

Critical Thinking & Problem Solving

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How to perceive and assess a critical need and
design a tailored solution

Global security challenges summary
Redefinition of Power

- **Global political change**
- **Globalization intensification**
- **Technological development**
- **New actors on the scene**

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

Global security challenges summary **Redefinition of Power**

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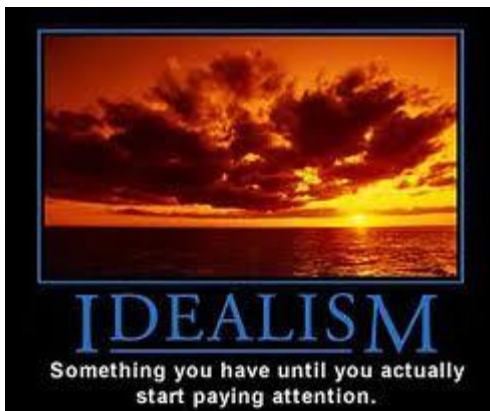
CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

1. Global security challenges summary Redefinition of Power

- Global political change

Domination of idealist perception over realist perception

Triumph of liberalism – Democratization as a trend



1. Global security challenges summary

Redefinition of Power

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CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

1. Global security challenges summary **Redefinition of Power**

- **Globalization intensification**

The influence of liberal ideology



- **The idea for freedom through free movement of people goods capital and services**

1. Global security challenges summary

Redefinition of Power

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CRITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

1. Global security challenges summary **Redefinition of Power**

- **Technological development**
(trend of modernization along with democratization)

Information flow

Service improvement

Influence of values

Possibility to improve welfare



1. Global security challenges summary

Redefinition of Power

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CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

1. Global security challenges summary

Redefinition of Power

New actors on the scene

PYRAMID OF POWER



CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

1. Global security challenges summary

BALI -
2002

Redefinition of Power

MADRID -
2004



LONDON -
2005



KABUL -
2009



CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

1. Global security challenges summary Redefinition of Power

Recent history has shown that infrastructures can be damaged and that disruption of critical processes can have far reaching *social and economic impacts*



- **Serious damage may be caused by natural events,**
- **Technical failure or human error,**
- **Intentional acts of a terrorist or other criminal nature and**
- **War**

A G E N D A

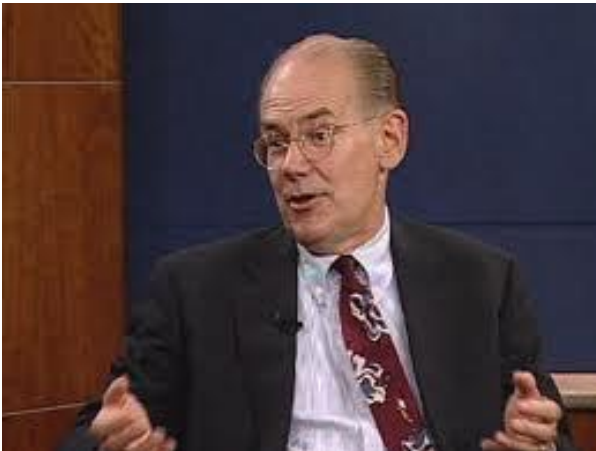
- 1. Global security challenges summary**
- 2. Why do we need to protect Critical Infrastructure**
- 3. Critical infrastructure protection in the context of natural disaster risk reduction**
- 4. Conclusion**

CRITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

-The 11 September 2001 terrorist attacks in the United States, have given new dimension to the concept of security...

-The John Mearsheimer's argument...



-Destruction and confiscation of the enemy's battlefield capabilities or occupation of enemy's maneuver space is no longer criteria for success in fighting modern terrorism

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

Relying on a strategy of mass casualties AQAM's center of gravity is to indirectly (through public opinion) persuade US and Coalition authorities and keep them clear from Middle-East conflicts, to re-launch and to expand the Caliphate... (Al Batr...)

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

The only way to succeed in this is by attacking the weakest points of perceived enemies (two weak points so far).

The first one is modern civilian systems (i.e. sophisticated networks of services and infrastructure that move people, goods, energy, money, and information at higher volume and greater velocities).

The second weak point identified by AQAM is western values (pursuit for stability, peace, and prosperity *per se*).

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

How???

AQAM have proven that is easy to employ modern systems we rely upon and use them against us



Terrorist attacks on the subway systems and the railway in Bali, London, Madrid, Mumbai, Moscow, Boston have confirmed that pouring more troupes for protection doesn't provide effective barrier as it does to the conventional threats.

