The Future of Metadata Management & Making Library Collections Discoverable on the Web

Ted Fons, OCLC

The National Library Descriptors Conference

Proposed Changes in the Development of Library Collections in the Era of the Semantic Web

Warsaw - 21-22 April, 2015

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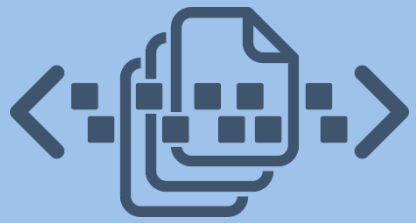
BIBLIOTEKA NARODOWA

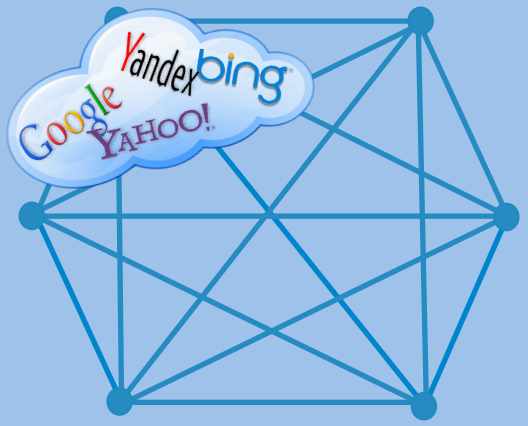
The Future

Cataloging



Harvesting

Datamining



Our Goal

The Goal

Connect the reader to content.

S.R. Ranganathan

1. Books are for use.
2. Every reader his [or her] book.
3. Every book its reader.
4. Save the time of the reader.
5. The library is a growing organism.

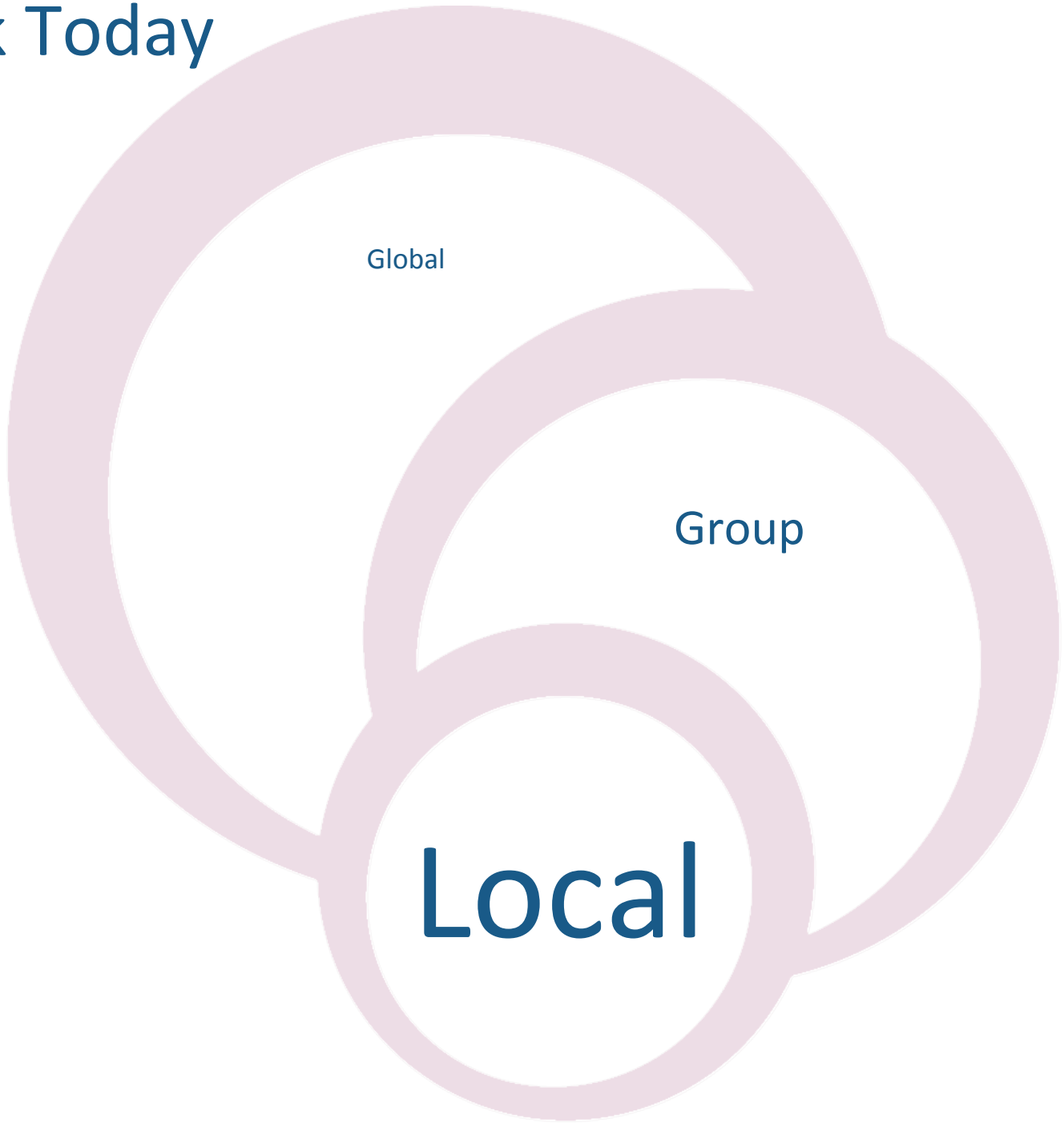
Image credit: http://static.guim.co.uk/sys-images/Guardian/Pix/pictures/2009/3/23/1237806064989/Young-man-reading-a-book-001.jpg

