



## ***Big Data for Government Symposium***

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# Civil Information Integration in support of the US Government

Government Big Data Symposium  
Holiday Inn Rosslyn at Key Bridge, Arlington VA  
17-18 June 2014

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# On my own behalf

I have not been sent here to represent the Department of Defense or the US Government. This presentation represents my views and does not constitute the official position of the DoD CIO or the US Government.

# DoD Big Data Goals

- Produce better information for decision making
- Foster greater data and analytical sharing
- Enable cost savings
- Supports better Integration and Interoperability
- Grow the BD talent in government. Not common in the marketplace.

# Earthquake

## January 12, 2010

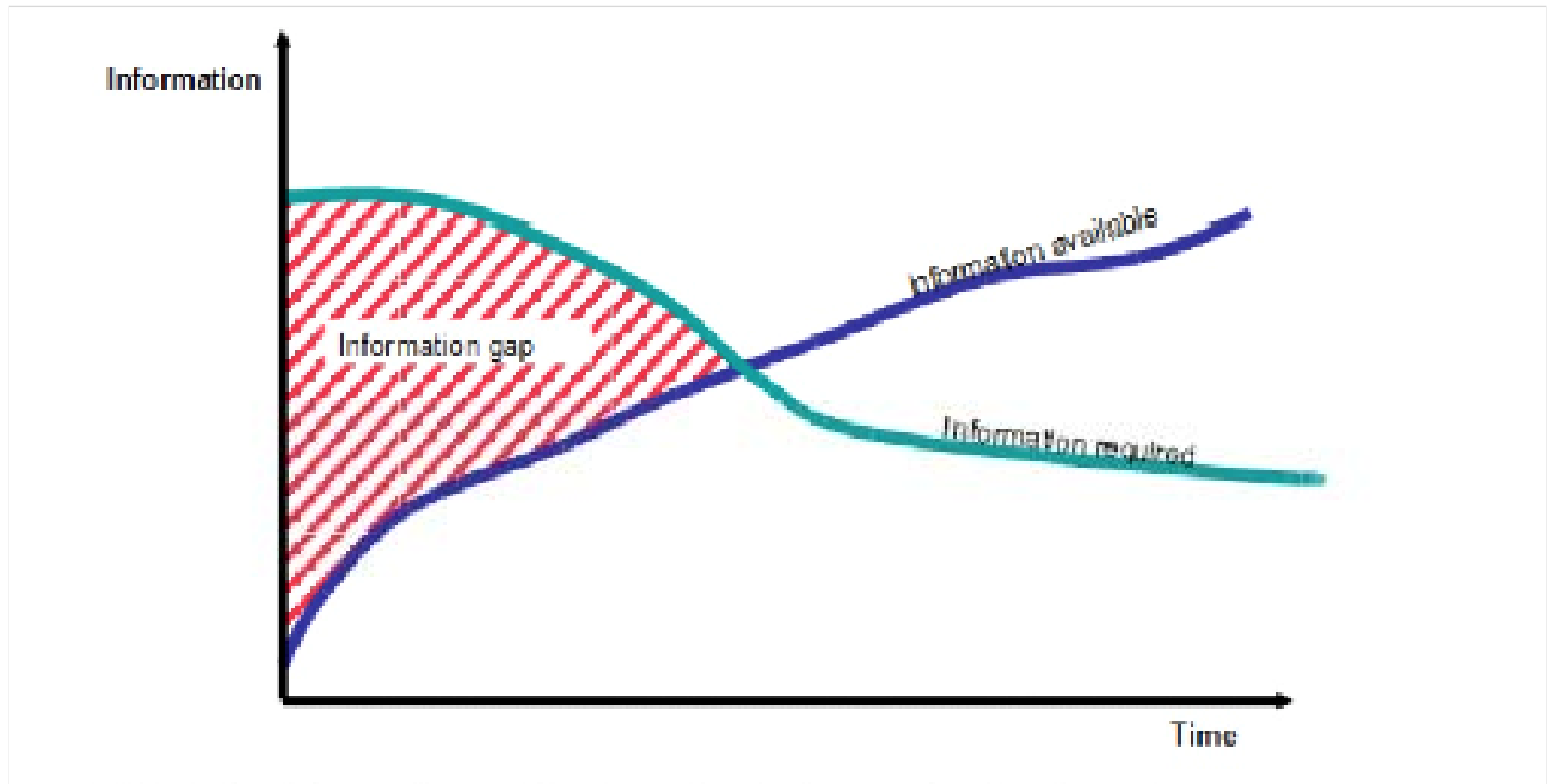


- 220,000+ dead
- Over 300,000 injured
- Over 1.1 million displaced
- 53% of buildings in affected area destroyed or damaged
- 14 of 16 national ministries destroyed

