

Open Technology: Realizing the Vision

Conference Overview (March 2007)

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Best Practices Committee Meeting @ NSF

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Web 2.0 made possible by:

Open Source Source,
Open Interfaces & Standards
Open Technology Development
practices

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Web 2.0 Definitions*

Core competencies of Web 2.0 companies:

- Services, not packaged software, with cost-effective scalability
- Control over unique, hard-to-recreate data sources that get richer as more people use them
- Trusting users as co-developers
- Harnessing collective intelligence
- Leveraging the long tail through customer self-service
- Software above the level of a single device
- Lightweight user interfaces, development models AND business models

* Tim O'Reilly, Sept 2005, <http://www.oreillynet.com/ipo/s/6228>

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Conference Keynotes

Day 1: OTD

- Chuck Niechers, Principal Deputy Assistant Secretary of the Air Force for Acquisition
- Chris DiBona, Open Source Manger, Google
- BG Nicholas G. Justice, USA, Deputy Program Executive Officer, Command, CST
- Ted Davies, Unitys Federal Civilian Business

Day 2: Open Source Geospatial

- Michele Westlander, Principal Deputy Associate Director of National Intelligence and Deputy Chief Information Officer in the Office of the DNI
- Tyler Mitchell, Executive Director, Open Source Geospatial Software Foundation
- Dave McIlhagga, CEO, DM Solutions
- Geoff Zeiss, Autodesk, Inc.

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Chuck Riechers, AF

"Our goal is to increase technical efficiency and reduce software lifecycle costs within DoD," said Chuck Riechers, Principal Deputy Assistant Secretary of the Air Force for Acquisition. "The Open Technology Development roadmap sets out a strategic vision that encourages the use of open standards, open-data interfaces and best-of-breed open source software solutions when and where appropriate."

"We are not mandating that it's either 'open' or 'proprietary' solutions," he continued. "We want to pay for unique intellectual property when they are best of breed, but not succumb to code and vendor-specific lock-in situations. Acquisition of proprietary solutions needs to be a conscience choice, not an assumption. The default should be 'open technology development,' where standards and interfaces are open and accessible and best of breed software is utilized, all coupled with the Air Force exercising data rights. Further, we need to move toward an increased competitive, collaborative and interoperable environment across the Services and Industry for technology development. This strategy will help to minimize redundant development efforts and enable more agile development and deployment of systems."

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Strategy

1. Crawl
 - Open Standards, Interfaces, Data
2. Walk
 - Open Source & Concept Methodology
3. Run
 - Air Force/DoD/Industry Source Repositories

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What's Happening in DoD

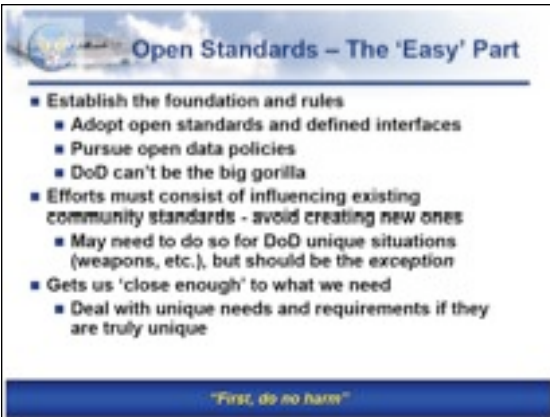
Open Technology Development (OTD)

- Promote:
 1. Open Standards, Open Data, Interfaces – enable systems and services to evolve
 2. Use of best-of-breed Open Source Software
 3. Open Source Software Development Practices and Solutions – minimizing redundant software development and enabling a more agile development of systems

OTD is about fostering collaboration across DoD on technology acquisition and development

No doubt changes in the way we do business are necessary

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Open Standards – The 'Easy' Part

- Establish the foundation and rules
 - Adopt open standards and defined interfaces
 - Pursue open data policies
 - DoD can't be the big gorilla
- Efforts must consist of influencing existing community standards - avoid creating new ones
 - May need to do so for DoD unique situations (weapons, etc.), but should be the exception
- Gets us 'close enough' to what we need
 - Deal with unique needs and requirements if they are truly unique

