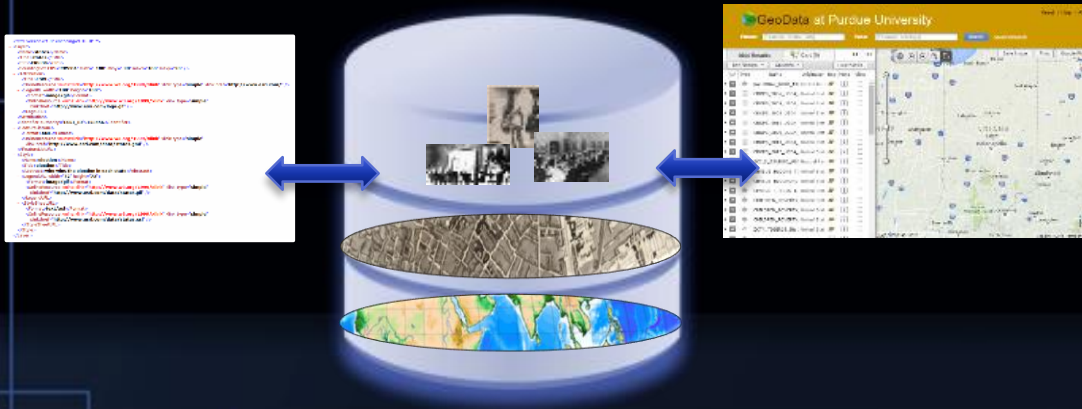


ONE STORE HAS ALL?

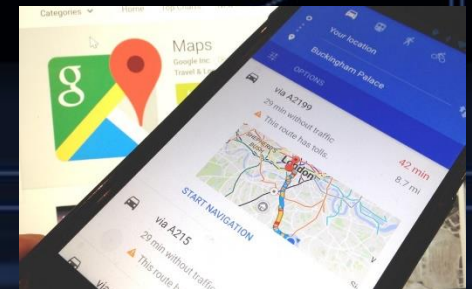
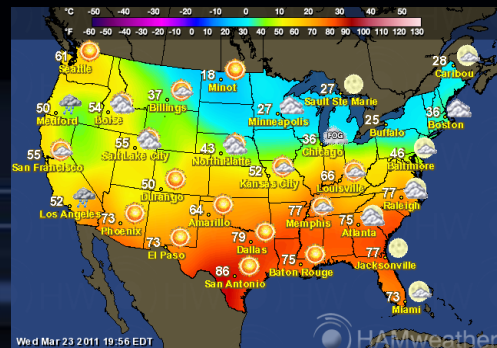
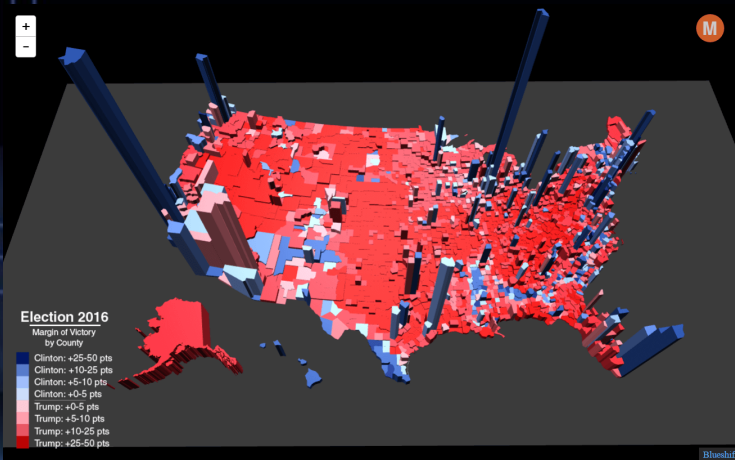
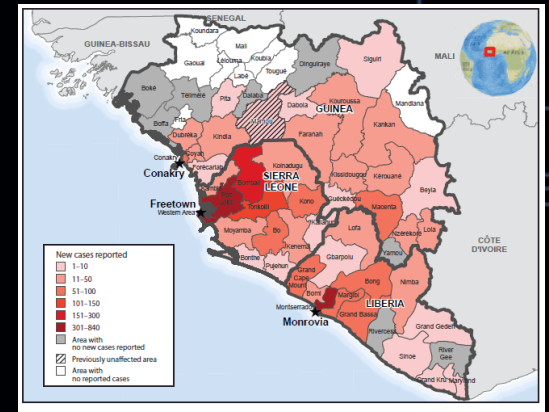
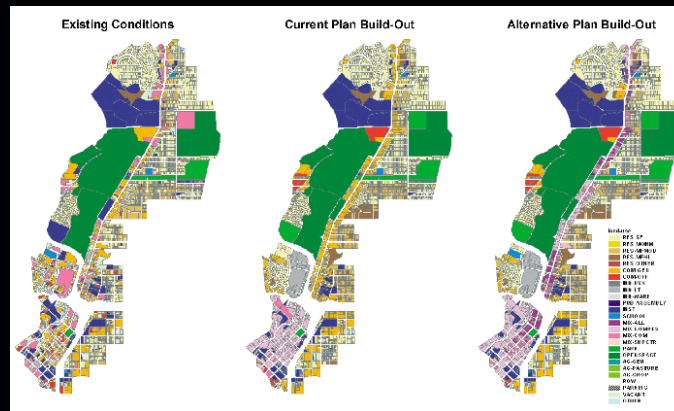
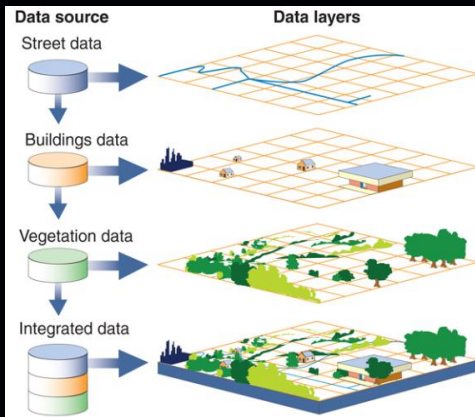
The Backend Story of Managing Geospatial Information
Toward an Easy Discovery



