How to prevent a Stuxnet like attack on India’s soil (Power Infrastructure)

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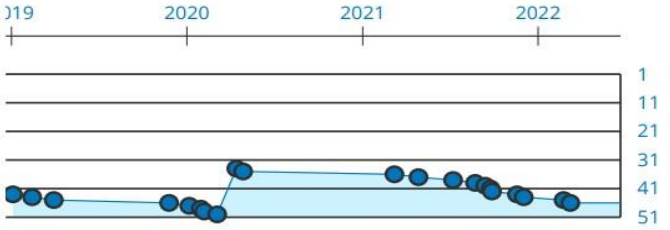
Current State of Cyber Security in India

Population	**1,295.2** million
Area (km²)	**3.3** million
GDP per capita ($)	**7.8** thousand

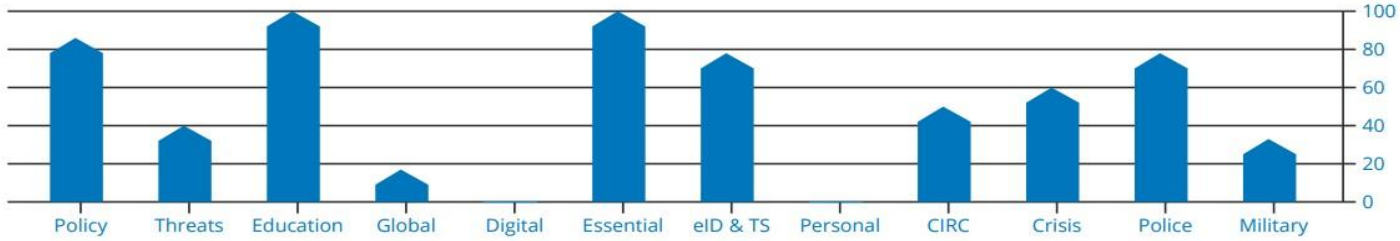
46th	National Cyber Security Index	60 %
10th	Global Cybersecurity Index	98 %
134th	ICT Development Index	30 %
67th	Networked Readiness Index	50 %

