



2010 DTIC CONFERENCE
March 22-24, 2010

Celebrating 65 Years of Providing Access to Defense Information

The Service-Oriented Enterprise and Sharing Information to Benefit DoD

23 March 2010

Mr. R. Paul Ryan, Moderator



The Service-Oriented Enterprise and Sharing Information to Benefit DoD

DoD Field Activity Since 2004 DoD Field Activity Since 2004 DoD Field Activity Since 2004 DoD Field Activity Since 2004 DoD Field Activity Since 2004

Mr. Ron Kelly

Deputy Director for Enterprise Services
& Integration

Office of DoD CIO



The Service-Oriented Enterprise: Sharing Information to Benefit DoD

Annual DTIC Conference

Ron Kelly
Office of the DoD CIO
Dep Director, Enterprise Services &
Integration
ronald.kelly@osd.mil
(703) 602-1007



Agenda



- Where does this guy Kelly fit in?
- What is this “Enterprise Services” stuff we hear about?
- How can ES help the warfighter?
- What is DoD CIO doing to support ES?
- Why is all of this important?

Transforming National Defense

NATIONAL SECURITY STRATEGY

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



NATIONAL DEFENSE STRATEGY

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

...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.

VIEWS OF THE ENTERPRISE



VIEWS OF THE ENTERPRISE



VIEWS OF THE ENTERPRISE



OUR ENTERPRISE



Our enterprise is networked people, organizations and technology that enable an integrated, highly capable warfighting team



View from DoD CIO



Net-Centric Information Sharing
Persistent Collaboration
Defense Information Enterprise
Service-Oriented
Focus + Convergence = Agility
The Power of Team
Information Advantage

