

Critical Infrastructure and Crisis Management

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Synonyms: framework; built environment; supporting systems, assets and networks

Definition: systems and assets, whether physical or virtual, so vital to the society that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.

Introduction

Modern societies are supported by a network of systems that provide the services essential to sustain human life, support socio-economic activity and provide security. While these systems provide high levels of convenience and quality of life, they also create vulnerabilities, since the established social order depends upon their functionality. Members of the society can plan for brief interruptions of these systems through stockpiling, temporary alternate modes of operation, or foregoing the related activities for short periods of time. However, longer term loss of these systems can damage the society's public health, economy and security.

In most nations the critical infrastructure elements are mostly owned by the private sector: individuals, firms, corporations. Governments may regulate service charges and delivery, and may mandate a level of preparing for outages, but the private sector ultimately has to undertake the investment to make these actions possible. Explaining the value of these steps and the long term return-on-investment (ROI) that they will generate is a challenge in growing economies, and a losing proposition in times of economic downturn, or in societies without increasing revenues to protect. The government's goal for critical infrastructure is to develop a society "in which physical and cyber critical infrastructure remain secure and resilient, with vulnerabilities reduced, consequences minimized, threats identified and disrupted, and response and recovery hastened." (USDHS. ((2013)) National Infrastructure Protection Program.)

Defining Critical Infrastructure

Source of Definitions

Critical infrastructure has been defined by national and international norms and regulations. For example, in the United States there have been many documents issued from the Executive Branch of the government that define critical infrastructure, such as presidential executive orders and descriptive documents created by executive branch agencies. There are sixteen economic and social segments that have been identified by these documents, and they form a useful paradigm for understanding and evaluating critical infrastructure internationally.

Table 1 lists the sectors that are commonly considered to be critical for the functioning of civil society and the provision of national security. While government has a security interest in their operation, according to the US Government Accountability Office (GAO) 85% of the critical infrastructure in the United States is privately owned. The owners generate income for themselves, their employees and the community while providing essential services. Short term disruption of CI will have immediate economic impacts, but longer term loss of these systems may have national security implications.