Demystifying Cyber Insurance

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DEFINING AND MEASURING RISK

Risk = Impact x Probability

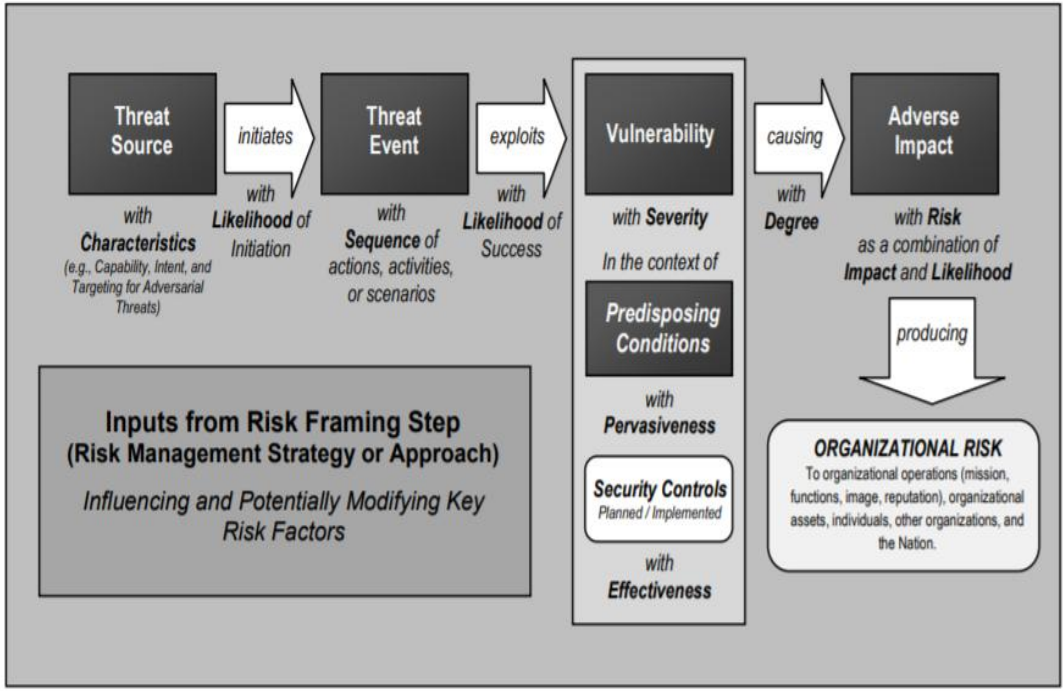
Risk = Impact x Probability

Quantitative Risk Assessment

- SLE and ALE
  - SLE = Asset Value x Exposure Factor
  - ALE = SLE x ARO (x uncertainty)

Qualitative Risk Assessment

- Threats and Vulnerabilities
  - FIPS 199
  - NIST SP 800 – 30: Guide for Conducting Risk Assessments



Measuring Maturity

Bayes Theory or Bayesian Statistics	Measures the probability of cause and effect
Confidence Interval	Probability Distribution
Loss Exceedance Curve / Exceedance Probability Curve	Represent the probability of exceeding different loss levels
Monte Carlo Simulation	Statistical technique used to understand impact of risk and uncertainty in prediction models.

Confidence Interval

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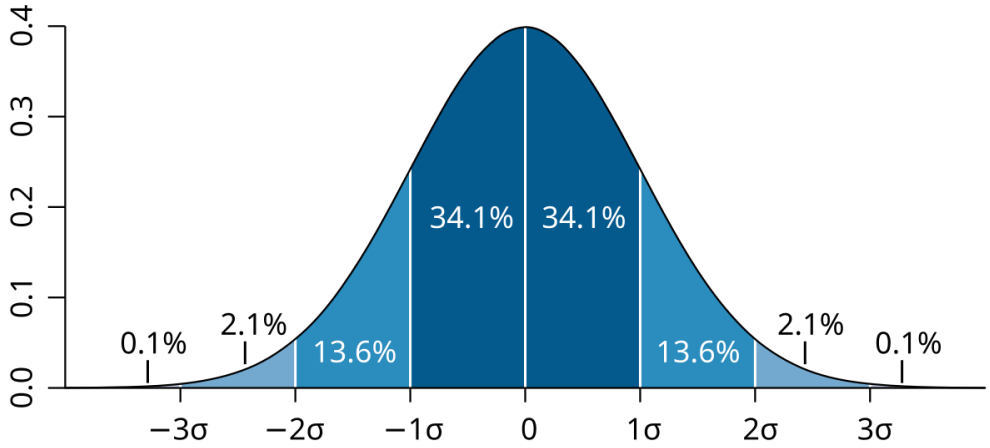
Standard Deviation



