OASD (NII) / DoD CIO
Enabling Net-Centric Operations

Assistant Secretary of Defense for Networks and Information Integration/ DoD Chief Information Officer

Overview Presentation

11/4/2008

Connecting People With Information

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CIO Vision and Mission

Vision

Deliver the Power of Information

An agile defense enterprise empowered by access to and sharing of timely and trusted information

Mission

Enable Net-Centric Operations

Lead the Information Age transformation that enhances the Department of Defense's efficiency and effectiveness

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CIO Goal and Outcome

Goal

Information on Demand

- *Build the Net*
- *Populate the Net*
- *Operate the Net*
- *Protect the Net*

Outcome

People, processes, and technology working together to enable timely and trusted:

- *Access to information*
- *Sharing of information, and*
- *Collaboration among those involved*

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ASD (NII) / DoD CIO -- Responsibilities

- Networks and Net-Centric Policies and Concepts
- Enterprise-wide integration of DoD information matters

Principal Staff Assistant

US Title 10
Advise the Secretary

- Command and Control
- Communications and Information Networks
- Network Operations
- RF Spectrum Management
- Position, Navigation, Timing
- Non-Intelligence Space

Chief Information Officer

US Title 40
Manage Information Resources

- Enterprise-level strategist from the information perspective
- Enterprise-wide Information policy
- Information architect for the DoD Enterprise
- DoD-wide information executive

Authorities
- NII Charter (DoDD 5144.1 May 2, 2005)
- Section 113, Title 40, U.S.C., (formerly Clinger-Cohen Act of 1996 as amended)

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"I can get the information I need"

When I need it

Where I need it

How I need it

Net-Centric Information Sharing

Better Decisions Faster -- Decisive Actions Sooner

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Transforming National Defense – Net-Centric Operations

National Security Strategy (2006)

Transform America's national security institutions to meet the challenges and opportunities of the twenty-first century.

National Defense Strategy (2005)

We will conduct network-centric operations with compatible information and communications systems, usable data, and flexible operational constructs.

Beyond battlefield applications, a network-centric force can increase efficiency and effectiveness across defense operations, intelligence functions, and business processes...

Transforming to a network-centric force requires fundamental changes in process, policy, and culture.

National Military Strategy (2004)

...creation of a collaborative information environment that facilitates information sharing, effective synergistic planning, and execution of simultaneous, overlapping operations... on demand to defense policymakers, warfighters and support personnel.

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Context for Net-Centric Operations

Challenge – UNCERTAINTY

"UNCERTAINTY is the defining characteristic of today's strategic environment."

(National Defense Strategy)

- Adjust to an era of surprise and uncertainty

Response – AGILITY

"We have set about making US forces more AGILE and more expeditionary."

(Quadrennial Defense Review)

- Enterprise-wide: Battlefield Applications; Defense Operations; Intelligence Functions; Business Processes
- Emphasis Shift: From moving the user to the data – to moving data to the user

Confront Uncertainty with Agility

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Leverage the Power of Information

NET-CENTRICITY:

People, processes, and technology working together to enable timely and trusted:

- **ACCESS** to information
- **SHARING** of information
- **COLLABORATION** among those who need it

Can Only Be Done on The Net!

Net-Centric Operations

A Fundamental Shift

- Requires ENTERPRISE, not stovepipes
- Requires ACCESS, not exclusivity
- Requires TRUST
  - Trust in the System (availability)
  - Trust in the Information (assurability)
  - Trust in the Participants (identity)

The Move to Net-Centricity

Current		Net-Centric
Information stovepipes	→	Shared information
"Welded" interfaces	→	Unconstrained
Predetermined needs	→	Unanticipated users
Fixed display formats	→	User-defined info and formats
Need to know	→	Need to share; right to know
	→	
Rigid		**Agile**