Nicole Kong
Assistant Professor, GIS Specialist
Purdue University Libraries

Geospatial Information

- Geospatial data are used across disciplines



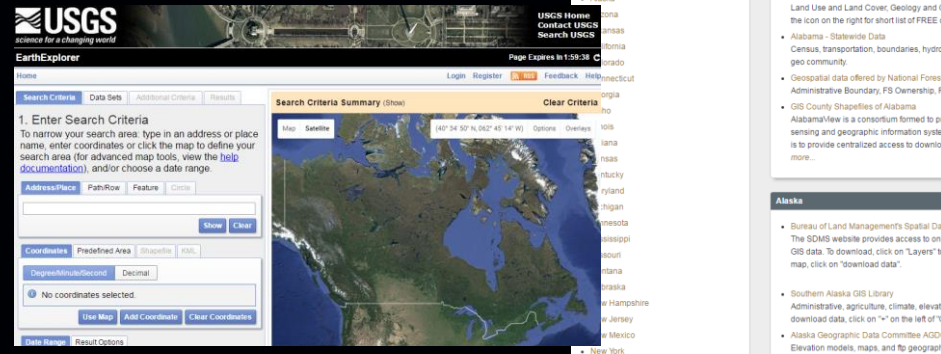
Geospatial Data in Libraries



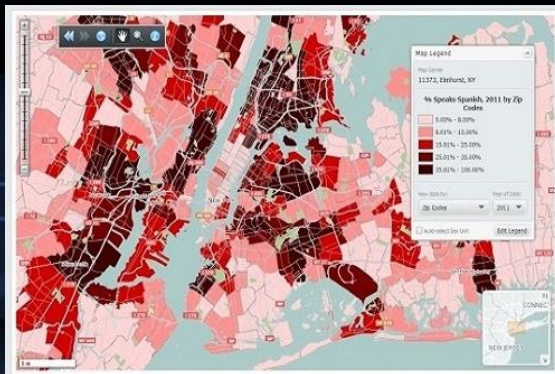
Maps



Digital Maps



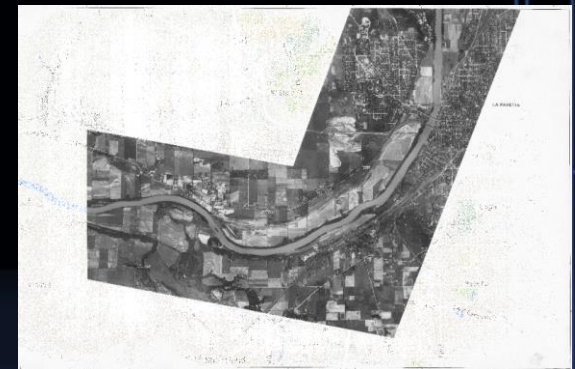
Public Domain Data



Proprietary Data



Research Data



Scanned Historical Maps

Geodata Portal

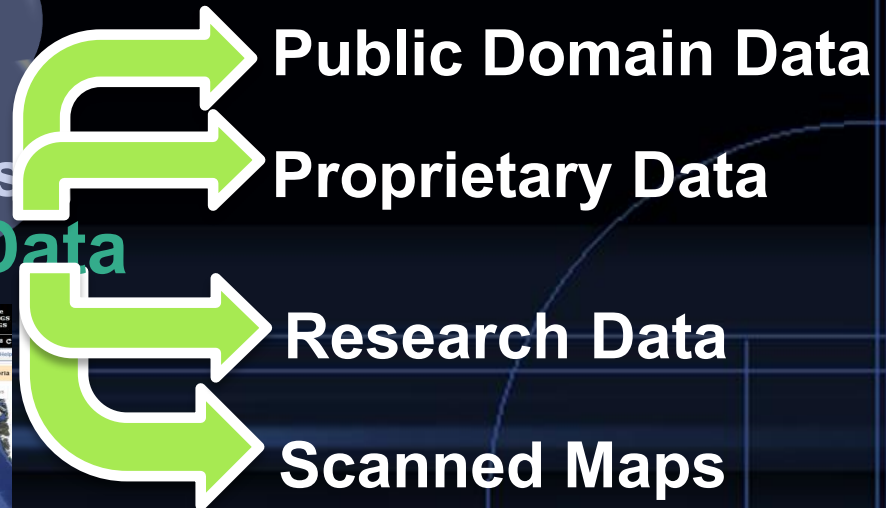
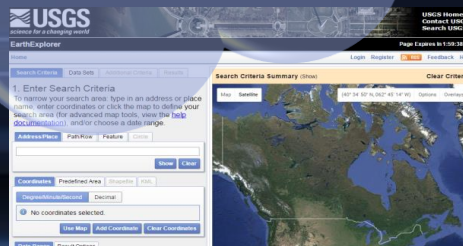
- Geodata portal is a discovery layer which allows users to **search various geospatial data**, and access the information by:
a web map + data downloading



Maps



Digital Maps
Geospatial Data



Geodata Portal in Libraries

Existing efforts:

- Different data providing organizations have their own data portal.
- From the library's world:
 - OpenGeoportal
 - GeoBlacklight

Open Geoportal Interface

geodata.tufts.edu

Apps | Inbox (208) - kongnn... | Save to Mendeley | CJC geospaial project | Purdue Web Authent...

GeoData at Tufts

Where: What:

70 Results | Cart (0)

Type	Name	Originator	Rep	Meta	View
+	Parcels Boston MA 2012	Boston (Mass.)	PA	i	
+	Parcels Boston MA 2013	Boston (Mass.)	PA	i	
