Your Output is My Input: Collaborative Portals

Stefan Falke
Washington University in St. Louis
& Northrop Grumman Information Systems
stefan@wustl.edu

Ed Fialkowski
Washington University in St. Louis

With substantial conversation and context from ESIP Air Quality Workgroup, GEOSS Air Quality Community of Practice, and others…

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Key Discussion Points

• Conversation is king; data gives us something to talk about; conversation adds value – how to foster conversation by sharing our data and information (our output) so that it can be useful to others as input

• Web portals can go beyond their traditional stand-alone roles to help foster the conversation and put it in the proper context

• Web technologies are allowing collaborative online communities to form around conversations and context – emissions could be a core community within broader air quality, climate and general environmental communities
Fostering Conversations

“Content isn’t king. … Conversation is king. Content is just something to talk about.”

- Cory Doctorow, Boing Boing Blog, speaking about websites

Does this relate to emissions inventories?

We often say, “Data is king.” or for some of us, “Metadata is King.”

Where is the conversation? What about context?

If we have data we’re told “make it web accessible in a standard format” and with respect to metadata, “create it and associate it with the data”

But standardized data and metadata is still not enough.

How do we put the data and metadata in the proper context to foster conversations? Do conversations foster a proper context?
Web 2.0 and Conversation

• Web 2.0 describes the rise of:
  – user-generated content;
  – conversing about user-generated content
  – on-line collaboration between users;
• Web 2.0 tools emphasize:
  – Blogging
  – Tagging
  – Commenting
  – Modifying
  – Augmenting
• “The Participatory Web” – it is easy to publish your own content and converse about others’ content
• User interaction with web has expanded from one-way information download to include user-driven information content – “Web 2.0”
• Within the science and engineering domains, this current phase of the web is referred to as cyberinfrastructure, e-science, and service oriented science.
  – new capabilities for sharing information, conducting research in a distributed environment, and achieving new insights that would have taken longer, or not occurred at all, in independent organizations.
“This is one of the key lessons of the 2.0 era: that the ultimate end-game generally boils down whoever has the deepest and most potent network effect, which are more pronounced when your data and software are being used from many other Web apps, instead of just your own.”

“The Web services approach completely changes where the focus of product design is, from the human/machine interface to the machine/machine interface.”

Source: Don Hincliffe’s Web 2.0 blog (http://web2.wsj2.com/)

Source: Amazon Web Services Blog (http://aws.typepad.com/aws/2008/05/lots-of-bits.html)
Using Portals to Collaborate

Wikipedia:
“A web portal presents information from diverse sources in a unified way.”

Traditionally portals pulled information from distributed sources into a central web location. Portals were stand-alone, usually not integrated or interoperable with other portals.

Some standards have evolved to address portal interoperability (JSR-286, Web Services for Remote Portlets)

Web 2.0 is providing complementary ways to connect portals, share content, put into context and broaden conversation
Emissions Related Community Activities

- Networked Environmental Information Systems for Global Emissions Inventories (NEISGEI) Portal
- GEOSS Architecture Implementation Pilot
- GEOSS Air Quality Community of Practice
- Hemispheric Transport of Air Pollution (HTAP) Assessments
- Committee on Earth Observation Satellites Atmospheric Composition Constellation Portal
Aggregating RSS Feeds

Filter RSS feeds for ‘air emissions’

Displayed in NEISGEI

News From Other Portals
- GoogleNews: Asteria leaders want the plug pulled on plans on power plant - New York Daily News
- US Smog Blog: Heavy Smoke in the Gulf of Mexico; Dust off the Pacific Coast
- YahooNews: Stimulus Money Flows to Reduce Diesel Emissions, Prop Up Water Infrastructure (GreenBiz)
- GoogleNews: Oakland-part moves ahead with emission reduction plan - natworld
- YahooNews: Air District Offering $20 Million

Other Analyses

<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
<th>Tool</th>
<th>Analyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Smoke in the Gulf of Mexico, Dust off the Pacific Coast</td>
<td>4/14/09</td>
<td>Smog Blog</td>
<td>Erica Zell</td>
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<tr>
<td>International: Ash plume from the Galapagos</td>
<td>4/12/09</td>
<td>Smog Blog</td>
<td>Jill Engel-Cox</td>
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<tr>
<td>Smoking in the Caribbean: affecting coastal cities</td>
<td>4/12/09</td>
<td>Smog Blog</td>
<td>Ray Hoff</td>
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<tr>
<td>Smoke in Midwest continues and smoke throughout the Caribbean</td>
<td>4/11/09</td>
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<tr>
<td>International: A look at Europe finds haze in its eastern region</td>
<td>4/11/09</td>
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<td>Jill Engel-Cox</td>
</tr>
</tbody>
</table>
Saving and Sharing Analyses

Save Analysis
Application Settings
to Portal

Application, settings, and comments are available for others to view and comment.
iGoogle Gadget (Portal to Portal Sharing)
Tagging Content for Findability and Association

