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Breaking Trust: Shades of Crisis Across an Insecure Software Supply Chain

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Why software supply chains?

- Software Channels Scale
- We Don’t Build What We Use
- Supply Chain (in)Security

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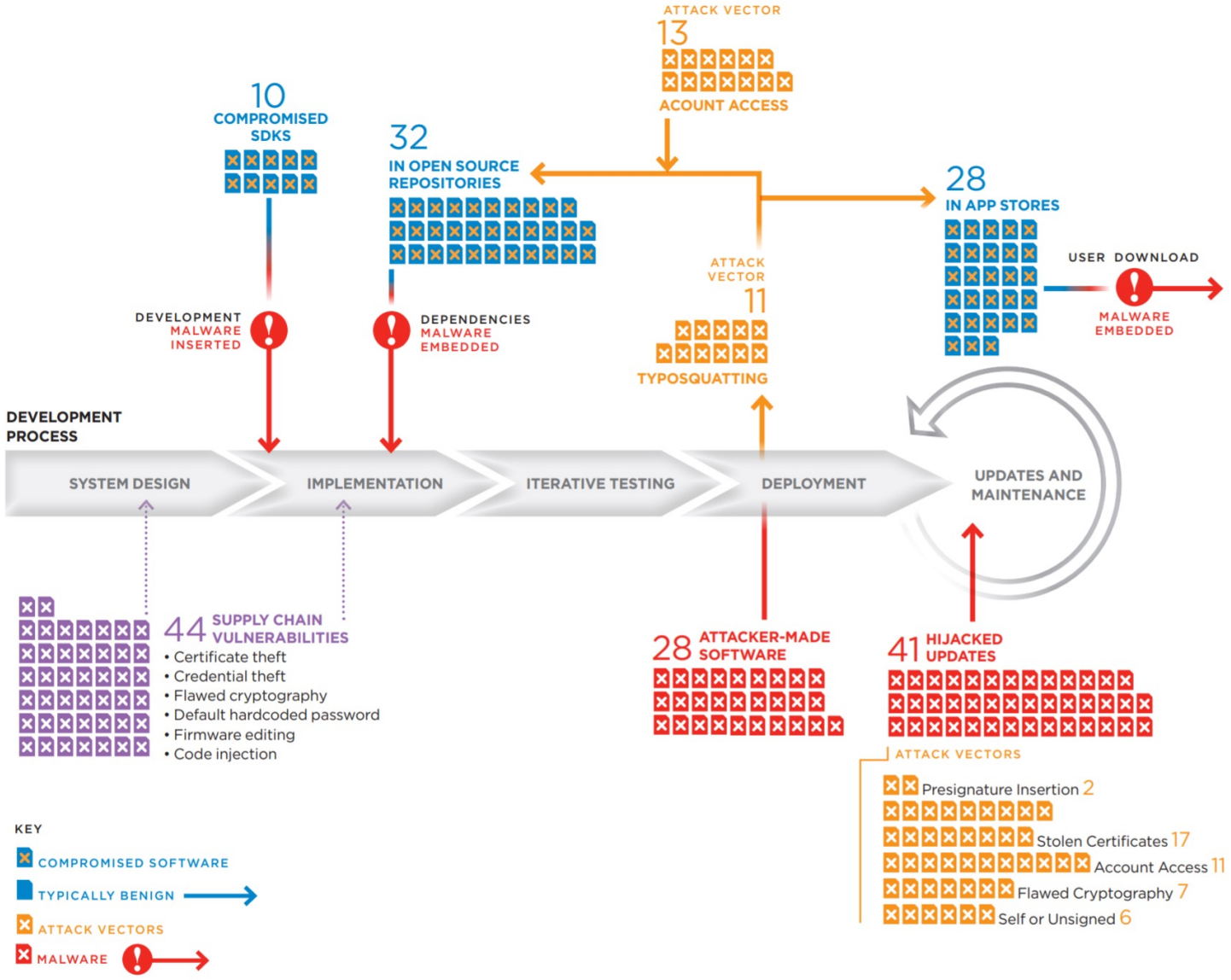
A decade of attacks and disclosures in the software supply chain