Cataloging

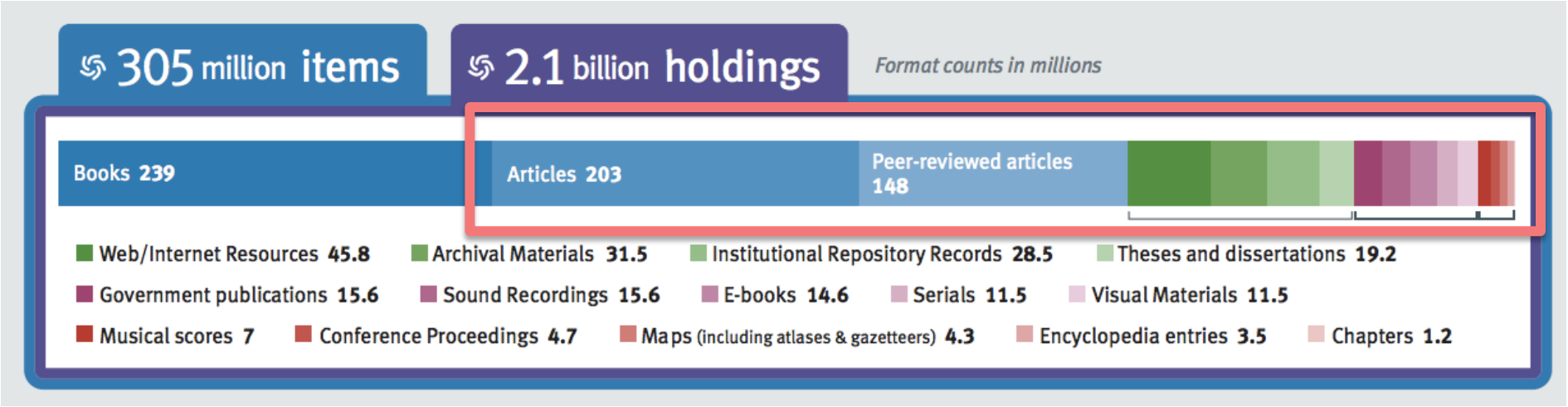
How We Work Today

We catalog:

- Books
- Music
- Journal titles
- Authorities



What is in a Global Discovery System



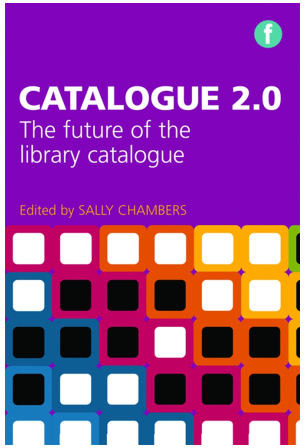
We catalog:

- Books
- Music
- Journal titles
- Authorities

Readers want:

