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

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The views expressed in this paper are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.
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?
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
## The Communications Technology Model Applied to Organizations

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

*MF = Mainframe*  
*LS = LAN server*  
*DSL = Digital Subscriber Line*  

**Computer Programs = Decision-Makers in the Communications Technology Domain**
What the Model Shows – Control versus Trust & Influence

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<td>Centralized control in DM. Focus on Training and practice to increase speed</td>
<td>Herded the groups. Centralized control within major organizations. Provided vector</td>
<td>Complex interdependent operations Self-synchronization Needs proper guidance and clear command intent</td>
<td>“Power to the Edge”</td>
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Centralized control in DM. “Really slow”

No control, only trust & influence. Empowerment. Total Quality Management Small organizations really honed their skills. Great improvements in tactics, not in strategy “All Magnitude – no Vector”
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<td>“Really slow”</td>
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Today’s Organizational Structures Demand: Operational Trust is Not Just Important – It is Required!!
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?
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?

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<th>RISK MATRIX</th>
<th>Probability of Occurrence</th>
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<tbody>
<tr>
<td></td>
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<td>Severity of Negative Consequences</td>
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</tr>
<tr>
<td></td>
<td>Major</td>
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<td></td>
<td>Catastrophic</td>
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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
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
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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