117 attacks & 44 disclosures



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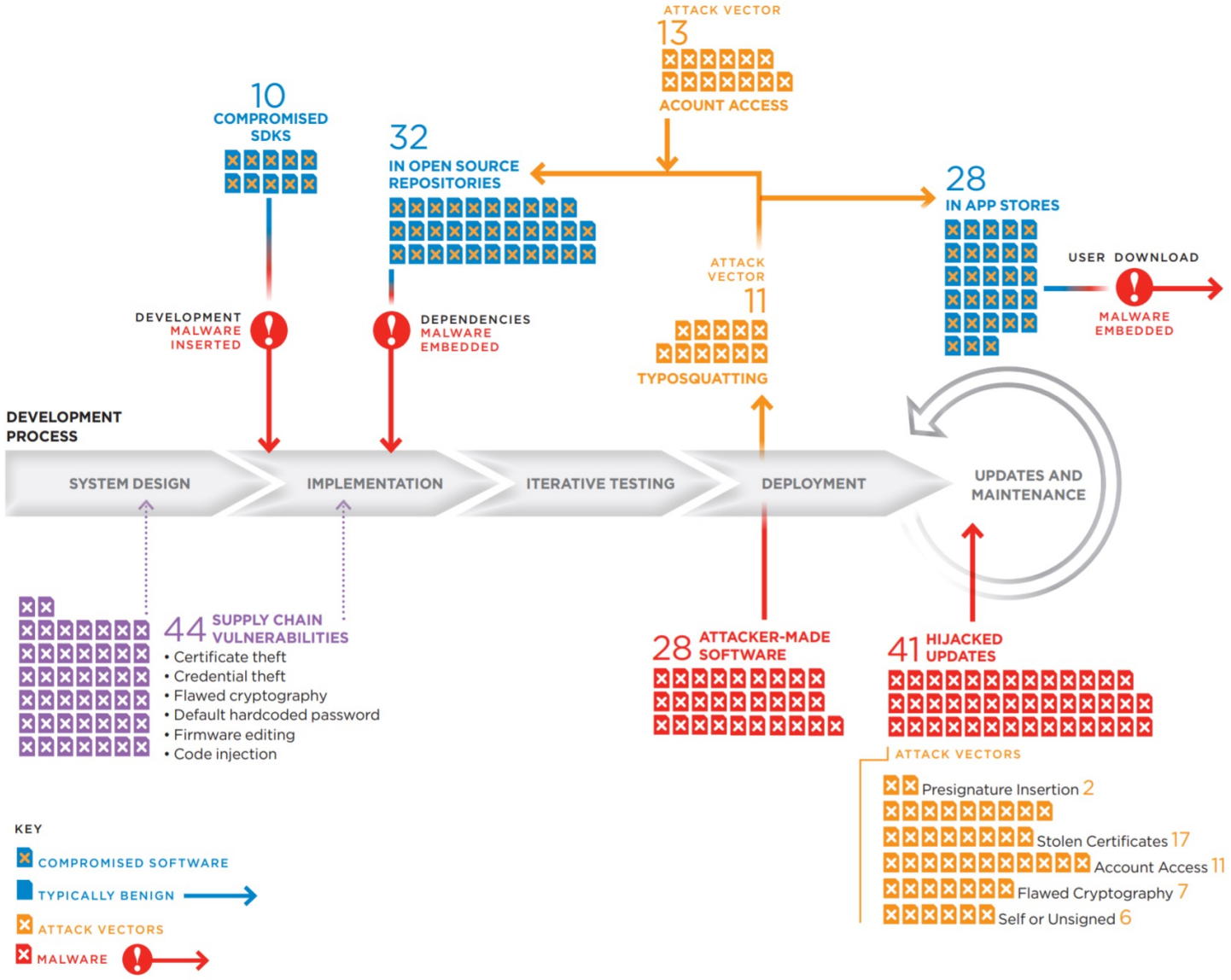
Attacks on open source with repeated targeting of NPM and PyPi



