



Operational Trust: A New Look at the Human Requirement in Network Centric Warfare



Major Nicole Blatt, USAF
MA Student, National Security Affairs
Naval Postgraduate School
Monterey, CA
niblatt@nps.edu

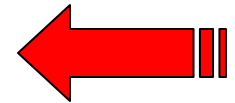
Power To The Edge

by David Alberts and Richard Hayes



❑ **Four Tenets of NCW**

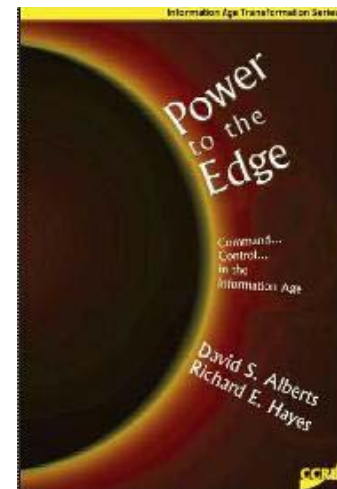
1. Competence at all levels of the force
2. High quality information and shared situation awareness
3. Clear and consistent understanding of command intent
4. Trust in the information, subordinates, superiors, peers, and equipment



But Trust is not a given...

Is Trust really necessary?

How can we ever get there?





Overview

Answer these questions

- What is Trust and Operational Trust?
 - Why Trust is Necessary in Network Centric Warfare?
 - How Can We Increase Trust in Operations?
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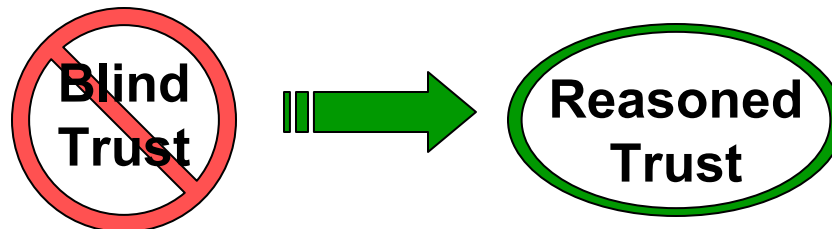


What is Trust?

Trust is a bet
that those entities
which you cannot control
will act in an expected manner
that is favorable to your cause.

□ Two Categories

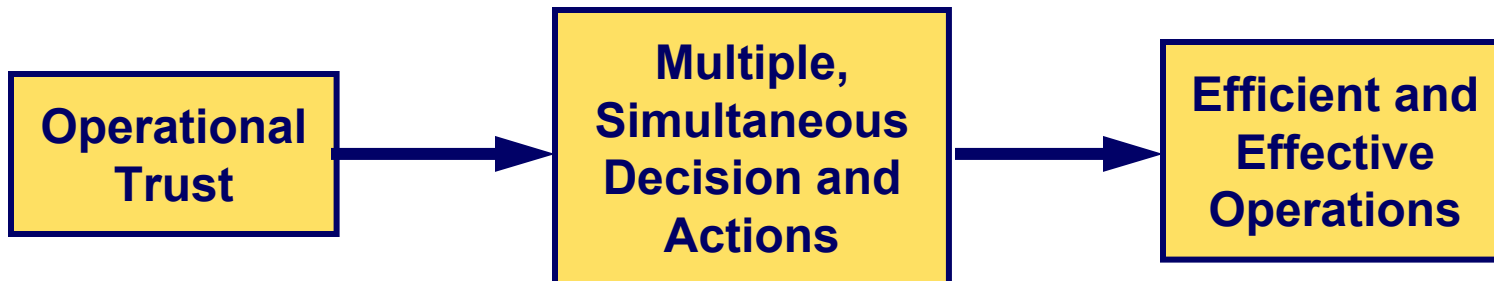
- Blind Trust – Making an uninformed (dumb) bet
- Reasoned Trust – Having reasons to make a smart bet



What is Operational Trust?



