

CENTER FOR SECURITY STUDIES

Swiss Federal Institute of Technology (ETH Zurich)

A Comparison of Cybersecurity Initiatives Worldwide

Myriam Dunn

WSIS Thematic Meeting on
Cybersecurity, Geneva, 29 June
2005



- ! National cybersecurity efforts exist
- ! How to move from national to global cultures of cybersecurity?
- ! Common denominator to aim for?
- ! Is there a global culture of cybersecurity already?
- ! Paper investigates national cyber-security initiatives to
 - ! identify common themes
 - ! best practices
 - ! problems and pitfalls for a future global culture of cyber-security

Structure of the Paper

- /** Introduction, Definition
- /** Cybersecurity and National Security
 - /** The Apparent Insecurity of the Global Information Infrastructure ...
 - /** ... and the Link to the Critical Infrastructure Debate in the 1990s
 - /** The Unsubstantiated Nature of Cyber-threats and Implications for Countermeasures
- /** A Comparison of National Cybersecurity Initiatives Worldwide
 - /** Major Topics/Common Denominators
 - /** Explaining Similarities and Differences
 - /** Viewpoints, Typologies, Consequences
- /** Problems and Prospects for an International Regime for the Protection of Cyberspace
 - /** Non-Zero-Sum Game: Cybercrime Convention
 - /** Zero-Sum Game: Arms Control in Cyberspace

Cybersecurity and National Security

- Cybersecurity concerns are not a phenomenon of the 1990s
 - Viruses and Worms
 - Movie War Games
 - „Cuckoo’s Egg“ Incident

- But: New dimension in the 1990s
 - Technological environment and substructure: networked environments
 - Quantitative increase in cyber-incidents
 - Qualitative difference/gravity of the threat

- A convergence of issues in the mid-1990s
- Modern societies rely heavily upon infrastructure, *particularly* ICT
- Critical information infrastructure (CII) links other infrastructure systems together
- CII is inherently insecure
- Threat rapidly evolving in terms of nature and capability to cause damage
 - „Force multiplier“ effect

National Cybersecurity Efforts in Comparison

▮ Five focal points of high importance

- ▮ Critical Sectors
- ▮ Organizational Overview
- ▮ Early Warning Approaches
- ▮ Current Topics in Law and Legislation
- ▮ Research and Development

National Cybersecurity Efforts: Similarities

- ▮ Definition of what constitutes critical sectors is ongoing
- ▮ Interagency and multi-stakeholder approach prevails
- ▮ Private-public partnerships identified as crucial
- ▮ Harmonization of national legal provisions to enhance judicial and police cooperation
- ▮ Need for cooperative international action identified and acknowledged

National Cybersecurity Efforts: Reasons for Differences

- Issue of relevance to different, diverse, overlapping communities
- Threat perceptions and their link to countermeasures
- Turf battles within governments
- Disagreement on approach to be taken
- Key question: Who wins when why?

Viewpoints and Typologies

- ▄ Cybersecurity is seen from different perspectives
 - ▄ IT-security issue
 - ▄ Economic issue
 - ▄ Law-enforcement issue
 - ▄ National security issue
- ▄ Overlaps and no clear-cut boundaries
- ▄ Different groups do not necessarily agree on what the problem is and what needs to be protected!
- ▄ The differing positions demand different allocation of *responsibility* and countermeasures
- ▄ Most dominant “paradigm”: Law enforcement

Towards Multilateral Solutions?

- ▮ Law enforcement, lack or disparity of legal codes, and the need for global cooperation
- ▮ From the national to the global naturally?
- ▮ International regime hampered by an underlying tension
 - ▮ Cyber-threats as a threat to the economic prosperity of all nations
 - ▮ Cyber-threats as a threat to national security
- ▮ Non-Zero Game vs. Zero-Game Solutions
 - ▮ Legal Instruments
 - ▮ Arms Control

- ▮ Law-enforcement/cyber-crime perspective has emerged as the most prominent one due to
 - ▮ nature of the threat
 - ▮ resources available to the law enforcement community
 - ▮ cultural and legal norms
- ▮ Basis for global culture derives from common need in this issue area
- ▮ But the defensive - offensive dilemma needs to be overcome before global culture can prosper

Contact Information

Myriam Dunn dunn@sipo.gess.ethz.ch

Center for Security Studies

ETH Zentrum WEC E 22

CH-8092 Zurich

Switzerland

E-mail crn@sipo.gess.ethz.ch

Web: www.isn.ethz.ch/crn