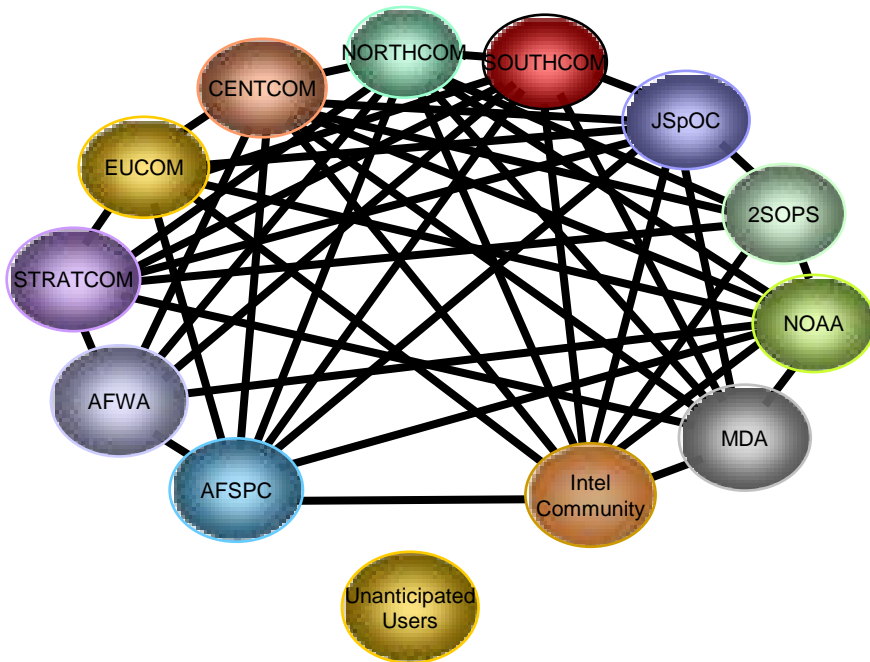
***CREATING AN INFORMATION ADVANTAGE FOR
OUR PEOPLE AND MISSION PARTNERS***



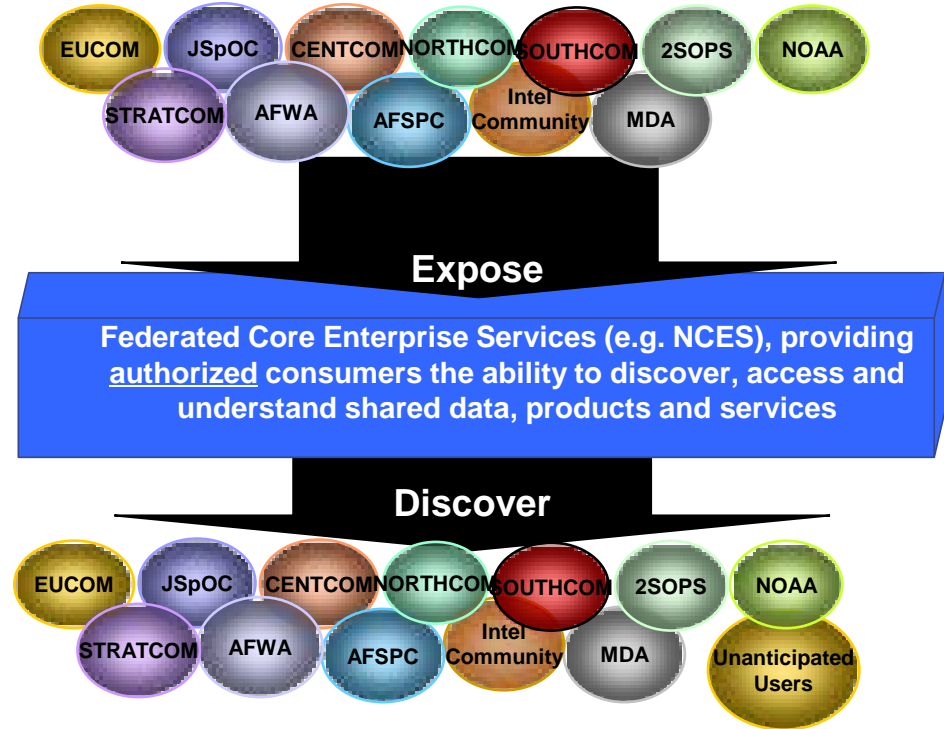
Paradigm Shift



Yesterday



Today



... Point-to-point (coupled) data sharing ...
 ... Not extensible, agile or flexible ...
 ... Grows exponentially in both complexity and expense ...



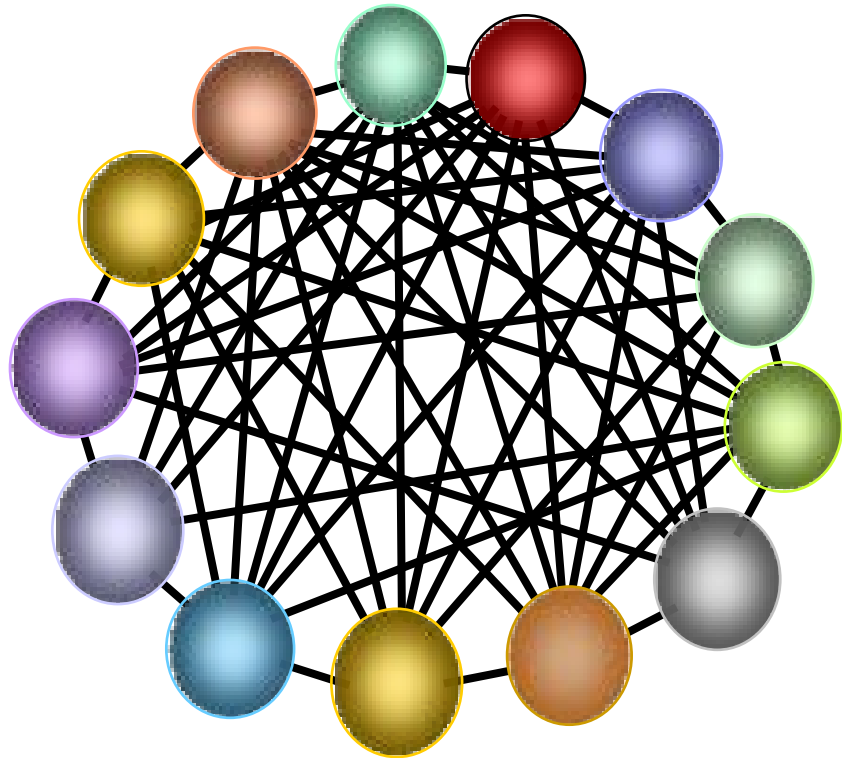
... Net-Centric data sharing ...
 ... Decouples data providers and consumers ...
 ... Extensible, flexible and responsive ...

This is a culture change

A Vision for Information

Today

- “Mandate to share” vs “Need to protect” information
- Focus on connectivity, standards, guard solutions
- Highly structured, pre-determined point to point information exchange



Sharing

Future

- Systems and applications are web-enabled to advertise and expose their information.
- Enable Unanticipated Users

Advertise & Publish

Services

Discover, Access & Subscribe



SOE Introduction



- DoD Mission/Vision relies on the “**Power of Information**” and “**Net-Centric Operations**” to transform
 - Enabled by a “**Service-Oriented Enterprise**”, based on current/emerging strategies, capabilities, and technologies
- The DoD CIO has championed several initiatives to ensure the delivery of enterprise solutions that promote **interoperability, information sharing, and IT efficiency** ... to include:
 - NetCentric Data & Services Strategy
 - DoD Information Assurance Strategic Plan
 - Defense Information Enterprise Architecture
 - NetOps
 - ...and many more!



DoD Net-Centric Data Strategy (9 May 2003)



“The...DoD Net-Centric Data Strategy provides a key enabler of the Department’s Transformation by establishing the foundation for managing the Department’s data in a net-centric environment.... The strategy also introduces management of data within communities of interest (COIs) rather than standardizing data elements across the Department.” - John P. Stenbit (former DoD CIO)

- Purpose
 - Describes a vision for a net-centric information sharing environment and the data goals for achieving that vision
 - Defines approaches and actions that DoD personnel will have to take as users—whether in a role as consumers and producers of data or as system and application developers
- DoD Directive 8320.02 (signed Dec 2, 2004) directs the implementation of the DoD Net-Centric Data Strategy [in revision]



Key components of the DOD Net-Centric Data Strategy



Make Data Visible

Is an information resource discoverable by end-users?

Make Data Accessible

Is it connected to the network(s), and are tools readily available to use and allow assured access to it?

Make Data Understandable

Can it be used intelligibly?
Are the semantics well documented?

Make Data Governable

Are data processes governed with sustained leadership?

Enable Data to Be Trusted

Is the authority (pedigree, security level, and access control level) known and available?

Make Data Interoperable

Can it be easily combined or compared with other information and/or mediated?

Be Responsive to User Needs

Are users involved in COIs?
Are robust, direct user feedback mechanisms in place to guide development?