- ❑ **The aggregate trust that is required by every person to orchestrate and accomplish a campaign or endeavor**
 - Battle Managers must trust the pilots to attack the correct target
 - Pilots must trust the target information received from the controller
 - The commander must trust his subordinates to ethically follow his directives
 - Soldiers must trust that their commander will provide smart orders
 - Operators must trust that the equipment works correctly
 - All players must trust that everyone else will follow the same ROE
- ❑ **Operational Trust is an integral part of Operational Art**



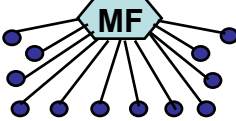
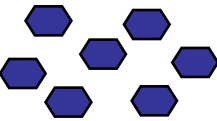
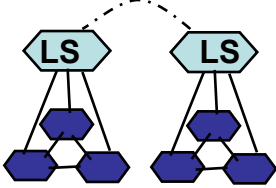
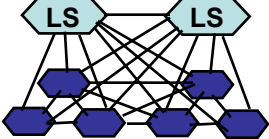
Why Operational Trust is Necessary in NCW



- NCW is defined by its ability to link entities together through shared information**
 - NCW is complex – lots of parts working together**
 - The greater the complexity, the more interdependence is required**
 - No single entity can do the job alone**
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The Communications Technology Model Applied to Organizations



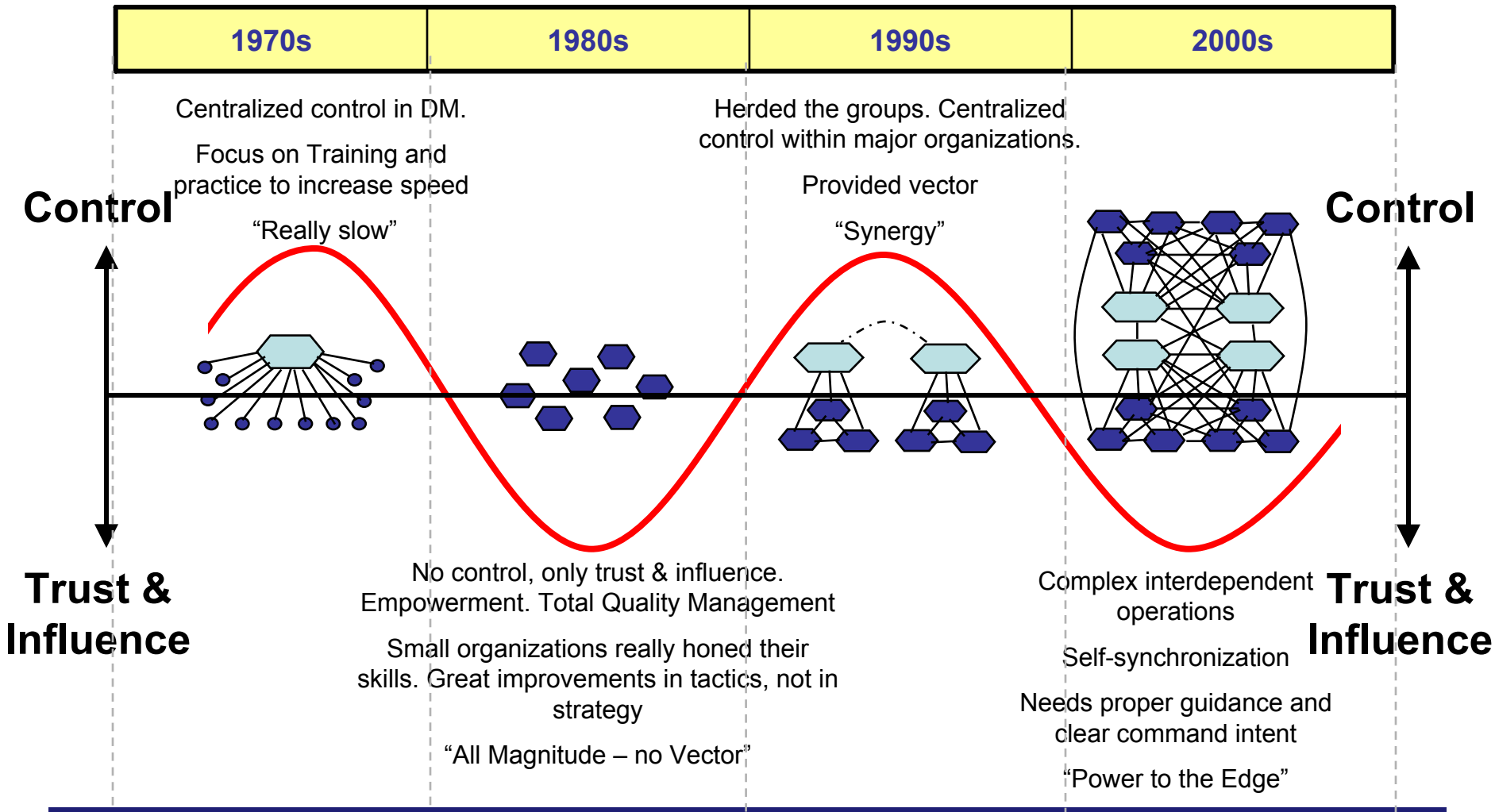
Timeline	1970s	1980s	1990s	2000s
Computer Technology	Mainframe + terminals 	Personal Computers (PCs) 	LAN of PCs 	Internet and Intranets, DSL, Access to the Web 
Characteristics	Few actual “thinkers”	Isolated decision-making, No connectivity	Integration and synergy within local networks	Exponential capability, Netcentricity
Military Organization, Force Structure, and Decision Making	Centralized, slow, few decision-makers per capita (lots of troops)	Complete push to decentralization, empowerment, can't work together	Federated but connected at central points, Those top central points not well connected to other top centralized points	Decentralized DM at individual level. Shared information. Multiple redundant paths for information sharing.