Source: United Nations

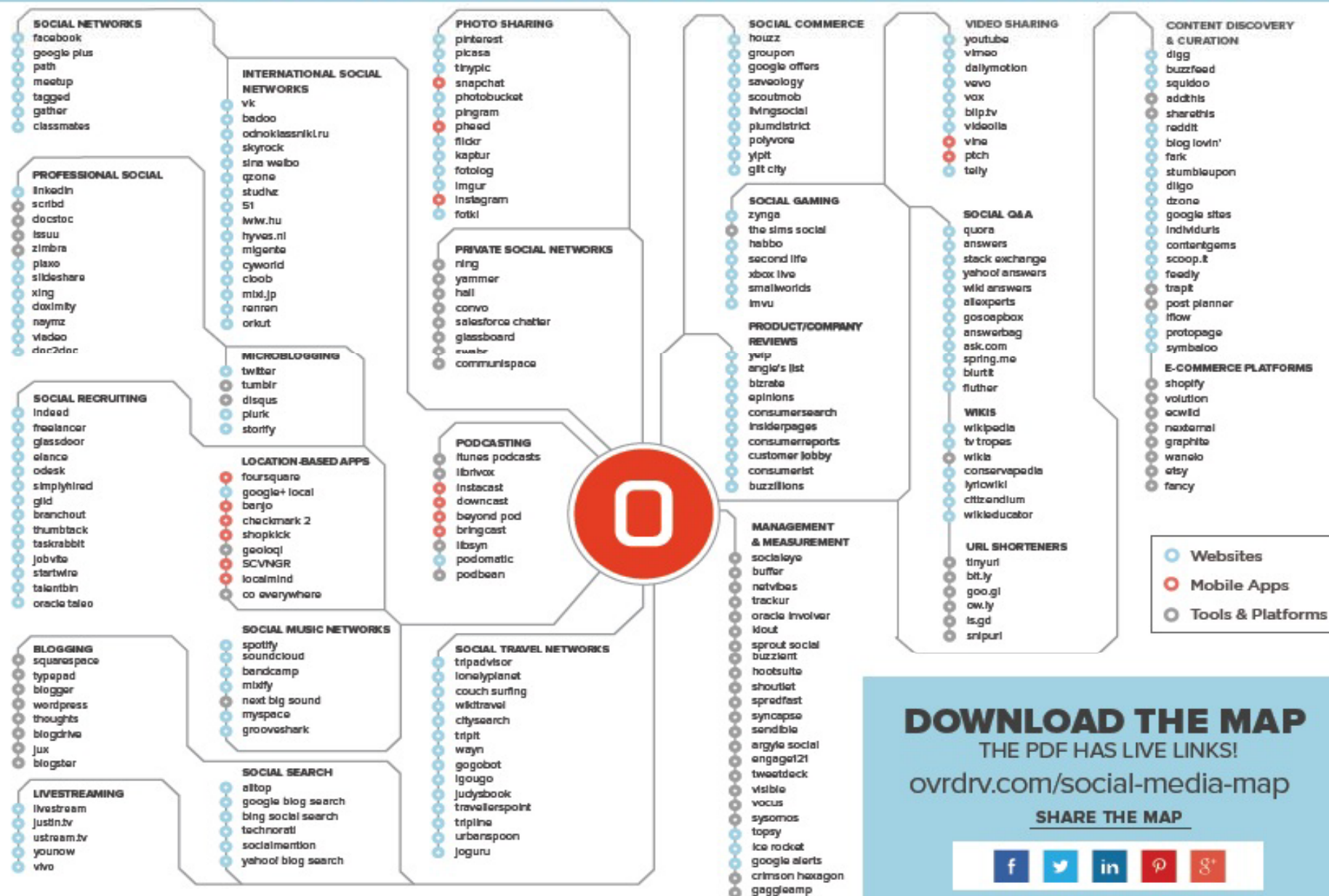


# How can we close the information gap?



It takes structured and unstructured data to gain situational awareness



**DOWNLOAD THE MAP**

THE PDF HAS LIVE LINKS!