+	Parcels Boston MA 2008	Boston (Mass.)	PA	i	
+	Parcels Boston MA 2007	Boston (Mass.)	PA	i	
+	Parcels Boston MA 2014	Boston (Mass.)	PA	i	
+	Parcels Boston MA 1999	Parcels Boston MA 2014		i	
+	Parcels Arlington MA 2012	Arlington (Mass.)	PA	i	Login
+	Brookline, MA (Parcels, 2006)	Town of Brookline	PA	i	
+	Parcels Newton MA 2007	Newton (Mass.)	PA	i	Login
+	Parcel Map Index Arlington MA 20	Arlington (Mass.)	PA	i	Login
+	Level 3 Parcels - Taxable Property		PA	i	
+	Level 3 Parcels - Taxable Property		PA	i	
+	Level 3 Parcels - Taxable Property		PA	i	
+	Level 3 Parcels - Taxable Property		PA	i	
+	Parcels Chelsea MA 2003	Chelsea (Mass.)	PA	i	
+	Parcels Chelsea MA 2003	Chelsea (Mass.)	PA	i	
+	Parcels Chelsea MA 2003	Chelsea (Mass.)	PA	i	
+	Parcels, Somerville, MA, 2012	Massachusetts	PA	i	
+	Somerville, MA (Parcels, 1999)	Camp Dresser	PA	i	
+	Parcels Somerville MA 2004	Somerville (Mass.)	PA	i	
+	Parcels Somerville MA 2008	Somerville (Mass.)	PA	i	
+	Parcels Somerville MA 2009	Somerville (Mass.)	PA	i	
+	Parcels Cambridge MA 2006	Cambridge (Mass.)	PA	i	
+	Parcels Cambridge MA 2011	Cambridge (Mass.)	PA	i	
+	Parcels, Cambridge, Massachusetts	Cambridge (Mass.)	PA	i	
+	Parcels, Cambridge, Massachusetts	Cambridge (Mass.)	PA	i	