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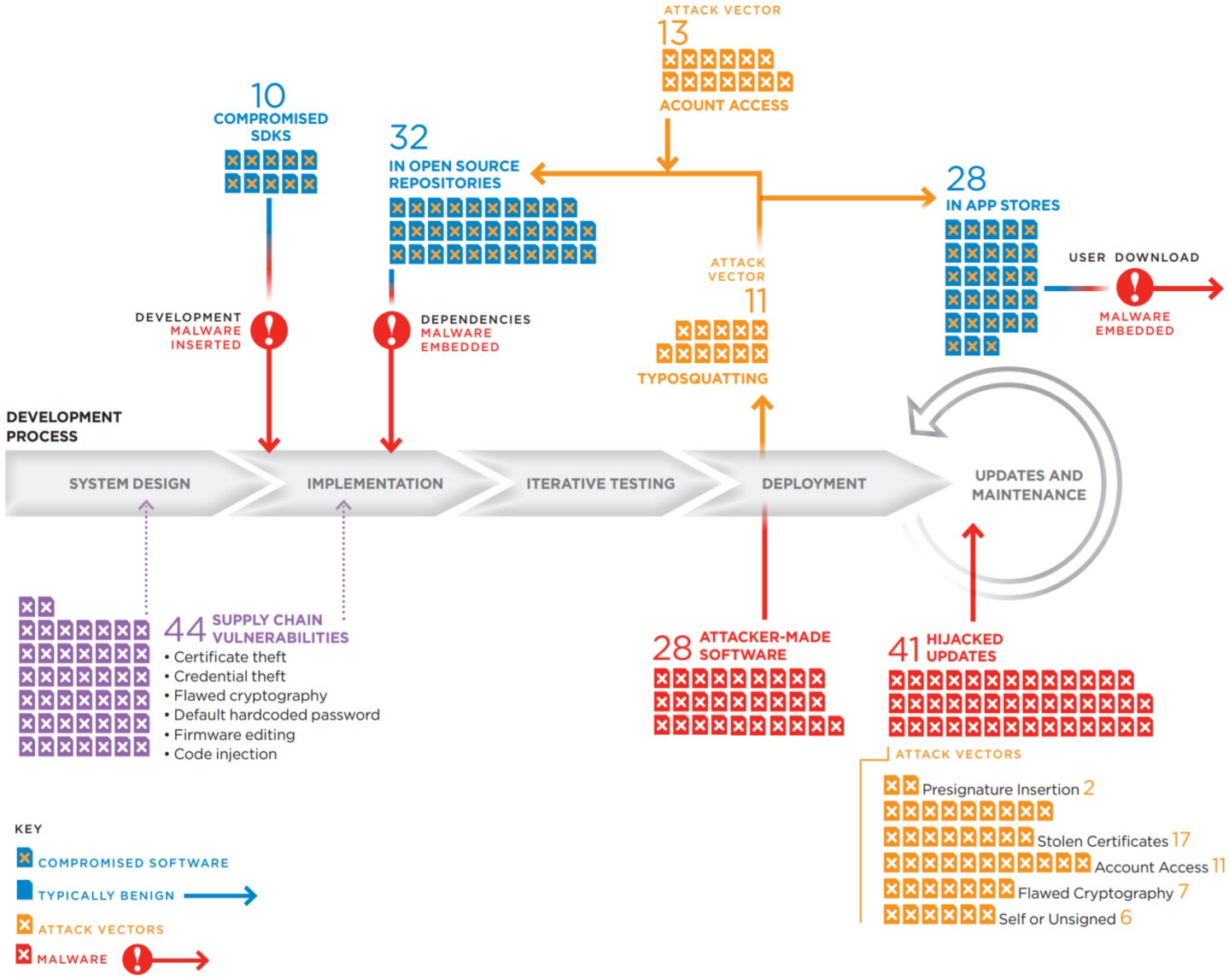
At least 32 attacks from state actors, most notably Russia and China



