CYBERSECURITY INITIATIVE WITH CISTAR

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CHEMICAL ENGINEERING/ COMPUTER AND INFORMATION TECHNOLOGY
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Agenda

Cybersecurity Measurement Adapted for Cybersecurity Initiative with CISTAR

- Introduction
- Importance of Cybersecurity
- Vulnerability Matrix
- CISTAR Cybersecurity Scorecard
- Questions

Special recognition: This work is based on the graduate student efforts of Dr. Jim Lerums, Katie Reichart and Marine Corps Captain Braiden Frantz

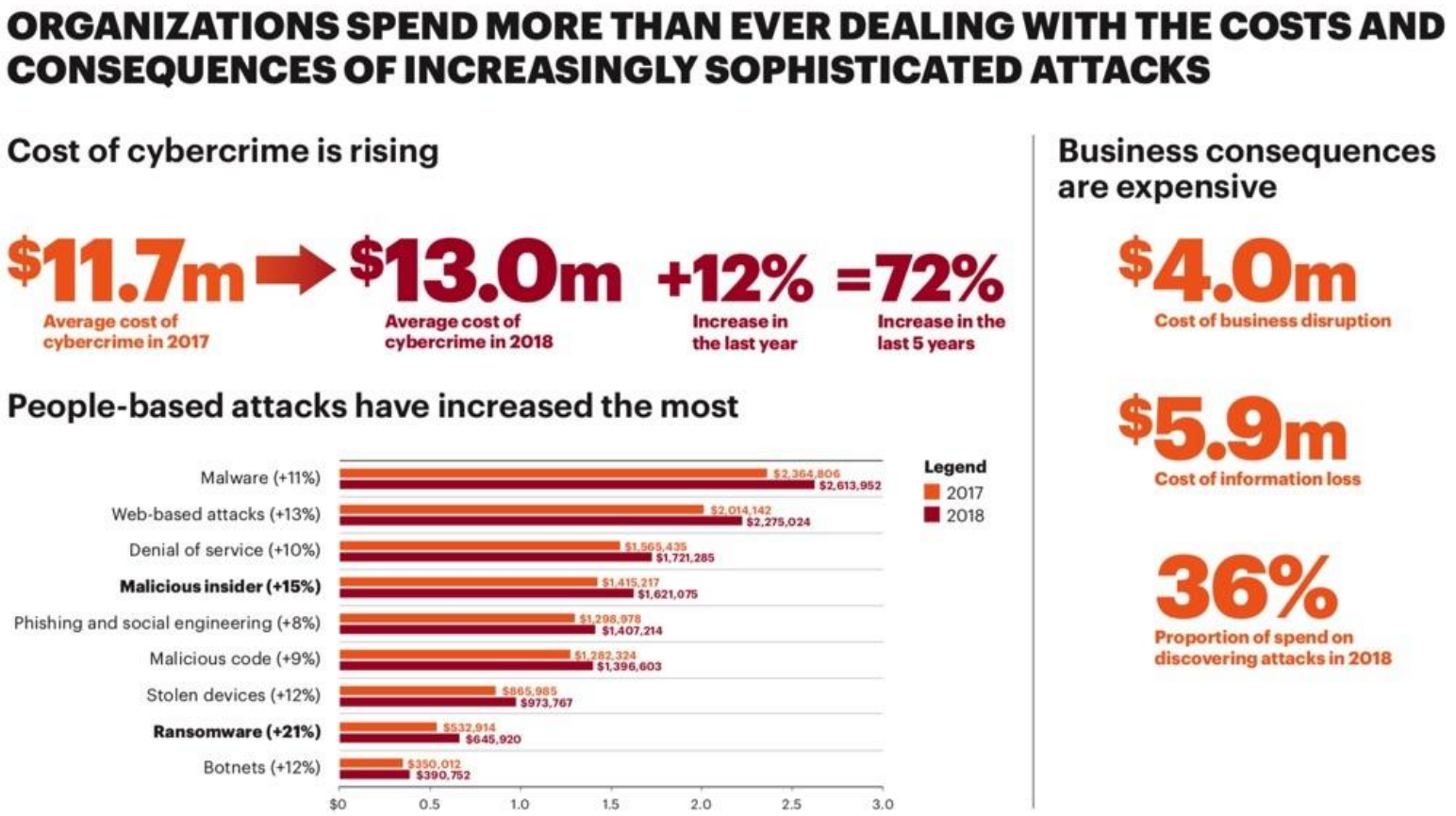
Introduction

Cybersecurity Trends

United States is leading cyber criminal target:

- Targeted attacks are on the rise (Symantec, 2018)
  - 61% of 2017 breached businesses < 1,000 employees
  - IoT attacks up 600% from 2016 to 2017
- Steady increase in cybercrime cost (Ponemon, 2019)
  - Business disruption, information loss, revenue loss, equipment damage
  - United States had the highest annual average cost of cybercrime at $27.4 million
    - Energy averages $13.8 million
  - Cost increased 29% from 2017 to 2018

