

# *Government Linked Data*

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**W3C AC Meeting**  
**March 22, 2010**

# The Opportunity (and Problem)



Governments are starting to release their data!

# We start with US: data.gov

SUNDAY, MARCH 21, 2010  
AN OFFICIAL WEB SITE OF THE UNITED STATES GOVERNMENT

Text A+ A- A

## DATA.GOV

Share | f | e | \*

HOME | OPEN GOVERNMENT | FEDERAL | STATE/LOCAL/TRIBAL | SUGGEST DATASETS | DIALOGUE | METRICS | FAQ | ABOUT

### DISCOVER. PARTICIPATE. ENGAGE.

View the DATA.GOV catalogs:

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

### Federal Student Loan Program Data



Provides recipient and disbursement information each quarter for the Direct Loan and Federal Family Education Loan Programs by postsecondary school.

View more +

< | || | >

## 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 Data.gov provides a limited portion of the rich variety of Federal datasets presently available, we invite you to actively **participate** in shaping the future of Data.gov by suggesting additional datasets and site enhancements to provide seamless access and use of your Federal data. Visit today with us, but come back often. With your help, Data.gov will continue to grow and change in the weeks, months, and years ahead. For more information, view our **How to Use Data.gov** guide.

### Data.gov Blog

March 15, 2010

#### Data.gov's Future: You're Talking, and We're Listening

by Linda Travers and Sanjeev Bhagowalia

SEARCH 

ADVANCED SEARCH

### ★ New Integrated Search

Data.gov has partnered with **Search.USA.gov** to optimize our website and to take advantage of their search capabilities. You may now search across all three of **Data.gov catalogs** and find results easier, faster, and with more relevance.

Search.USA.gov  
BETA

### ★ Developers Corner

Show Us Your Mashups

# US Federal Agencies...

🇺🇸 SUNDAY, MARCH 21, 2010

## HHS.gov/Open

 Search

+ - Font Size 🖨️ ✉️ OPEN GOV

### EXPLORE. ENGAGE. ENLIGHTEN.

Data Sets

Tools

Our Plan

Discuss



#### Spotlight on

#### FDA Peanut-Containing Product Recall

This widget allows users to browse the FDA database of peanut butter and peanut-containing products subject to recall, to determine whether any of the products one has at home may be subject to recent recall.

[More details...](#)



1 2 3 4 5

[Home](#) [Data Sets](#) [Tools](#) [Our Plan](#) [FOIA](#) [Records Management](#) [Get Involved](#) [Discuss](#)

### Open Government at HHS

HHS is committed to providing open access to its data and information, building public-private partnerships, enhancing communication with its senior leadership, and expanding overall opportunities for citizens' involvement and interaction.

#### How Do I Use Data Sets?

Two types of [data sets](#) are available. **Downloads** 📄 are open-format data sets presented in csv, xml or other downloadable formats. **Interactive** 🖱️ data sets can be manipulated on the Web. You may search by keyword, HHS Agency and/or type. New data sets are being

💡 [Share Your Ideas](#)

#### Open HHS Blog

Chief Technology Officer  
Todd Park writes about harnessing the power of data, technology and

# Some Recent Examples

## Dept. Interior

Natural Resource Volunteer Opportunities

Federal National Recreation Sites

## Dept. Agriculture

MyPyramid Food Raw Data

Census of Agriculture Race, Ethnicity and Gender

## Dept. Transportation

Child Passenger Safety Ease of Use Ratings

Tire Quality Grading System (4200 Ratings)

# US States...



## Open Data Initiative Home

1 Added by [Glenn Tremblay](#), last edited by [Glenn Tremblay](#) on Mar 05, 2010 ([view change](#))

**Table of Contents**  

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- ▣ [Data Catalog](#)
- ▣ [Information](#)

⚠ Welcome to the Massachusetts Open Data Initiative Wiki Space. Please note that we expect to update this content regularly with data as it becomes available. As of today much of the Commonwealth's data is available via web query interfaces - links are provided within the Data Catalog. For questions or concerns about the data please email: [opendata@massmail.state.ma.us](mailto:opendata@massmail.state.ma.us), or follow us on Twitter: [@MassData](#). Please visit our homepage, <http://mass.gov/data>, for more information.