- eBooks
- Articles
- Unique content

Catalogue 2.0 by Karen Calhoun



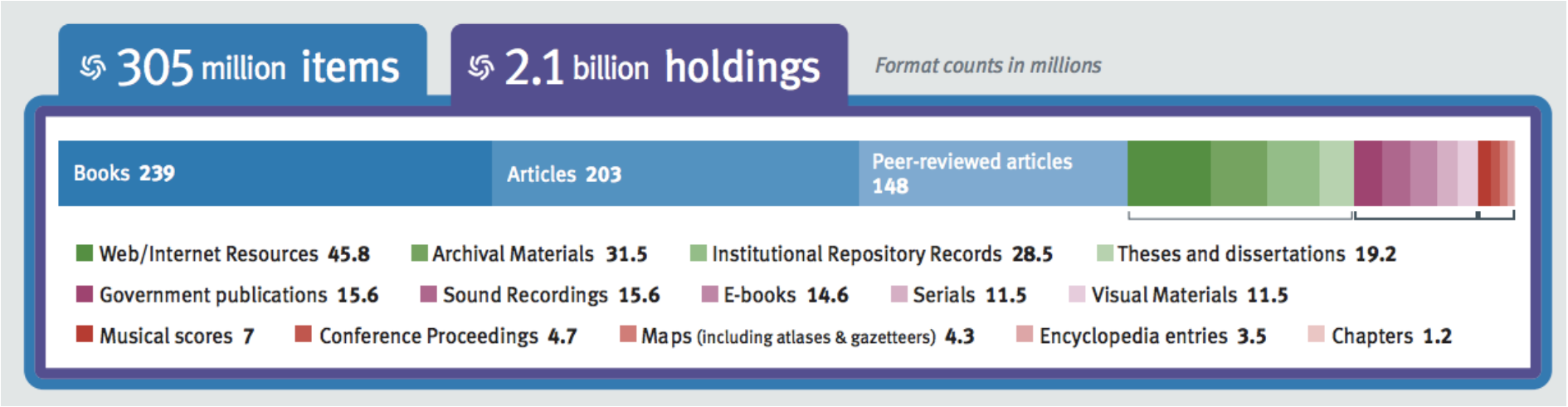
- Calhoun: “Metadata has changed as collections have changed. It remains important, but **it comes in many forms and from many sources**. The centrality of bibliographic control has been disrupted.” P. 15.
- And: “There is less need and place for traditional bibliographic control as a set of methods for providing [metadata] for discovery, access and management of the content of **mainstream books and serials**. “p. 24.

Duplicating records for local purposes

"Ken Chad examines the distinction betweeen **redundant cataloging** (re-editing records to suit local practices) and **redundant catalogs** [in the UK]. He enumerates the benefits of moving from … 160 standalone catalogues to a single shared catalogue at the network level for all of these libraries"

Karen Calhoun in Catalogue 2.0

What is in a Global Discovery System



We catalog:

- Books
- Music
- Journal titles
- Authorities

Readers want:

- eBooks
- Articles
- **Unique content**

The value of authorities

FRAD Tasks

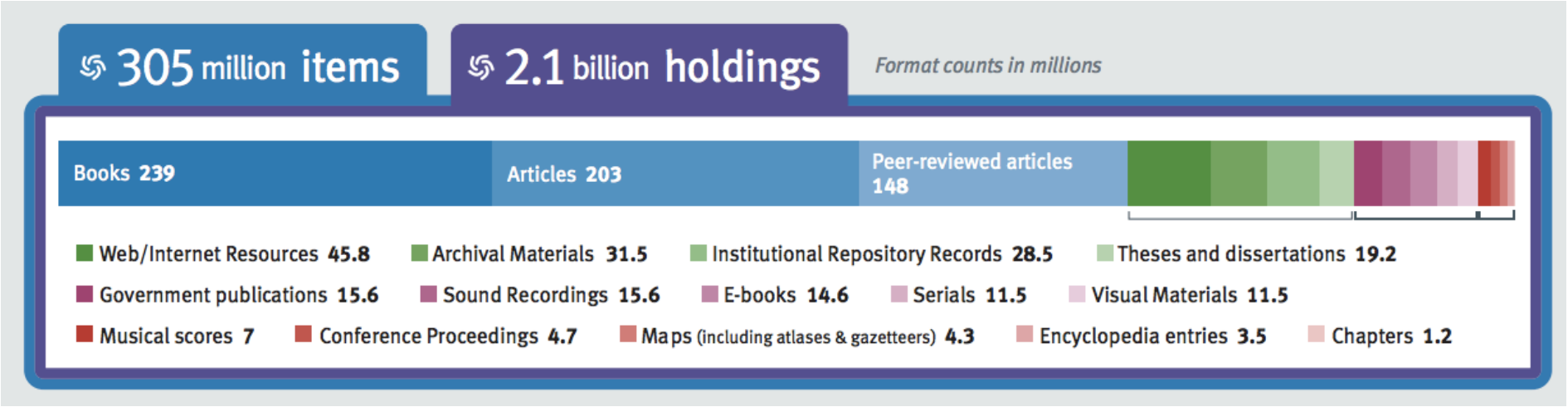
- Find
- Identify
- Clarify
- Contextualize