[ovrdrv.com/social-media-map](http://ovrdrv.com/social-media-map)**SHARE THE MAP**

Command inputs  
keyword search to mine  
for data

Data mining technology  
searches the web for  
matching information

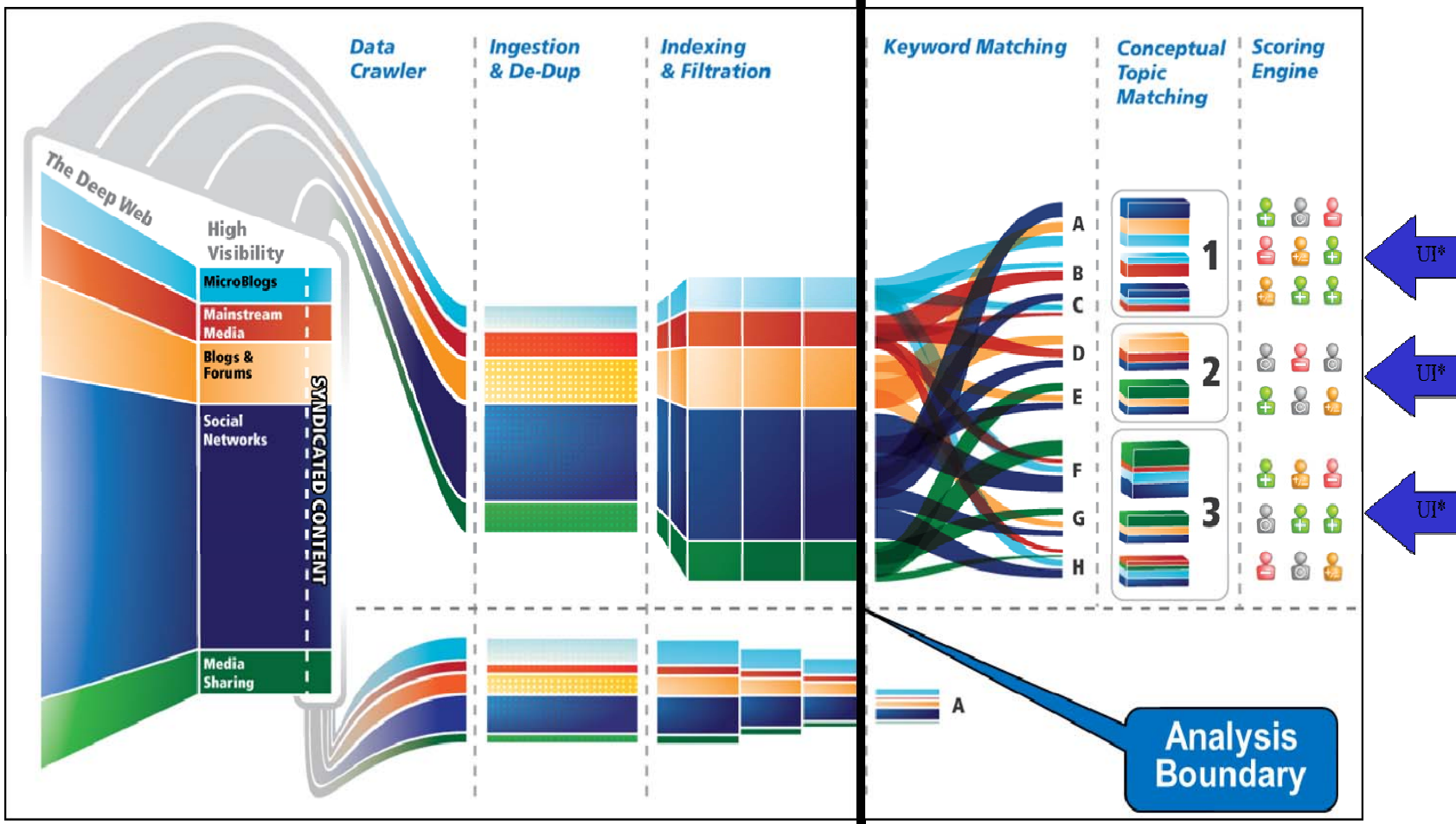
Technology sorts data,  
eliminating spam, duplicate  
posts