Log Normal

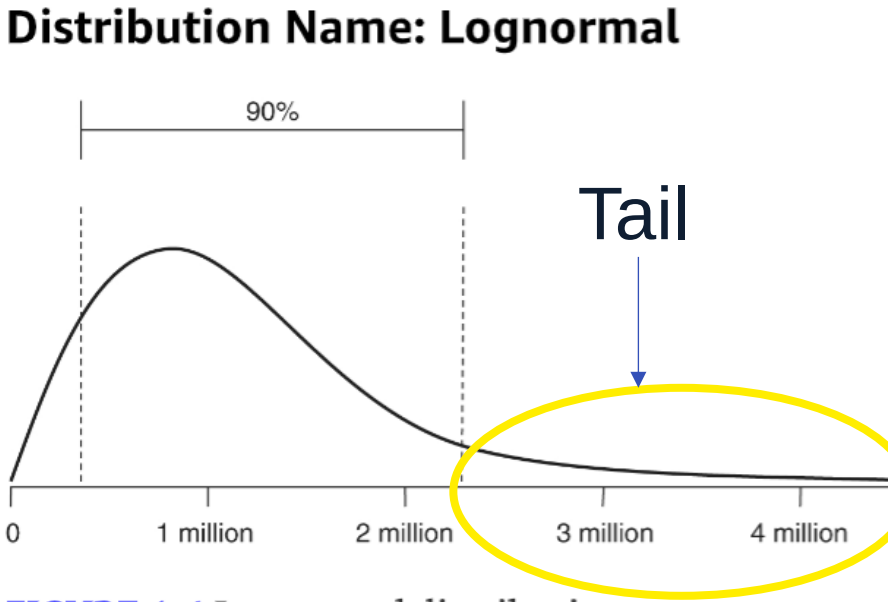
