

Frameworks and Insights Characterizing Trends in Cyberspace and Cyberpower

Frank Kramer, Stuart Starr, Larry Wentz, Eli Zimet
Center for Technology and National Security Policy (CTNSP),
National Defense University (NDU)

Daniel Kuehl
Information Resources Management College (IRMC), NDU

Abstract

During the course of DoD's 2006 Quadrennial Defense Review (QDR), it was observed that DoD lacks a coherent, holistic framework to formulate and assess policy issues associated with cyberspace and cyberpower. To redress that shortfall, the Under Secretary of Defense (Policy) directed the Center for Technology and National Security Policy (CTNSP), National Defense University (NDU), to undertake a study of the subject area. As stated in the study's Terms of Reference, "... there is a compelling need for a comprehensive, robust and articulate cyber power theory that describes, explains and predicts how our nation should best use cyber power in support of US national and security interests".

In order to address these issues, a framework has been developed that can be depicted as a pyramid. In the framework, the foundation of the effort is established by characterizing key definitions (e.g., "cyberspace", "cyberpower") and exploring possible changes in cyberspace over the next 15 years. Building on that foundation, the next layer of the framework explores the potential impact of changes in cyberspace on selected levers of power (i.e., military, informational). The third level of the pyramid addresses the extent to which changes in cyberspace serve to empower key entities. These entities include, *inter alia*, individuals, activists, terrorists, transnational criminals, nation states, and supra-national organizations (e.g., the United Nations). Another plane of the pyramid considers key factors that transcend each of these factors. These include institutional and policy issues that the community must address (e.g., governance, legal, government-corporate responsibilities).

A series of workshops have been convened to address each of these areas. At these workshops, leading experts from government, think tanks, industry, and academia have presented their views on the major subject areas. Based on the feedback from those discussions, each presenter is developing a chapter for a comprehensive book on the subject.

This paper introduces selected frameworks for conceptualizing the problem, suggests a hierarchy of Measures of Merit (MoMs) to support policy analysis, discusses preliminary analyses that have been performed based on those frameworks, and identifies residual issues that warrant further research.