Tags

Tags A to Z:
Data(12) EIA(1) EPA(1) Media Coverage(2) Portals(8) Presentations(5) Projects(3) Reports and Papers(7) aerosols(1) air quality(5) atmospheric sciences(1) bio(3) community(2) conference(2) cyberinfrastructure(10) data analysis(1) eGrid(1) emissions inventories(1) event(1) gea(1) map viewer(2) modeling(1) nsf(3) organizations(5) sensor web(1) tools(16) wiki(2) workflows(2) workshops(1)

Tags are keywords used to describe an online resource

Tools

Emissions Data Browser
- CEC 2002 North American Power Plant Emissions Data visualized in maps and t
EDGAR Spatial Viewer
- A web map viewer application built using ESRI ArcIMS that provides map views of greenhouse gas emissions and population density
GEA/ACCENT Emissions Visual Comparison
- Application for visualizing emissions maps side-by-side for comparison among species, emission inventory, and region
Google Maps Emissions Browser
- A tool that combines the widely used Google Maps interface with interoperable data access through Dat...
Google Maps Fire/Smoke Browser
- A mashup application for browsing fire related data. Note: Some...
GRASS web services
- George Mason University has built NSDI/SDAP interfaces to some of the GRASS GIS functions. These...
NOAA NESDIS Emission Map Viewer
- The map offers visualizations and reporting tools for seven criteria pollutants (nitrogen oxides, sul...
SMOKE
- The Sparse Matrix Operator Kernel Emissions (SMOKE) Modeling System regards emissions inventories to...
Datafed Spatial–Temporal Viewer
- Datafed /
Emissions Comparison Tool
ESA FireAtlas
- European Space Agency's FireWeb Map Server for ATSR and AATSR fire location data.
HTAP Model Comparison Tool
- Calculate differences, ratios, etc. between two HTAP model runs.
Delicious as a NEISGEI Database

Delicious bookmarks are retrieved based on tags that match query parameters (space, time, keyword, …)

NESIGEI posts are automatically recorded as delicious bookmarks, with tags including ‘NESIGEI’, time, location, keywords and information source

http://delicious.com/NEISGEI
The Group on Earth Observations (GEO) is a partnership that includes 78 governments and 52 international organizations.

The vision of GEO is to create a Global Earth Observation System of Systems (GEOSS) to realize coordinated, comprehensive and sustained Earth observations and information among countries.

http://www.earthobservations.org/

A ten year GEOSS plan (2005-2015) defines the vision, purpose, and scope of the system, as well as nine expected “Societal Benefit Areas” in disasters, health, energy, climate, water, weather, ecosystems, agriculture and biodiversity. This emerging infrastructure aims to interconnect a diverse and growing array of sensors and information systems to monitor, forecast and assess changes in our global environment to support experts, policy makers, and decision makers.
GEOSS Architecture Implementation Pilot (AIP)

Creating an information architecture based on web standards that allows various analysts and decision makers to access and use GEOSS information and to share their information with GEOSS.

Societal Benefit Area Working Groups

- **Air Quality and Health**
- **Disaster Response**
- **Biodiversity and Climate Change**
- **Renewable Energy**

AIP Phase 2 Participants

- ACRF
- BKG
- Caribbean Flood Team
- CIESIN
- CNES and ERDAS
- Compusult
- EuroCryoClim
- GEO-Ukraine
- IP3
- ISPRRA
- JAXA
- Mines Paris Tech
- NASA World Wind
- NASA Giovanni
- EPA AirNow
- ERDAS Titan
- ESA
- ESIP AQ Cluster
- ESRI
- ESRI Canada
- NOAA/NASA GOES-R and GMU CSISS
- NOAA IOOS
- NOAA NCDC
- NOAA SNAAP
- Noblis
- Northrop Grumman
- Spot Image
- SURA/NIMSAT/GoMOOS
- USGS
- VIEWS
- Washington University in St. Louis
Evolving AQ Community Infrastructure

Users
- Community Portal
  - Search
  - Register

Service Providers
- Create ISO metadata
  - ISO 19115

GEOSS Common Infrastructure
- GEO Web Portals
- GEOSS Clearinghouse
- ESA/FAO
- ESRI
- Compusult
- USGS
- ISO WAF
- CS/W 2.0.2

Registries
- Components & Services
- Standards & Interoperability
- Best Practices & Wiki
- User Requirements

Note: diagram only depicts finding and registering activities - no binding (yet)
Atmospheric Composition Constellation Portal

Goals:
Provide access, tools, and contextual guidance to scientists and value-adding organizations in using remotely sensed atmospheric composition data, information, and services. The ACC Portal will help to foster interoperability and application of atmospheric composition data, information and services worldwide.

The Committee on Earth Observation Satellites (CEOS) is considering the development of an Atmospheric Constellation Composition Portal

The World Data Center for Remote Sensing of the Atmosphere (WDC-RSAT) is being considered as the focal point for the portal.
An Emissions Inventory Community of Practice?

Overlap represents the shared components but each group has areas of specialty that is distinct from the other groups.

Where do we all fit?

Interested in the overlap? Please participate in GEOSS Architecture Implementation Pilot / Community of Practice [https://sites.google.com/site/geosspilot2/air-quality-and-health-working-group](https://sites.google.com/site/geosspilot2/air-quality-and-health-working-group)