Net-Centric Services Strategy (May 2007)



“The Department of Defense (DoD) Net-Centric Services Strategy (NCSS) reflects the recognition by the DoD that this **services oriented approach can result in an explosion of capabilities** for our warfighters and decision makers, thereby **increasing operational effectiveness.**” - John G. Grimes (DOD CIO)

- Describes the DoD’s vision for establishing a net-centric information sharing environment that increasingly leverages shared services and Service Oriented Architecture (SOA)
- Expands upon the DoD Net-Centric Data Strategy by connecting services to the Data Strategy goals
- July 13, 2007 - DoD and Intelligence Community (IC) committed to a shared vision for Services-Based Environment to
 - Improve interoperability within and across the DoD and IC
 - Enable better analysis and decision-making through increased access to information within and across the DoD and IC



Key Components of the DOD N-C Services Strategy



Provide Services

Are information resources and functional capabilities available as services on the network? Are services visible, accessible, and understandable?

Use Services

Are existing services (including Core Enterprise Services) used to satisfy mission needs before creating duplicative capabilities?

Govern the Infrastructure and Services

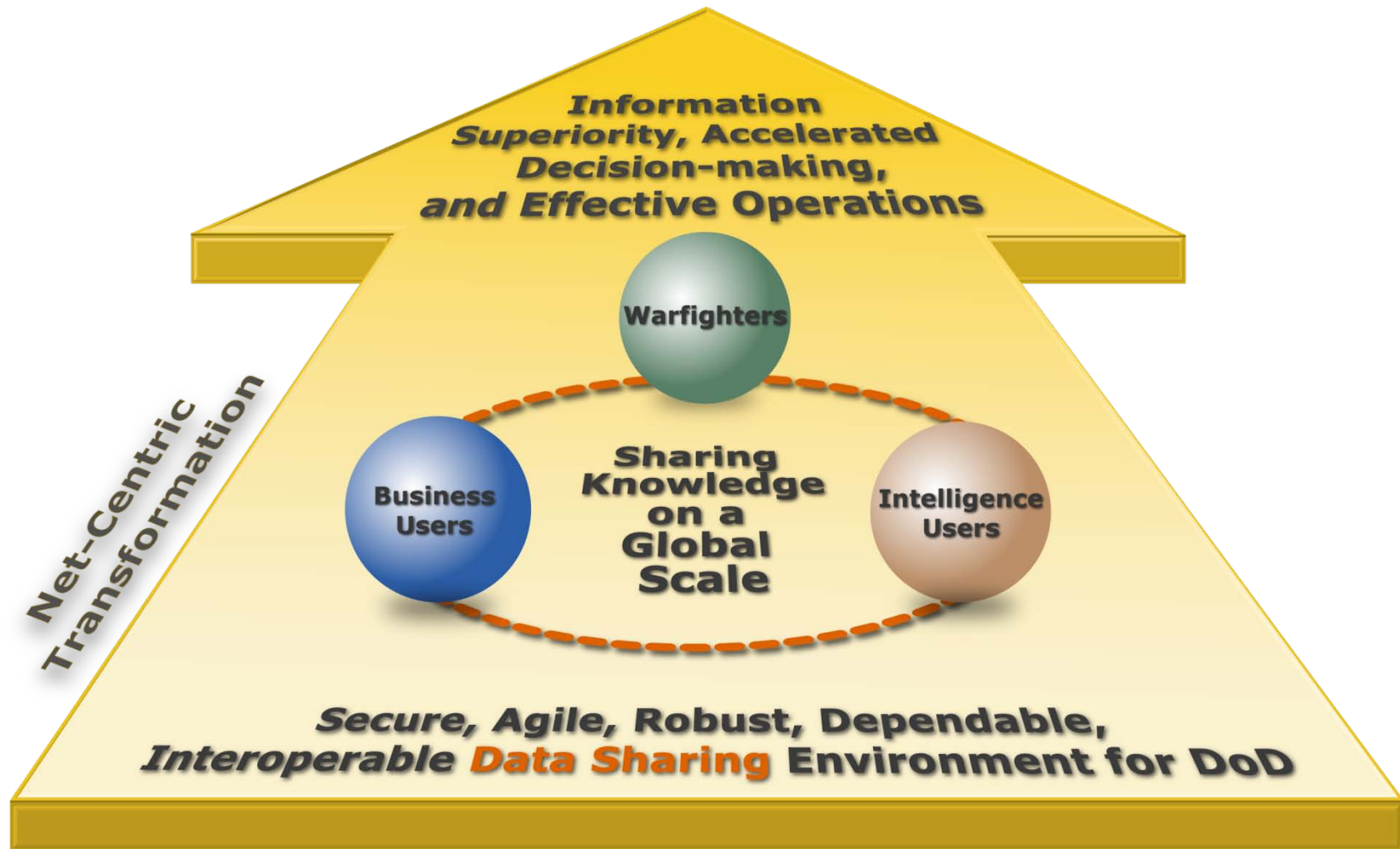
Are policies and processes established to govern how to provide, secure, use and operate services?

Monitor and Manage Services via GIG NetOps

Are services implemented in accordance with DoD's GIG NetOps Strategy and concept of operations to ensure situational awareness of the net-centric information sharing environment?