Technology  
filters and  
indexes data

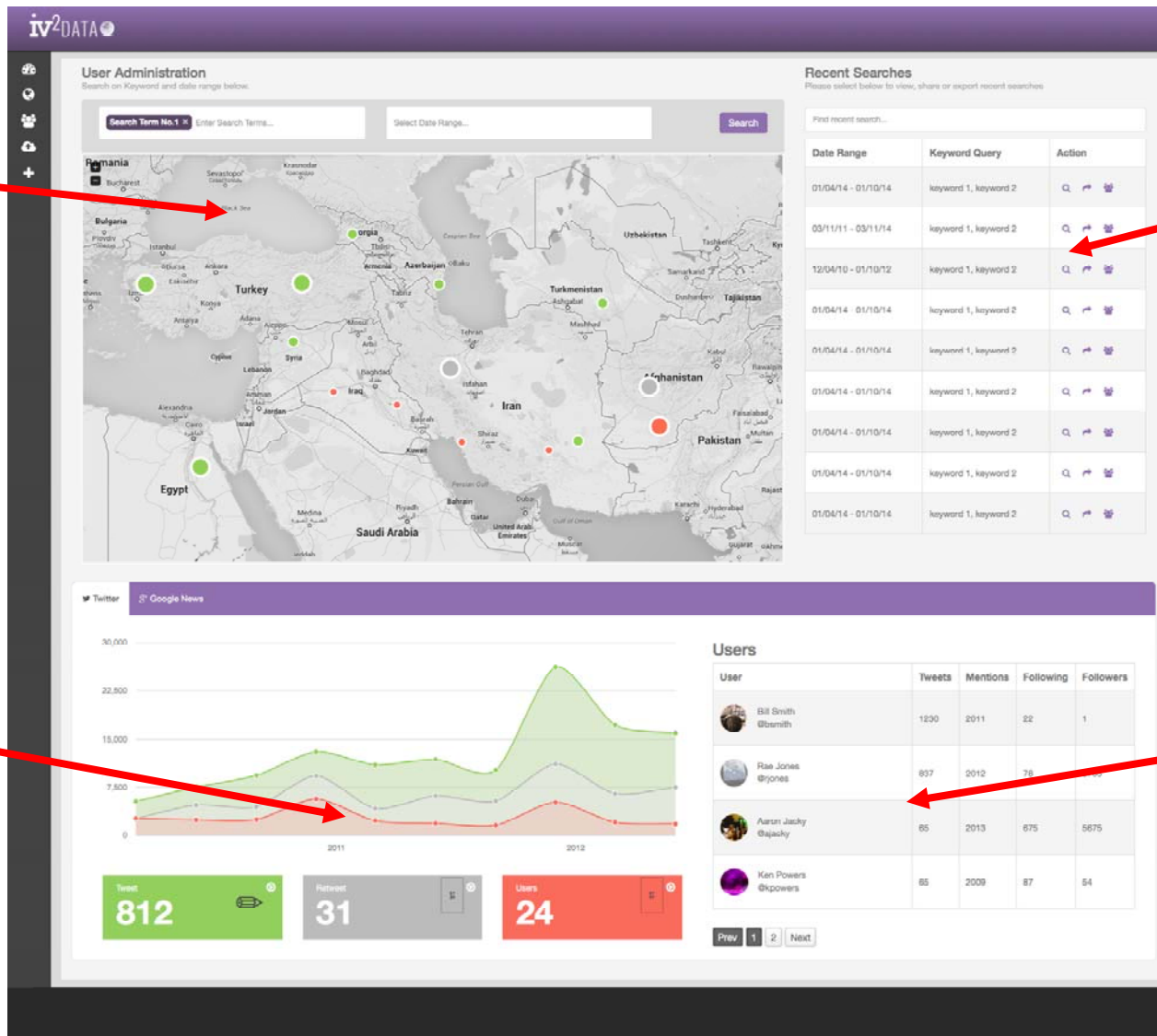
Technology matches  
Command's key words with  
collected data

Technology ensures  
key words are  
appropriate

Automated sentiment  
scoring overseen by  
analyst for accuracy







Geospatial

Cloud Search

Trends


Trends



# Unclassified Information Sharing Service


← → ↻ <https://community.apan.org/default.aspx> ☆ ☰

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## TYPHOON HAIYAN RESPONSE

JOIN THE COMMUNITY TO COLLABORATE AND SHARE INFORMATION WITH OTHER MEMBERS...