NCSI DEVELOPMENT TIMELINE

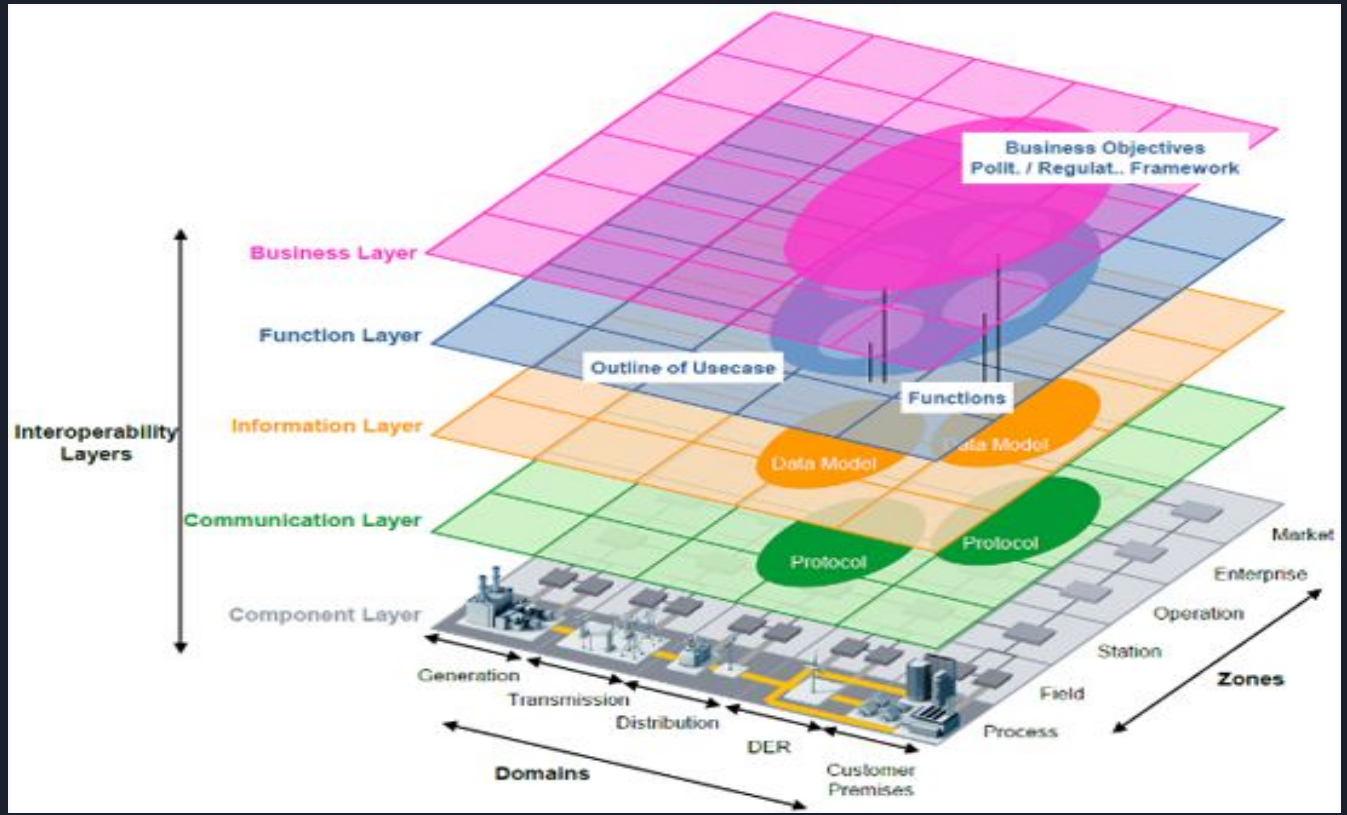
RANKING TIMELINE



NCSI FULFILMENT PERCENTAGE

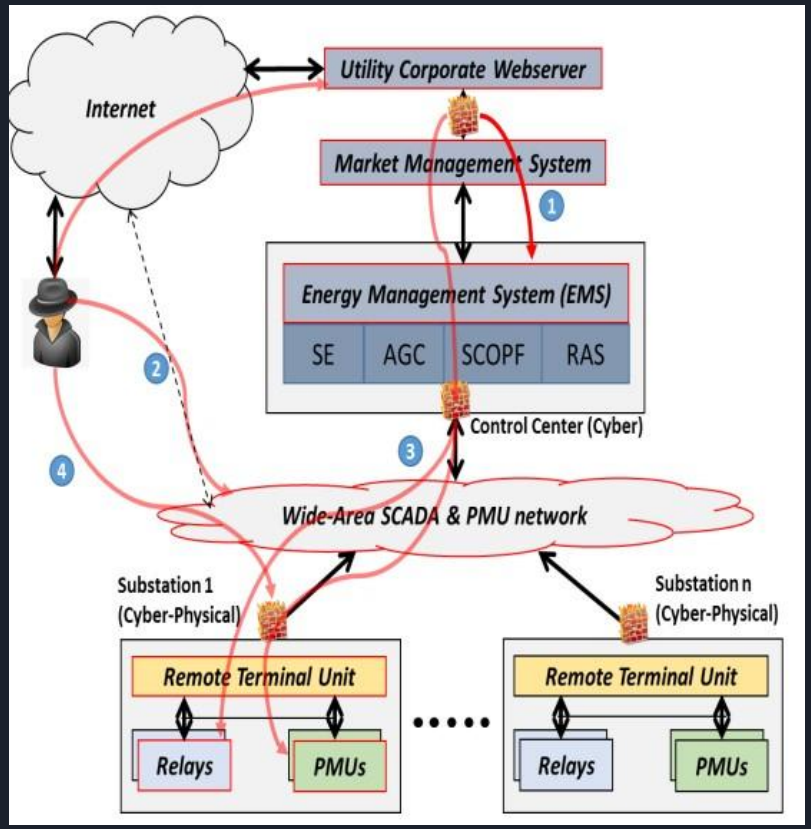


Smart Grid Architecture



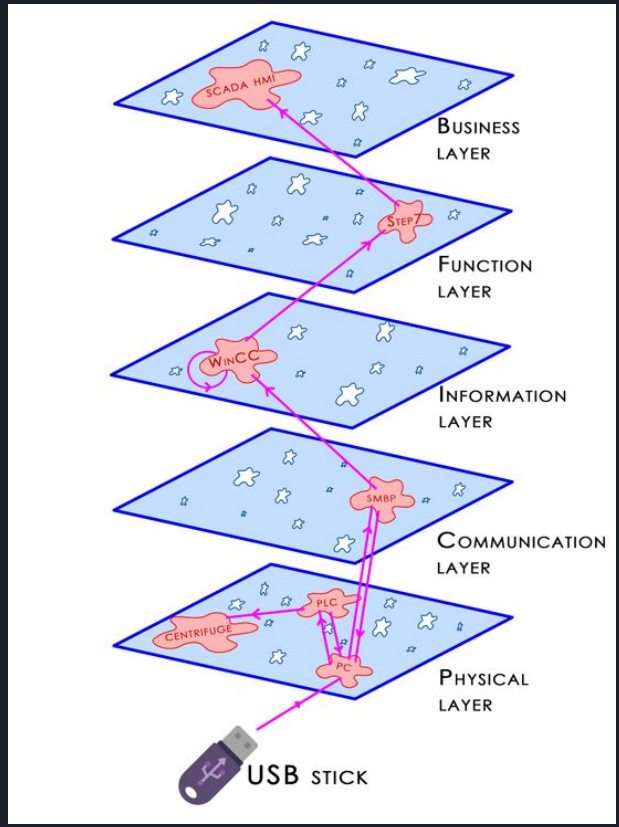
Increasing Attack Surface

- Multiple Attack paths and large attack surface
- Static configuration and network traffic makes it easy for reconnaissance attacks