COIs Help To Define

N-C Enterprise Services





"Must Haves" for ES



- Standards
- Governance
- Registries
- Funding
- Trust



The Challenge



**CHANGE NEEDED FOR DATA &
SERVICES STRATEGY TO
SUCCEED**

**IMPLEMENTATION
APPROACHES**

*Implement Automated Access
Control and Enterprise Security
Services*

*Tag Data with Classification,
Pedigree*

*Identify Authoritative
Sources*

*Implement Governance of
Standards, Rules, Services*

Manage and Monitor Services

*Institutionalize Sharing via
Processes, Education*



TRUST

User is not sure of the
data source;
Producer does not want
to give access to
unanticipated user

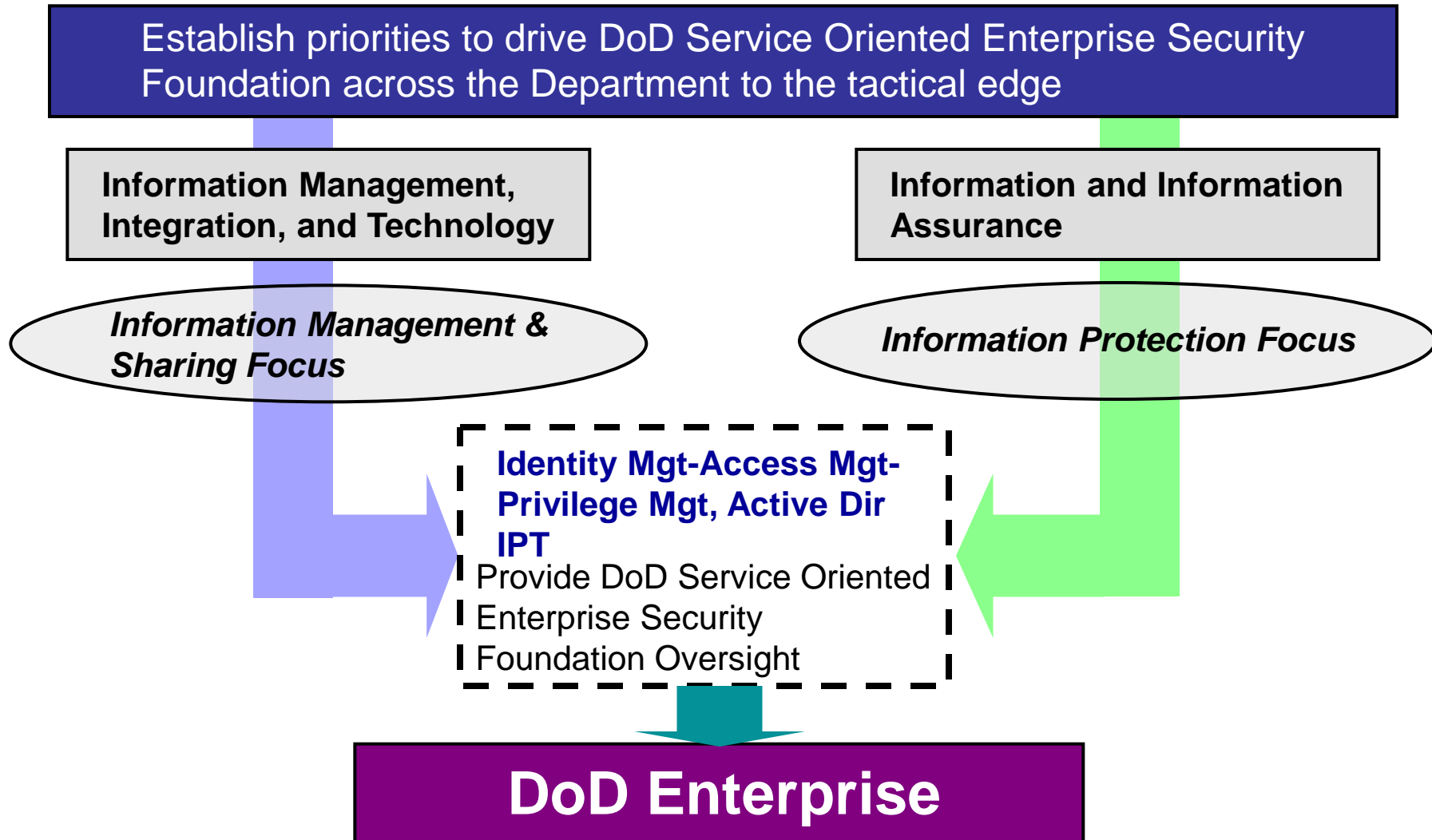


Services environment means roles will change



- Government
 - Enterprise-wide standards and architectures
 - Emerging DoD enterprise-wide governance models
 - New models for funding, requirements, acquisition, testing
- Industry
 - “Prime” role is deconstructed and re-assembled (loosely coupled)
 - Interface between infrastructure providers and mission experts moves “up the stack”
 - Risk/reward model transacted in smaller delivery units
 - OCI model will permit more opportunity to deliver high-value from capabilities
 - Opportunity grows for small business

DoD CIO Organizational Focus



Designated Services Within DoD Enterprise Services Framework

Information Sharing

Messaging

- Enterprise E-Mail
- Organizational Messaging
- Publication/Subscriber Messaging
- Machine-to-Machine

Content Delivery

- GIG Content Delivery
- File Delivery

Collaboration

- Text, Audio, Video
- Whiteboarding/Annotation
- Application sharing
- Application Broadcasting
- Social Networking (e.g., BLOGs, Wikis)