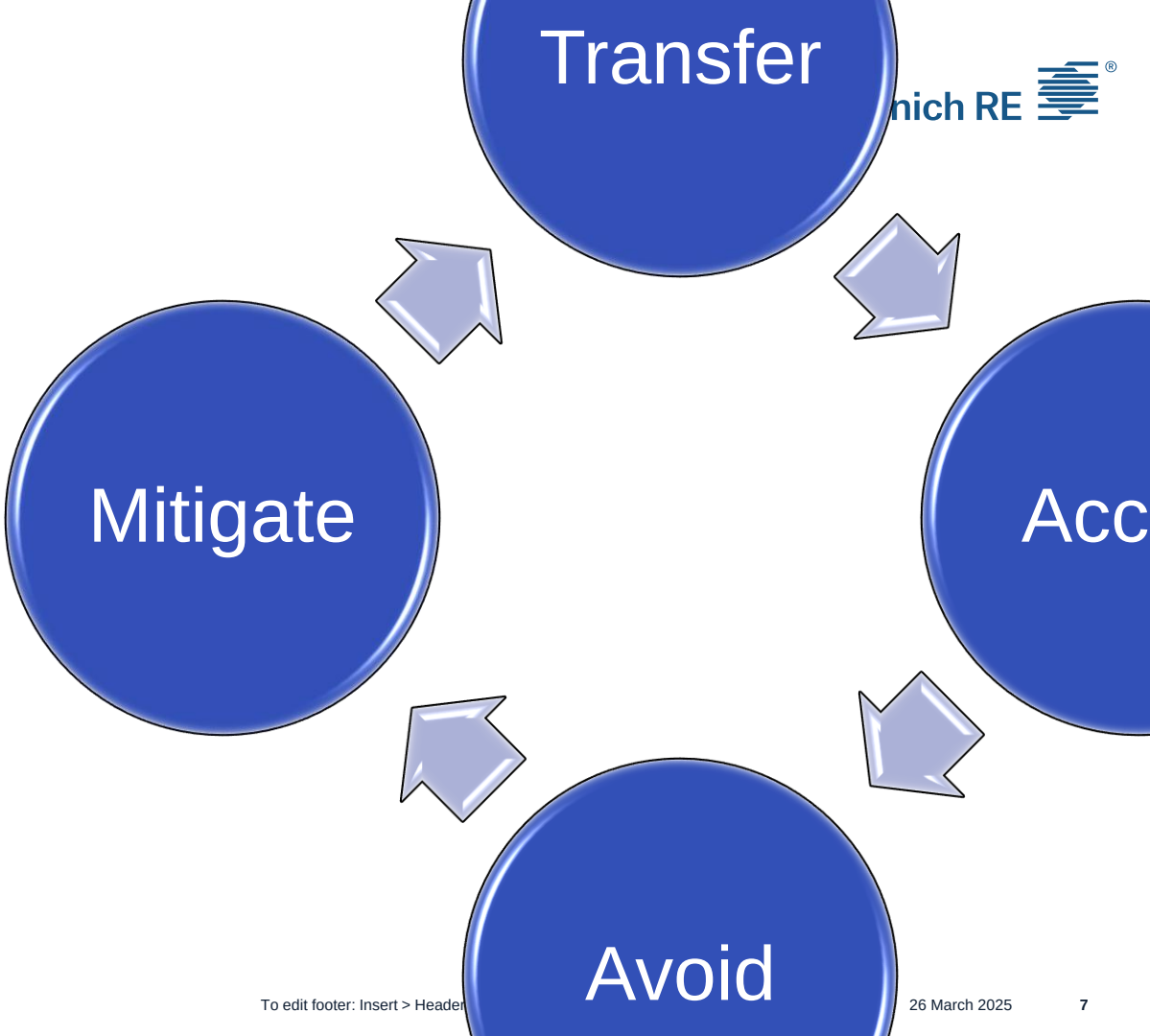
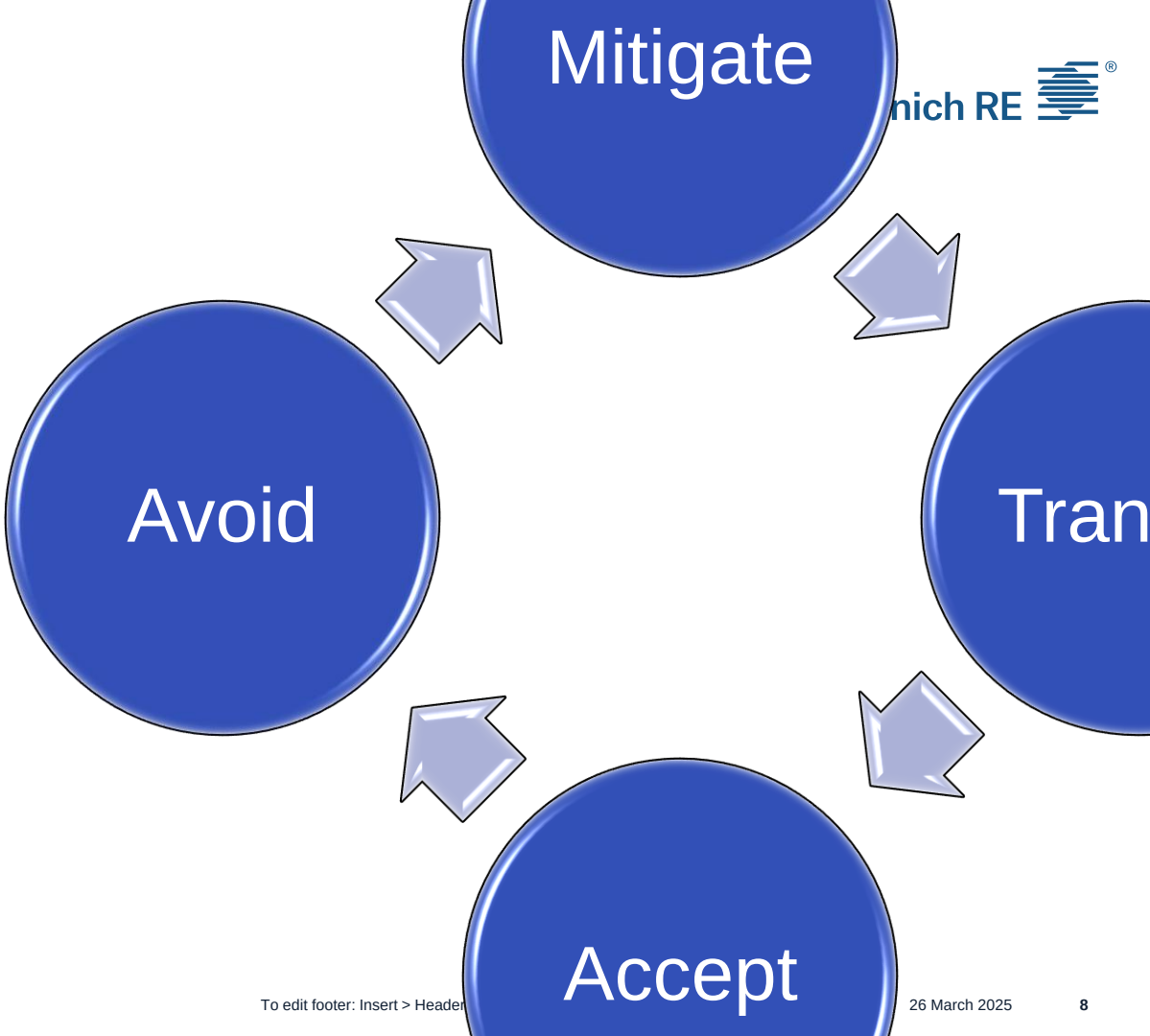