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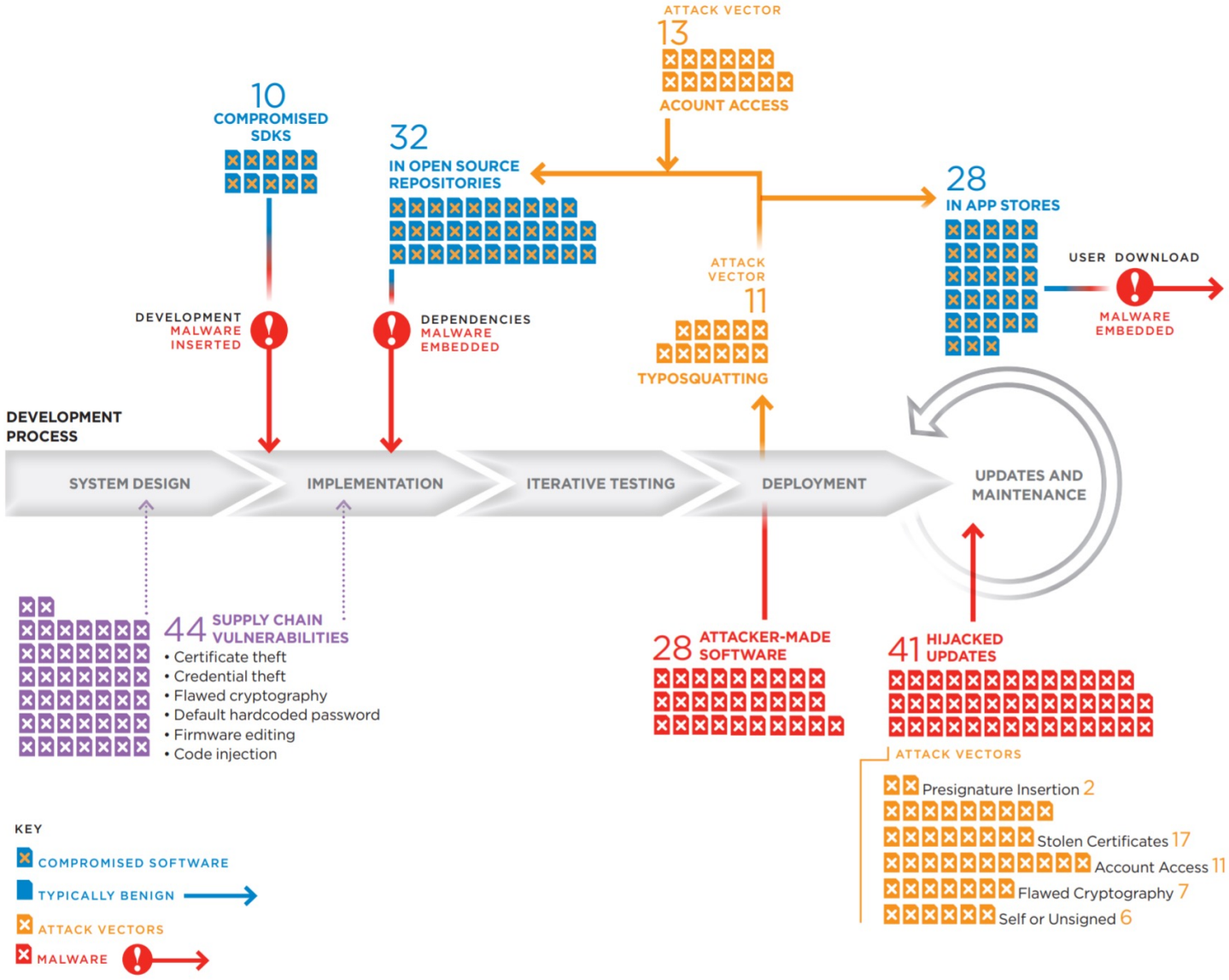
24% of attacks target app stores and developer tools