✔ **Want to be notified if this page changes?**  
Just add this space to your watch list. [Here's how.](#)

## Massachusetts Open Data Initiative

The Massachusetts Open Data Initiative is working to make public data available and accessible to the citizens of the Commonwealth. Our Data Catalog is an inventory of public data in the Commonwealth of Massachusetts.

**Open Data Quick Links**

## Data Catalog

**Recent posts on Twitter from [twitter.com/MassData](http://twitter.com/MassData)**

- [MassData: Join us, @MassDOTdev & @MITX for the Open Data event on Wednesday <http://bit.ly/9TUDPN> #gov20 #opendata #opengov #mbta](#)  
MassData: Join us, @MassDOTdev & @MITX for the Open Data event on

# Countries...

The screenshot shows the homepage of data.australia.gov.au. At the top, there is a navigation bar with links for 'About', 'Contact Us', and 'Help'. The main header features the Australian Government logo and the text 'data.australia.gov.au your connection with government BETA'. A search bar with a 'SEARCH' button is located on the right. Below the header, there are navigation tabs for 'HOME', 'CATALOGUE', and 'OTHER CATALOGUES'. The main content area has a 'Welcome' section with a paragraph explaining the site's purpose and a link to 'Start browsing the collection.' To the right of the text is an icon representing data, including a spreadsheet, a pie chart, and a stack of coins. Below the welcome section, there are two columns: 'Browse Data by Category' and 'Recently-Added Datasets'. The 'Browse Data by Category' column lists links for Business (3), Communication (1), Community (25), Culture (5), Finance (1), Information & Communications Technologies (2), and Law (9). The 'Recently-Added Datasets' column lists links for National Public Toilet Map, Australia Council Funded Arts Organisations 2009, National Parks and Asset Locations (South Australia), and NSW Rural Fire Service - Current Incidents.

Australian Government

data.australia.gov.au  
your connection with government BETA

About | Contact Us | Help

SEARCH

HOME CATALOGUE OTHER CATALOGUES

## Welcome

*data.australia.gov.au* is the home of Australian government public information datasets. We encourage you to make government information even more useful by mashing-up the data to create something new and exciting! Make sure you pay attention to the licence attached to the datasets you are interested in using. Each licence should make clear what you can and can't do with the data. If you're unsure, please contact the contributing agency.

[Start browsing the collection.](#)

### Browse Data by Category

- › [Business](#) (3)
- › [Communication](#) (1)
- › [Community](#) (25)
- › [Culture](#) (5)
- › [Finance](#) (1)
- › [Information & Communications Technologies](#) (2)
- › [Law](#) (9)

### Recently-Added Datasets

- › [National Public Toilet Map](#)
- › [Australia Council Funded Arts Organisations 2009](#)
- › [National Parks and Asset Locations \(South Australia\)](#)
- › [NSW Rural Fire Service - Current Incidents](#)

+ New Zealand, The Netherlands, France, Sweden, Spain, Austria, Denmark, ...

# It's XML, CSV, XLS, and KML

```
- <dataroot xsi:noNamespaceSchemaLocation="UTQG.xsd" generat
- <UTQG>
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  <CONST>RADIAL</CONST>
  <TIRELINER>GT 50/55</TIRELINER>
  <SIZE>ALL EXCEPT</SIZE>
  <TRAC>A</TRAC>
  <TEMP>A</TEMP>
  <WEAR>280</WEAR>
</UTQG>
- <UTQG>
  <BRAND>AKURET</BRAND>
  <CONST>RADIAL</CONST>
  <TIRELINER>GT 50/55</TIRELINER>
  <SIZE>7-RATED</SIZE>
```