[LEARN MORE →](#)

### SIGN IN



[NEXT](#)


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Not a member? [JOIN](#)

### RECOMMENDED BROWSERS

For the best user experience, APAN recommend


 Firefox 6.0  
 Internet Explorer 8.0



### CRISIS RESPONSE

Humanitarian Assistance and Disaster Relief...


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### TAKE A TOUR

Learn how APAN can help you organization harness community technologies...

[get more info](#)



### COMPUTERWORLD HONORS

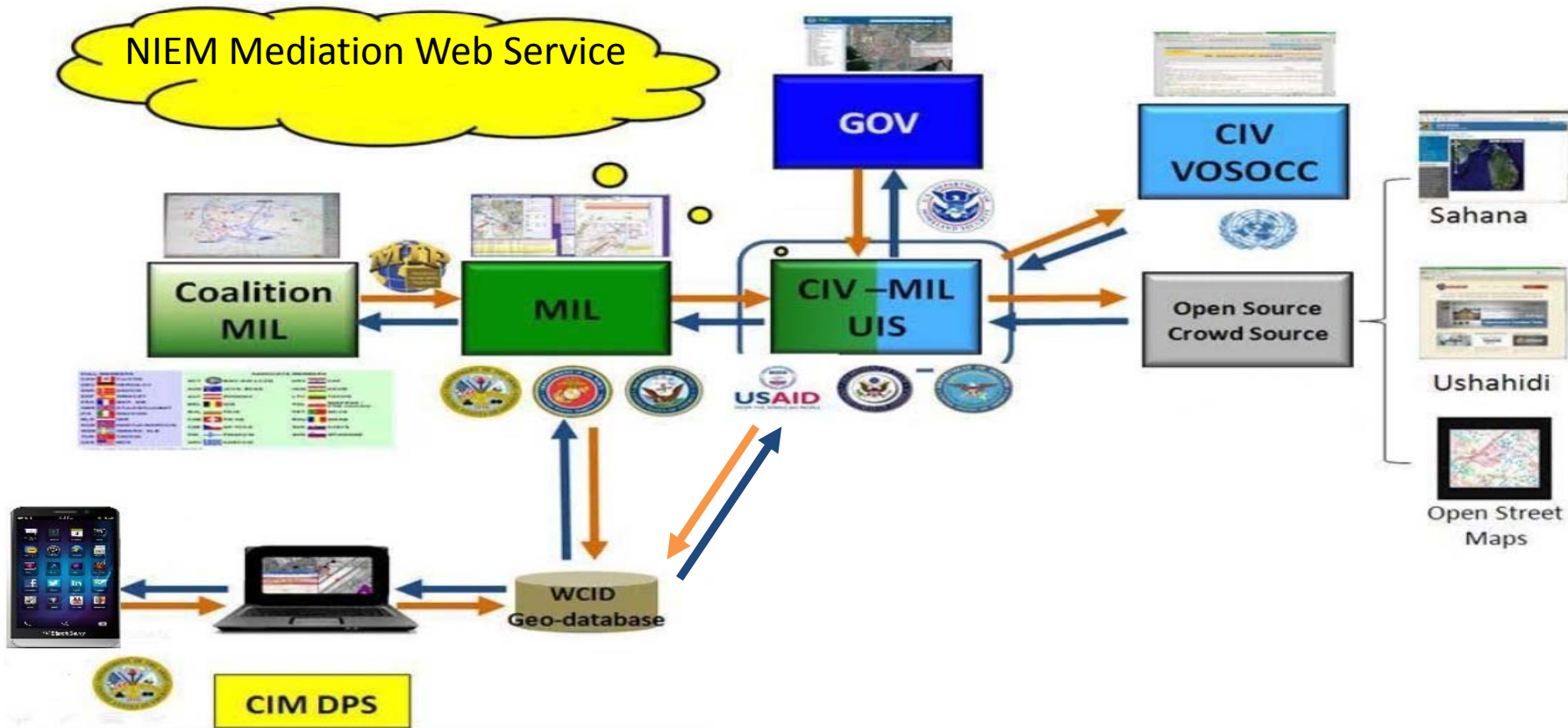
APAN named as a 2013 Computerworld Honors Laureate...

