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INTERNET SECURITY ALLIANCE

Presentation Outline

- The Growing Problem of Cyber Security
- Traditional Solutions and Why They Won't Work
- A New Paradigm (tools and incentives)
- Bringing it all Together

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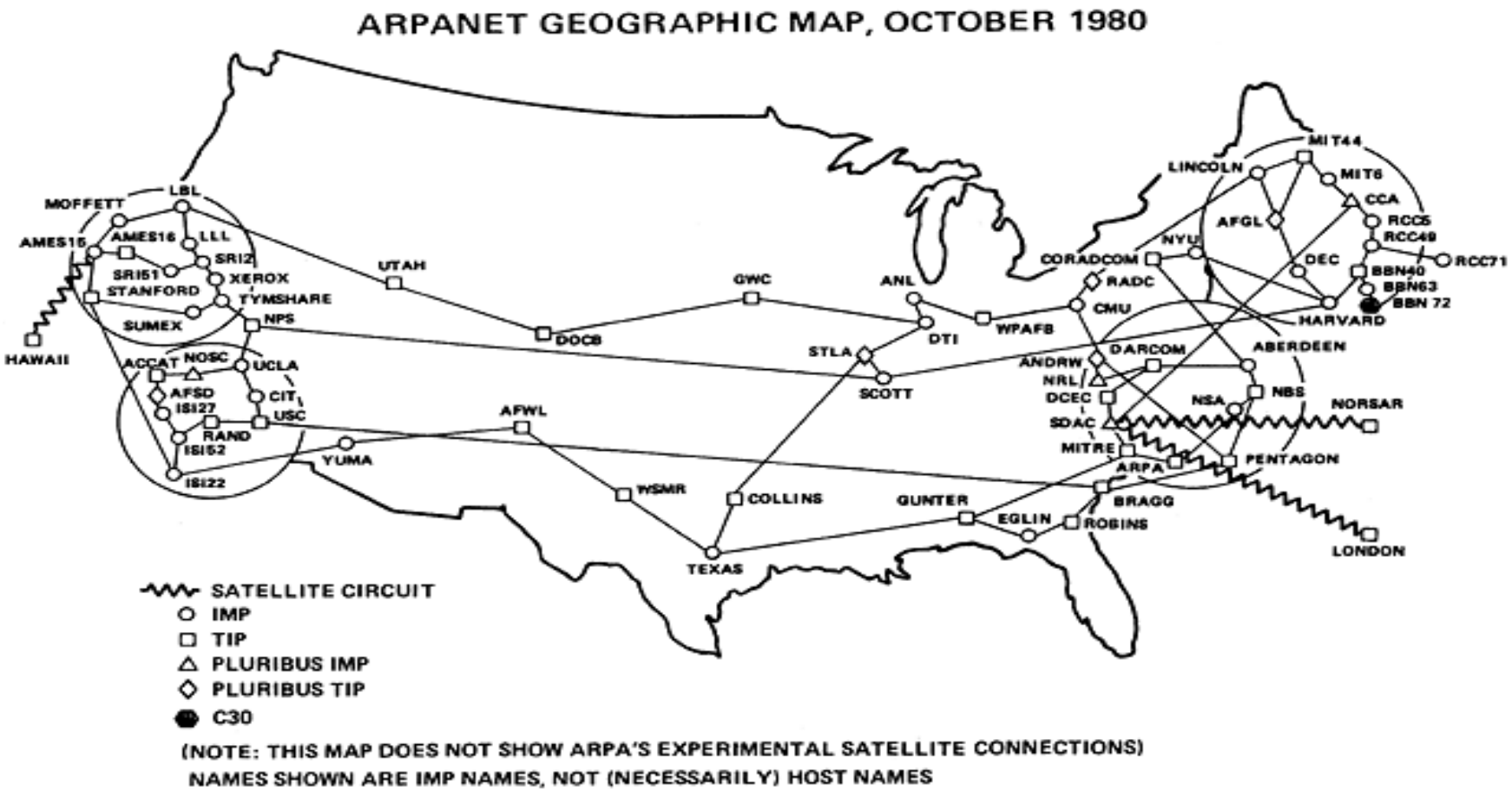
The Past



