Transforming Defense

Office of Force Transformation

• The Role of Defense in National Security

• The Management of Defense

• The Force

  As National Strategy
  As Corporate Strategy
  As Risk Management Strategy

Vision: Broad and Sustained Competitive Advantage

Arthur K. Cebrowski, Director, Force Transformation
Transforming Defense

...A description

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Elements of Transformation

✓ Continuing process
✓ Creating/anticipating the future
✓ Co-evolution of concepts, processes, organizations, and technology
✓ New competitive areas/competencies; revalued attributes
✓ Fundamental shifts in underlying principles
✓ New sources of power
✓ Broadened capabilities base

Vision: Broad and sustained competitive advantage

- New strategic context
- Broadened threat context
- Technological threats facilitated by falling barriers to competition

- As National Strategy
- As Corporate Strategy
- As Risk Management Strategy
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...Compelling need

New strategic context
- New Theory of War based on information age principles and phenomena
- New relationship between operations abroad and homeland security
- New concept/sense of security in the American citizen

Broadened threat context
- State/Non-State
- Nodal/Non-nodal
- Symmetric/Asymmetric
- Traditional/Unrestricted

New technological threats facilitated by the falling barriers to competitive entry
- Immediate accessibility to highly capable low cost IT
- Opens key operational domains to competition: space, sea, cyberspace

To the extent we do not transform, we are at risk
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...Methodology

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Operational Goals
- Protecting Bases
- Conducting Info Operations
- Project & Sustain U.S. Forces
- Denying Enemy Sanctuary
- Conducting Space Operations
- Leveraging Info Technology

Strategic

Threat

Technology

...Compelling Need

Transformation Strategy

Joint Concepts

Capabilities

Technology Processes Organization People
Transforming Defense
...deter forward...or defeat with modest reinforcement

ASSURE, DISUADE, DETER

WHAT’S VALUED
NETWORKING
SENSING
ENVELOPE MANAGEMENT
SPEED/ENDURANCE
NUMBERS
RISK TOLERANCE
STAYING POWER

ALTER INITIAL CONDITIONS

INFLUENCE INITIAL CONDITIONS

ASSURE, DISUADE, DETER

COMPEL

RESTORE

Effort

Results

Speed of Command

Attrition

Intensity

Duration
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…Strategic Issues

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Strategic Maneuver/Balance
- Forces forward
- Strategic deploy from home
- Allies

Operational Maneuver
- From forward garrison
- From the sea
- From strategic distances

Deter Forward
- 2d derivative force
- Sustaining force
- Constabulary/Nation-building force
Network-Centric Warfare

Based on human behavior

Translates an information advantage into a competitive advantage.

Derives power from robust networking of geographically dispersed forces.

Characterized by:

- Shared battlespace awareness,
- Shared knowledge of commanders intent,
- Self-synchronization, speed of command, and rapid lock-out.

If you’re not interoperable, you’re not on the net
not contributing
not benefiting
Not part of the information age!
**Chains versus Networks**

**Chain**
Too brittle, simple pattern, simple control, scaled
“business end” most poorly connected, hard to reconfigure or change flow

**Network**
Very robust, complex pattern, complex control, scale free
“business end” best connected, natural to reconfigure or change flow
Information-Age Warfare

...Domains of conflict

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Cognitive Domain – Decision Advantage

Conveyed Commander’s Intent

Shared Awareness

Compressed Operations

Information Domain – Information Advantage

Information Advantage

Physical Domain – Force Advantage

NCW

Precision Force

Speed and Access

Concept-focused Experimentation (upstream and downstream) at the domain intersections

Plan, Organize, Deploy, Employ and Sustain Cycle
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...The new American Way of War