[get more info](#)



# The Critical Path

## Comprehensive Approach to CIM Information Sharing

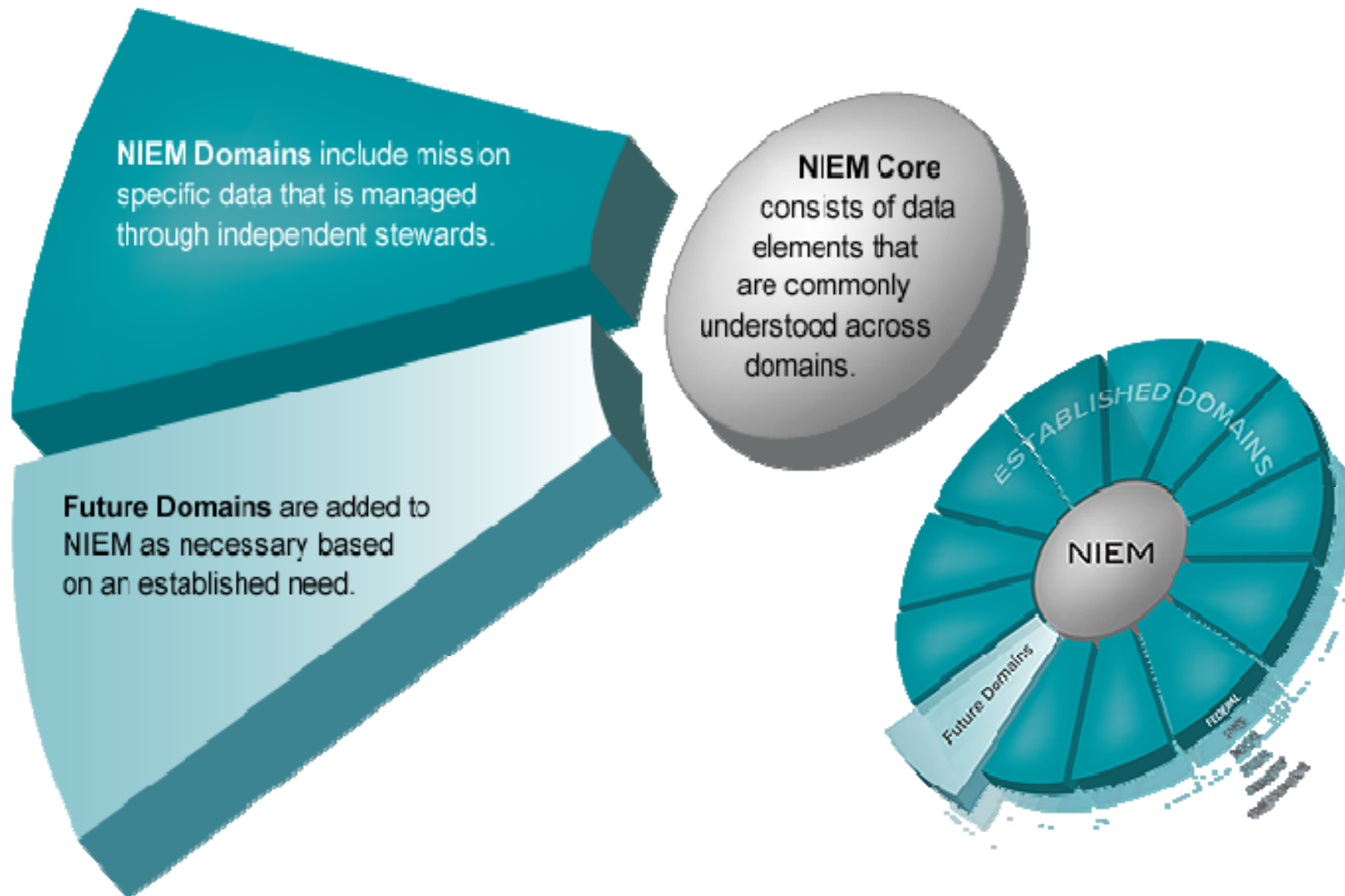


# NIEM

- The **National Information Exchange Model** defines a data schema for real world objects and activities. There is also governance on how to modify, extend, and utilize the model for information exchange.
- Information Exchange Packages (IEPs) are the XML messages that are used to exchange information.
- IEPs are defined by Information Exchange Package Documentation (IEPDs). IEPDs subset and extend the core model and provide a schema for the messages.
- DoD CIO March 2013 issued guidance to consider for implementation. DoD has created the MilOps domain to define military specific information.