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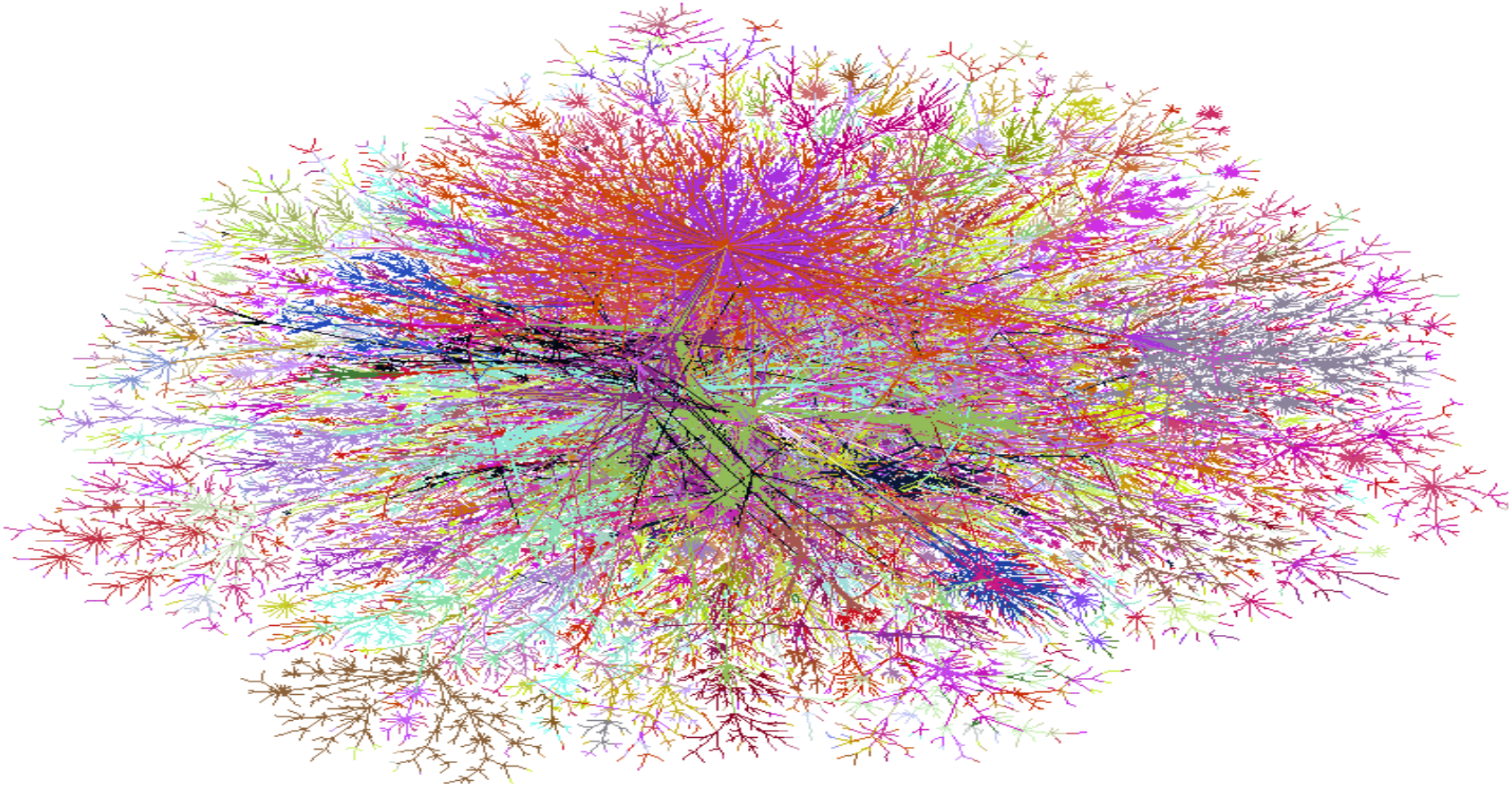
The Present