Importance

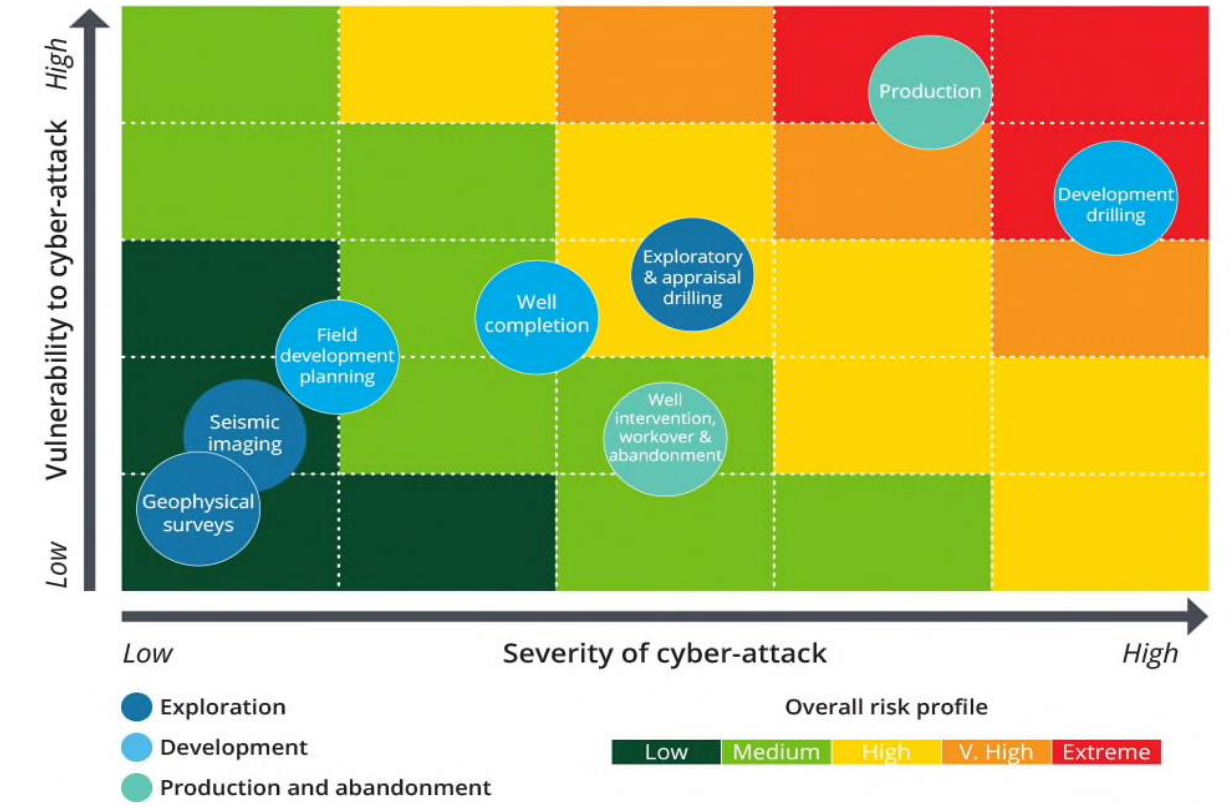


Source: Accenture, 2019

Upstream Stages and Vulnerability

Cyber Vulnerability/Severity Matrix

- Exploration: Closed data systems = Low vulnerability
- Development: Real-time operation centers & monitoring = High vulnerability
- Production and abandonment: Legacy systems & lack of monitoring tools = High vulnerability



Note: Refer to the appendix for further details.

Source: Deloitte analysis.

Deloitte University Press | dupress.deloitte.com

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Cybersecurity Scorecard and Development Process

1. CISTAR Focus

- Measure current cybersecurity standards used by petroleum industry
- Developed 27 questions tailored to the petroleum companies
- Questions based upon National Institute of Standards and Technology (NIST) guidelines, aspects or concerns.
- Policy related to CISTAR process work

2. Identify Demographic Similarities

- Seeking industry specifics
  - Wells and facilities of various sizes
  - Companies have varying cybersecurity standards in place
  - HAZOP & LOPA relate to cybersecurity assessment and defense in depth

3. Develop Partnerships

- Next steps
  - Collect data via scorecard
  - Review current operating systems for control methods
  - Identify cybersecurity gaps
  - Share findings with CISTAR staff

Next Steps

Cybersecurity Scorecard

- Scorecard complete
  - Distribution via Qualtrics survey
  - Identification of cybersecurity shortfalls
  - Complete data collection late summer 2019
  - Provide findings
    - Develop short and long-term cybersecurity improvements
  - Share cybersecurity practices used between organizations
  - Identify potential cybersecurity investment areas
    - Promote proactive mindset
- Expand CISTAR partnership for follow-on data collection

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THANK YOU

Questions/Discussion

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