Tufts Technology Services GIS at Tufts

GeoData at Purdue University

Reset | Help | About

Where: What: Search Advanced Search

1544 Results | Cart (0)


Type	Name	Originator	Rep	Meta	View
+	NATIONAL_GRID_10: Center for		PA	i	
+	CROPS_2006_USDA_ United Stat		PA	i	
+	CROPS_2009_USDA_ United Stat		PA	i	
+	CROPS_2008_USDA_ United Stat		PA	i	
+	CROPS_2011_USDA_ United Stat		PA	i	
+	CROPS_2009_USDA_ United Stat		PA	i	
+	CROPS_2013_USDA_ United Stat		PA	i	
+	CROPS_2012_USDA_ United Stat		PA	i	
+	SOILS_SSURGO_US Natural Res		PA	i	
+	CENSUS_BLOCKS_T1 United Stat		PA	i	
+	CENSUS_BLOCKGRO United Stat		PA	i	
+	CENSUS_TRACTS_T1 United Stat		PA	i	
+	CHILDREN_POVERTY_ United Stat		PA	i	
+	CHILDREN_POVERTY_ United Stat		PA	i	
+	CHILDREN_POVERTY_ United Stat		PA	i	
+	ZCTA_TIGER05_IN: United Stat		PA	i	

Map data © 2016. Terms of Use

Map Report: a map error

Powered by OpenGeoportal


GeoBlackLight Interface

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BOOKMARKS (0) HISTORY


ACADEMIC ALLIANCE

Geoportal

Bookmarks (0) History Login


Search...

Search


Find Maps and Data

The Big Ten Academic Alliance Geoportal provides discoverability and facilitates access to geospatial resources. The resources in the portal are selected and curated by librarians and geospatial specialists at nine research institutions in the [Big Ten Academic Alliance](#).

The resources include GIS datasets, web services, and digitized historical maps. [Learn more](#) about the research institutions involved and the sources of the geospatial records.




Browse







Institution

[Harvard](#), [Stanford](#), [Tufts](#), [Columbia](#),
[Minnesota](#), [MIT](#), [MassGIS](#), [Berkeley](#), [UCLA](#),
[more »](#)



Placename


[Europe](#), [California](#), [Massachusetts](#), [United States](#), [Pacific Ocean](#), [Georgia](#),
[Connecticut](#), [more »](#)

Institution	
 Minnesota	709
 Maryland	603
 Penn State	446
 Purdue	352

Subject

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State of Michigan GIS Open Data	223
Metropolitan Council	159
Minnesota Department of Natural Resources	153
Purdue University Libraries	114