- Emergence of Internet of Things (IoT) in the grid context
- Lack of clear metrics and tools to assess attack surface and to reduce it
- Distribution assets, smart meters, and DERs (wind, solar) are being increasingly deployed and are potentially vulnerable!



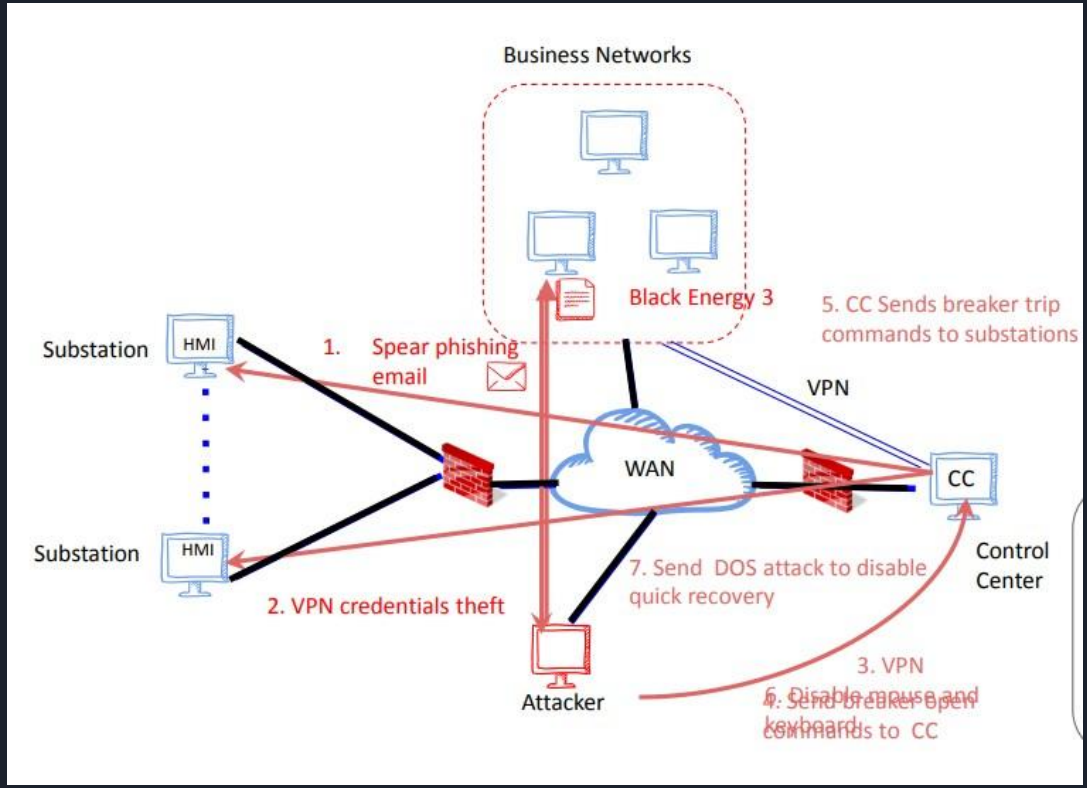
Stuxnet(2010)