# NIEM Overview



# Integration of Data

- Early information requirements will have to be met with Social Media, Crowd Source
- Big Data tools can be very helpful in closing the gaps using unstructured data
- When deployed, US military responders will use structured assessments and exchange packages that will become part of the MilOps domain of NIEM
- SMS gateways have proven to be invaluable as another Crowd Sourced means

# Whole Of Government Approach

- APAN can become the platform of choice for the USG as an enterprise for the Whole Of Government approach
- Provides a common place for DoD and other Departments and Agencies to Meet, plan, and respond
- Provides a bridge from the “dot gov” and “dot mil” to the “dot org”  
The vision is to create the nexus between the USG and all other mission partners for StabOps, HA/DR, Theater Security Cooperation and other operations.

“Whole of Government Approach” first used in the 2010 National Security Strategy of the U.S.

# Coping with a downsized military

- There will be deep reductions in contractors, officer, and NCOs on staffs
- How will the analysis get done? We have to shift the cognitive burden to the Machine.
- Leverage the UISS and improve it
  - Add a Big Data Warehouse component
  - Implement Web 2.0 through Resource Description Framework, and OWL
  - Employ Big Data best practices such as Predictive Analytics, Data Visualization,
  - Tailor Business Intelligence tools to better map to military needs to improve Situational awareness, planning, and coordination.
  - Employ agent based technologies to improve analytics
  - Use the UISS as the medium to effect NIEM-based exchanges across the USG