Subject	
environment	377
society	376
inlandWaters	309
transportation	290

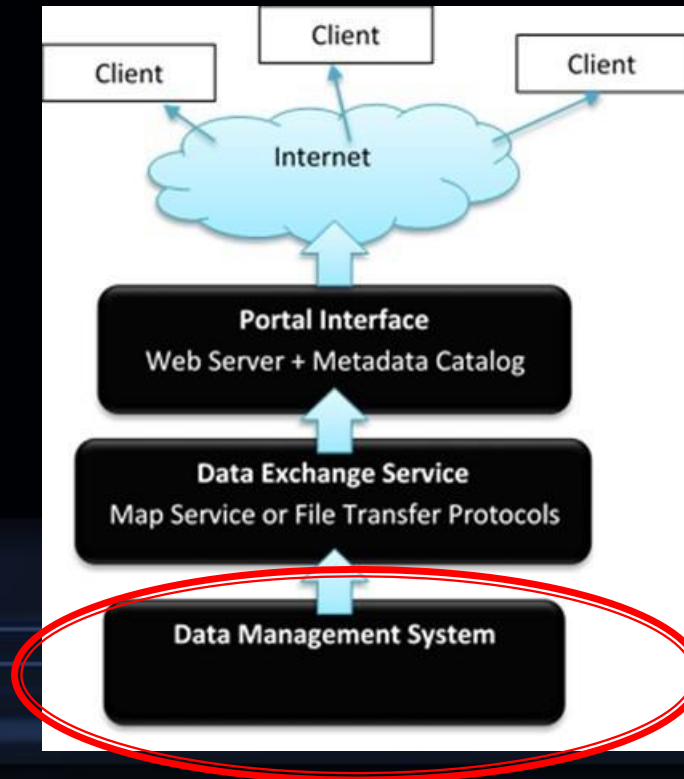

ANTARCTICA
Leaflet | © OpenStreetMap contributors, Tiles Courtesy of MapQuest

Challenges of Building A Portal

- Choose and create the **cyberinfrastructure**
Software + Hardware
- Organize geospatial **metadata**
- Manage library's **datasets**
- Interface design and **usability**

Research Question

- How to manage the ever increasing datasets in the library's environment?



Study Methods

- Project review – data management portion or the existing project
 - ▣ Non-library setting
 - ▣ Academic library approaches
- Metadata review - records shared by Open Geoportal community

Results

- Designing the Data Management System
- Spatial Data Management Options
- Solutions in Non-Library Projects
- Solutions in Library Projects
- Practices in OpenGeoportal Community

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Data Management Design

Needs assessment

➤ Data properties

- Data formats, data organization, metadata schema, content standard, license agreement, update mechanism.

➤ Expected functions

- Data download/visualization/mapping

➤ Long-term preservation

- Data repository – format registry, right management and contracts, metadata documentation, collection management

Results

- Designing the Data Management System
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Spatial Data Management Options

Various options to deliver data via Internet

- OGC (Open Geospatial Consortium) web services
- Spatial DBMS (Database Management System)
 - Oracle 10g Spatial
 - Esri enterprise geodatabase
 - PostGIS
 - Other FOSS: MySQL spatial extension, SQLite
- Other: FTP, HTTP protocols.

Results

- Designing the Data Management System
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Solutions in Non-Library Projects

- **File management system**
 - Implemented by a metadata inventory
 - File could be accessed by FTP, ODBC, HTTP.
- **Spatial DBMS**
 - PostGIS + Geoserver
 - Esri ArcGIS Server + SQL database
- **Data management system**
 - Fedora

Results

- Designing the Data Management System
- Spatial Data Management Options
- Solutions in Non-Library Projects
- Solutions in Library Projects
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Solutions in Library Projects