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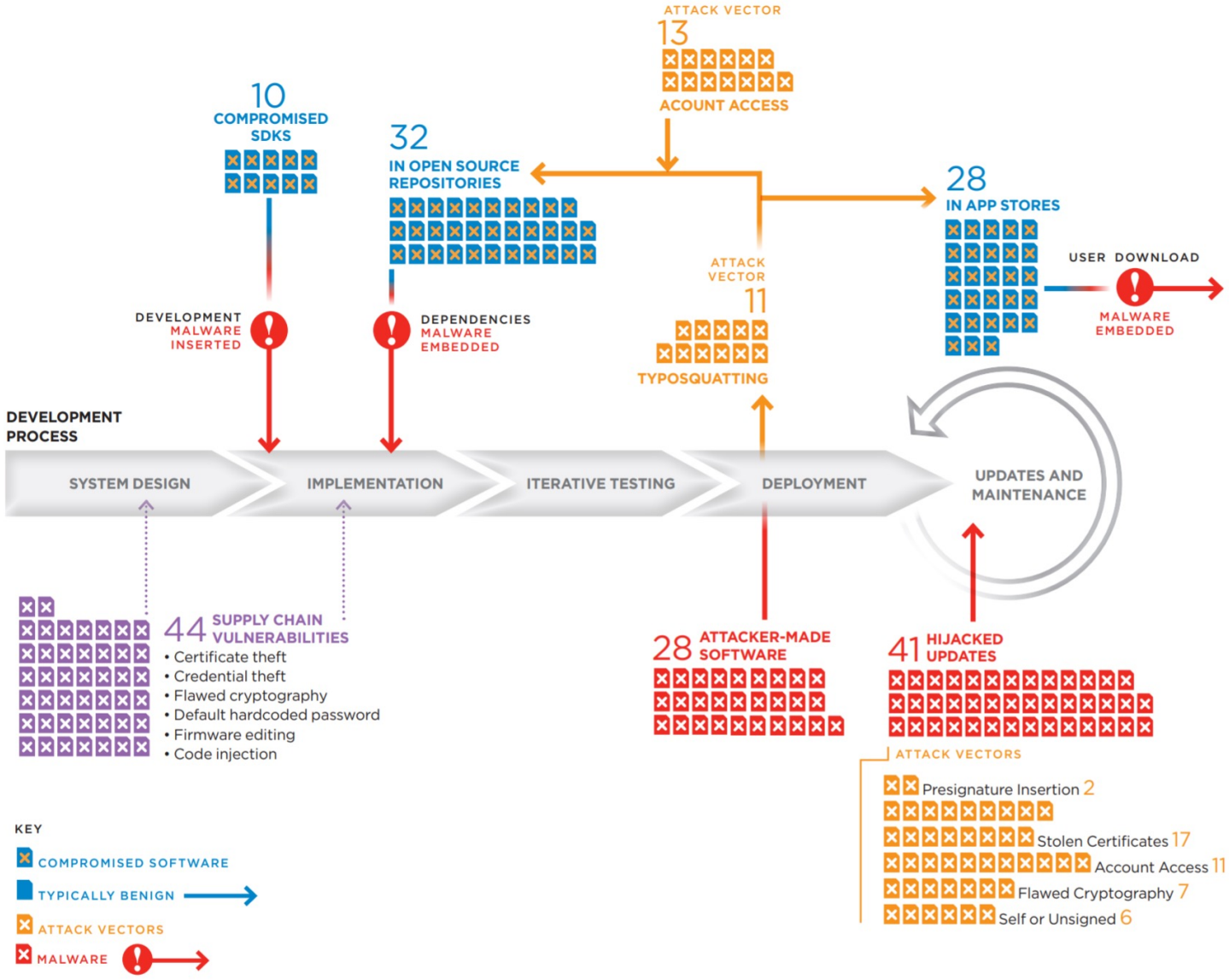
25% of attacks hit software updates