FIGURE A.4 Lognormal distribution

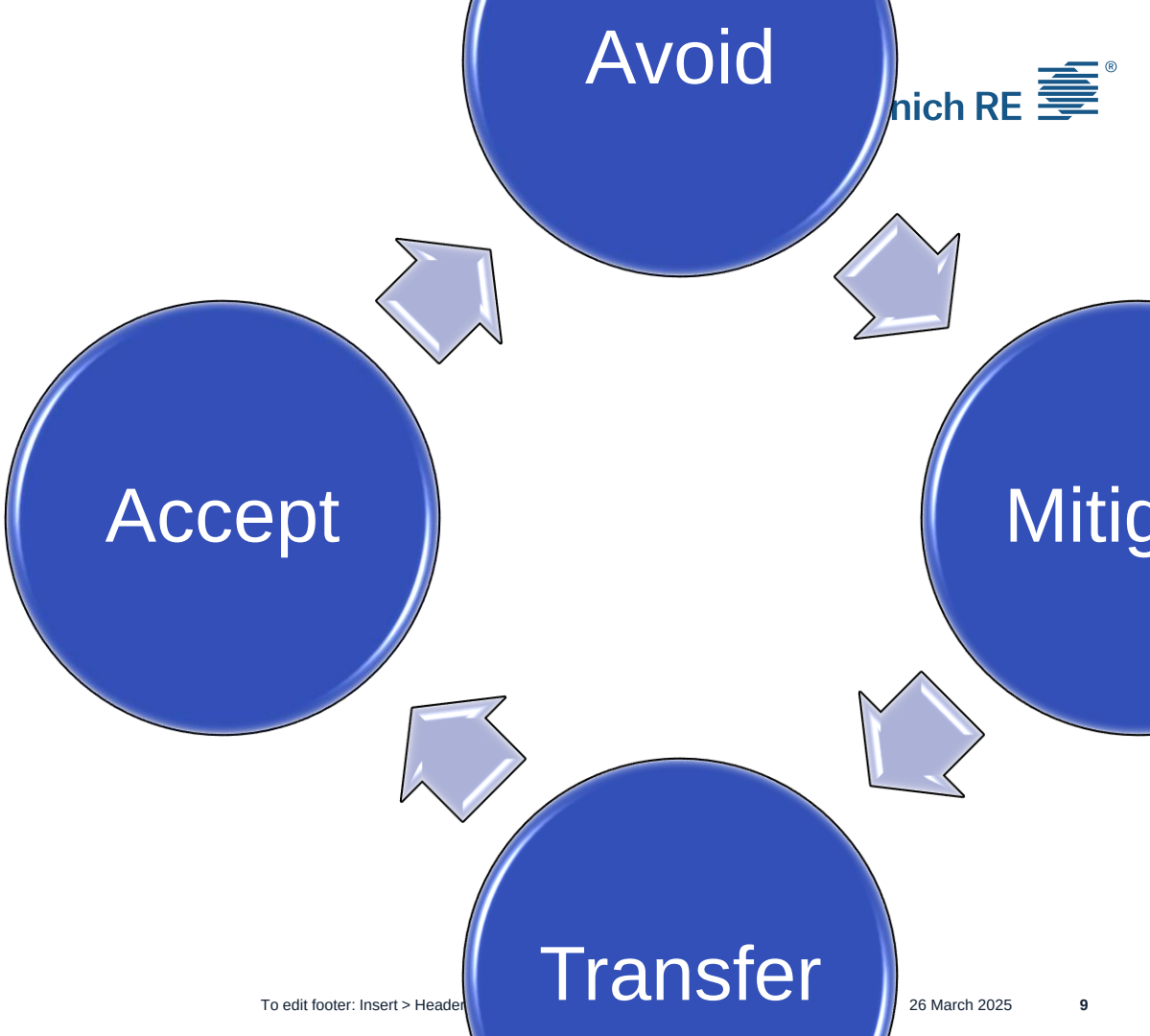
4 Ways to Address Risk



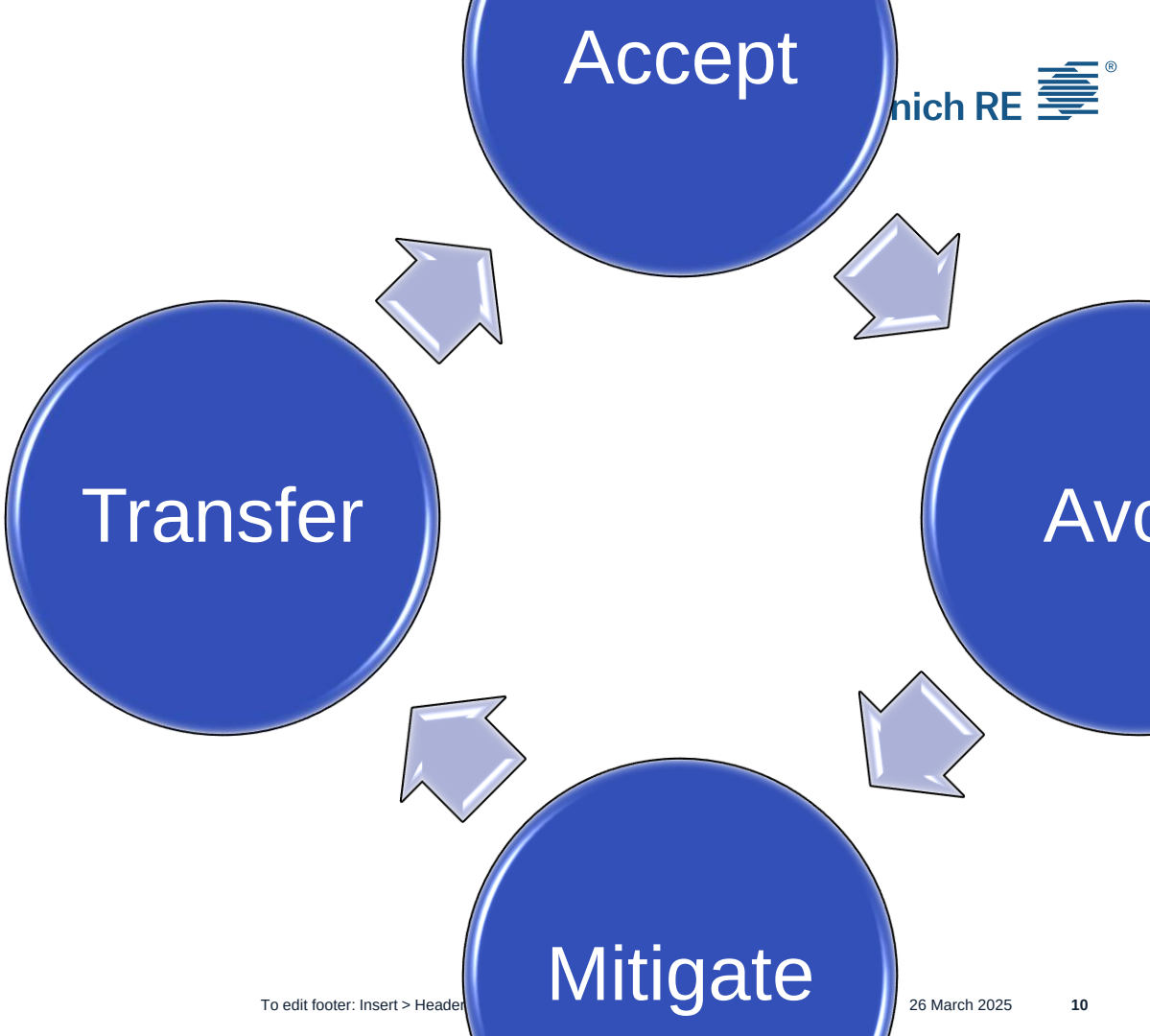
4 Ways to Address Risk



4 Ways to Address Risk

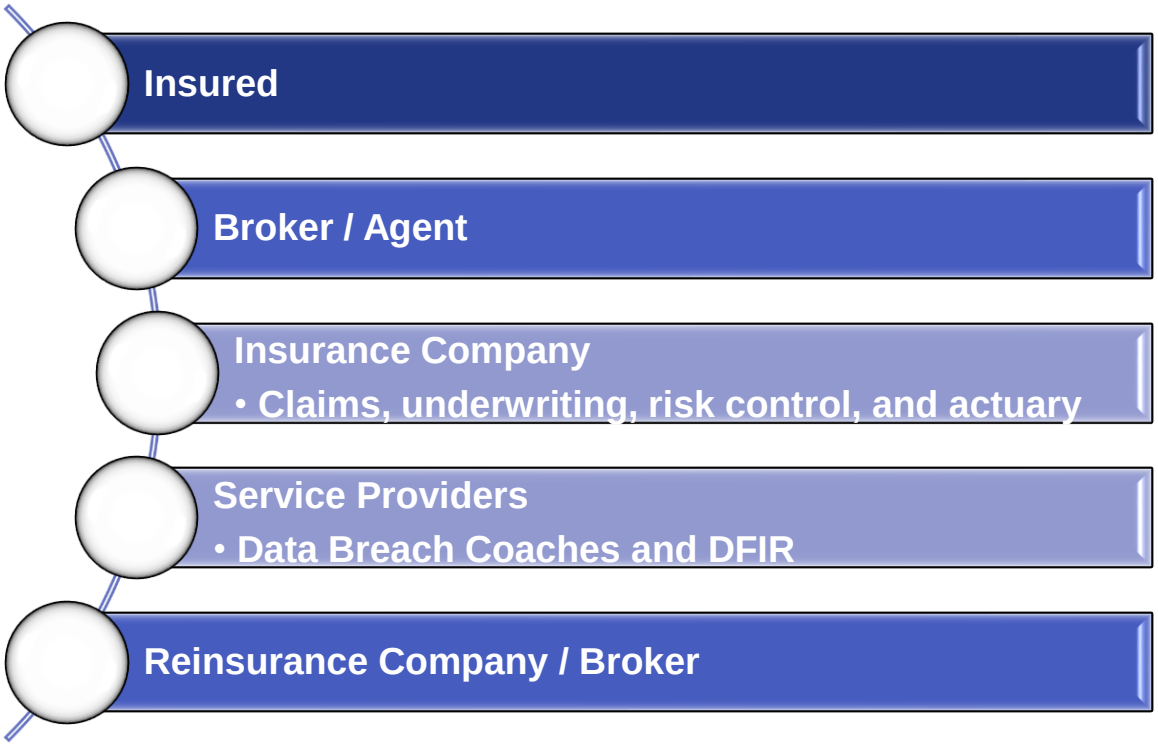


4 Ways to Address Risk

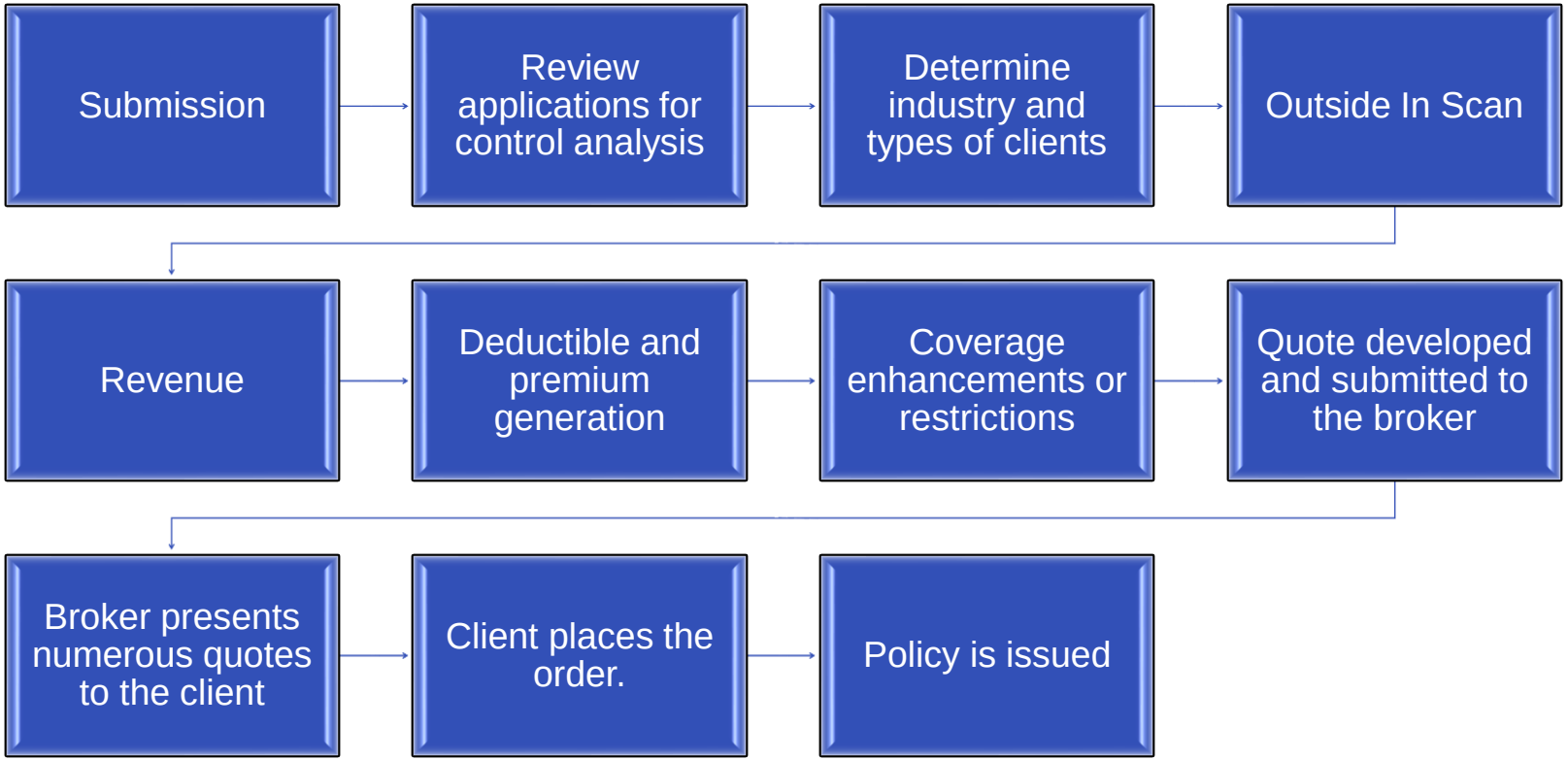



Cyber
Insurance

Key Cyber Insurance Stakeholders



Underwriting Process



Outside In Underwriting

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Foot printing the organization: Attack Surface analytics

- Organization hierarchy
- Firmographics
  - Location
  - Revenue
  - Indusrty
- Domains, systems, egress points, cloud assets

Evidence Collection (inexactly called scanning)

- Traditional port scanning with service and vulnerability discovery
- Pixel Scanning
- Profiling of endpoints – OS, software, versions / patching
- Evolution of hygiene – asset management, hardening, DNS
- Application security – web and mobile
- User Behavior

Exposure vs Performance

- Analyze exposure in a single point in time
- Analyze Performance over time
- Continuous Monitoring
- Continuous Underwriting???