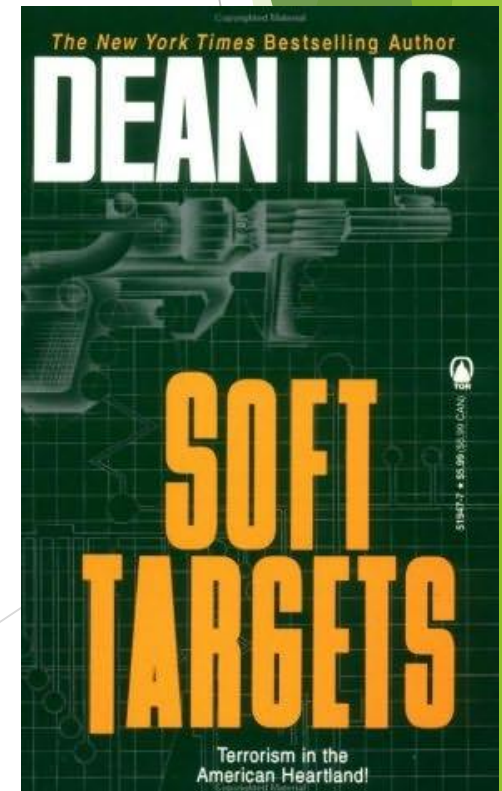
CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

Development of **these systems** in virtual security vacuum (after the collapse of communism) has made them **soft targets**.

Why ???

The architects of these networks and infrastructures were mainly concerned with **profit**. In fact, the cost reduction and efficiency was their highest priority. At the same time the growing dependence on these networks had not been matched by parallel focus on their security.

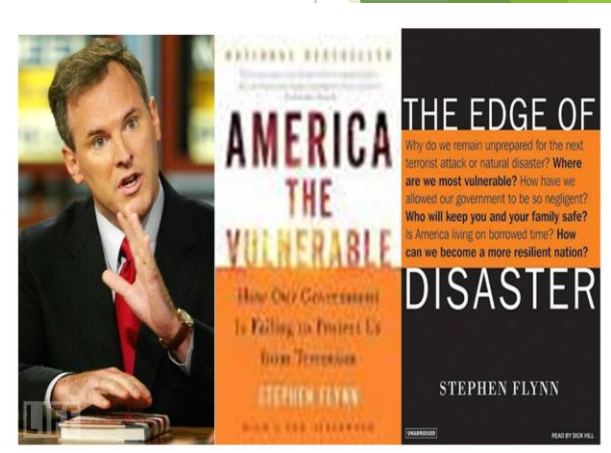


CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

Why???

Stephen Flynn argues “...security considerations have been widely perceived as annoying speed bumps in achieving their goals (referring to the architects of these systems), ...As a result the systems that underpin our prosperity are soft targets for those bent on challenging U.S. power..” (Flynn, 2004).



Nevertheless this wasn't the only weak point that US and Coalition failed to protect.

There is far more complex and abstract point that remained unprotected.

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CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

HOW?



Tactics to attack **modern systems** that ensure wellness and prosperity especially **apocalyptic pursue** for **weapons of mass destruction** attack, have created unimagined **domestic** and **international pressure** and **panic**

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

Why is this a problem?

-In the age of globalization these systems and services that they provide are interlinked, interconnected and go beyond national borders



-On the other hand after the Cold War free flow of capital, people, goods, energy, money, and information, (all of which depend on these systems) have begun to equal free market, and foreign investments.

Boston how to protect this?

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

2. Why do we need to protect Critical Infrastructure?

Why is this a problem?

-Thus the **networks of facilities and infrastructures** that build modern systems have begun to ensure **competitive edge in the age of globalization**.



-Ensuring the continuous provision of essential services to the population (in order to achieve wellness and prosperity) still remains as a core state responsibility.

A G E N D A

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CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction

Can we really prevent natural disasters?

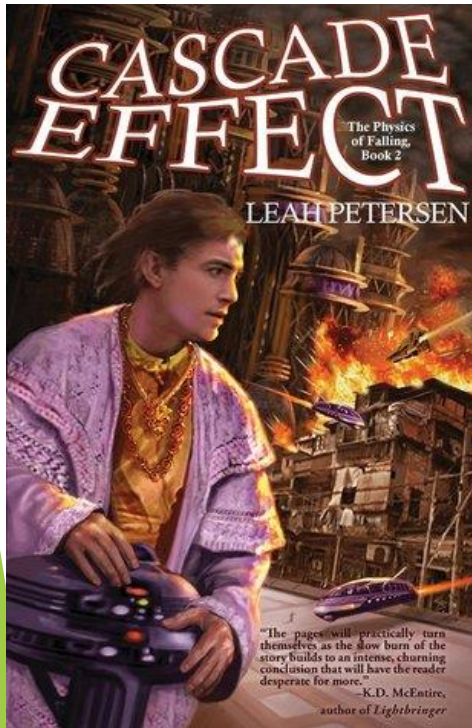


CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction Can we really prevent natural disasters?

