

Collective C2 in a Network-Centric Environment

presented to
Cognitive Aspects of Decision Making Research Workshop

Dr. David S. Alberts
Director, Research
Office of the Assistant Secretary of Defense
(Networks and Information Integration)
DoD CIO

Agenda

- **DoD Mission and C2 Challenges**
- **Network-Centric Operating Domains and Value Chain**
- **C2 Maturity Levels**
- **Variables of Interest**
- **ELICIT**

21st Missions

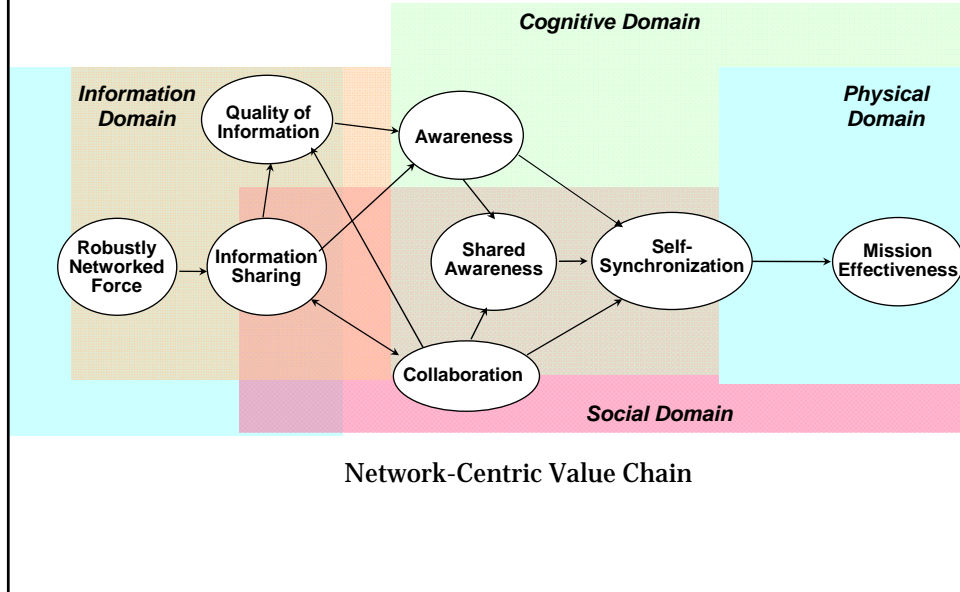
- Complex Endeavors are now the business of DoD
- Complex Effects Space
 - More than just military effects
 - Interactions in effects space significant
 - Lack of understanding of cross-domain cause-effects
 - Inability to predict
- Operating in a Network-Centric Environment
 - Many v. Few
 - Unfamiliar v. Familiar
- Complex “Self”
 - “Self” is composed of large number of heterogeneous entities
 - Different objectives, values, constraints
 - No single entity in charge
 - Entities have significantly different perceptions

21st Missions

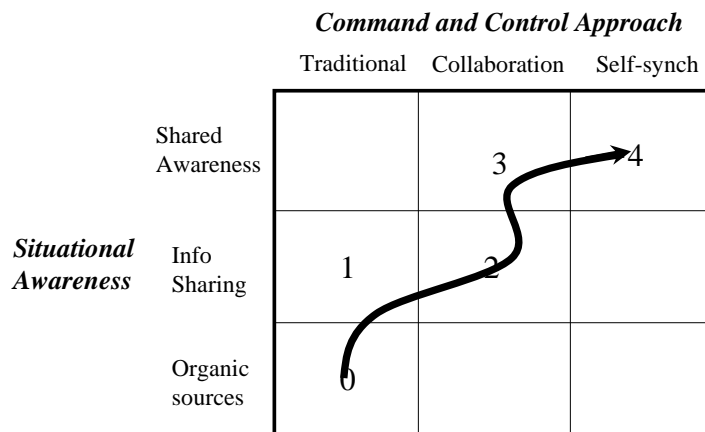
- Complex Endeavors are now the business of DoD
- Complex Effects Space
 - More than just military effects
 - Interactions in effects space significant
 - Lack of understanding of cross-domain cause-effects
 - Inability to predict
- Operating in a Network-Centric Environment
 - Many v. Few
 - Unfamiliar v. Familiar
- Complex “Self”
 - “Self” is composed of heterogeneous entities
 - Different objectives, values, constraints
 - No single entity in charge
 - Entities have significantly different perceptions