Mediation

- Information Transformation
- Service Adaptation
- Service Orchestration

Portal

- Access Provisioning
- Single sign-on

Other

Discovery

People/Service Discovery

- Enterprise Directory Service
- Enterprise Address List
- Service Discovery

Content Discovery

- Centralized Search
- Federated Search
- Metadata Catalog

Metadata Discovery

- Metadata Registry

Geospatial Visualization

- Force Tracking
- Global Streaming

Other

Management

Enterprise Management

- Service Monitoring
- Service Configuration Management
- Enterprise Service Management
- Enterprise Task Management

Resource Management

- Network Monitoring
- Storage Management
- Resource Allocation Mgmt.
- Continuity of Operations

Content Handling

- Content Management
- Work-flow Management

Other



Current ES Initiatives



- DoD Service Oriented Enterprise Security Foundation
 - Establish security foundation for enterprise services (i.e., information sharing, discovery, and management services) by synchronizing and integrating related efforts (e.g., identity management, access control/authorization, privilege management, cyber security)
- Enterprise E-Mail
 - Provide users universal access to email to securely and reliably identify and exchange information within the DoD-IC enterprise and with mission partners
- Organizational Messaging
 - Working with JS and NII, execute an alternatives analysis to identify viable path(s) forward to support DoD Component DMS requirements
- Enterprise Portal
 - Establish a thin enterprise portal that is customizable, loosely coupled and agile, extensible and scalable, and provides secure access across the enterprise
- Enterprise Tasking Management
 - Establish enterprise wide processes for managing DoD taskings across the enterprise



Current ES Initiatives Cont.



- Enterprise Services at the Tactical Edge
 - Provide Tactical Edge solutions that enable situational awareness and timely sharing of tactical data
- Geospatial Visualization
 - Establish Geospatial Visualization as an enterprise service capability
- Enterprise Solution Pricing Framework
 - Establish a pricing framework that will deliver enterprise services and solution with pricing structures that are transparent, offer service/solution level choices, and incorporate fixed, variable, recurring, and non-recurring costs
- Enterprise Services Portfolio Oversight
 - Oversee the definition, planning, implementation, migration, operation, and evolution of enterprise services (e.g., collaboration, content discovery, content delivery) to include integration of component plans and management of cross enterprise service dependencies
- DoD Enterprise Services Management Methodology
 - Develop concept of operations (CONOPS) for managing enterprise services through the full life cycle, across organization levels, and across areas of responsibilities



Other ES initiatives

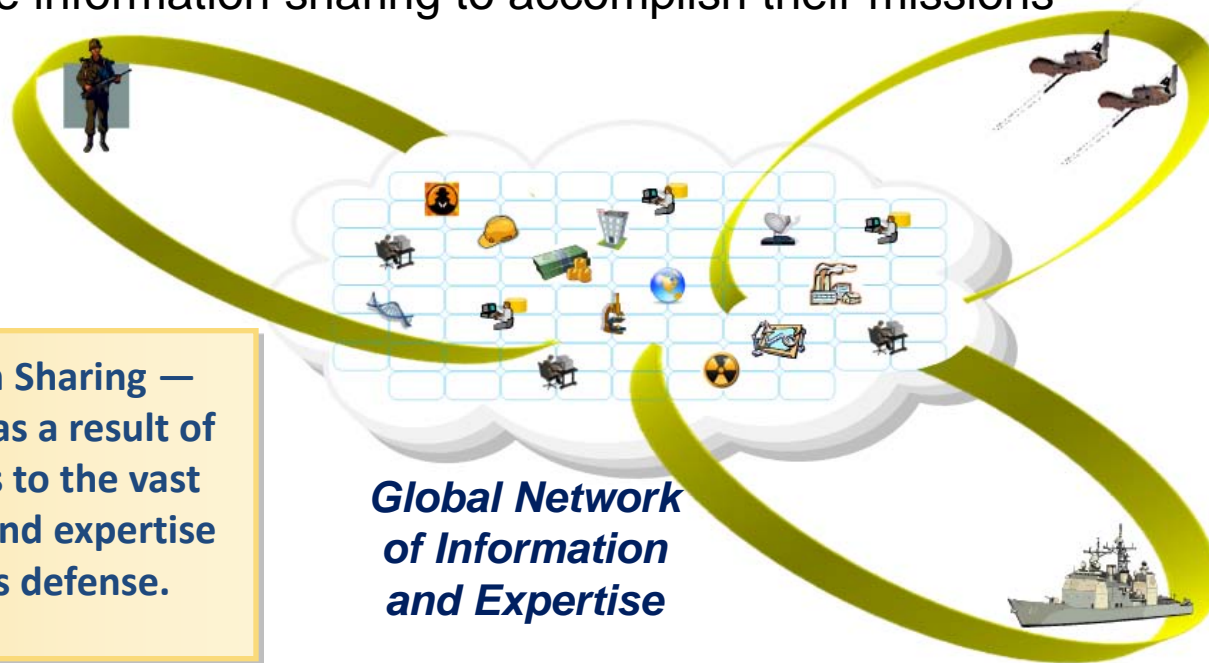


- Currently working these projects in the Service Oriented Enterprise space:
 - Cloud Computing
 - Universal Core
 - Storefront
 - Directory services
 - User Access

Operational Information Sharing Initiative

Working to bringing the benefits of information sharing to the operators

- PDM III-directed Net-Centric Data Strategy Implementation Progress and Compliance status report to DepSecDef found that the value of the Net-Centric Data Strategy remains largely unrealized by the Department's Business, Warfighting and Intel operators.
- FY2007 Collaboration with DISA PEO-IAN
- FY2008 shifted the focus to the consumer – how operations may access and use information sharing to accomplish their missions



Operational Information Sharing — accomplishing a mission as a result of direct, day-to-day access to the vast network of information and expertise focused on the nation's defense.