Feedback Loop

Cyber Insurance Coverage

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Coverage responds to a **security failure** of your computer system or loss of **confidential data** in **your** care, custody or control

Security & Data Breach Expenses

Day 1 response:

- Digital Forensic and Incident Response
- Breach coach and Legal consultation
- Public relations
- Regulatory compliance, including notification and post-event monitoring
- Call center services

1st Party Loss

- Business Interruption – lost income due to a cyber incident, subject to a waiting period
- Data Recovery – costs to replace, repair, restore or recover data assets
- Extortion Threats – monetary demands to avoid network disruption, disclosure of data or damage to data

3rd Party Liability

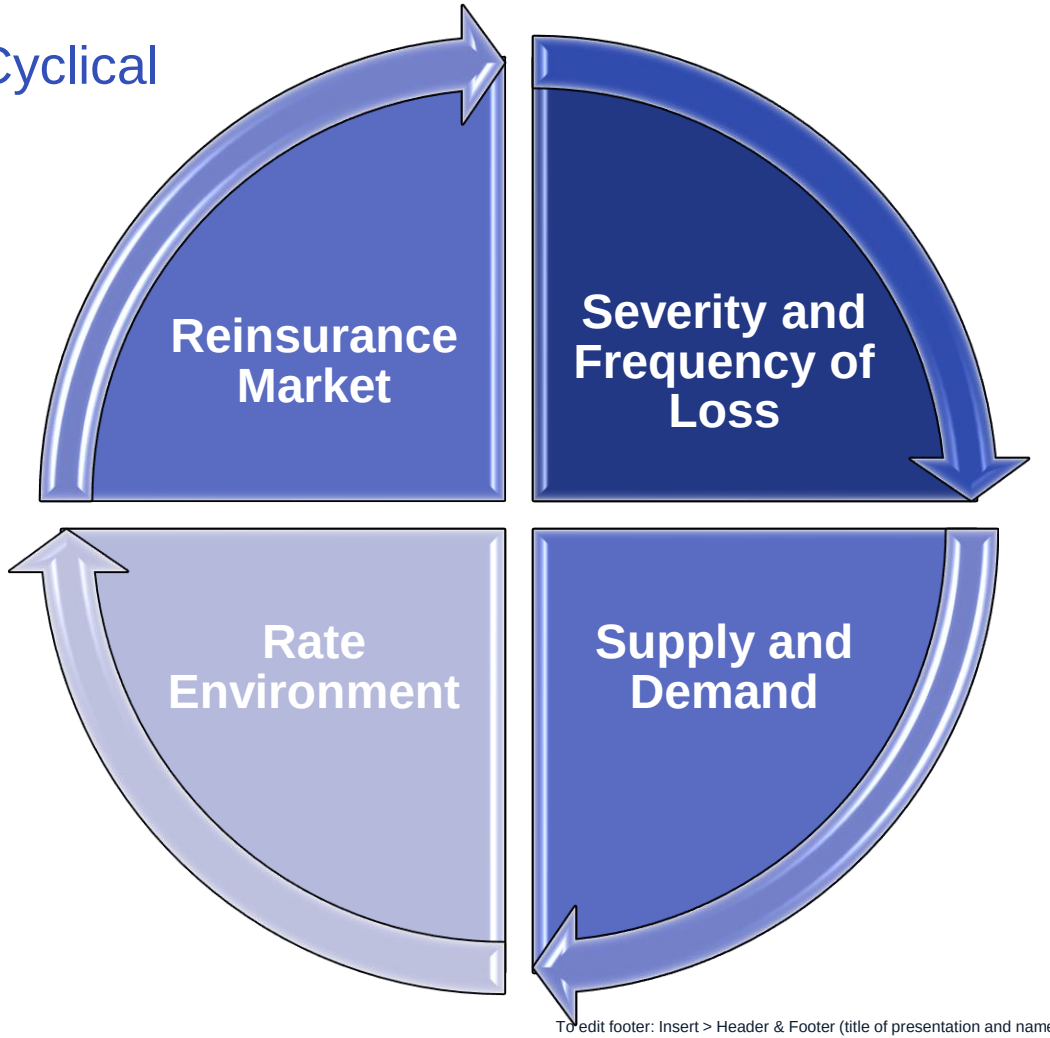
- **Claims** stemming from disclosure of, or failure to protect:
  - Personally Identifiable Information (PII)
  - Payment Card Information (PCI)
  - Private Health Information (PHI)
  - Corporate Confidential Information (CCI)
- Regulatory or PCI fines and penalties
- Media-related **claims** alleging personal/ advertising injury