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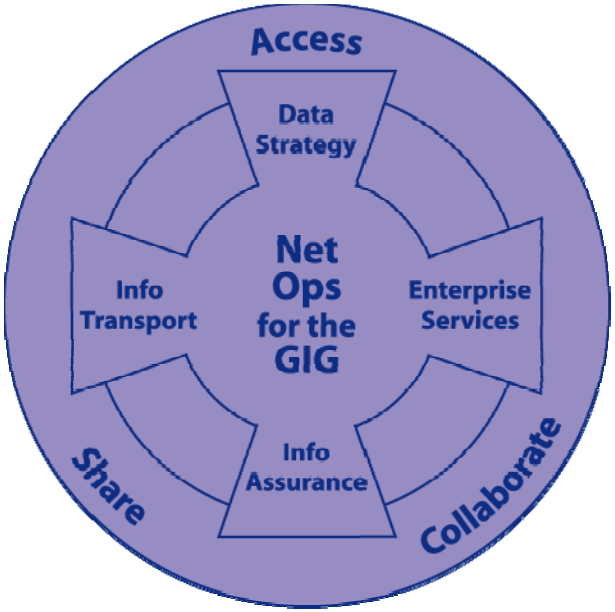
Net-Centric Framework



- **Data Strategy:**
  - *How to "**share**" the data*
- **Enterprise Services:**
  - *How to "**access**" the data*
- **Information Transport:**
  - *How to "**move**" the data*
- **Network Operations:**
  - *How to **"operate and defend"** the GIG*
- **Information Assurance:**
  - *How to keep it all "**dependable**"*

Data: Discoverable, Accessible, Understandable

Data Strategy

Vision – A flexible and agile Net-Centric, environment of "many-to-many" exchanges and effective decisions	*Mission – Implement a data-centric strategy allowing access to and sharing of information*

Data Strategy: Foundation

- Ensures **visible, accessible, and understandable** data
- Accelerates decision making by having data where needed and when needed
- Accommodates known and unanticipated users
- "Tags" data (intelligence/non-intelligence; raw/processed) with metadata to enable discovery
- Requires data and services registries to describe, post and store
- Posts data to shared spaces for users to access based on identity and role
- Organizes around Communities of Interest (COIs) using a shared vocabulary to exchange information

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Enterprise Services

Vision – A Service-Oriented Architecture that is open, output focused and independent of location and system-ware

Mission – Establish easy-to-use services to access, share, collaborate

Enterprise Services: Overview

- **Messaging** – Ability to exchange information among users or applications
- **Discovery** – Processes to find information content or services
- **Mediation** – Software to help broker, translate, aggregate, fuse or integrate data/metadata
- **Collaboration** – Allows users to work together and jointly use selected capabilities on the network
- **User Assistant** – Automated "help" capabilities
- **Information Assurance** – Capabilities that provide confidentiality, integrity, availability, authorization, and assurance for information, users, applications, and networks
- **Storage** – Physical and virtual places to host data on the network
- **Application** – Infrastructure to host and organize distributed on-line processing
- **Enterprise Service Management** (ESM) – End-to-end performance monitoring, CM, and problem detection of GIG enterprise services

Network Operations

Objective - Ensure the continuous ability to easily access/ manipulate/share any information, from any location, at any time

NetOps: Functions

- **Manage and Assure Operations**
  - Monitor conditions of GIG assets on a continuous basis
  - Make decisions based on conditions and events
  - Direct responses to incidents
- **Govern Enterprise**
  - Set policies, roles and responsibilities for managing operations
  - Determine priorities for operations (i.e., bandwidth allocation, routing, incident response)
  - Establish common processes and standards for operating, monitoring, and responding

Information Assurance (IA)

Vision – Dynamic IA in support of Net-Centric Operations

Mission – Assure DoD's information, information systems, and information infrastructure