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The New Rules

• Fight first for **information superiority**
• **Speed** of command
• Access to information- **shared awareness**
• **Dispersed forces**- noncontiguous operations
• **Demassification**
• Elimination of **process lines**
  (eg. organize, deploy, employ, sustain, ops, intel, logistics)
• Elimination of **structural lines**
  (eg. Joint ops at the small unit level)
• Dynamic **self-synchronization**
• **Alter** initial conditions
• Develop **high rates of change**
• **Compression** of levels of war

NETWORK CENTRIC WARFARE

- **HIGH RATES OF CHANGE**
- **CLOSELY COUPLED EVENTS**
- **LOCK IN/OUT**
- **SPEED OF COMMAND**
- **SELF SYNCHRONIZATION**

WHAT’S VALUED

- NETWORKING
- SENSING
- ENVELOPE MANAGEMENT
- **SPEED/ENDURANCE**
- **NUMBERS**
- **RISK TOLERANCE**
- **STAYING POWER**
The Emerging American Military:

- More expeditionary (including lighter, more lethal)
- More networked (more interoperability at the JTF level)
- Designed to leverage the exterior positions (precision from distance as sensors move in)
- Leverages increasingly persistent ISR
- Tighter sensor-shooter timelines (sensing, C2, fly-out)
- Values Information Superiority (information operations)
- Expanded unmanned capabilities (UAV, UCAV, UUV, robotics)
A Military Force which:

• *Is more preventative, and less punitive*

• *Can determine unambiguous warnings sooner*

• *Is ISR – intensive, especially for counter - WMD*

• *Is more SOF - like*

• *Develops extensive local knowledge*

• *Can down shift to match threat*

• *Is less reliant on guard and reserves for foreign wars*
Transformation Implementation

...Two-front Strategy

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Program
Long Timelines
Future Forces
Budgets
Processes
Efficiency (Optimization)
Consensus

Operations
Short Timelines
Current Ops
Capabilities
Actions
Effectiveness (Fitness)
Jointness

Transformation as a function of Programs and Dollars, Organization
Transformation as a function of Behavior and Capabilities, Teamwork/Training

Capability
Transformation

Down at the grange they’re teachin’ a new way of plowin’ Ya’ goin’?

Nope!
I already don’t plow as good as I know how ...
Backup
Enduring Freedom

... March 2 – 3

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Gardez

B-52 Stack

Zurmat

JSTARS

AC-130 Stack

AWACS

Khowst

Rivet Joint

Fighter Stack
Area of Operations

... Aerial View
Area of Operations

... Ground View
Aerial View

... Overlay of Other Source Information

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...Elements of strategy

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Transform from Industrial Age to the Information Age
  Implement Network Centric Operations

Ensure sustained competitive advantage
  Assure Allies
  Dissuade competitive entry
  Underwrite déterrence
  Implement countervailing strategies

Broaden the capabilities base
  Operational, Technical, Industrial
  Create new competitive areas
  Revalue competitive attributes for the information age
  Decrease capabilities cycle time

Leverage U.S. advantages and opportunities
  Manage the devolution of “sunset” capabilities and processes

Achieve Speed and Agility vice Optimization
Violence in the Globalization Era

But most of system’s power and competition are up here . . .

- Economics races ahead of politics
- Technology ahead of rules
- Potential threats ahead of realized
- Vulnerabilities ahead of robustness

. . . and most of the violence and “threats” are down here
Transforming Defense

Global Interests = Homeland Security = Surrogate Wars

1990
MAD Containment

Global Interests = Homeland Security = System Perturbations and Consequences

Projecting Defense? Containment Globalized?
System Perturbation

• An international security order thrown into a state of some confusion by a perversely shocking development centered somewhere in the globalized economy.

• This “vertical” shock generates an outflow of “horizontal” waves whose cascading effects cross sectoral boundaries, which may not dampen but amplify.

• In this outflow process, seemingly every rule set is somehow disturbed, knocked out of equilibrium, or intrinsically rearranged.

• This fluxing of the system is temporary, but path dependent and chaotic.