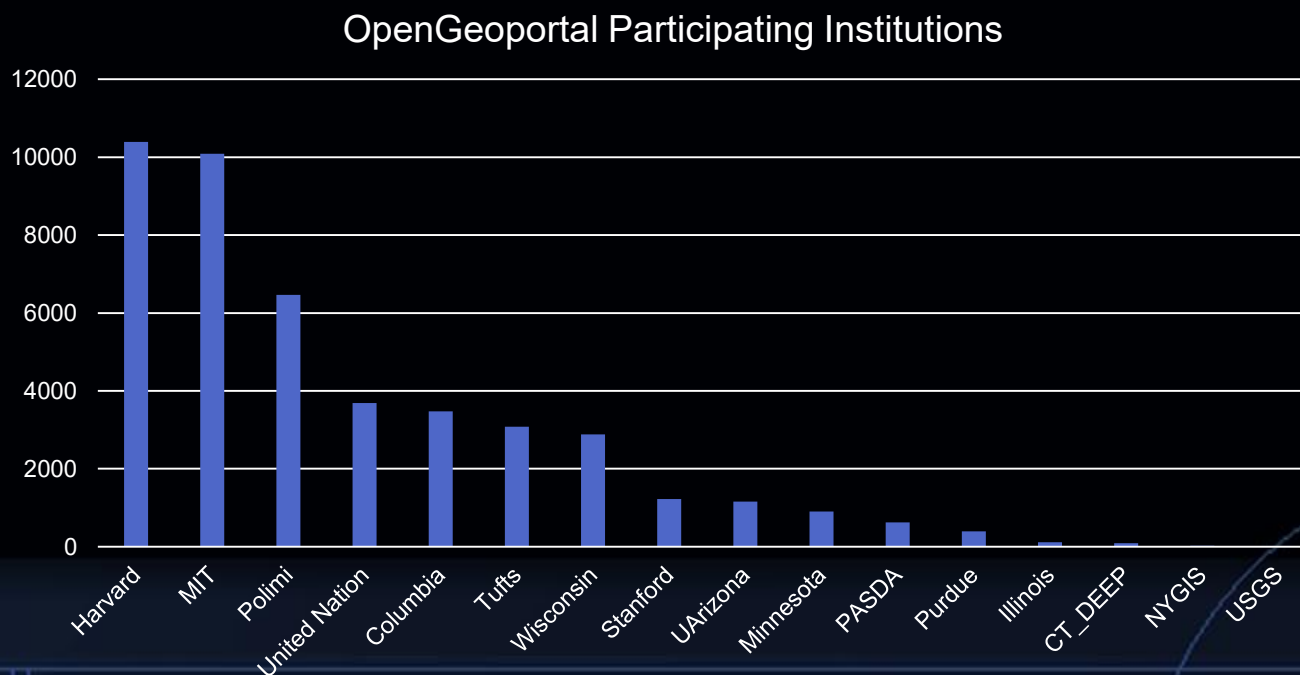
- Spatial DBMS + OGC services
 - OpenGeoportal community
 - Or, direct data download
- Physical map collection can be integrated into geoportal
- Data repository
 - More choice of data formats, data management solutions.
 - GeoHydra

Results

- Designing the Data Management System
- Spatial Data Management Options
- Solutions in Non-Library Projects
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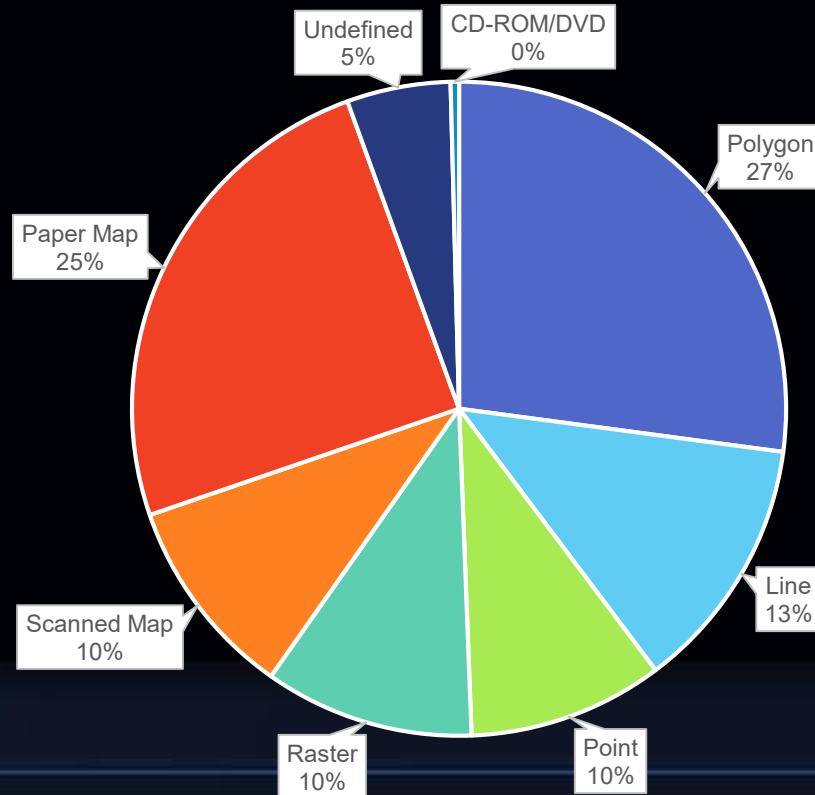
Practices in OGP Community

- Metadata shared by OpenGeoportal community.
- 44,603 records with online link information.