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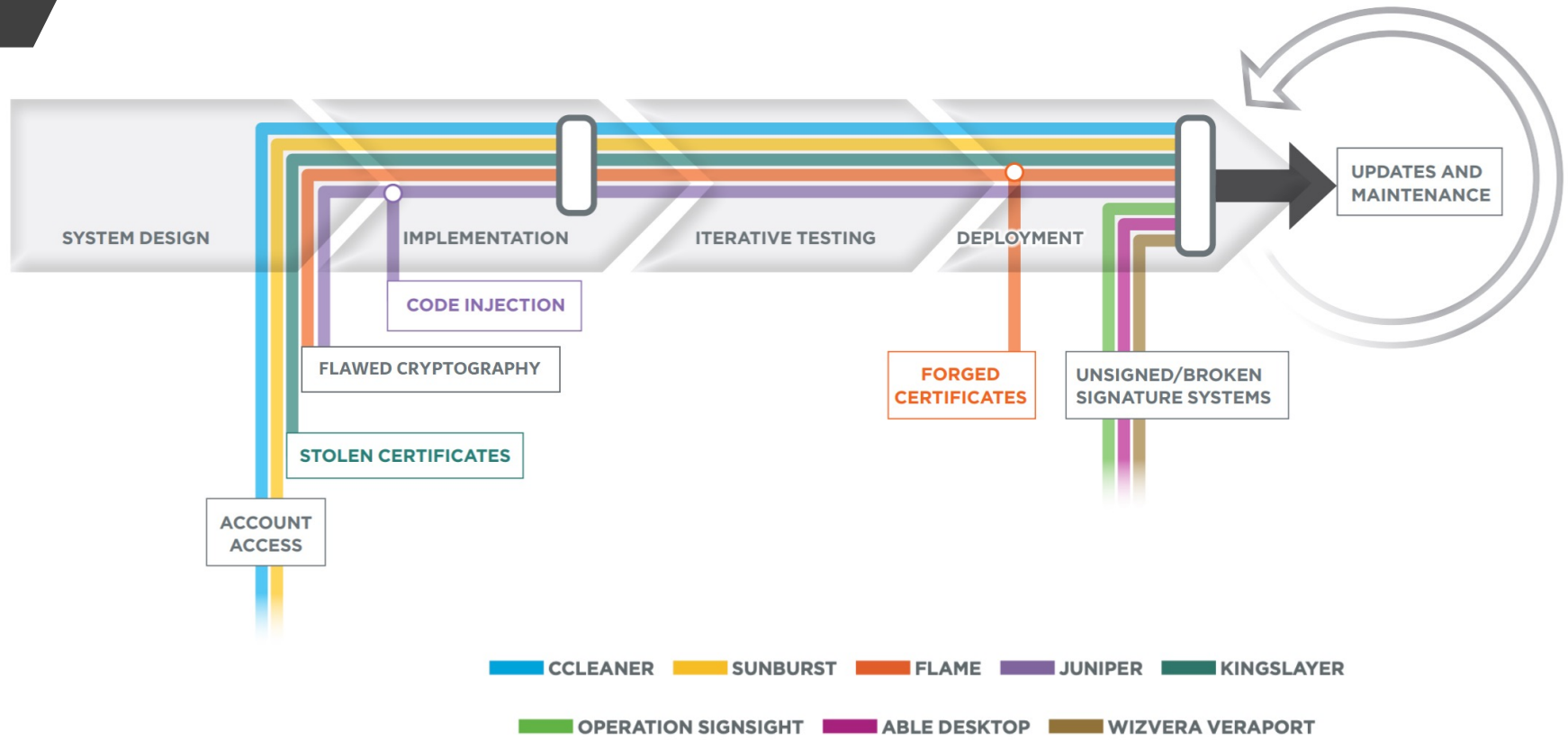
Key Trends

- Efficiency and Scale
- Path to Targeted Exploitation
- Subverting Vendor Code-Signing
- Targeting OSS Repositories

Sunburst


SYSTEM DESIGN
IMPLEMENTATION
ITERATIVE TESTING
DEPLOYMENT
UPDATES AND MAINTENANCE
ACCOUNT ACCESS

History Rhymes



What Comes Next?