"First, do no harm"

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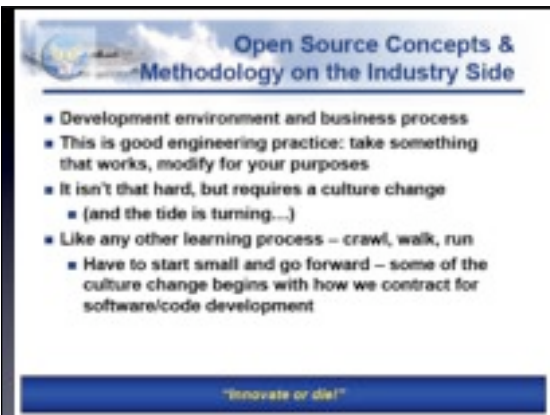


Open Systems Architecture/ Open Standards

- Simply expected – but it won't happen overnight
- Proprietary is OK so long as it's an informed decision – not a blind default that creates unanticipated lock-in.
 - We want the best of breed – if you have a great new idea, you should be rewarded
 - Thorough interface and performance specs are critical – they will be deliverables
 - Don't need to know the details of what goes on in the box (competitive advantage), but need to describe the functionality in sufficient detail to allow someone else to swap in
- Compete on functionality and service

"It's the interfaces, stupid!"

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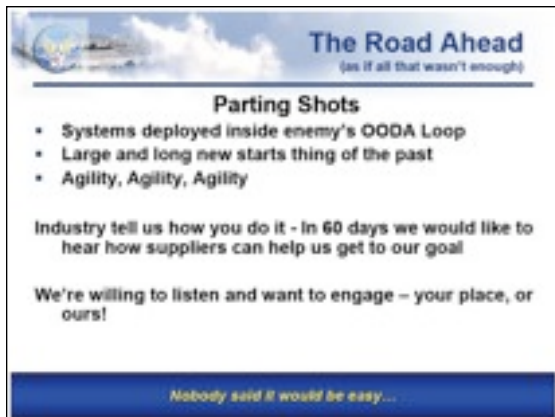


Open Source Concepts & Methodology on the Industry Side

- Development environment and business process
- This is good engineering practice: take something that works, modify for your purposes
- It isn't that hard, but requires a culture change
 - (and the tide is turning...)
- Like any other learning process – crawl, walk, run
 - Have to start small and go forward – some of the culture change begins with how we contract for software/code development

"Innovate or die!"

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The Road Ahead
(as if all that wasn't enough)

Parting Shots

- Systems deployed inside enemy's OODA Loop
- Large and long new starts thing of the past
- Agility, Agility, Agility

Industry tell us how you do it - In 60 days we would like to hear how suppliers can help us get to our goal

We're willing to listen and want to engage – your place, or ours!

Nobody said it would be easy...

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Chris Dibona, Google

- We couldn't build Google without open source software

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Government Panel

Panel: Architecture & What's Ahead for DoD Open Source?

- Tim Johnson, US Navy - CIO Org
- MAJ Jim Jackson, JFCOM
- Fritz Schultz, DISA
- David Wheeler, IDA
- Nick Guertin, US Navy PEO IWS 7

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Naval Open Architecture

We are moving forward with our OA business model

- The Navy seeks to receive and assert Government Purpose Rights (GPR) in all National Security Systems it develops and acquires
- The Surface Navy has established the Software Hardware Asset Reuse Enterprise (SHARE) library in which these assets will be deposited
- GPR will enable the Navy to share these assets with all qualified contractors who sign up to access SHARE
- The SHARE agreement requires that modifications to SHARE assets be redeposited into the library
- However, SHARE is only accessible to qualified contractors. It is not available to the general public.