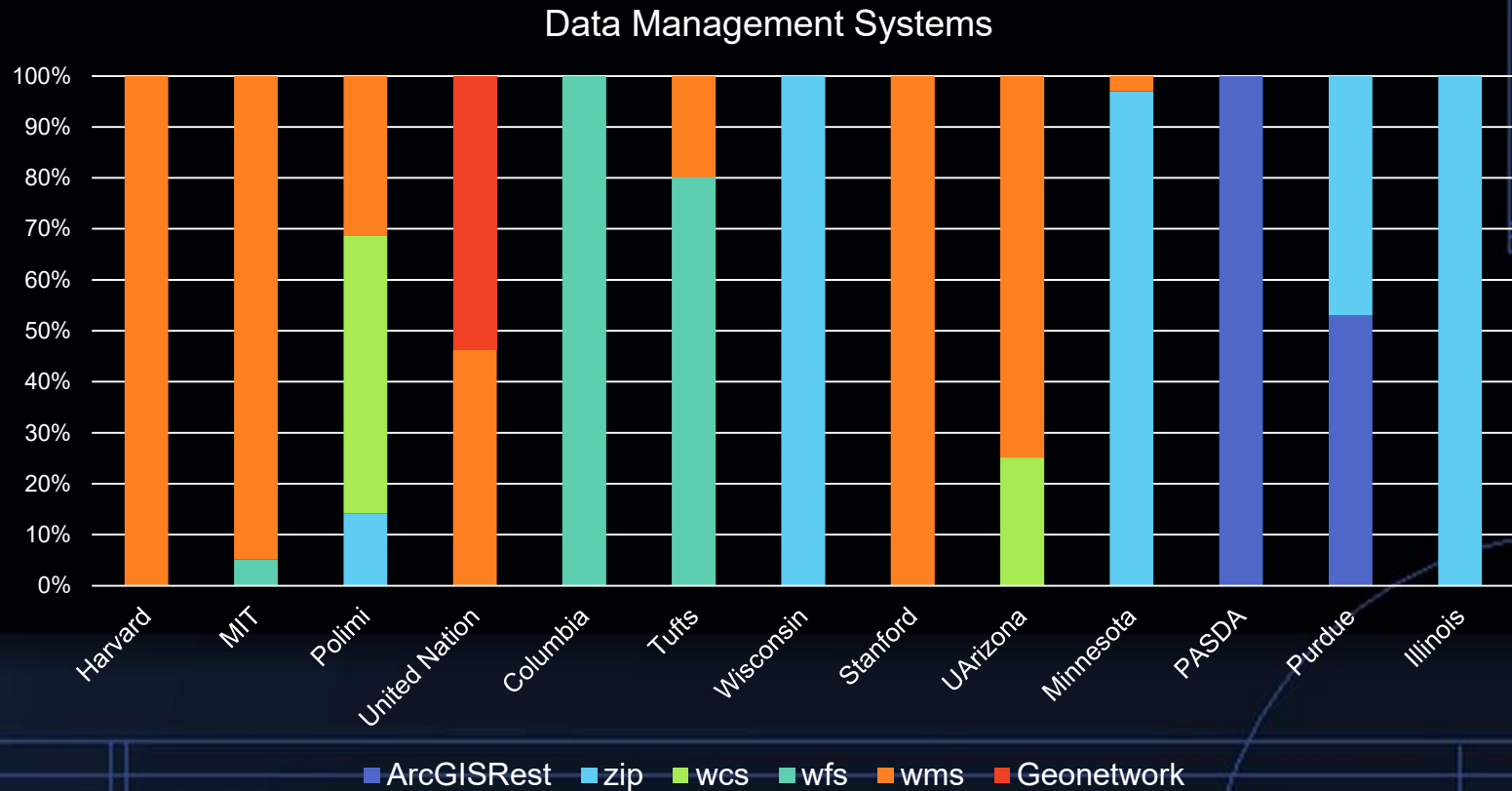


Practices in OGP Community

Data Type within the OpenGeoportal



Practices in OGP Community



Discussion

- A well-designed data management system along with good metadata practices are essential for academic libraries to manage the great variety of geospaital datasets.
- Not every library data repositories was designed for geospatial data.
- It will need a long-term discussion and effort between librarians in order to preserve geospaital datasets