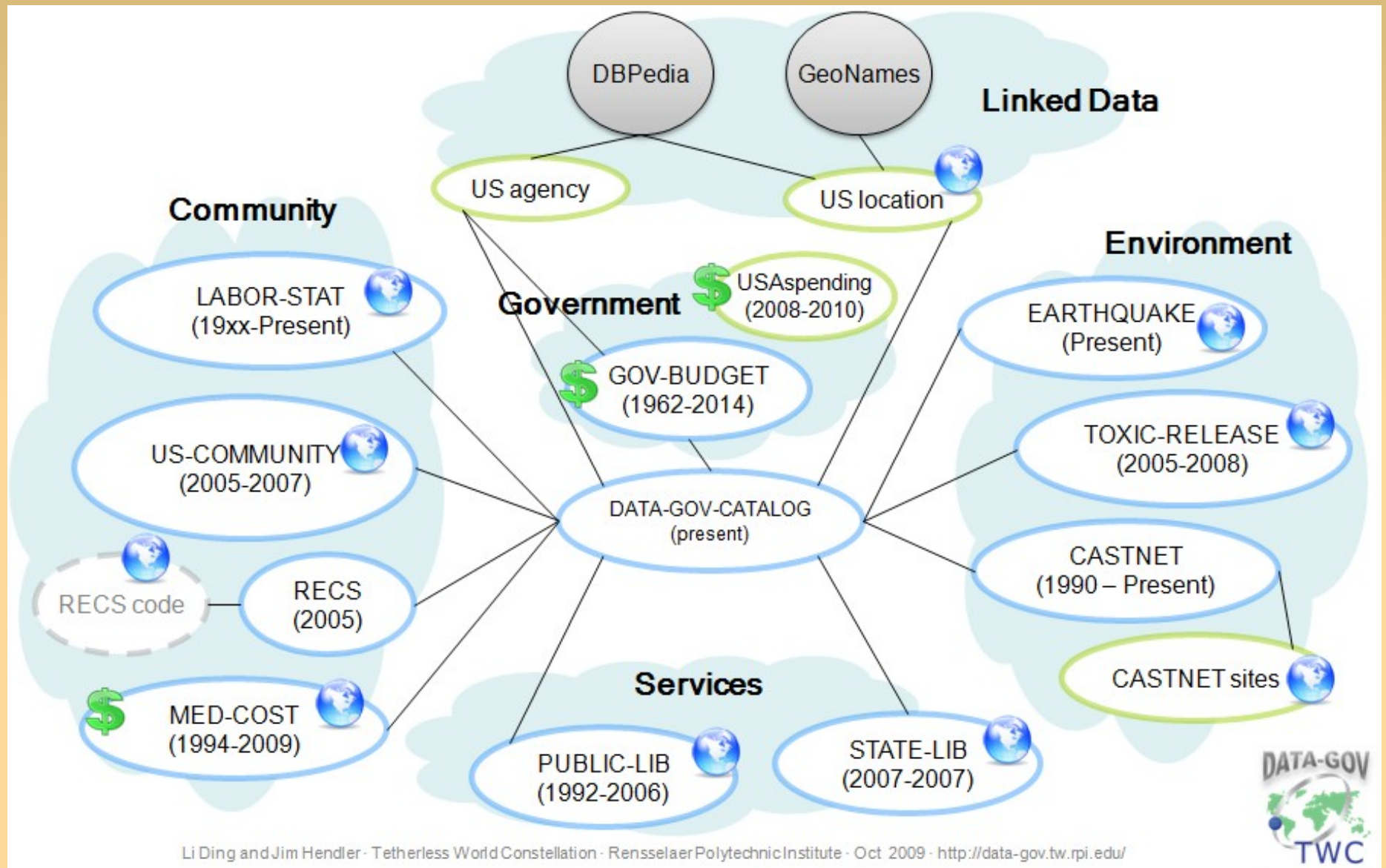
...from a million governments!



**So how do you integrate this?**



# Semantic Web Linked Data



# Third Party Translations



## The Data-gov Wiki

### About the Data-gov Wiki

We are investigating open government datasets using semantic web technologies. Currently, we are translating such datasets into RDF, getting them linked to the linked data cloud, and developing interesting applications and demos on linked government data.