- Better Defense of OSS
- Risk Assessment on New Data
- Don’t Forget About Architecture

Thank you

For more on this project visit:
https://www.atlanticcouncil.org/breaking-trust/

Recommendations

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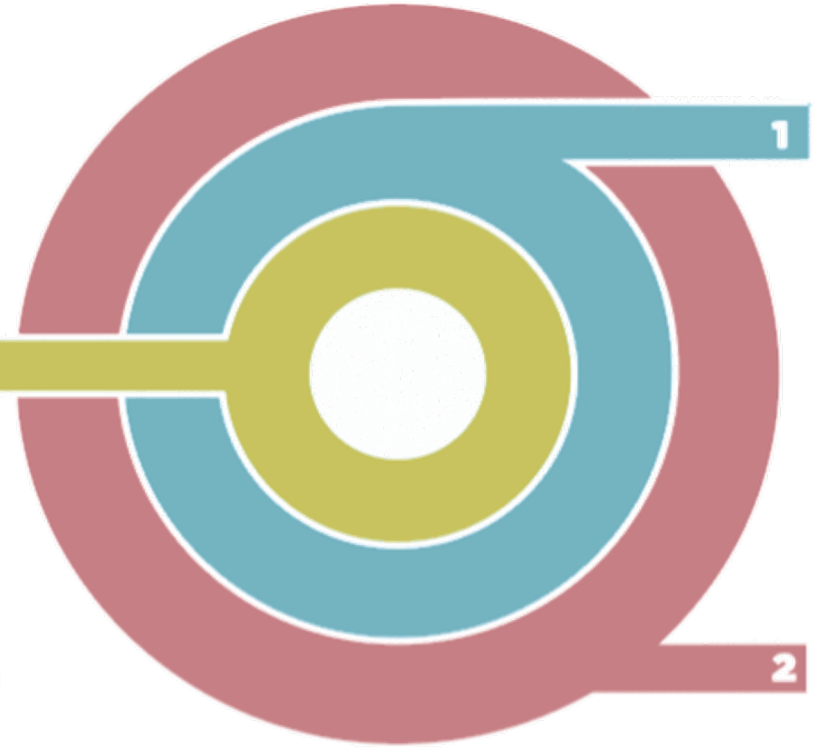
Ready for Work

These recommendations build on existing authorities, functions, or programs but may require new funding.

1. **Hunt for Blast Radius**
2. **FASC Sets the Process**
4. **Shift the Landscape for Adversaries**
6. **Give SBOM a Glide Path to Success**
8. **Do Not Leave Open Source Behind**
10. **Create a Trusted Traveler Program for FedRAMP**
11. **Evolve and Default to Secure**



Some assembly required

These ideas pair an action with an outcome or actor but may have a critical dependency that keeps them from being shovel ready.

5. **Develop a Lifecycle Security Overlay**
7. **Apply the Overlay**
12. **Govern Through the Cloud**

Step Carefully

Ideas to push outside the box a bit farther while still being rooted in critical needs

3. **Breach Response Hunger Games**
9. **Change an Architecture, Change the World**

Selected Recommendations

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Ruthlessly Prioritize Risk

1. Hunt for blast radius

Improve the Defensibility of Linchpin Technologies

5. Develop a lifecycle security overlay

8. Do not leave open source behind

9. Change the architecture, change the world

Enhance the Adaptability of Federal Cyber Risk Management

12. Govern through the cloud