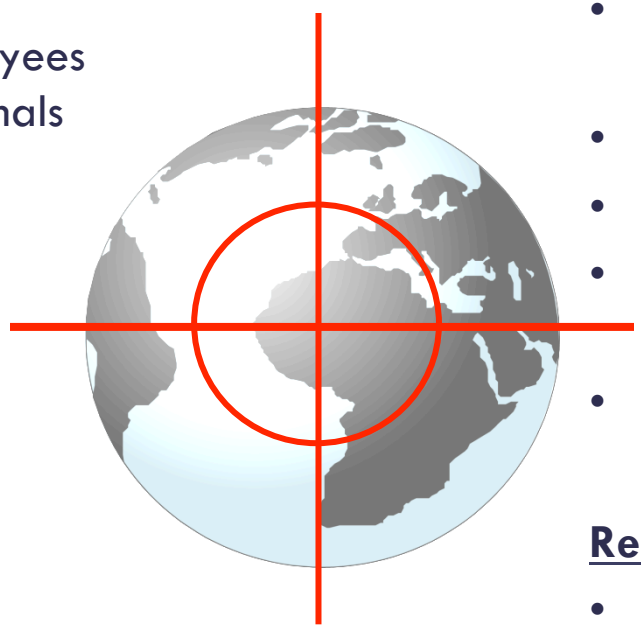


Source: http://cm.bell-labs.com/who/ches/map/gallery/index.html

The Threats – The Risks

Human Agents

- Hackers
- Disgruntled employees
- White collar criminals
- Organized crime
- Terrorists



Exposures

- Information theft, loss & corruption
- Monetary theft & embezzlement
- Critical infrastructure failure
- Hacker adventures, e-graffiti/ defacement
- Business disruption

Methods of Attack

- Brute force
- Denial of Service
- Viruses & worms
- Back door taps & misappropriation,
- Information Warfare (IW) techniques

Representative Incidents

- Code Red, Nimda, Sircam
- CD Universe extortion, e-Toys "Hactivist" campaign,
- Love Bug, Melissa Viruses