MF = Mainframe
LS = LAN server

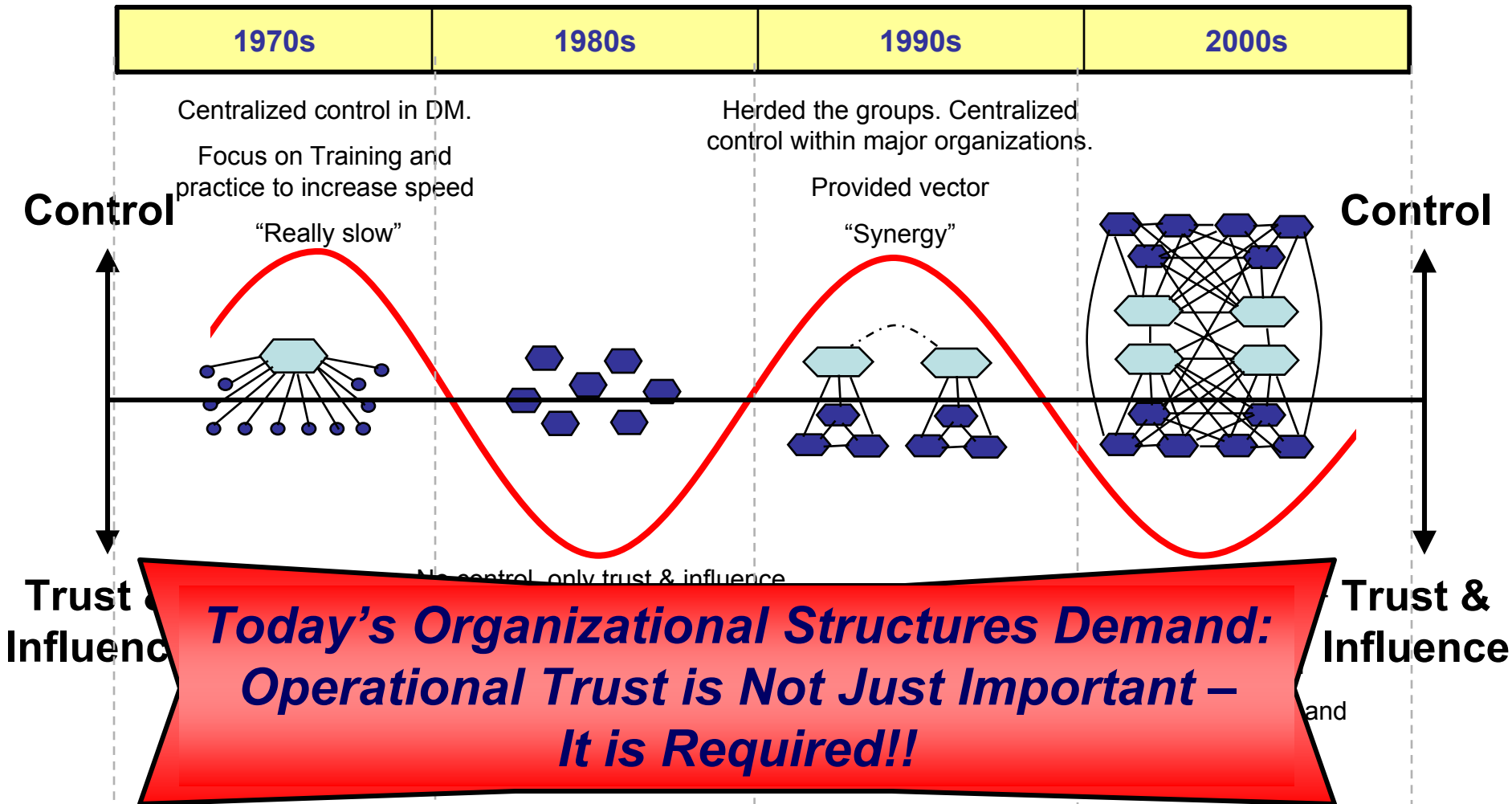
LAN = Local Area Network
DSL = Digital Subscriber Line