***Global Network
of Information
and Expertise***



FY08 Focused on Research and Collaboration

Leveraged existing efforts to inform OIS work



Organization	Information Sharing Mission Description	Example Success Story
Defense Technical Information Center 	World-class array of scientific and technical information to support defense	Brokered information on chemical agents for USNORTHCOM
Knowledge and Information Fusion Exchange 	Watch center support for IED Defeat and Irregular Warfare information	Provided IED Initiator usage information for the Iraq Multi-National District-Center in a day
Intelligence Community Enterprise Solutions 	Platform and tools for mass collaboration and information sharing	Intelink allowed a COCOM user to receive authoritative feedback in a timely manner
USNORTHCOM Information Exchange Brokers 	Proactively monitoring of information across mission partners	Aided coordination of fire-fighting assets during California wildfires



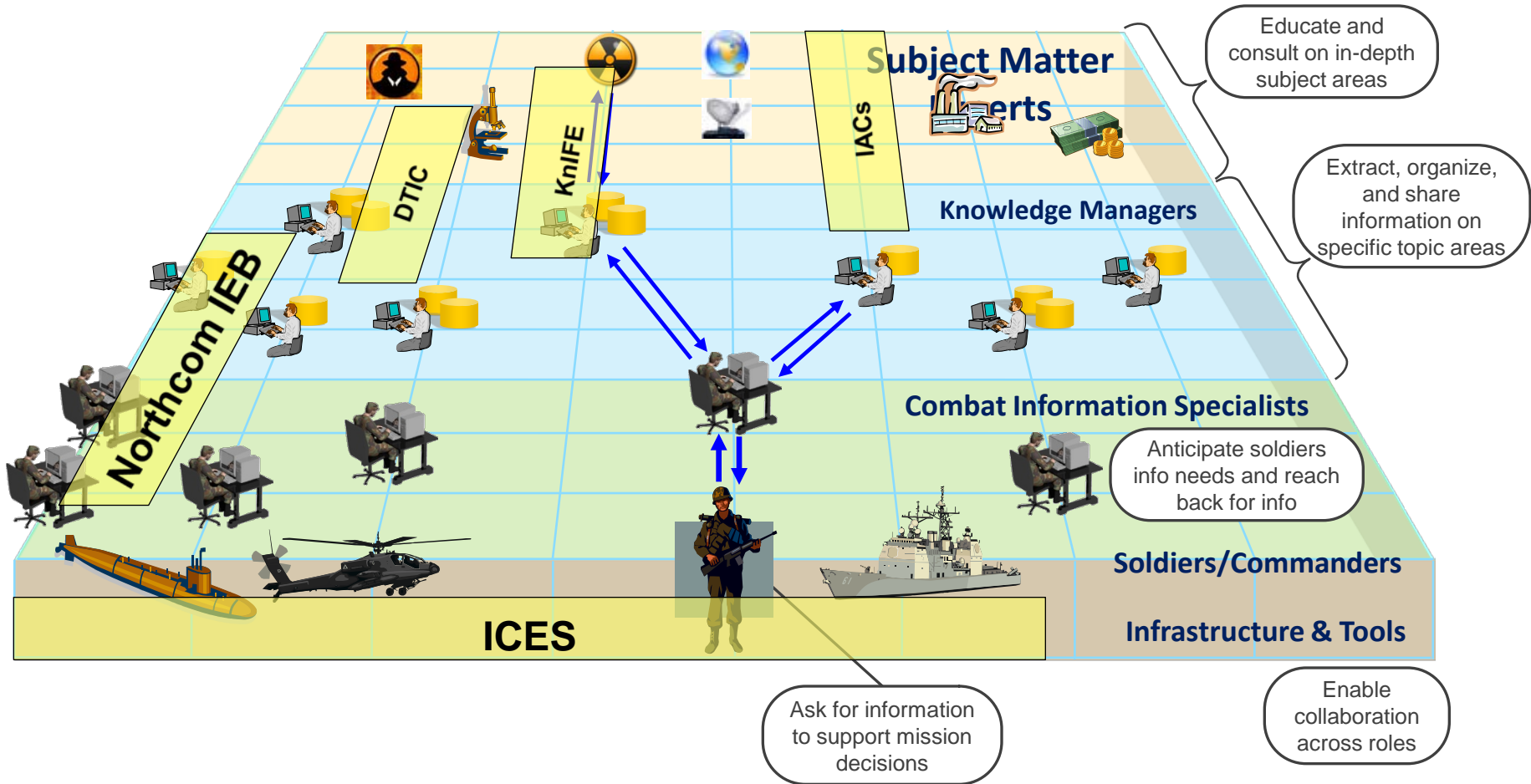
Operational Information Sharing Findings



1. Significant information sharing to support the operator is already underway across the Department
2. There is an evolving set of information providers and venues for information sharing
3. Commanders are not always aware of the available information
4. Documenting warfighting experiences and related information remains a challenge

Proposed Combat Information Management*

Existing efforts provide portions of the envisioned capabilities



*Adapted from *Defense Science Board 2006 Summer Study: Information Management for Net-Centric Operations Vol. I*, April 2007 page 19.