- Targeted industrial control systems and compromised code on PLCs
- 7 methods of propagation
- 4 zero-day exploits
- 3 rootkits
- 1 known exploit
- 2 unauthorized stolen certificates
- 2 Siemens security issues
- Took 1 year to discover and >100,000 machines infected

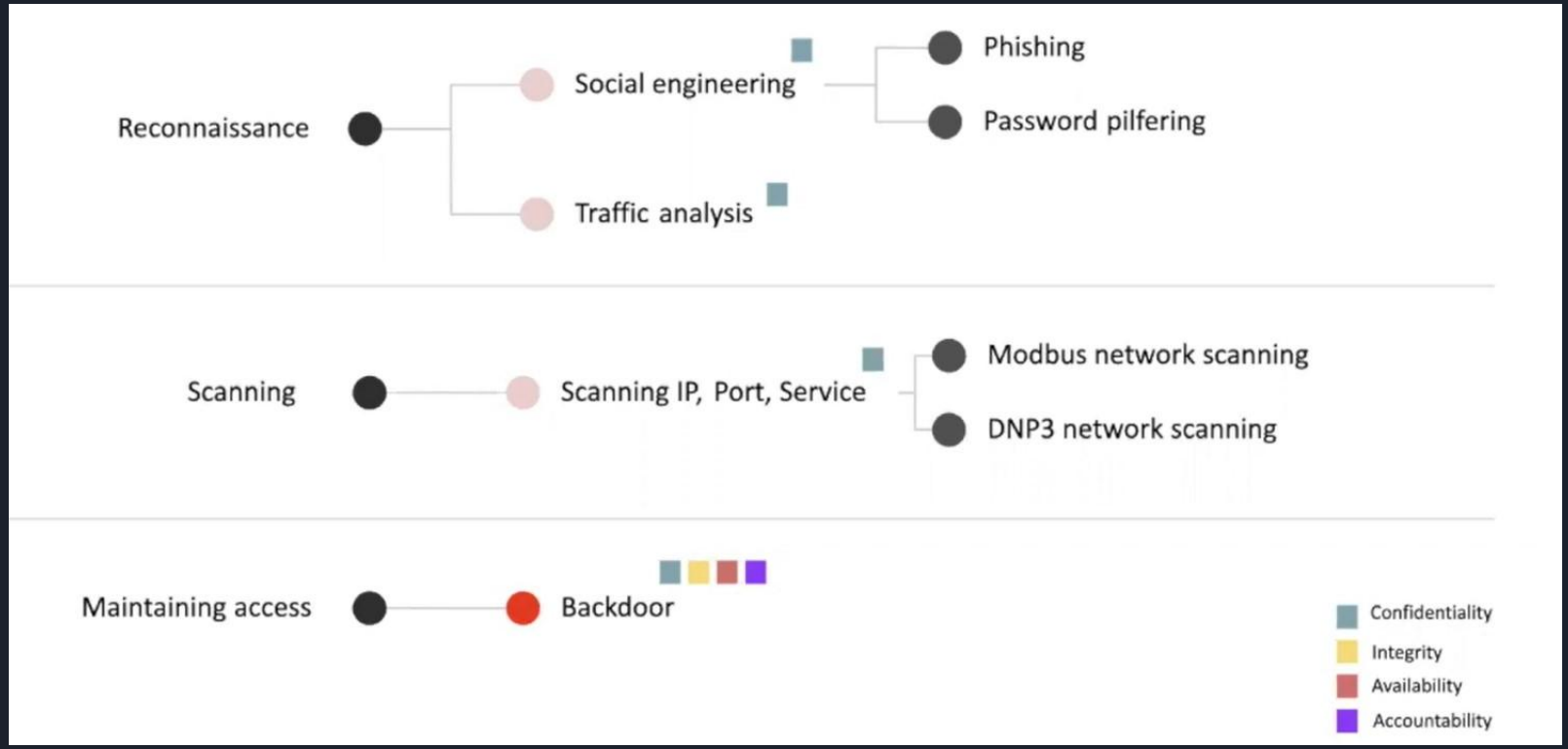


Ukraine’s grid attack(2015)

