From Bricks and Mortar to Bits and Bytes: A History and Future of Insider Threat

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Agenda

- Common behaviors and triggers for insider events
- Evolution of the workplace and insider threats
  - Bricks and mortar workplace
  - Transitional workplace
  - Bits and bytes workplace
- Implications for today’s insider programs
- Future uncertainties and their implications
- Applying this knowledge to your organization
Defining Insider Threat

Insider Threat: A person who has the potential to harm an organization for which they have inside knowledge or access.

An insider threat can have a negative impact on any aspect of an organization, including employee and/or public safety, reputation, operations, finances, and mission continuity.
Behavior is Constant…

<table>
<thead>
<tr>
<th>Characteristics of Employees at Risk</th>
<th>If Needs Are Not Met, Employee Becomes…</th>
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<tbody>
<tr>
<td>Not impulsive</td>
<td>Rebellious</td>
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<tr>
<td>No single motive</td>
<td>Passive aggressive</td>
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<tr>
<td>History of managing crises ineffectively</td>
<td>Destructive</td>
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<tr>
<td>Pattern of frustration, disappointment</td>
<td>Complacent</td>
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<tr>
<td>Seeks validation</td>
<td>Self perceived value exceeds performance</td>
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<tr>
<td>Aggrandized view of abilities/ achievements</td>
<td>Intolerant of criticism</td>
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<td>Strong sense of entitlement</td>
<td>Unable to assume responsibility for actions</td>
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<tr>
<td>Views self above the rules</td>
<td>Blaming of others</td>
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<tr>
<td>Seeks immediate gratification/validation</td>
<td>Minimizing of their mistakes or faults</td>
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…But Context Changes

Over the past 30 years, insiders have shifted from removing paper files to exfiltrating digital data.
The Bricks and Mortar Workplace

1985

John Walker (Navy)¹
- **Access**: Navy Chief Warrant Officer and communications specialist
- **Rationale**: Validation; $500 - $1,000 a week
- **Exploit**: Helped the Soviet Union decipher more than one million encrypted messages

Steven Louis Davis (Gillette)²
- **Access**: Lead Process Control Engineer with access to the development of a new system
- **Rationale**: Anger at supervisor; removed from position as lead developer
- **Exploit**: Sent confidential engineering drawings to several competitors

Era Characteristics
- **Attributes**: Physical actions are observable, which leads to external constraints
- **Behavior**: Person-to-person handoffs of hard copy information
- **Insider Programs**: Counterintelligence focused and reactive
The Transitional Workplace

Era Characteristics

- **Attributes**: Unobservable virtual actions avoid external constraints – leaving only internal constraints
- **Behavior**: Download data using removable media
- **Insider Programs**: Use physical, behavioral, and some technology indicators

Brian Regan (NRO)

- **Access**: Signals intelligence specialist with access to Inelink
- **Rationale**: Validation; debt
- **Exploit**: Stole 15,000 pages, CD-ROMs, videos

Greg Chung (Boeing)

- **Access**: Stress analyst with a high security clearance and access to technical blueprints and designs
- **Rationale**: Allegiance; “contribute to the motherland”
- **Exploit**: Stole ‘hundreds of thousands of documents’ to bring to China under the guise of giving lectures
The Bits and Bytes Workplace

Era Characteristics

- **Attributes**: Tracking of virtual actions create external constraints
- **Behavior**: Machine to machine file transfer to exfiltrate data
- **Insider Programs**: Correlate virtual and non-virtual behavior

Yuan Li (Sanofi Aventis)$^5$
- **Access**: Research chemist with access to secret R&D work and lab test results
- **Rationale**: Greed/allegiance; sold secrets to a Chinese chemical company she had stake in
- **Exploit**: Downloaded information to her home computer from internal databases to sell

Edward Snowden (NSA)$^6$
- **Access**: Network administrator with a high level of access to classified information
- **Rationale**: Validation; disagreement with US surveillance and privacy policies
- **Exploit**: Leaked classified information to the media, starting in May 2013
Today’s Evolving Insider Threat Program

Insider Incident

Organization Continuously Identifies New Potential Risk Indicators (PRI)

Complacent Insiders Exploited

Organizational Policies/Procedures

Organization Increases Protections

External Actors Look for New Weaknesses
An Uncertain Future

Changes in technology and privacy protections could alter the insider dynamic
Nearsighted/farsighted

Scenario Characteristics

- **Attributes**: Lots of data solutions, all of which are imperfect, in a privacy protected world

- **Threat**: Malicious insiders become more common and destructive while external actors actively recruit complacent insiders

- **Strategies**: Must find new ways to baseline risky behaviors and define new processes to carefully adhere to compliance guidelines
Selective Views

Scenario Characteristics

- **Attributes**: Technology gets much more powerful, but is constrained by privacy protections
- **Threat**: Limited data collection creates opportunities for complacent and malicious insiders
- **Strategies**: Organizations leverage advanced technical tools to best utilize the data permitted for collection, invest in training and enhanced technical controls
Unreconciled Perspectives

Scenario Characteristics

- **Attributes:** Data solutions remain highly imperfect and dispersed while privacy protections diminish

- **Threat:** Malicious insiders become a more significant threat than complacent insiders who can be monitored, though ineffectually

- **Strategies:** Organizations increase investment in manpower to monitor disparate tools and training to curb complacent insiders
20/20 Vision

Scenario Characteristics

- **Attributes:** Real-time insider threat mitigation capabilities become available and operate at scale
- **Threat:** Quick identification of malicious insiders shifts the focus to external actors who recruit complacent insiders
- **Strategies:** Significant insider technology investments accompanied by process changes to improve ROI
Applying this Knowledge to Protect your Organization

- Identify your critical assets
- Determine your “risk appetite” and “risk tolerance”
- Catalog potential risk indicators in your organizational data
- Understand organization’s culture and how it can be targeted
- Continually evaluate program effectiveness to meet evolving threats
Want More Information?

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**Sources**