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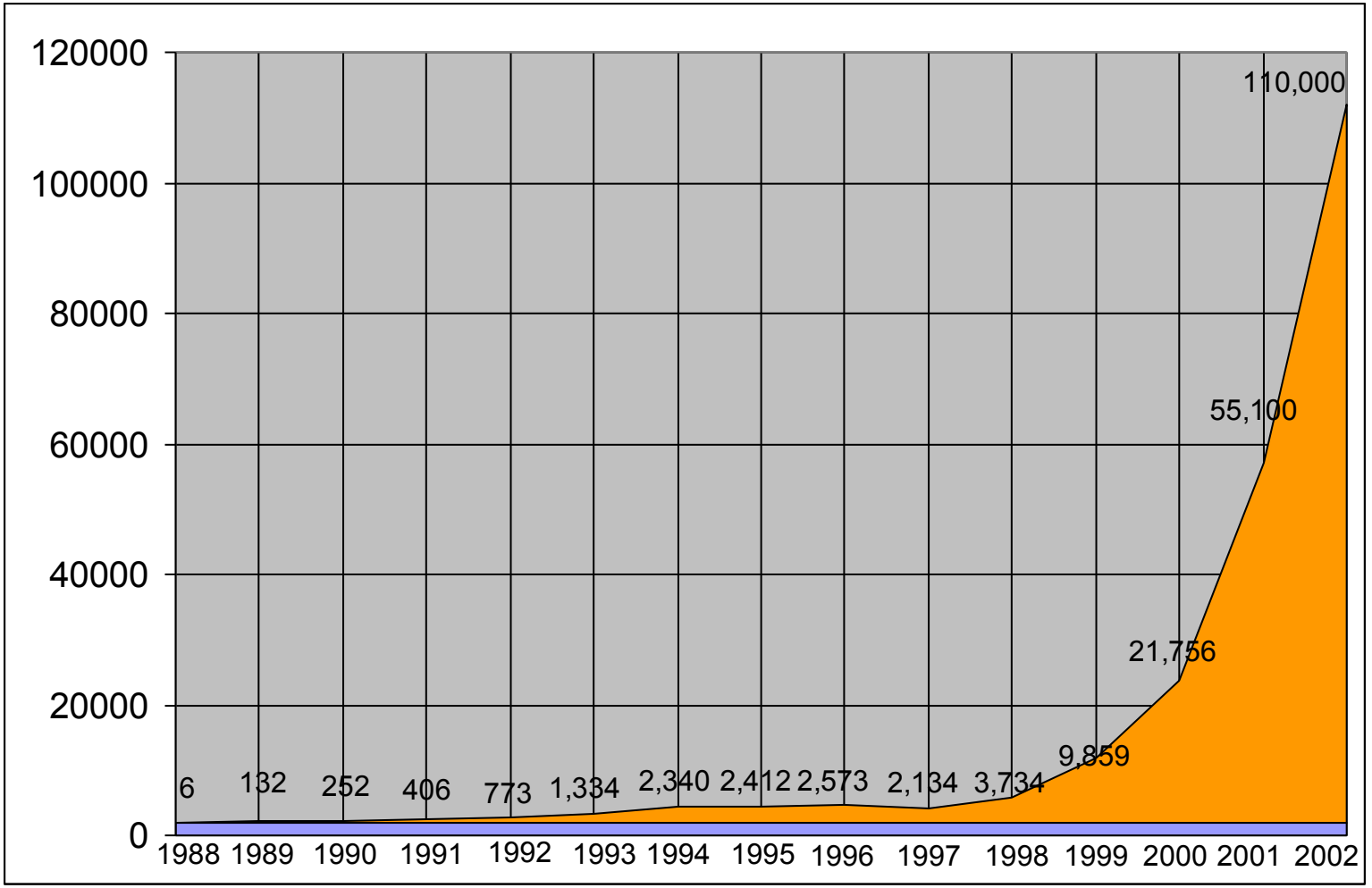