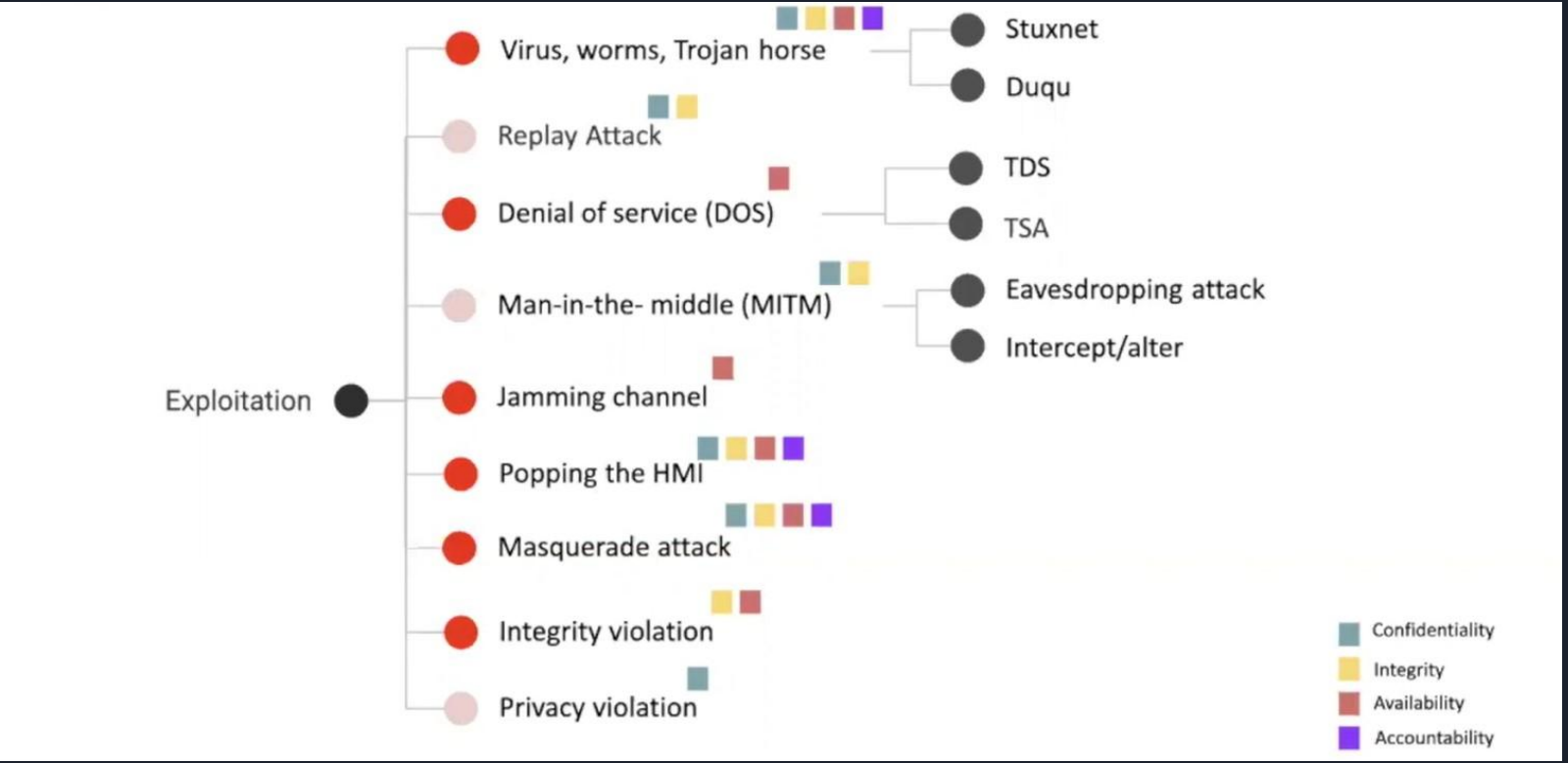
- Coordinated cyber attack
- 3 distribution companies ~30 substations targeted
- 225k customers experienced outage



Smart Grid Attacks



Smart Grid Attacks



Security Strategy

Thank you!