Cyber Risk Outlook
Key Cyber Trends

- **Cyber War – NotPetya – Chubb vs Merk Decision**
- Increasing exposure to digital attack and disruption (increase in IoT, commercial endpoints)
- **Growth of XaaS and reliance on internet for revenue**
- Increasing propensity for cyber-induced business interruption (IT and OT more integrated)
- **Attacks on digital supply chains (manufacturing, energy, IT, industrial risks)**
- Growing potential for cyber physical loss events (infrastructure, transportation, aviation)
- Improving security standards in corporations
- **Changes in the regulatory environment**

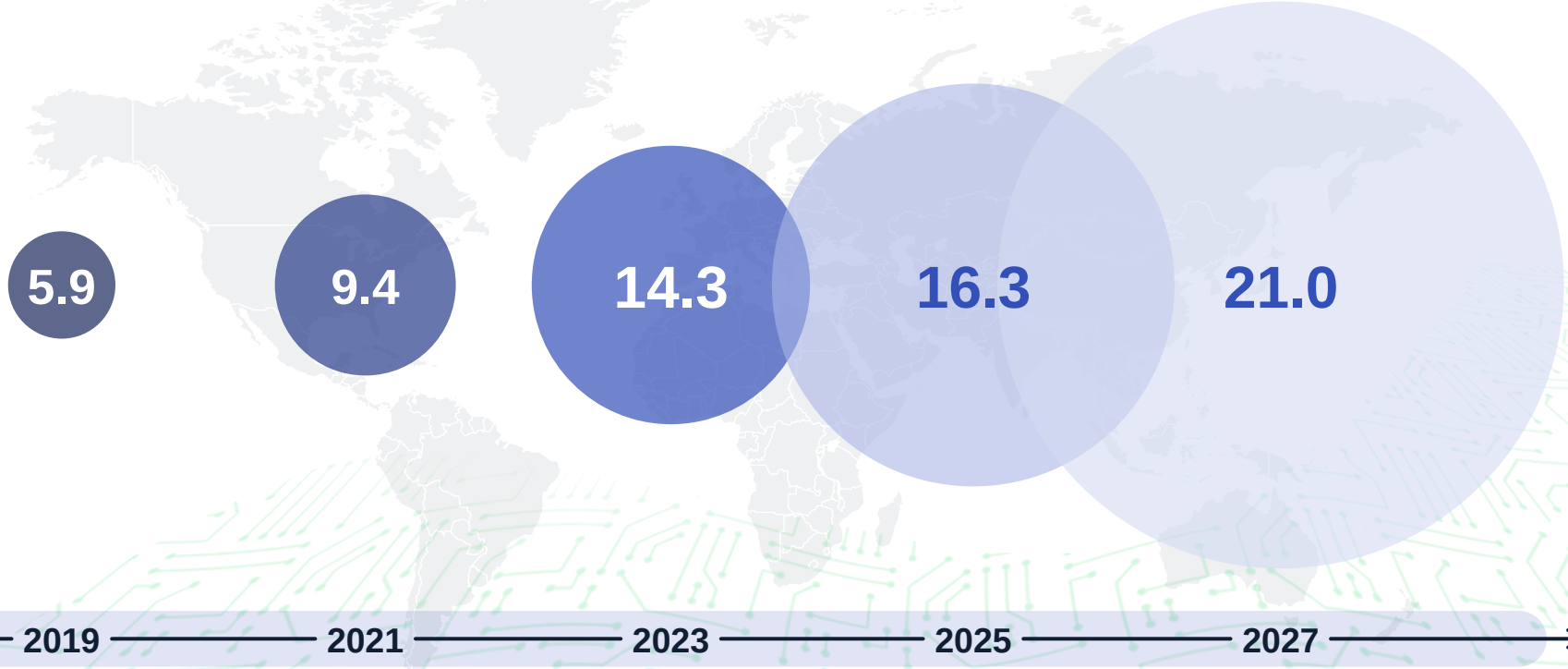
Source: RMS Cyber Risk Outlook 2019 Report

Marketplace is Cyclical



Cyber insurance market

Cyber Premium Development 2019–2027 in $bn



Major Events in Cyber Insurance

Ransomware

- Accellion
- JBS
- Colonial Pipeline
- CDK Global
- Change Healthcare

Liability Claims

- Target
- Home Depot
- Marriot
- Capital One
- Alphabet

Supply Chain

- Microsoft Exchange
- MoveIt
- SolarWinds
- Log4j
- CrowdStrike

Regulatory

- GDPR
- CCPA / CIPA
- DORA
- NYDFS
- VPPA
- BIPA
- State Regulations

Questions?

Appendix

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