More information on SHARE is available at <http://viewnet.asac.navy.mil>

<https://acc.dau.mil/oa>

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BG Justice, C3T

"Our job is to provide accurate and timely information to the soldier in the field so they can perform their mission," said General Justice. "Open source software is part of the integrated network fabric which connects and enables our command and control system to work effectively, as people's lives depend on it."

"When we rolled into Baghdad, we did it using open source," General Justice continued. "It may come as a surprise to many of you, but the U.S. Army is 'the' single largest install base for Red Hat Linux. I'm their largest customer."

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Industry Panel

- Andy Gordon, Unisys
- Gary Long, Enterprise DB
- Chris Runge, Red Hat
- Bill Moriarty, Black Duck
- Ken Lorenzen, Boeing FCS
- John Smith, Hewlett Packard
- Drew Ladner, ZURI Technology

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Open Source Enterprise Applications Evolution Beyond Linux

	Edge Infrastructure	Static Web Infrastructure	Application Serving	Line of Business Solutions Developed Using Open Source
Infrastructure	OpenStack, OpenFlow, Open vSwitch, Open vNetwork	Apache HTTP Server, Apache Tomcat, Apache Struts, Apache Cocoon, Apache Camel, Apache Camel-Quartz, Apache Camel-Activemq, Apache Camel-Beanstalkd, Apache Camel-AMQP, Apache Camel-FTP, Apache Camel-FTP2, Apache Camel-IMAP, Apache Camel-IMAP2, Apache Camel-IMAP3, Apache Camel-IMAP4, Apache Camel-IMAP5, Apache Camel-IMAP6, Apache Camel-IMAP7, Apache Camel-IMAP8, Apache Camel-IMAP9, Apache Camel-IMAP10	Apache Tomcat, Apache Struts, Apache Cocoon, Apache Camel, Apache Camel-Quartz, Apache Camel-Activemq, Apache Camel-Beanstalkd, Apache Camel-AMQP, Apache Camel-FTP, Apache Camel-FTP2, Apache Camel-IMAP, Apache Camel-IMAP2, Apache Camel-IMAP3, Apache Camel-IMAP4, Apache Camel-IMAP5, Apache Camel-IMAP6, Apache Camel-IMAP7, Apache Camel-IMAP8, Apache Camel-IMAP9, Apache Camel-IMAP10	Apache Tomcat, Apache Struts, Apache Cocoon, Apache Camel, Apache Camel-Quartz, Apache Camel-Activemq, Apache Camel-Beanstalkd, Apache Camel-AMQP, Apache Camel-FTP, Apache Camel-FTP2, Apache Camel-IMAP, Apache Camel-IMAP2, Apache Camel-IMAP3, Apache Camel-IMAP4, Apache Camel-IMAP5, Apache Camel-IMAP6, Apache Camel-IMAP7, Apache Camel-IMAP8, Apache Camel-IMAP9, Apache Camel-IMAP10
Business	OpenStack, OpenFlow, Open vSwitch, Open vNetwork	Apache HTTP Server, Apache Tomcat, Apache Struts, Apache Cocoon, Apache Camel, Apache Camel-Quartz, Apache Camel-Activemq, Apache Camel-Beanstalkd, Apache Camel-AMQP, Apache Camel-FTP, Apache Camel-FTP2, Apache Camel-IMAP, Apache Camel-IMAP2, Apache Camel-IMAP3, Apache Camel-IMAP4, Apache Camel-IMAP5, Apache Camel-IMAP6, Apache Camel-IMAP7, Apache Camel-IMAP8, Apache Camel-IMAP9, Apache Camel-IMAP10	Apache Tomcat, Apache Struts, Apache Cocoon, Apache Camel, Apache Camel-Quartz, Apache Camel-Activemq, Apache Camel-Beanstalkd, Apache Camel-AMQP, Apache Camel-FTP, Apache Camel-FTP2, Apache Camel-IMAP, Apache Camel-IMAP2, Apache Camel-IMAP3, Apache Camel-IMAP4, Apache Camel-IMAP5, Apache Camel-IMAP6, Apache Camel-IMAP7, Apache Camel-IMAP8, Apache Camel-IMAP9, Apache Camel-IMAP10	Apache Tomcat, Apache Struts, Apache Cocoon, Apache Camel, Apache Camel-Quartz, Apache Camel-Activemq, Apache Camel-Beanstalkd, Apache Camel-AMQP, Apache Camel-FTP, Apache Camel-FTP2, Apache Camel-IMAP, Apache Camel-IMAP2, Apache Camel-IMAP3, Apache Camel-IMAP4, Apache Camel-IMAP5, Apache Camel-IMAP6, Apache Camel-IMAP7, Apache Camel-IMAP8, Apache Camel-IMAP9, Apache Camel-IMAP10
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Typical Open Source Applications	<ul style="list-style-type: none"> • Email Servers • CRM • ERP/IMS • Scientific Apps 	<ul style="list-style-type: none"> • Linux • Apache Web Server • MySQL • JSP • J2EE Web Services 	<ul style="list-style-type: none"> • Enterprise Applications (CRM, SCM, ERP) • Specific Domains (Finance, Logistics) • LAMP/Java preferred, Rights, Risk Management • Office Products, Open Office, Open WordSearch 	<ul style="list-style-type: none"> • Enterprise Integration • Platform Integration • Dynamic Business Models • Business Intelligence • E-Content Management • CRM • Security