### Announcement (7)

- ANN: data-gov session at TED (10 February 2010, Deborah McGuinness hosts a conversation at TED 2010 on data.gov Friday Feb 12, 2010 4pm pacific time at TED Dome)
- more ...

### Demos (23)

#### Demo: Facts about Transportation Energy



State Level Comparison (2002) vs (2003)

- **Description:** Facts about Transportation Energy
- **Live Demo(s):** [1]
- **Dataset(s):** Dataset 402, Dataset 10029
- **Technology Used:** RDF, SPARQL, Google Visualization API, Google Visualization Motion Chart

more...

### Document (22)

- Current Issues in data.gov (15 July 2009, Not all datasets in

### Quick Links

- [Data.gov Catalog](#) - List of datasets from data.gov
- [Issues](#) - Issues in gov data
- [Demos](#) - applications using the published gov data.
- [RSS](#) - recently updated gov data.
- [data-gov-wiki Source Code](#) - our code are open

### Dataset Statistics

- data.gov hosts **1784** Datasets contributed by **85** US government agencies, including **1286** Raw Data Catalog and **495** Tool Catalog
- There are currently **150** translated RDF datasets
  - contributing **463082586** table entries
  - contributing **5227433743** triples.
  - contributing **8207** properties.
- more ...



Cloud of Government data in RDF

### Recently Updated Datasets

Changes from <http://data-gov.tw.rpi.edu/raw/92/2010-03-16/data-92.rdf> to <http://data-gov.tw.rpi.edu/raw/92/2010-03-19/data-92.rdf>

#### navigation

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#### catalogs

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#### internal pages

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#### search

# Governments Using Linked Data

The screenshot shows the data.gov.uk website. At the top left is the HM Government logo. The top right corner features the text 'data.gov.uk' and a 'BETA' badge. A navigation bar contains links for Home, Blog, Data, SPARQL, Apps, Ideas, Forum, Wiki, Resources, and About, along with a search input field. The main content area has a header with the text 'Unlocking innovation' and 'Working with UK Public Sector information and data', accompanied by a blue molecular structure graphic. Below this is a paragraph explaining the site's purpose, followed by a 'Latest news' section with three bullet points. On the right side, there are several sidebar widgets: 'Subscribe by RSS', 'Community Log in / Sign up', 'Local Data Panel', 'What is the Semantic Web?' (with a 'Read more' button), and 'Digital Engagement Twitter stream' (with a Twitter bird icon and text about listening to presentations).

HM Government

data.gov.uk

Home Blog Data SPARQL Apps Ideas Forum Wiki Resources About

Unlocking innovation

Working with UK Public Sector information and data

Advised by Sir Tim Berners-Lee and Professor Nigel Shadbolt and others, government is opening up data for reuse. This site seeks to give a way into the wealth of government data and is under constant development. We want to work with you to make it better.

We're very aware that there are more people like you outside of government who have the skills and abilities to make wonderful things out of public data. These are our first steps in building a collaborative relationship with you.

**Latest news:**

- Read about our latest [site changes](#)
- find out how the data.gov.uk team has been [getting involved with the community](#)
- listen to a [Podcast on setting up data.gov.uk](#)

**Search Data**

Enter keyword(s)

e.g. education, NHS, crime, transport, environment

**Search**

Powered by: [CKAN](#)

**Browse for Data**

- List all datasets
- By Public Body
- Common tags

Subscribe by [RSS](#)

Community  
Log in / Sign up

Local Data Panel

**What is the Semantic Web?**

Combining different data sources has never been easy but the Semantic Web will enable data to be joined easily across boundaries.