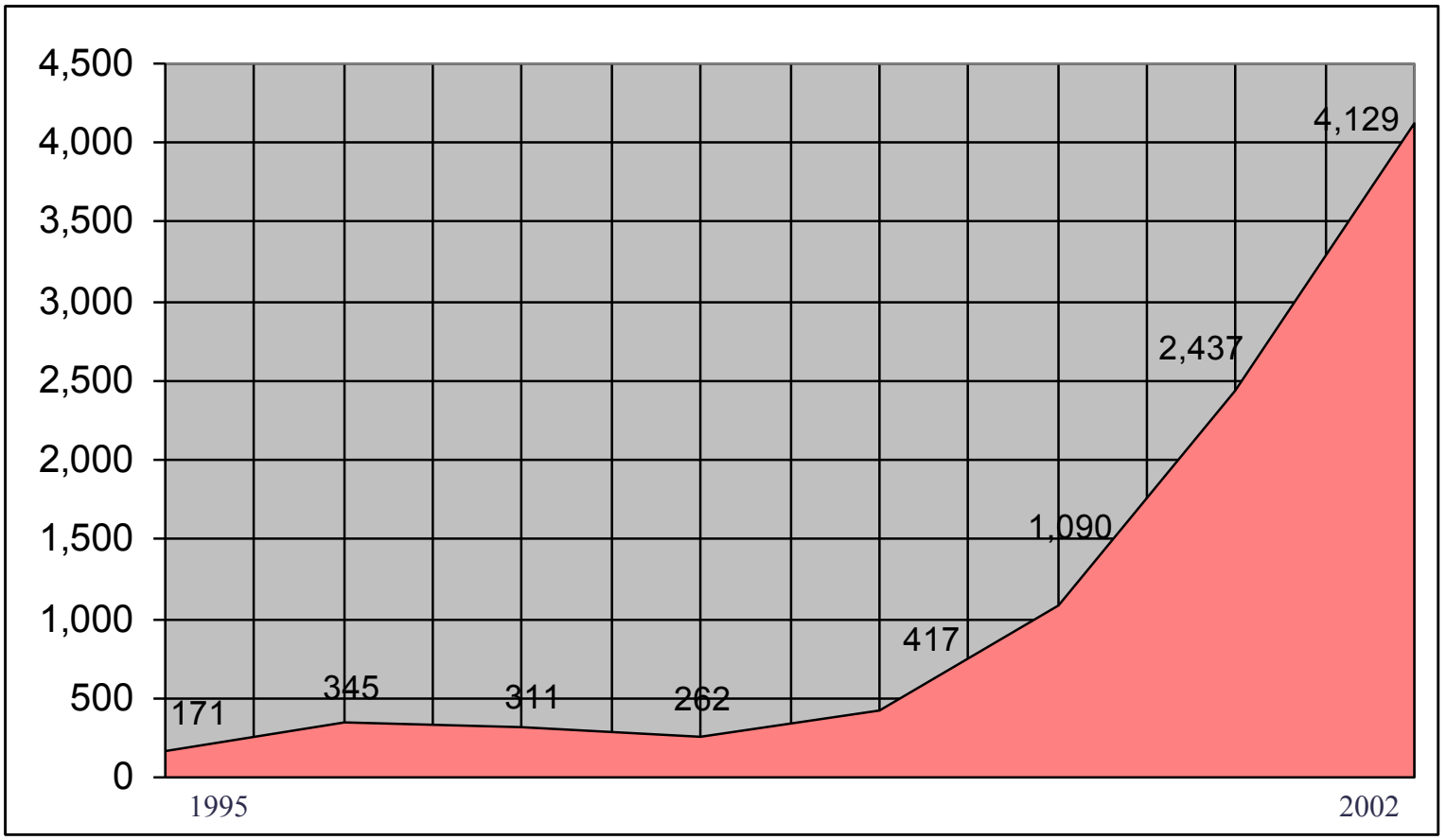
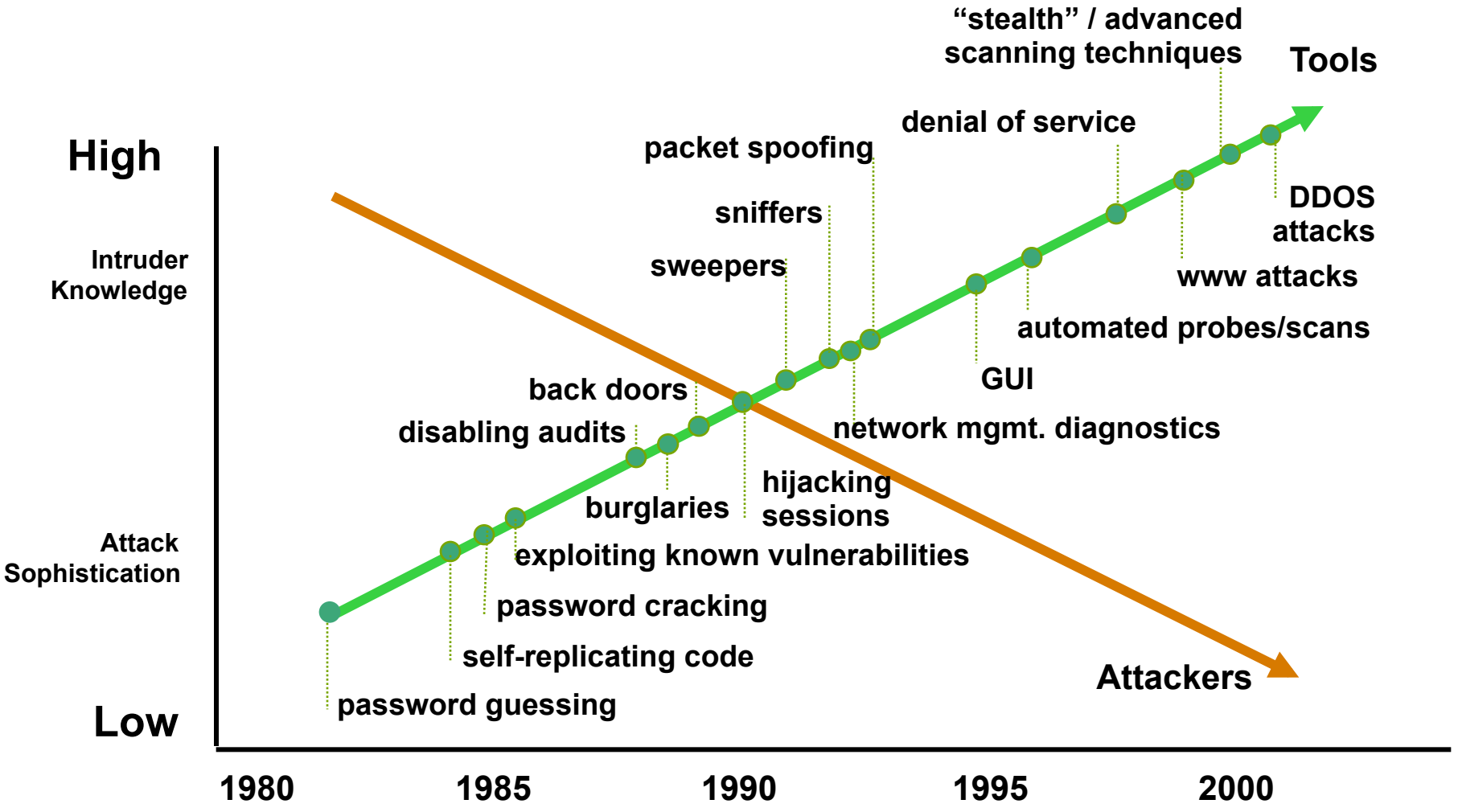
Growth in Incidents Reported to the CERT/CC