Follow-on with DTIC



- Visibility of the DTIC Collection (Enterprise Search & Discovery)
 - How is DTIC making the collection visible to users?
 - Can the Enterprise Search find items available from the DTIC collection?
 - Can a search from the DTIC portal find relevant items in other sources such as DKO or Intellipedia?
- Accessibility
 - How does access control evolving to address unanticipated users and to satisfy enterprise needs?
- DTIC Enterprise Services
 - What enterprise services does DTIC provide and how are they being used?

Why all the “HYPE” about Cloud Computing?

Continual ongoing discussions regarding Cloud Computing in media industry, and the Federal Government





Cloud Computing Realities



- It is a **Disruptive Technology** – we need to treat it as such...
 - *A new technology, that radically transforms markets, creates wholly new markets or destroys existing markets for other technologies..*
- **Not mature** – needs 2+ years – This is the time to plan
- **DoD Acquisition** “as a process” could be a significant barrier (CC is not a weapon system)
- **Requires planning, pilots, and lessons learned** to build a new (fundamental) understanding of how DoD will migrate legacy applications and associated data to “Services” hosted in the Cloud



Cloud Computing Realities



- **Stateless Cloud Computing Technology?**
 - *DoD CIO views that as collapsing the desktop (which stores state resulting from data, applications, network profile, etc) into the Cloud.*

- Moving the desktop into the **Cloud will pay HUGE returns** – cost savings, agility, performance, etc, etc...
 - *Offers the potential of saving billions in “provisioning costs” per year*

WHAT?

UNIFIED
CAPABILITIES

Data.gov

ESI OPEN GOVT

eISp

EANCS

DP1

SEGMENTED ARCHITECTURE

GESP

DoD Techipedia

IT DASHBOARD



Open Govt Directive



- OMB signed on 8 Dec 09
- Three principles: transparency, participation and collaboration
 1. Publish Govt Information Online
 2. Improve the quality of Govt Information
 3. Create and Institutionalize a culture of Open Govt
 4. Create an enabling policy framework for Open Govt

Open Govt Plan

- Formulating the plan
- Publishing the plan
- Components of the plan

Data.gov

The screenshot shows a Mozilla Firefox browser window displaying the Data.gov website. The browser's address bar shows the URL <http://www.data.gov/>. The website's header includes the date "MONDAY, JANUARY 25, 2010" and the "DATA.GOV" logo. A navigation menu contains links for HOME, CATALOGS, STATE/LOCAL, FAQ, SUGGEST DATASETS, AGENCY PARTICIPATION, ABOUT, and BLOG. The main content area is divided into two sections. The left section, titled "DISCOVER. PARTICIPATE. ENGAGE.", features a search prompt and three catalog icons: "RAW" DATA CATALOG (with CSV, XML, KML, and SHP file format icons), TOOL CATALOG (with a wrench and hammer icon), and GEODATA CATALOG (with a globe icon). The right section, titled "FEATURED DATASETS:", highlights "OPEN GOVERNMENT DIRECTIVE AGENCY DATASETS" with a text block explaining the 2009 White House directive and a "VIEW THESE DATASETS" link. Below this is a large graphic for "Open Government Datasets" with a blue header and a background of binary code. At the bottom, a "Welcome to Data.gov" message is partially visible, and a "NEW!! Open Government Directive Agency Datasets" banner is on the right.

Data.gov - Mozilla Firefox UNCLASSIFIED//FOUO

File Edit View History Bookmarks Tools Help

DATA <http://www.data.gov/> Google

Most Visited Getting Started Latest Headlines

MONDAY, JANUARY 25, 2010

DATA.GOV

Share | Facebook | Email | Twitter

HOME | CATALOGS | STATE/LOCAL | FAQ | SUGGEST DATASETS | AGENCY PARTICIPATION | ABOUT | BLOG

DISCOVER.
PARTICIPATE.
ENGAGE.

Search the following Data.gov catalogs:

- CSV XML KML SHP
"RAW" DATA CATALOG
- TOOL CATALOG
- GEODATA CATALOG

FEATURED DATASETS:
OPEN GOVERNMENT DIRECTIVE AGENCY DATASETS

On December 8, 2009, the White House issued an historic Open Government Directive (OGD), instructing Executive Departments to publish three high-value datasets online within 45 days. The Open Government Datasets showcase the high-value data sets agencies have published to fulfill the Directive and thereby increase accountability, promote informed participation by the public, and create economic opportunity.

VIEW *THESE* DATASETS ▶

OPEN GOVERNMENT
TRANSPARENCY . PARTICIPATION . COLLABORATION

Open Government Datasets

NEW!! Open Government Directive Agency Datasets

Welcome to Data.gov

The purpose of Data.gov is to increase public access to high value, machine readable datasets generated by the Executive Branch of the Federal Government. Although the initial launch of

<http://www.data.gov/>

Apps.gov

The screenshot shows the Apps.gov website in a Mozilla Firefox browser window. The browser's address bar displays the URL https://www.apps.gov/cloud/advantage/main/start_page.do. The page features the GSA Apps.Gov logo with the tagline "A Service Provided by GSA". Navigation links include Home, Business Apps, Productivity Apps, Cloud IT Services, and Social Media Apps. A search bar is present with a dropdown menu set to "All Categories". The main content area includes a "Welcome to Apps.gov" section with a globe graphic and a "Click here to download plugin" message. Below this, a section titled "What type of solution do you need?" offers options for "Business Apps" and "Cloud IT Services". The browser's status bar at the bottom shows "Done" and a green bar with the text "UNCLASSIFIED//FOUO".

