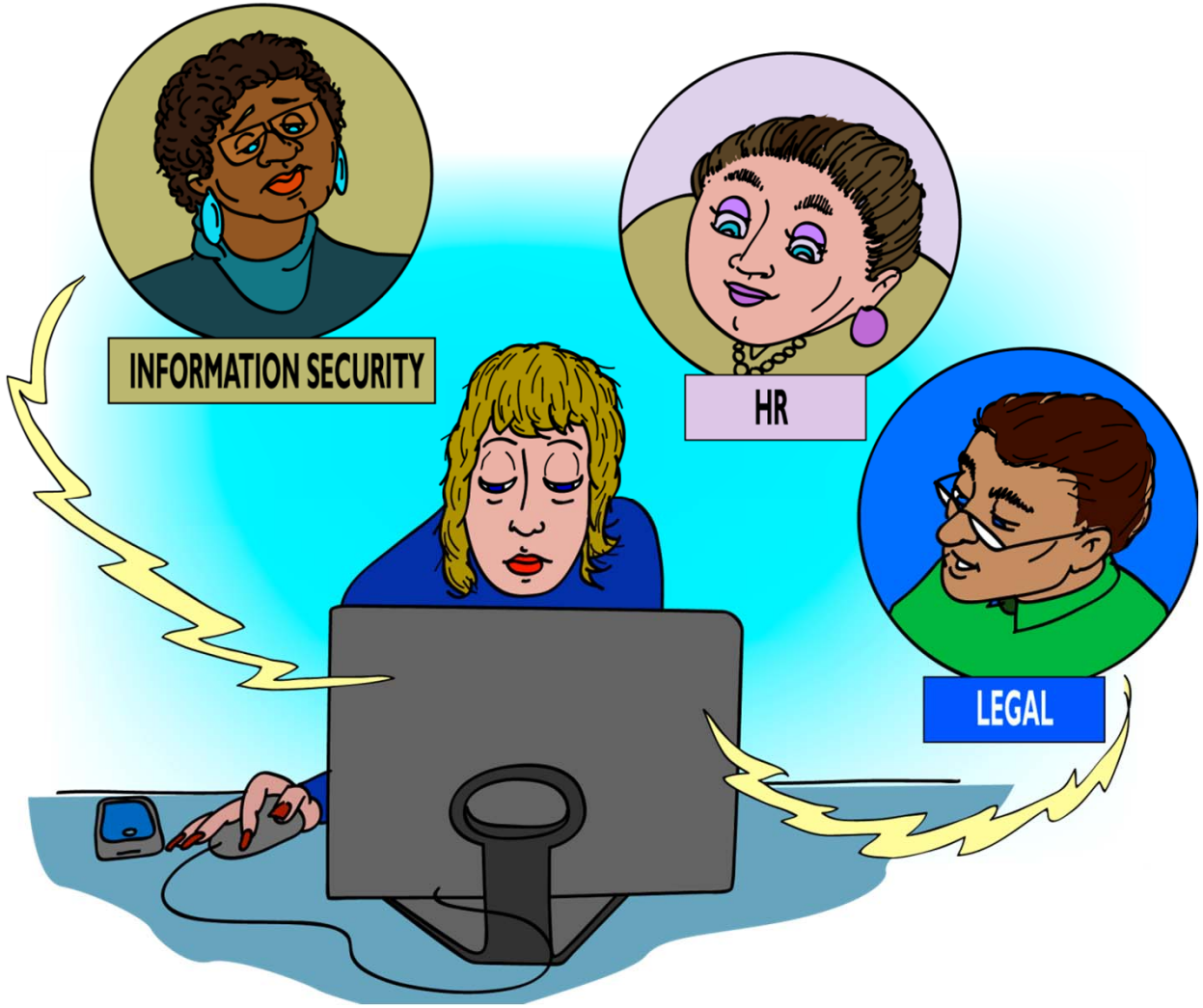
- Change in employment status is the TOP issue of concern in the CERT Insider Threat Database
- BUT… Typically not in fraud cases!
- Some organizations
  - Perform targeted employee monitoring
    - Low performing employees
    - Employees who will be laid off or terminated
  - Implement special controls for their most critical IP

#3: Address employee privacy issues with General Counsel



#3: Address employee privacy issues with General Counsel

- Employee privacy issues present a tricky legal issue
- Laws and regulations differ in private sector, government, and various critical infrastructure sectors
- Some organizations:
  - Have created and implemented insider threat policies and processes by working with Human Resources, General Counsel, Information Security / Information Technology, Security, and top management

#2: Work together across the organization

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- IT cannot solve this alone!
- Need communication across Management, Information Security / Information Technology, Security, Data Owners, Software Engineering, General Counsel, and Human Resources
- Some organizations:
  - Achieve this communication but only after significant suspicious activity warrants an investigation
  - Have achieved proactive communication between some of these organizational units

#1: Create an insider threat program NOW!