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Progress since the 9-14-2006 OTD Conference

The Contractor shall promote the use of open source solutions and open technology development where practicable to enable this re-use.

GSA Alliant (Fall 2006)

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red hat

DDG-1000 and TSCEI

- Next generation destroyer
- Requirement: open and standardized platform, with sustainable and reusable technology for the long-term
- One CG for a variety of ship-based needs
 - C&C, navigation, targeting, weapons control, radar systems
 - Enhances manageability and survivability
- Red Hat, IBM, Raytheon
 - Red Hat Enterprise Linux with enhanced Real-Time capabilities
 - Real Time Java



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Ted Davies, Unisys

- **There is huge opportunity here for industry & government**

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Michele Weslander, DNI

"Speed, efficiency and flexibility are essential in the business of Intelligence gathering," Weslander said.

"One of the key advantages of using open technologies within geospatial programs is that it promotes interoperability which broadens the resource base which we have to draw from regarding both informational data and the tools and service providers which collect and process the vast amounts of information involved in satellite mapping and information sharing."

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Open Source Geospatial

- Tyler Mitchell, Executive Director, Open Source Geospatial Software Foundation
- Dave McIlhagga, CEO, DM Solutions

What's Ahead for Open Source Geospatial Software?

- Jim Long, National Geospatial Agency
- Al Kelly, I Labs, Inc.

Finding the Role for Source Geospatial Software

- Geoff Zeiss, Autodesk, Inc.
- Large DATA JCTD/OSSIM
- Mark Lucas, RadiantBlue

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DM Solutions Group www.dmsolutions.com

State of the GeoSpatial Universe

- Web technologies have been the primary disrupter to how geospatial technologies are used and applied
- Traditionally GIS departments have performed all geospatial activities and delivered end-results to 'users' as map products, reports, etc...
- Introduction of Web mapping technologies has allowed 'users' to engage in this process of geospatial information delivery
- The result is a disruption to how geospatial data and information is created, managed accessed, and distributed

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Trend: Geospatial-enabled IT

2005/2006

Autodesk

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Web2.0

Open Source Geospatial

Web1.0

AcGIS MapServer

Weblogs GeoMedia Web

Map@Home

Utility and Telecom Government

Autodesk

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Summary

Open standards create a fertile ground for commoditization.

Open source is good at commodity software.

- http, html -> Apache Web Server
- OGC OWS -> MapServer

Web mapping is becoming commoditized

- Open source used by ~50% of the world's map servers

Web 2.0 and open source web mapping is a business opportunity

- Bigger pie

Autodesk

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in closing...

**Acquisition of proprietary solutions
needs to be a conscience choice, not
an assumption.**

- Chuck Riechers, AF

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