Apps.Gov - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://www.apps.gov/cloud/advantage/main/start_page.do

Most Visited Getting Started Latest Headlines

Additional plugins are required to display all the media on this page. Install Missing Plugins...

GSA Apps.Gov
A Service Provided by GSA

Welcome Register | Log In
0 Items in Cart \$0.00

Contact Us | Cloud FAQs | Vendor FAQs

Home Business Apps Productivity Apps Cloud IT Services Social Media Apps

HOME »

SEARCH FOR IN All Categories

Welcome to Apps.gov

Apps.gov is your source for cloud computing applications designed to help your agency harness the power of today's technology. Whether it's Business or Productivity Applications, Cloud IT Services or Social Media solutions, Apps.gov is the place to get your government agency in the cloud.

Click here to download plugin.

Video transcript »

What type of solution do you need?

Business Apps
Your agency or service is complex and

Cloud IT Services
Need a better solution to reduce cost and

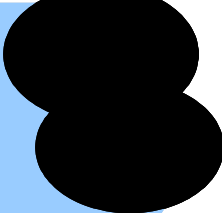
Done

UNCLASSIFIED//FOUO

The Case for a Service Oriented Enterprise




Service Producer
Data and applications available for use, accessible via services. Metadata added to services based on producer's format.

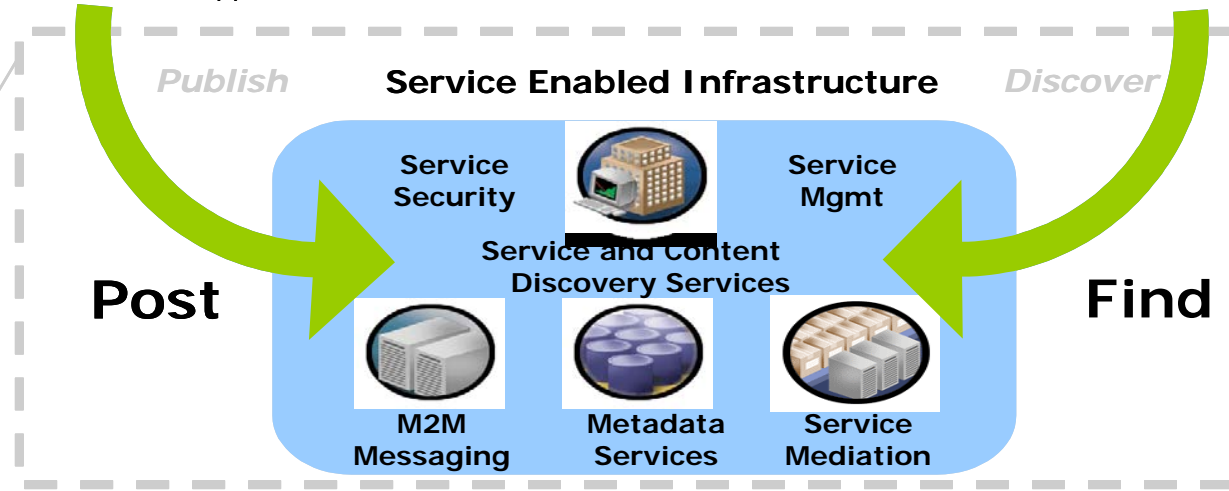


- **Describes** content using metadata
- **Posts** metadata in catalogs for discovery
- **Exposes** data and applications as services

Service Consumer
Automated search of data services using metadata. Pulls data of interest. Based on producer registered format and definitions, translates into needed structure.



- **Searches** metadata catalogs to find data services
- **Analyzes** metadata search results found
- **Pulls** selected data based on metadata understanding



NCES provides foundational capabilities (e.g. Security, Discovery, Messaging, etc) that facilitate the DoD-wide transition to an information sharing environment



WHY



- The foundation of a **Service-Oriented Enterprise** relies on ‘**visible, accessible, governable, trusted, understandable, and trusted**’ shared information
- Leveraging Enterprise-wide strategies, governance boards, and initiatives, allow organizations further success in DoD information and data sharing
 - To highlight a few:
 - **Enterprise Strategies**: encourage reuse through the implementation of technologies such as “**the Cloud**”, **Portals, Consolidated Email, Enterprise Security**...resulting in reduced costs, improved interoperability, and increased protection
 - **Standards**: define information exchanges through the use of “**vocabularies**” of commonly exchanged concepts
 - **Governance**: oversee implementation of enterprise services, through CIO governance boards...rapid development of BCAs outlining technical, operational, and financial implications
 - **Enterprise Service Security**: recognize and solve attribute and authorization problems to secure the Service-Oriented Enterprise

How do we better share data?

How do we improve info access?

How do we best collaborate?

How do we make data dependable?



My Contact Info



Ron Kelly

Office of DoD CIO/ES&I

703-602-1007

ronald.kelly@osd.mil