What will be the best way to organize critical infrastructures protections in time of natural disasters?

Avoid cascade effects!

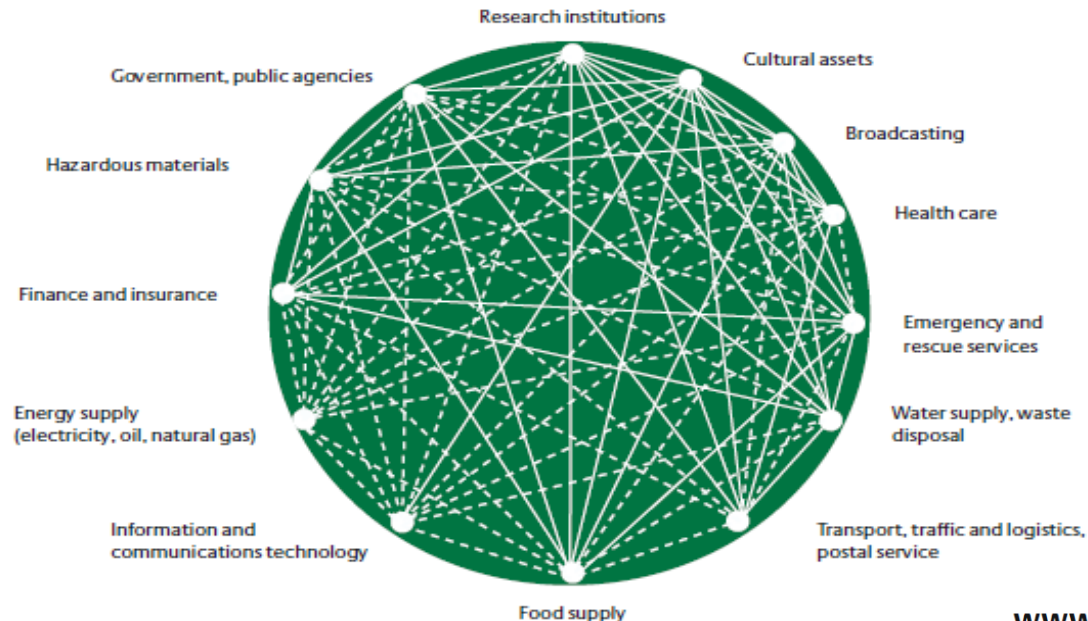


CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction

Can we really prevent natural disasters?

Recent history has shown that infrastructures can indeed be damaged and that disruption of critical processes can have far reaching social and economic impacts



CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction

Many governments believe that ability of one's system to withstand, absorb, adapt to the new situation and to bounce back would be best way to respond to natural disasters

