COP: From Knowledge Webs to Knowledge Portals

Alexandre Bergeron Guyard
Denis Gouin
IKM Section / DRDC Valcartier
June 2005
(Paper 197)
Information Age – Major Transformation

- US DoD and Allies
  - Information Superiority
  - Implement Network Centric Warfare
- NCW – definition (D.S. Alberts)…
  - Achieve secure and seamless connectivity and interoperability
  - Share, access and protect information
  - Correlate, fuse and analyse the information in order to develop high quality shared awareness
  - Establish and maintain an information advantage over an adversary
NCW...

- Knowledge Webs
  - Connect organizations to information by exploiting Web technology

- Net-Centric Enterprise Services (NCES)
  - Allow sharing of information but also sharing of services

- Enterprise Portal technology
  - Allows to retrieve, organize and publish structured and unstructured information in a secure manner
  - Allows for the integration of an organization’s applications and services
Knowledge Webs and Enterprise Portals

Samples…
K-Web

- Project sponsored by Office of Naval Research (ONR) and implemented by Space and Naval Warfare Systems Center, San Diego (SSC-SD), since 1999

- The K-Web is a “dynamic status board” where you are trying to share the “best available” information at all times across the entire command.
K-Web...

- Provides users with a template (Summary Maker) that supports the easy creation of basic HTML summary pages that can be rapidly published onto a Web and shared.
K-Web...

- TacGraph (Tactically-relevant Graphics Authoring Tool) is designed as an easy-to-use graphical drawing tool to rapidly develop summarized, tactically relevant images and publish them as Web content.
Command View

• Knowledge Web being developed in Canada’s under the leadership of Director Joint Force Capability (DJFC)

• Web-based solution to disseminate and manage information between Canadian Forces organizations
Command View…

- R & D pour la défense Canada
COP 21

• COP – Common Operational Picture:
  – Integrated capability to receive, correlate and display heterogeneous sources of information in order to provide a consistent view of the battlespace

• COP 21 Portal
  – Situation Awareness Knowledge Portal, in line with the NCES approach
COP 21 TD Objectives

- Demonstrate how Enterprise Portal Technology can improve Situation Awareness
- Review organizational impacts caused by Enterprise Portal technology
- Conduct Risk Mitigation of new Information Technology trends
COP 21 Vision
COP 21 Main Capabilities

• Single point of access to multiple information sources
• Filtering and categorizing information using Portfolio views
• View of several documents together
• Disseminating information using Portfolios
• Contextual search services
• Web-Based Geographic Information System
• Integration of application services in the portal
Single Point of Access to Multiple Information Sources

Services Access Layer

COP21 Services
- DTRA Services
  - Tarantella
  - Email
  - HPCA
- Australian Services
  - Elvin Stickler
  - Gazetteer

COP21 Core Services
- Portfolio
- Messaging
- RFI
- Notification System
- GIS Browser
- IMS
- Contextual Search

COP21 Application Services
- Tarantella
- COPIC
- Battle Rhythm
- DRBD
- C2 Infrastructure Browser
- Collaboration
- CAAT-XI
- COPCast

NSA Services
- GEOGRAPHY MKM
- GIS Browser
- RFI

CPGIS Services
- WMS
- WFS
- Gazetteer

Data Access Layer

COP21 Data Sources
- COP21 Core Services
- Other Allied Sources and Services
- Canadian Sources
- Geospatial Sources
- Other Sources from C2Is

Open Sources
- Canada
Filtering and Categorizing Information using Portfolio Views
Disseminating Information using Portfolios

UNCLASSIFIED
Terrorism Open Source Intelligence Report (TOSIR) No. 91
9 October 2003

Overview

1. “Swarming: Sing Like a Fox—The Study of Social Insect Ideas for Networks and Organizations in the 1990s, Wael Mark Elahi,” by David Hughes, Aviation Week and Space Technology, 7 September 2003. The idea of using swarming tactics in battle has been explored by the Byzantine empires. After the fall of Rome, Al-Qaeda has employed swarming tactics as a means of resistance. Using small units of four to fifty members, the Chechen has been successful against much more advantaged forces by using radios and weapons that are simple and effective. Using small units of four to fifty members, the Chechen has been successful against much more advantaged forces by using radios and weapons that are simple and effective.

2. “The Terrorist Talks: Al-Qaeda’s Top Man in Asia Sings about the Group’s Operations,” by Simon Egan, Time, 15 October 2003. Al-Qaeda is a working principle of professional terrorists who take professions to tell their story. It did not take long for Bin Laden to start using his story to disseminate information and propaganda.”
Contextual Searches

Terrorism Open Source Intelligence Report (TOSIR) No. 91
9 October 2003

Some U.S. officials describe Saudi-backed Wahhabism as a philosophical "platform" that terrorists have used to justify holy war.

Governments can beef up their intelligence services, ferret out and destroy terrorist networks, and harden potential targets.
Integration of Application Services in the Portal

Services Access Layer

COP21 Services
- DTRA Services
  - TARANTULA
  - Intellectual Data
  - HPICA
- Australian Services
  - ESRI
  - Gazettier
- COP21 Core Services
  - Portfolio
  - Messaging
  - RFI
  - Document Mgmt
  - Notifcation System
  - GIS Browser
  - IMS
  - Contextual Search
- COP21 Application Services
  - TARANTULA
  - COP21
  - Battle Rhythm
  - DBI
  - Grid/Infrastructure Browser
  - Collaboration Tools
  - IAAT-XI
  - GPV
- NSA Services
  - GEOGRAPHY
  - GIS Browser
  - RFI
  - WMS
  - WFS

Data Access Layer

COP21 Data Sources
- COPC Sources
- Canadian Sources
- Geospatial Sources
- Other Sources from U.S.
- Other Sources from CIFS
- Open Sources

Games, Lessons Learned, US Data Store, Client Application DBs
Integration of Application Services in the Portal – Tight Coupling
JWID 04 Feedback

- “COP21 is ideal for loading a large amount of data from multiple sources”
- “Being able to access all pertinent info from one workstation has increased my efficiency 10 fold!”
- “With the 5 screens in full operation you get a better picture of what’s going on in any of the portfolios you have open”
- “It’s an effective way to share, file, organize info”
- “Posting to portfolios is an appropriate and effective means of info dissemination”
- “Having all the apps in one place – not needing to know where documents are stored – just that they are related to a portfolio is a bonus”
Towards a Knowledge Portal

- K-Web, Command View and the COP 21 Portal all provide easy sharing of information in order to improve situation awareness and support decision-making.
- Each application has some unique concepts worth examining.
- As part of the COP 21 project, a goal has been to consider how Command View could evolve from a Knowledge Web to a Knowledge Portal.
Towards a Knowledge Portal - Key Concepts

- Exploitation of Enterprise Portal Technology
- Global View and Portfolio Views
- Managing Information
- Contextual Support
- Improved Search Capabilities and Classification
- Linked Views
- Collaboration services
- Decision Boards and Decision Support Applications
- Briefing Aids
- Knowledge Walls