The Threat Environment
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Assessing Risk

Risk = \( f \) (cost, schedule, performance)

Risk = \( f \) (threat, vulnerability, consequence)


Supply Chain Life Cycle

Concept Design Manufacture Integration Deployment Maintenance Retirement
Proliferation of cheap, readily available, and effective Cyber Network Operation tools increasingly gives less capable actors the means to conduct cyber attacks.
Adversaries Need Not Look Foreign

- Global
  - Temporary Workers & Visitors
  - Subsidiaries
  - False Flags
  - Overseas Suppliers & End Users
- US
  - Recruited Citizens
  - Recruited Work & Student Visas
  - Multinationals
  - Front Companies
<table>
<thead>
<tr>
<th>Observable behavior of Multinational Firm</th>
<th>Nefarious Intent … ?</th>
<th>… or Business as Usual?</th>
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</thead>
<tbody>
<tr>
<td>Tries to purchase US firms, create joint ventures</td>
<td>Seeking intellectual property for intelligence activities</td>
<td>Secure market share, distribution, and access to technology and IP</td>
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<tr>
<td>Conduct business intelligence on competition</td>
<td>Acts as intelligence agents for foreign government</td>
<td>Plans and intentions of rivals; limitations of competing products</td>
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<tr>
<td>Access to systems or networks after equipment or software install</td>
<td>Foreign government access for collection, exploitation, and disruption</td>
<td>Retain access to customer systems for service, maintenance, and license compliance monitoring</td>
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<td>Fills key overseas positions with individuals of specific nationality</td>
<td>Vetted trusted insiders can facilitate intelligence activities</td>
<td>Executives with strong ties to firm to protect IP and business interests</td>
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<tr>
<td>Uses financial structure that is complex with limited transparency</td>
<td>Conceals financials to appear independent and fiscally sound</td>
<td>Global variation in taxes incentivize complex financial structures; privately held firms limit details</td>
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<tr>
<td>Seeks contracts to supply US government</td>
<td>Firm may be trying to supply subverted products</td>
<td>US government is a large customer of products and services</td>
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Collaboration

- The U.S. National Security Community is deeply concerned about the integrity of supply chains.

- We have more than enough evidence to know the threat is real and dangerous, but we will inevitably have difficulty predicting targets and assessing impacts.

- Supply chain security is a group effort; government and industry must identify threats and implement countermeasures.
QUESTIONS?