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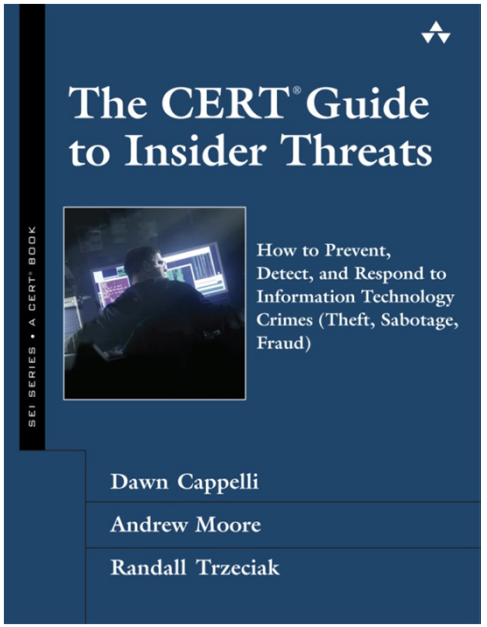
- In the first three months following this presentation you should:
  - Obtain buy-in from top management
  - Form an insider threat team
  - Create policies (approved by General Counsel)
  - Develop processes and implement controls
- Within six months you should:
  - Roll out and consistently enforce the policies
  - Regularly communicate across your organization

#1: Create an insider threat program NOW!

- Some organizations
  - Follow an enterprise-wide insider threat strategic plan which was created by C-level managers
  - Have designated a Director responsible for the insider threat program
  - Have made a significant investment in an insider threat program

CERT Resources

- Insider Threat Center website (http://www.cert.org/insider_threat/)
- *Common Sense Guide to Prevention and Detection of Insider Threats* (http://www.cert.org/archive/pdf/CSG-V3.pdf)
- Insider threat workshops (http://www.cert.org/insider_threat/docs/workshop.pdf)
- Insider threat assessments (http://www.cert.org/insider_threat/docs/assessment.pdf)
- New controls from CERT Insider Threat Lab (http://www.cert.org/insider_threat/controls/)
- Insider threat exercises
- The CERT® Guide to Insider Threats: How to Prevent, Detect, and Respond to Information Technology Crimes (Theft, Sabotage, Fraud) (SEI Series in Software Engineering) by Dawn M. Cappelli, Andrew P. Moore and Randall F. Trzeciak



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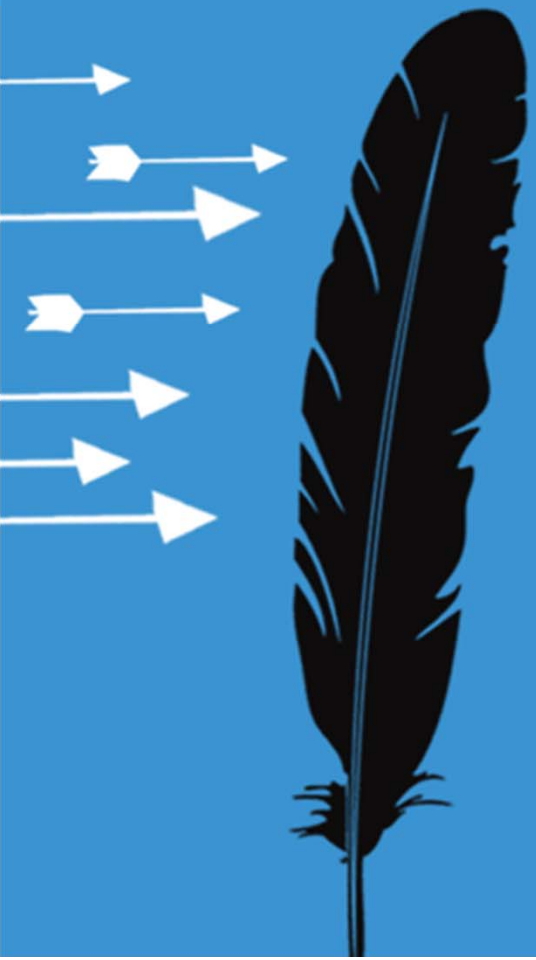
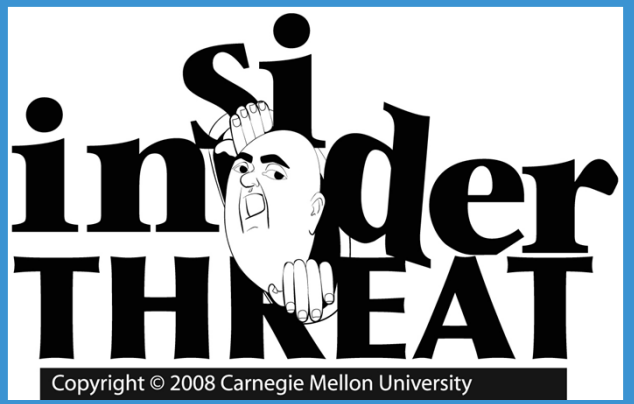
10. Learn from past incidents
9. Focus on protecting the crown jewels
8. Use your current technologies differently
7. Mitigate threats from trusted business partners
6. Recognize concerning behaviors as a potential indicator
5. Educate employees regarding potential recruitment
4. Pay close attention at resignation / termination!
3. Address employee privacy issues with General Counsel
2. Work together across the organization
1. Create an insider threat program NOW!



Questions / Comments



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http://www.cert.org/insider_threat/