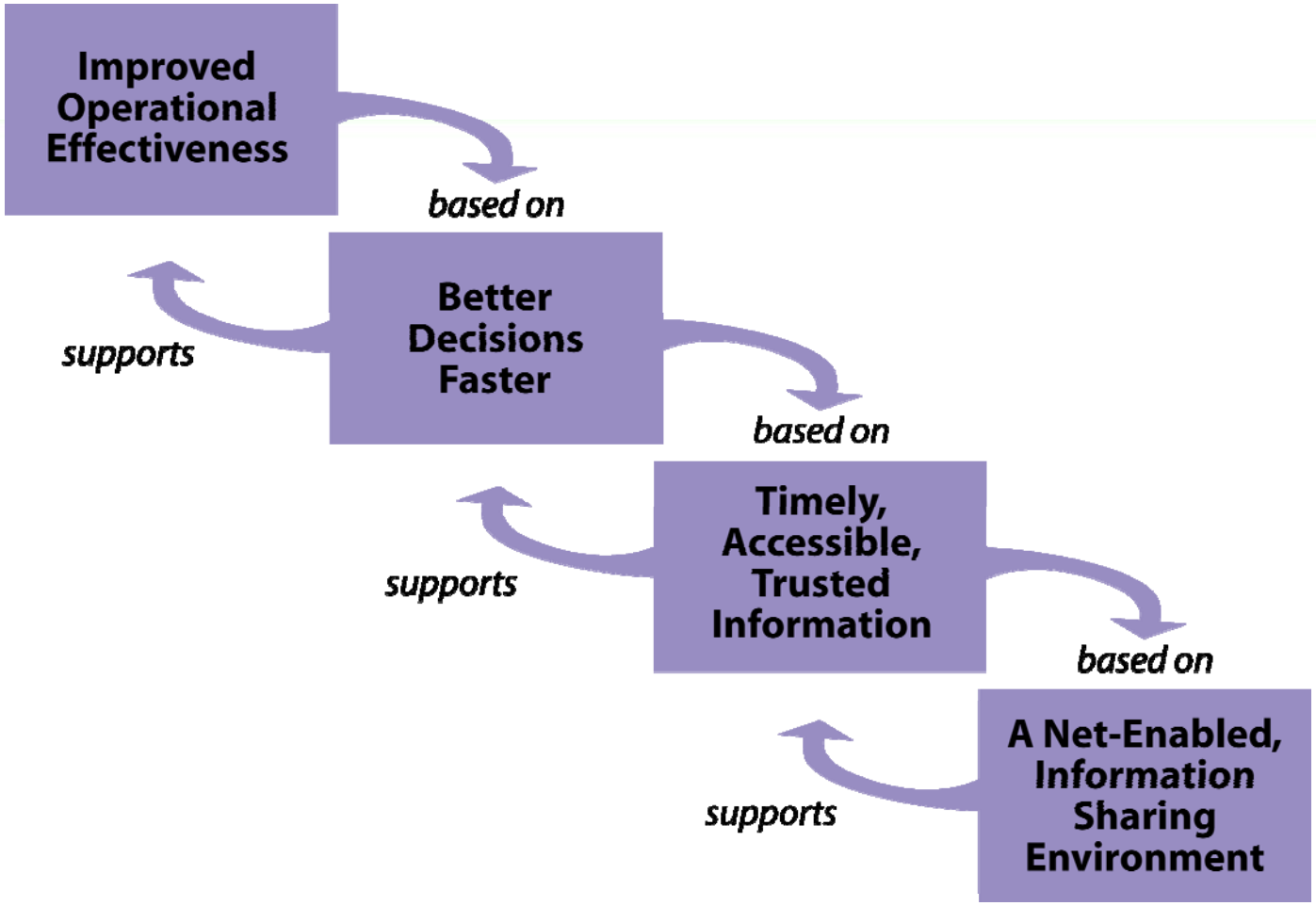
Information Assurance: Strategy

- **Protect Information**
  - Data protection requirements
  - Protection mechanisms
  - Robust mechanisms
- **Defend Information and Information Environment**
  - Engineer defenses
  - React and respond
  - Assess and evaluate activity
- **Provide Situational Awareness/IA Command and Control**
  - User Defined Operating Picture (UDOP)
  - Coordinate IA ops and decisions
  - Evaluate collaboration
- **Transform and Enable IA Capabilities**
  - Ensure IA integration into programs
  - Dynamic IA capabilities
  - Improve strategic decision-making
  - Information sharing
- **Create an IA Empowered Workforce**
  - Baseline skills
  - Enhance IA skill levels
  - Provide trained/skilled personnel
  - Infuse IA into other disciplines

Information Transport

Objective - Provide access to and movement of information regardless of time, location, or disposition

Information Transport: Programs

- **Global Information Grid – Bandwidth Expansion** (GIG-BE):
  - Transforms Defense Information System Network (DISN) capabilities (capacity/availability)
  - Connects fixed locations to each other (but does not reach individual users at the tactical edge)
- **Transformational Satellite** (TSAT):
  - Connects mobile groups of users to each other and to fixed locations
  - Extends reach to individual users at the tactical edge
- **Joint Tactical Radio System** (JTRS):
  - Connects individual users within a group of mobile users
  - Provides network entry device for individual users at the tactical edge
- **Teleports**:
  - Provides a gateway between TSAT and GIG BE
- **Spectrum Management**
  - Ensures managed access to the airwaves

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