The Dilemma: Growth in Number of Vulnerabilities Reported to CERT/CC



Attack Sophistication v. Intruder Technical Knowledge



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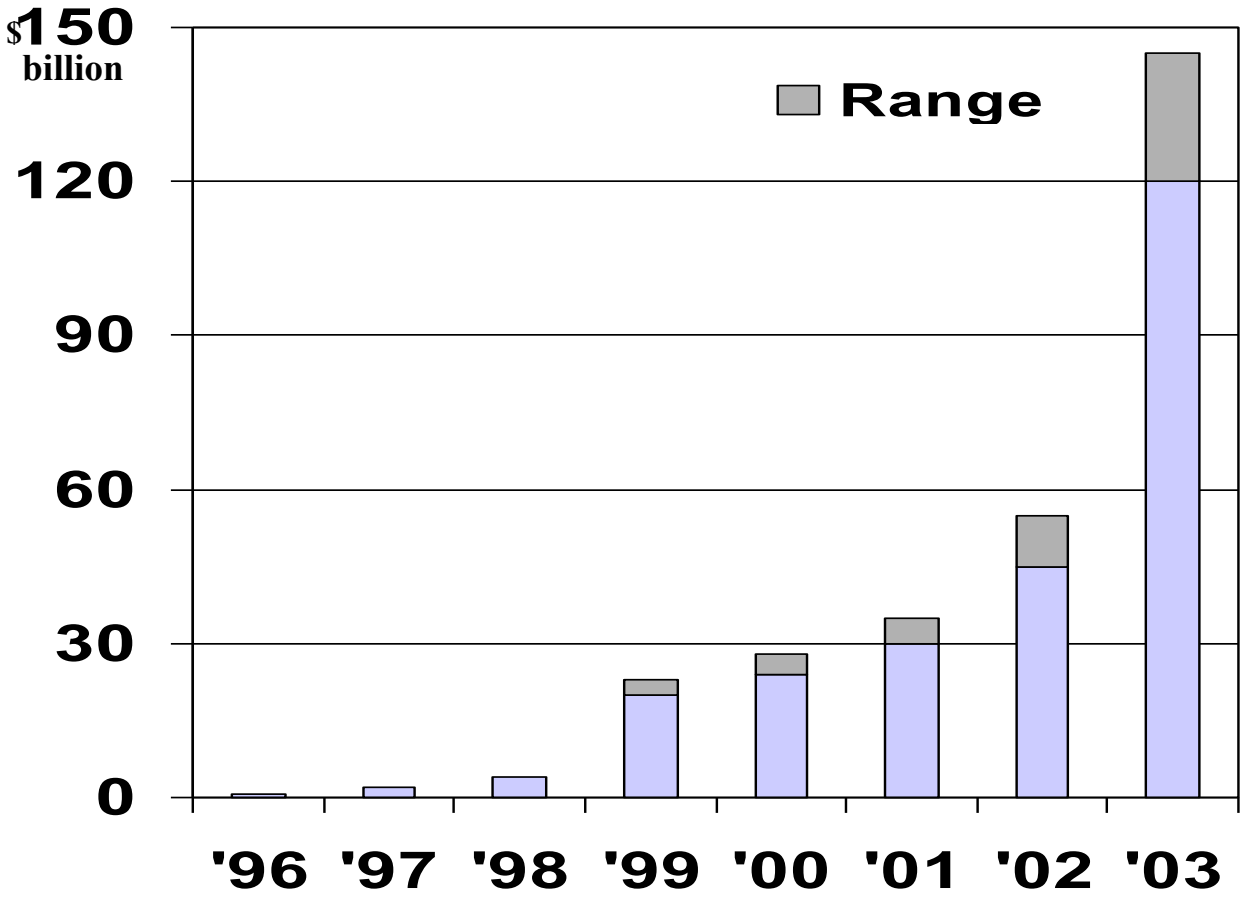
Computer Virus Costs (in billions)



(Through Oct 7)

Traditional Solutions & Why They Won't Work

- Technology Solutions ("its like Y2K")
- Government Regulation ("just mandate security")
- Great Wall of China ("Secure our boarders")

Cyber Security is not an "IT" Problem

- Y2K WAS:

- Simple
- Passive
- Not an attack

- Cyber Security requires people, processes, procedures and management of the risk.

A Risk Management Approach is Needed

"Installing a network security device is not a substitute for a constant focus and keeping our defenses up to date… There is no special technology that can make an enterprise completely secure."

– *National Plan to Secure Cyberspace, 2/14/03*

You Can't Mandate Cyber Security

- Policy Must Address Internet as a new Technology
- No one owns the Internet
- It is Constantly Evolving
- International Operation makes regulation difficult
- Mandates will Truncate innovation and the economy
- Beware the "Roadmap" for mischief

Putnam Legislation

- Risk Assessment
- Risk Mitigation
- Incident Response Program
- Tested Continuity plan
- Updated Patch management program

- Putnam has said it won't work.