[Read more](#)

**Digital Engagement Twitter stream**

Listening to some great presentations at the [#rewiredstate](#)

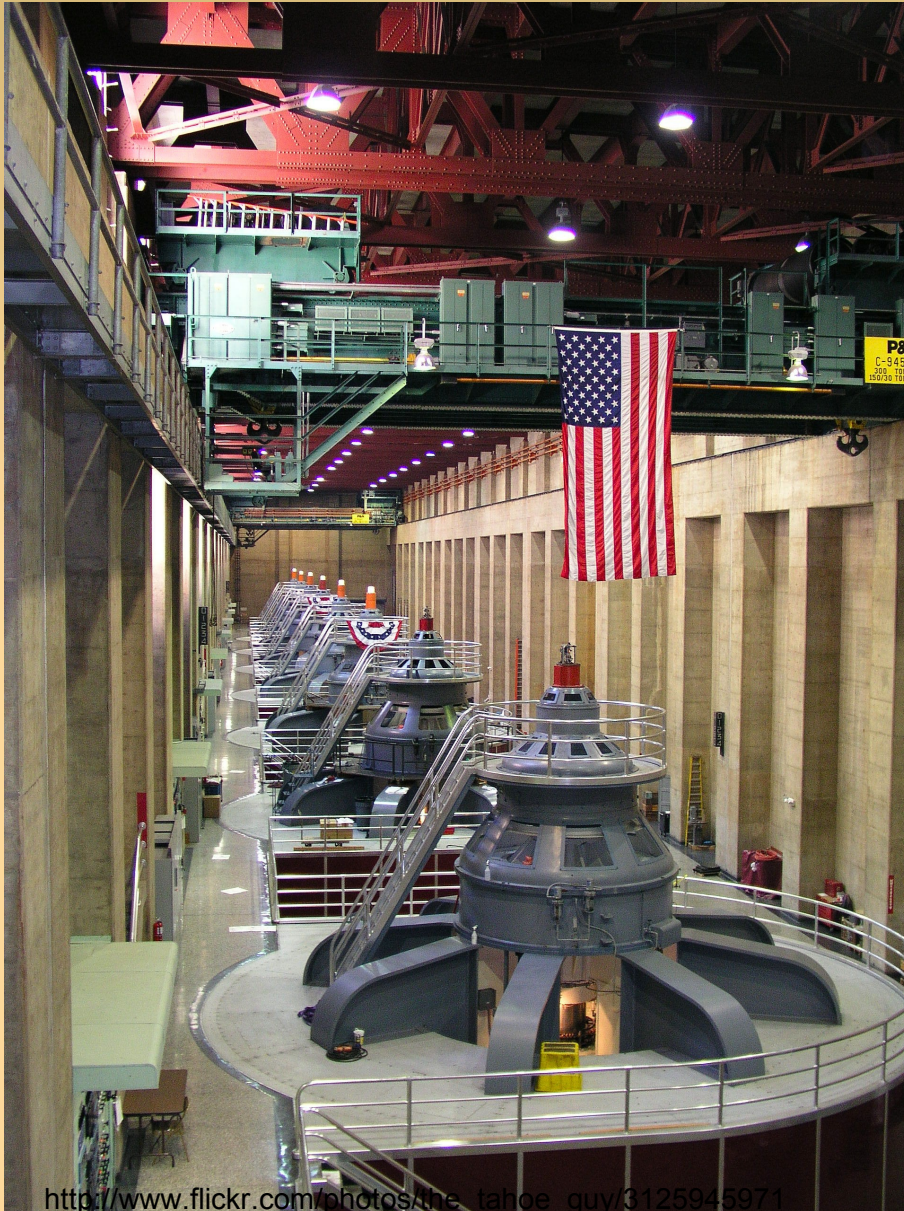
# Design Patterns

- URIs (using 303s, /TR/cooluris)
  - `http://{sector}.data.gov.uk/id/{concept}`
  - `http://{sector}.data.gov.uk/doc/{concept}`
- Versioning
  - Maintaining historical data
  - Named graphs
- Provenance
  - Where data came from
  - How it's been handled

# Access For Developers

- Linked Data API
  - Maintain your RDF database
  - Expose it via RDF GET
  - Expose it via SPARQL
  - Expose it via RESTful APIs (JSON/XML)
  - Expose it via Web Pages
- Linked Data is cost effective solution

# It's possible, with the right technology.



[http://www.flickr.com/photos/the\\_tahoe\\_guy/3125945971](http://www.flickr.com/photos/the_tahoe_guy/3125945971)



<http://www.flickr.com/photos/willbakker/3752485827>