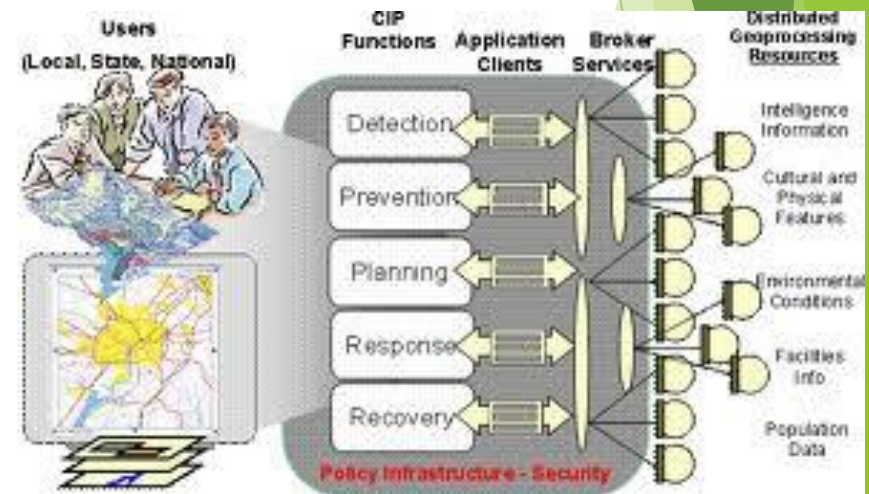


CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction

In practice this means that

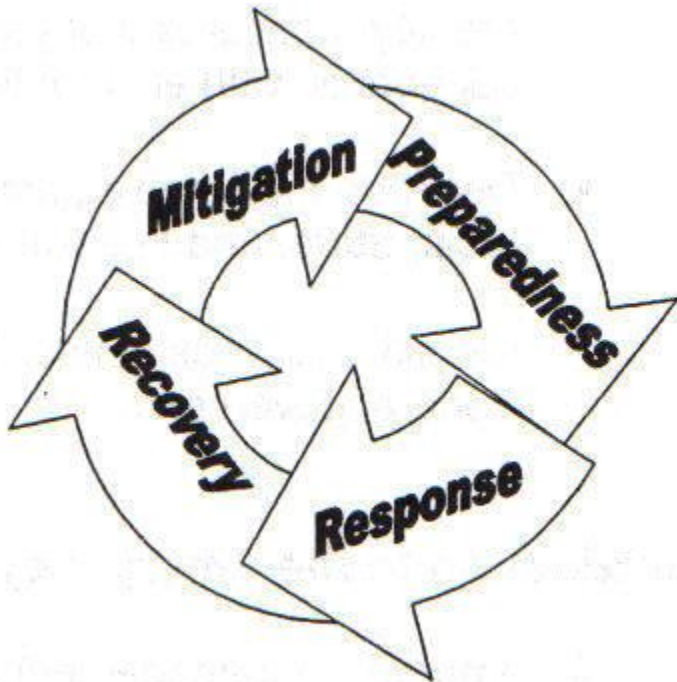
Best way to achieve this is through identified critical infrastructures that need to be protected



CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction Can we really prevent natural disasters?

Many countries apply the so called “all-hazards” approach and linked it to CI identification



The benefit of applying “all-hazards” approach is that it enables the country to develop comprehensive protection regardless of the threat

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction

Can we really prevent natural disasters?

To achieve such capacities all stakeholders (public and private) need to develop their security systems to a point where the system is able to recover from adversity, to restore it either to its original state or to a modified state based on new requirements.

In other words to create greater resilience.



Resilience

The Courage to Come Back

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction

Three other reasons also urge countries that apply comprehensive all hazard approach and resilience in their national security strategies to identify critical infrastructures that need protection.

- First it is more practical (for the operational level),**
- Second technical reason (i.e. achieving necessary standardization) and**
- Financial reasons (it is les costly)**

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction

International trends and experience in this area also show that in general countries are using two models of prioritization (i.e. identification of critical infrastructure):

- First model, countries distinguish between critical infrastructures that deserve a greater level of attention**
- Second, countries identify vital points within a critical infrastructure**

CRTITICAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

3. Critical infrastructure protection in the context of natural disaster risk reduction

Risk Analyses

Criticality analysis

Risk identification

Threat analysis and scenario development

Vulnerability analysis

Risk calculation

Comparing and evaluating risks

Preventive measures and strategies

Risk reduction

Risk avoidance

Risk shifting

Acceptance of risks (residual risks)

Property insurers' experience with damages

Crisis management – strategy

Evaluating risk and crisis management

CRTITCAL INFRASTRUCTURE PROTECTION FROM ALL KIND OF THREATS

4. Conclusion

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3. Critical infrastructure protection in the context of natural disaster risk reduction

Q & A

Reference and sources

1. Critical Thinking and Problem Solving: Advanced Strategies and Reasoning Skills to Increase Your Decision Making. A System... by Carl Patterson, Chris del Camino
2. Critical Thinking and Problem Solving: Advanced Strategies and Reasoning Skills to Increase Your Decision Making. A Systematic Approach to Master Logic, Avoid Mistakes and Be a Creative Problem Solver by Carl Patterson, Chris del Camino
3. Thinking Skills: Critical Thinking and Problem Solving by John Butterworth and Geoff Thwaites | Apr 18, 2013
4. Critical Thinking: How to Improve Your Critical Thinking Skills, Problem Solving Skills, and Avoid the 25 Cognitive Biases in Decision-Making by Scott Lovell and Timothy Burke
5. Beginners Guide to Critical Thinking and Problem Solving: Become a Better Critical Thinker & Problem Solver, by Using Secret Tools & Techniques that Will .! by Pamela Hughes, Samantha Novak, et al.
6. Understanding A3 Thinking: A Critical Component of Toyota's PDCA Management System by Durward K. Sobek II and Art Smalley | Mar 7, 2008