Build a Great Wall around your Organization

- The Internet has no walls, no boarders, no one actually owns it.
- You are only as secure as the organizations you interconnect with, and that's pretty much everyone.
- The Internet is Interdependent, and Security is Interdependent

Attacks are Inevitable

- "According to the US Intelligence community American networks will be increasingly targeted by malicious actors both for the data and the power they possess." – *National Strategy to Secure Cyberspace, 2/14/02*

- The significance of the NIMDA attack was not in the amount of damage it caused but it foreshadows what we could face in the future" – *CIPB*

- "Things are getting worse not better." – *NYT 1/30/03*

A New paradigm:Tolls and Incentives

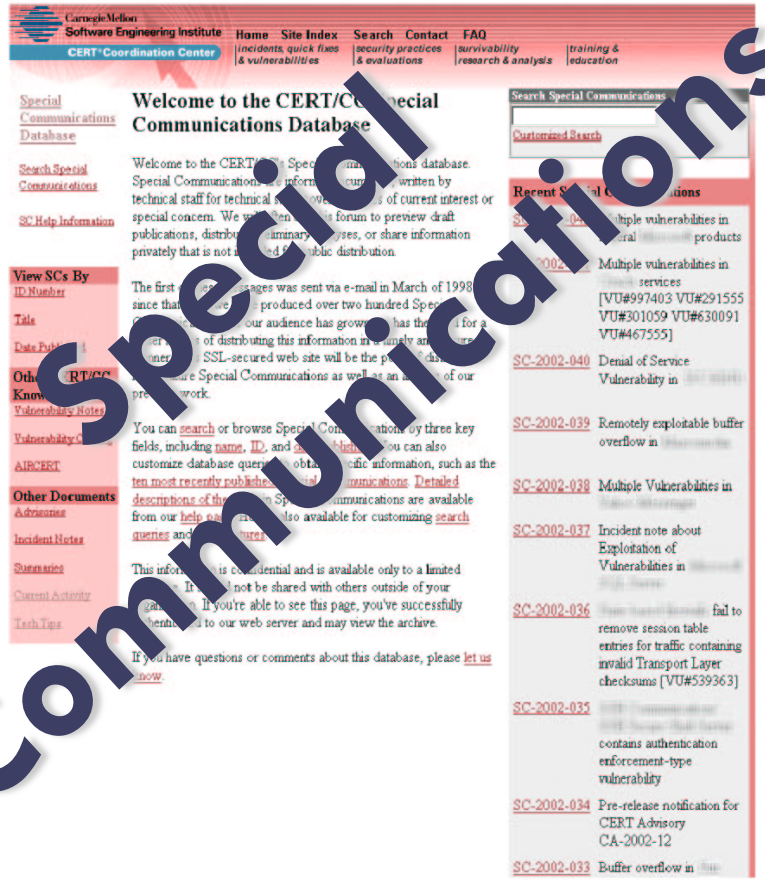
- TOOLS

- Information Sharing
- Best Practice Development
- Standards/Certification/Qualification
- Training
- Policy Development
- A Total SystemS Approach

ISAlliance/CERT Knowledgebase Examples

CERT Coordination Center

Figure 3: Special Communications index page



Special Communications

Benefits of Information Sharing Organizations

- May lesson the likelihood of attack

  "Organizations that share information about computer break ins are less attractive targets for malicious attackers." – NYT 2003

- Participants in information sharing have the ability to better prepare for attacks

Benefits of Information Sharing Organizations

- SNMP vulnerability
  - CERT notified Alliance members Oct. 2001
  - Publicly disclosed Feb. 2002
- Slammer worm
  - CERT notified Alliance members May 2002
  - Worm exploited Jan. 2003

Step 4. Adopt and Implement Best Practices

- Cited in US National Draft Strategy to Protect Cyber Space (September 2002)
- Endorsed by TechNet for CEO Security Initiative (April 2003)
- Endorsed US India Business Council (April 2003)

Common Sense Guide
Top Ten Practice Topics

- Practice #1: General Management
- Practice #2: Policy
- Practice #3: Risk Management
- Practice #4: Security Architecture & Design
- Practice #5: User Issues
- Practice #6: System & Network Management
- Practice #7: Authentication & Authorization
- Practice #8: Monitor & Audit
- Practice #9: Physical Security
- Practice #10: Continuity Planning & Disaster Recovery