Computer Programs = Decision-Makers in the Communications Technology Domain

What the Model Shows – Control versus Trust & Influence



What the Model Shows – Control versus Trust & Influence



How Can We Get There?

Three Steps to Trust-Based Decisions



Look At Trust From The Perspective Of Each Person's Role In The Operation

- Step 1: Determining The Need To Trust**
Do I Have To Make A Bet?

 - Step 2: Assessing The Risk**
What are the Stakes of the Bet?

 - Step 3: Changing The Odds**
Can I Make A Better Prediction?
-

Step 1: Determining the Need



Do I Have To Make A Bet?

Importance of My Task

- How important is my task?
- Are others depending on me?
- Do I need to be trustworthy ?

Necessity of Dependency

- Do I need help to accomplish my mission?
- Whom do I need to depend on to complete my mission?

Amount of Dependency

- How critical is each of these dependencies?
 - Do I have alternatives?
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Step 2: Assessing The Risk



What Are the Stakes of the Bet?

☐ Severity of Negative Consequences

- What if the entity in which I placed trust defects?
- How will that inhibit my ability to accomplish my mission?
- Are the consequences minor, major, or catastrophic?

☐ Probability of Occurrence

- What is the likelihood that the entity will fail to meet expectations?
- How difficult is his task? How many things does he depend on?
- Is the entity trustworthy?

RISK MATRIX	Probability of Occurrence				
		Highly Unlikely	Not Likely	Likely	Highly Likely
Severity of Negative Consequences	Minor	Green	Green	Green	Yellow
	Major	Green	Yellow	Yellow	Red
	Catastrophic	Yellow	Red	Red	Red

Step 3: Changing The Odds



Can I Make a Better Prediction?

- ❑ **Increased Situational Awareness (SA)**
 - Common operational picture allows all players access to all information
 - Understanding where the information comes from increases SA
 - Real-time and near real-time data exchange increases confidence
 - ❑ **Real-time Verification**
 - Multiple sources of information produces collaborative results
 - Multiple methods to receive info ensures communications reliability
 - ❑ **Verification Afterwards**
 - Truth data in debriefs closes the loop in the trust cycle
 - Reports document and provide past data for future trust
 - ❑ **Rules / Roles / ROE**
 - Clear, consistent, rules, intent, adds control and establishes priorities
 - Established expectations – a key element in trust-based decisions
 - ❑ **Amount of Control**
 - By increasing your control over the entity, you will decrease risk in trust
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Changing The Odds (cont)



Can I Make a Better Prediction?

Past Experience with Trustee

- Nothing beats experience and personal contact for building trust
- Train across organizational lines with the units you will fight with
- Build Capability Thread teams; develop capabilities in joint packages
- CONUS Deployment Rehearsals with the entire deployment package

Indirect Reputation

- When you have no personal knowledge of the trustee, you may depend on others' assessment of that entity
- Squadron/Brigade competitions to build a name and reputation

Common Cause / Objective / Priority

- Understanding the priorities and availability of the trustee can help you determine if you can entrust him to help you
- Garner consensus in the planning stage

Likelihood of Future Interactions

- Increase the probability that the actors will work together again
 - This will increase trust through experience
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Bottom Line

- ❑ Trust Is Necessary In Network Centric Warfare**
- ❑ Reasoned Trust Leads To Better Decisions**
- ❑ Trust-based Decisions Will Increase Efficiency And Effectiveness In Operations**
- ❑ Take The Steps To Maximize Reasoned Trust**

Change The Odds Of The Trust Bet



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