Domains of Interest in Network Centric Operations



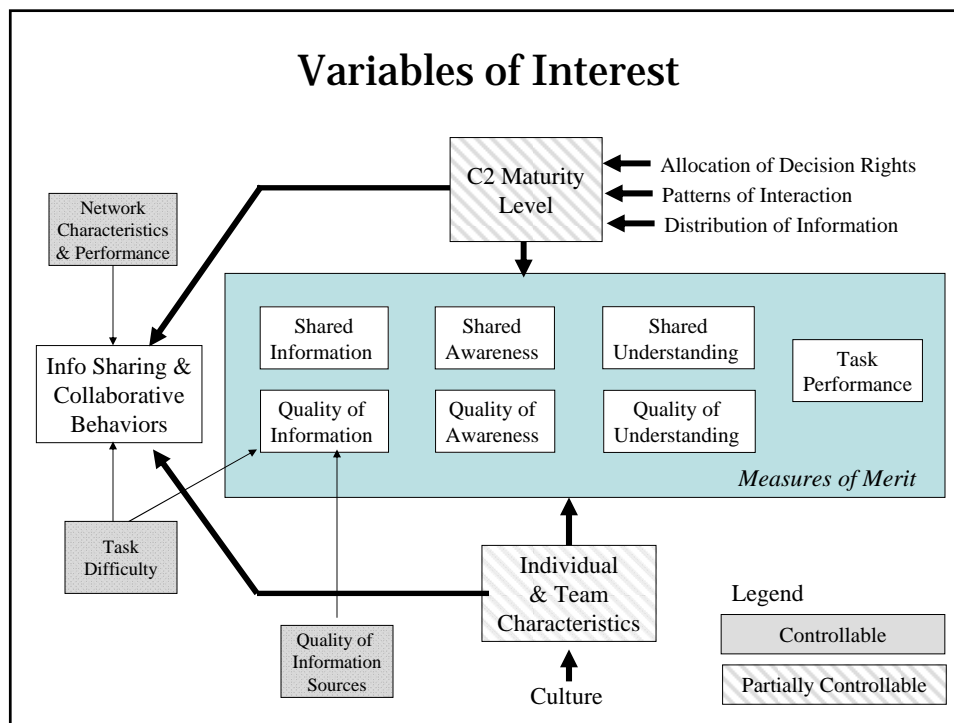
Network-Centric C2 Maturity Model*



* First appeared in *Understanding Information Age Warfare* p.241, CCRP Publications, 2001. www.dodccrp.org

C2 Maturity and Cognitive Demands

- As C2 maturity increases, the cognitive demands on individuals and collectives increases because there is a requirement to:
 - share information more extensively and more frequently
 - involve more sources of information
 - interact (collaborate) with great numbers and more diverse people and organizations
 - accept external values and constraints
 - accept more interdependence



What is ELICIT?

- ELICIT = Experimental Laboratory for Investigating Collaboration, Information-sharing, and Trust
- U.S. DoD (OASD/NII) Command and Control Research Program (CCRP) sponsored the design and development of the ELICIT platform for experimentation focused on information, cognitive, and social domain phenomena
- Web-based version for person-in-the-loop experiments and abELICIT, an agent-based version
- Purpose of ELICIT-related Experimentation and Analysis is to investigate the cognitive and social impacts of C2 approach and organizational structure (e.g. information sharing, trust, shared awareness, and task performance)

see www.dodccrp.org for more information