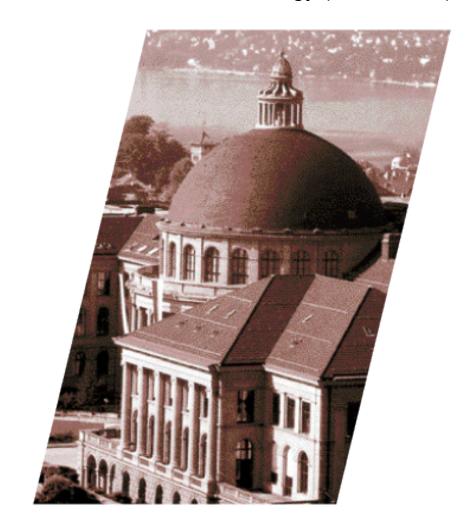
CENTER FOR SECURITY STUDIES

Swiss Federal Institute of Technology (ETH Zurich)

A Comparison of Cybersecurity Initiatives Worldwide

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Introduction

- 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





Cybersecurity and CIP

- 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





Conclusion

- 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

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