# Questions

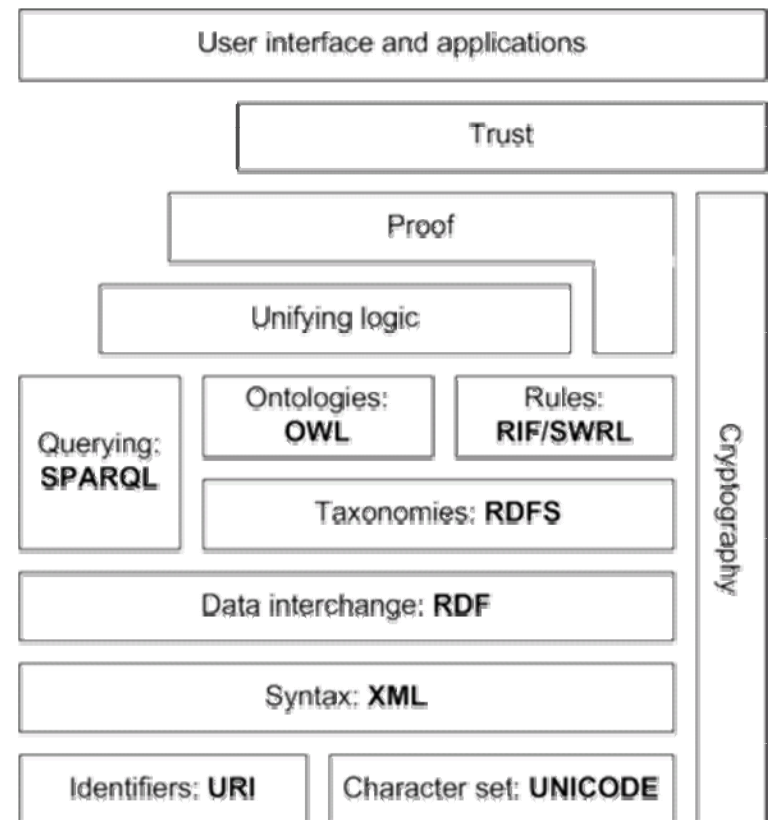


Back Up

# Semantic Web

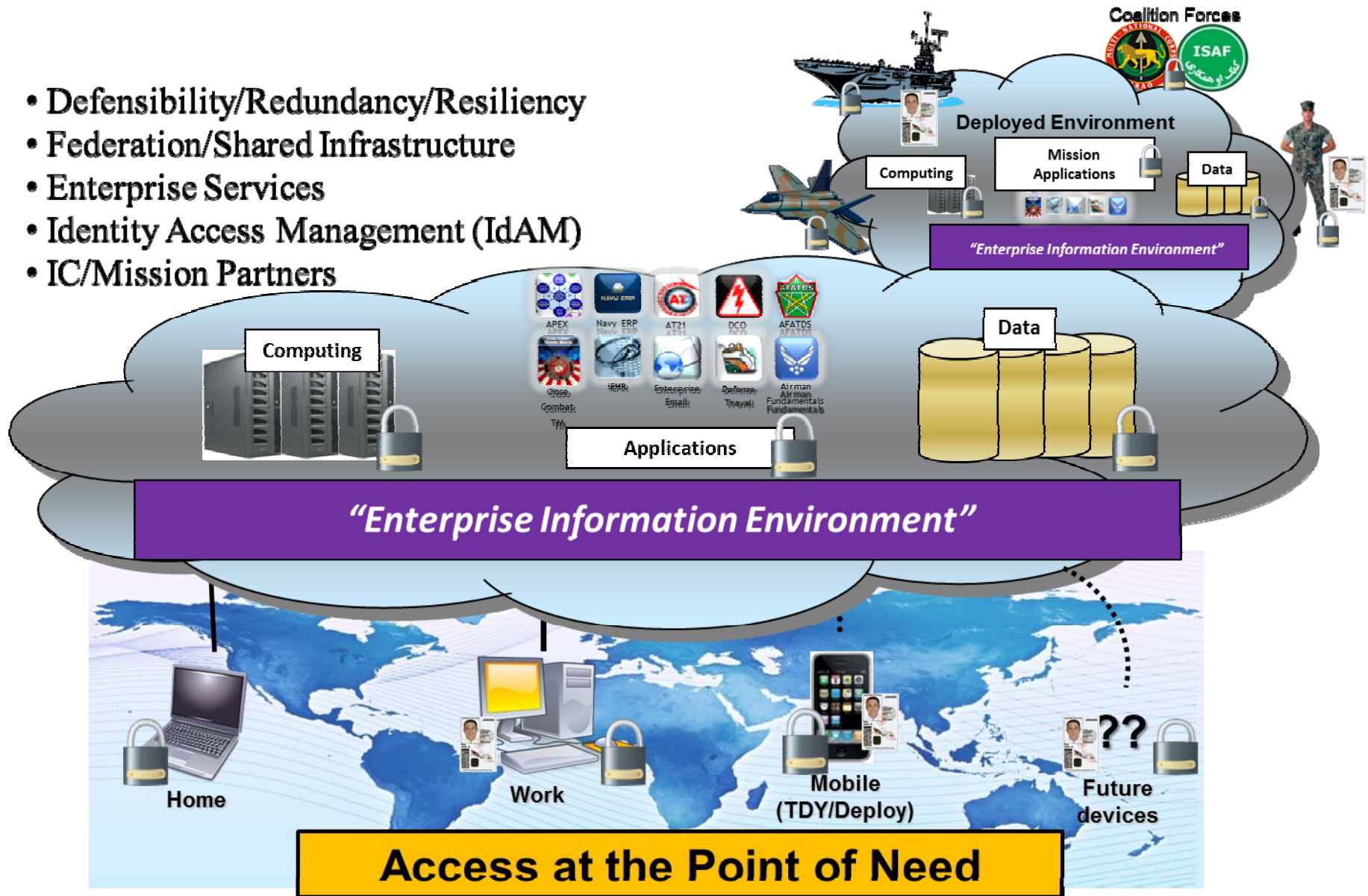
- Sir Tim Berners-Lee
  - “a web of data that can be processed directly and indirectly by machines”
- Establishes a common framework to enable data sharing across multiple systems in an open format.
  - RDF – Resource Description Framework

*An ability to analyze content relationships can expand content utility far beyond original items.*



## Joint Information Environment (JIE)

- **Defensibility/Redundancy/Resiliency**
- **Federation/Shared Infrastructure**
- **Enterprise Services**
- **Identity Access Management (IdAM)**
- **IC/Mission Partners**





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Group  
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People at the grassroots level already produce reams of reports and are willing to share them. Little of what they write, however, reaches Afghanistan's five regional commands, and even less reaches top decision-makers and analysts in Kabul and beyond. Some reports remain trapped at the ground level because of a lack of bandwidth, while others get pushed up only to be **“stove-piped”** in one of the many classified-and-disjointed networks that inevitably populate a 44-nation coalition. But even where there is a commonly available network, such as the unclassified Internet, little from the ground level in Afghanistan reaches a central repository where customers who need information can access or search for it. Instead, **vital information** piles up in obscure SharePoint sites, inaccessible hard drives, and other **digital junkyards**.