• Endstates encompass the return of old rules, the rise of entirely new rule sets, and the merging of old and new.
The System Perturbation
The System Perturbation
On 9/11, A Map Redrawn
Globalization’s Major Flows

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Foreign Direct Investment

Non-Integrating Gap

PEOPLE

ENERGY

SECURITY

PEOPLE

The Core
Globalization’s Major Transactions
The Transaction Strategy

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The System Perturbation

Vertical Shock

Horizontal Tail

Horizonal Tail

Horizontal Tail

Horizontal Tail

The Leviathan as System Administrator

- Determinism: Markets rule!
- Realism: We protect our privileged position
- Idealism: We shrink the Gap over time
Competitive Advantage

... New sources of power

New Competitive Space

Information “Richness”
- Content
- Accuracy
- Timeliness
- Relevance

Information “Reach”

Network-Centric Operations

Platform-Centric Operations
The Power of the Collective

... When Fully Networked

Network Power = $N^2$ (Metcalf’s Law)
Network Robustness = $N!$

Architectural Choices:
- Maximize “N”
- “Peer-to-Peer”
- “Power to the Edges”

As information goes down echelon, power follows!

Unless …
Information Advantage – Create new source of power with order of magnitude improvements in information sharing (Common Relevant Operational Picture)

"We need a force that is designed and capable of fighting for information superiority first"
**Competitive Advantage**

*...New sources of power*

**Physical Advantage** – Gaining Advantage in force, space and time (physical expression of the impact of the information-age)

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**TACTICAL INSTABILITY**

- **Occurs as combat power grows disproportionately with survivability.**
- **Increase passive defense, active defense, platform numbers, tactical maneuver, performance and speed.**

<table>
<thead>
<tr>
<th>SURVIVABILITY</th>
<th>COMBAT POWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPABILITY LIMITED (PAYLOAD POOR)</td>
<td>ACCESS X CAPABILITY = UTILITY</td>
</tr>
<tr>
<td>NO UTILITY</td>
<td>ACCESS LIMITED (SURVIVABILITY POOR)</td>
</tr>
</tbody>
</table>
Decision (Cognitive) Advantage – Self-synchronization, collaboration, coordination, precision of desired effects, “lock-out” to deny adversary the opportunity to compete, speeding up the “kill chain” to strike time-critical targets, enabling new TTP.
Transformation must...be focused on emerging strategic and operational challenges and the opportunities created by these challenges. Six operational goals provide the focus for DoD’s transformation efforts.”
On 9/11, A Map Redrawn

But if you are not against globalization, then you should join the solution set.

If you are fighting against or losing to globalization, you are likely a problem for the U.S.

Mostly Non-Integrating Gap

U.S. Naval Responses to Situations, 1990-1999

- Evac’s
- Relief
- Contingency Positioning
- Show of Force
- Combat
Globalization’s Major Flows

- Direct Investments
- Security
- Energy

Non-Integrating Gap

The Core
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Network-Centric Warfare
...The Emerging Theory of War

...how does war work now?
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...To the Information-Age

Integrated systems    ➔   Networking components
Precision weapons    ➔   Precision Effects
Weapons reach    ➔   Sensor reach
Dispersed Offense    ➔   Networked Force
High volume strike force    ➔   Full service maneuver force
Securing the sanctuary    ➔   Assuring Access
The Department’s efforts fall into three categories

- **Incremental** capability enhancements generally termed “modernization”

- **Significant** capability improvements within the current American Way of War (medium jumps)

- **New** rule sets that leverage new sources of military power creating a new American Way of War (big bets)

**Create a new game with new rules**
Wither Transformation?

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- Rest of the world changes more than the U.S.
- Private sector changes more than the public sector
- Rest of U.S. Government changes more than DoD
- DoD changes more in the way it relates to the rest of the world than how parts within DoD relate to one another (the new “jointness” is inter-agency and beyond)
- DoD operations change more than the stuff we buy