Cooperative work on assessment/certification

- TechNet CEO Self-Assessment Program
- Bring cyber security to the C-level based on ISA Best Practices
- Create a baseline of security even CEOs can understand
- American Security Consortium 3-Party Assessment program
- Risk Preparedness Index for assessment and certification
- Develop quantitative independent ROI for cyber security

ISAlliance/CERT Training

- Concepts and Trends In Information Security
- Information Security for Technical Staff
- OCTAVE Method Training Workshop
- Overview of Managing Computer Security Incident Response Teams
- Fundamentals of Incident Handling
- Advanced Incident Handling for Technical Staff
- Information Survivability an Executive Perspective

ISAlliance Incentive Model

- Model Programs for market Incentives

---AIG ----Nortel

---Visa ----Verizon

SemaTech Program

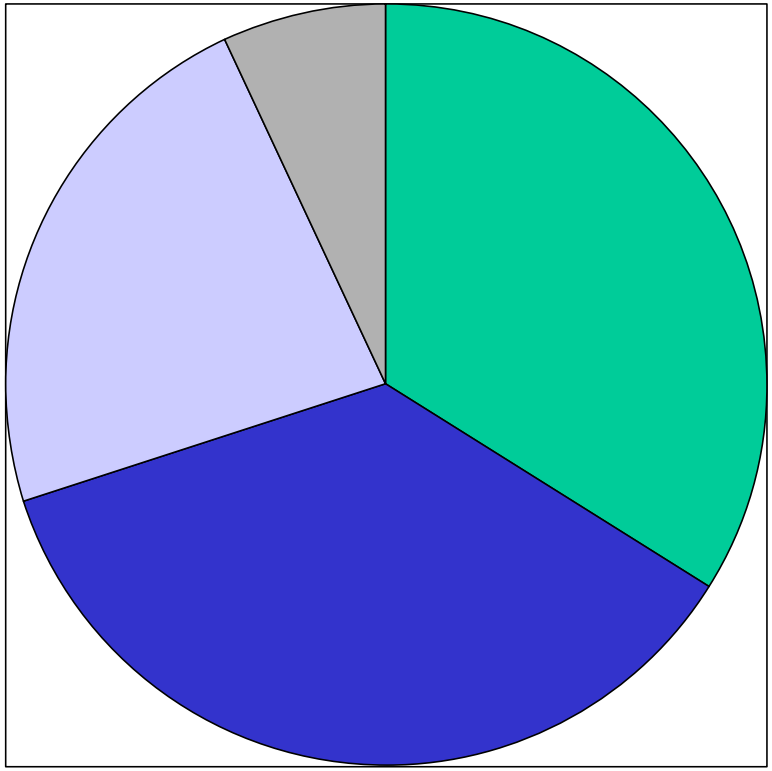
Tax Incentives

Liability Carrots

Procurement Model

Research and Development

Chief Technology Officers' Knowledge of their Cyber Insurance



- **34% Incorrectly thought they were covered**
- **36% Did not have Insurance**
- **23% Did not know if they had insurance**
- **7% Knew that they were insured by a specific policy**

ISAlliance Cyber-Insurance Program

- Coverage for members
- Free Assessment through AIG
- Market incentive for increased security practices
- 10% discount off best prices from AIG
- Additional 5% discount for implementing ISAlliance Best Practices (July 2002)

ISAlliance Qualification Program

- No Standardized Certification Program Exists or will exist soon
- ISAlliance in cooperation with big 4 and insurance industry create quantitative measurement for "qualification" for ISA discounts as proxy for certification
- ISA works with CMU CyLab on Certification

A Coherent 10 step Program of Cyber Security

1. Members and CERT create best practices

2. Members and CERT share information

3. Cooperate with industry and government to develop new models and products consistent with best practices

A Coherent Program of Cyber Security

4. Provide Education and Training programs based on coherent theory and measured compliance

5. Coordinate across sectors

6. Coordinate across boarders

A coherent program

7. Develop the business case (ROI) for improved cyber security
8. Develop market incentives and tools for consistent maintenance of cyber security
9. Integrate sound theory and practice and evaluation into public policy
10. Constantly expand the perimeter of cyber security by adding new members

The Internet Security Alliance

The **Internet Security Alliance** is a collaborative effort between Carnegie Mellon University's ***Software Engineering Institute (SEI)*** and its ***CERT Coordination Center (CERT/CC)*** and the ***Electronic Industries Alliance (EIA)***, a federation of trade associations with over 2,500 members.

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