VIAF
Virtual International Authority File

isni

http://www.ifla.org/publications/functional-requirements-for-authority-data

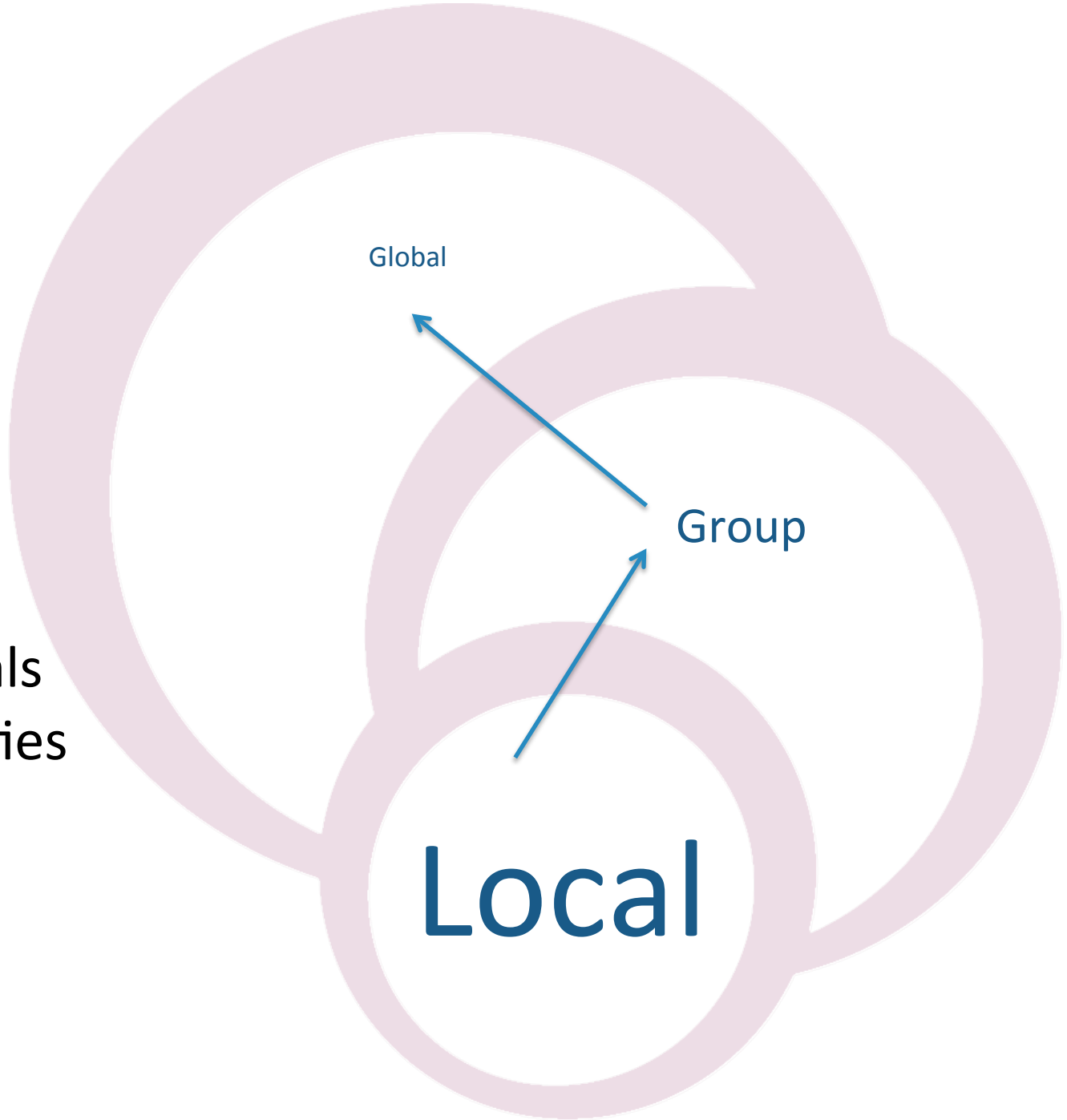
What is in a Global Discovery System



So, what should we do?

1. Catalog unique materials
2. Create authorities
3. Use harvesting and data mining for everything else

Where?

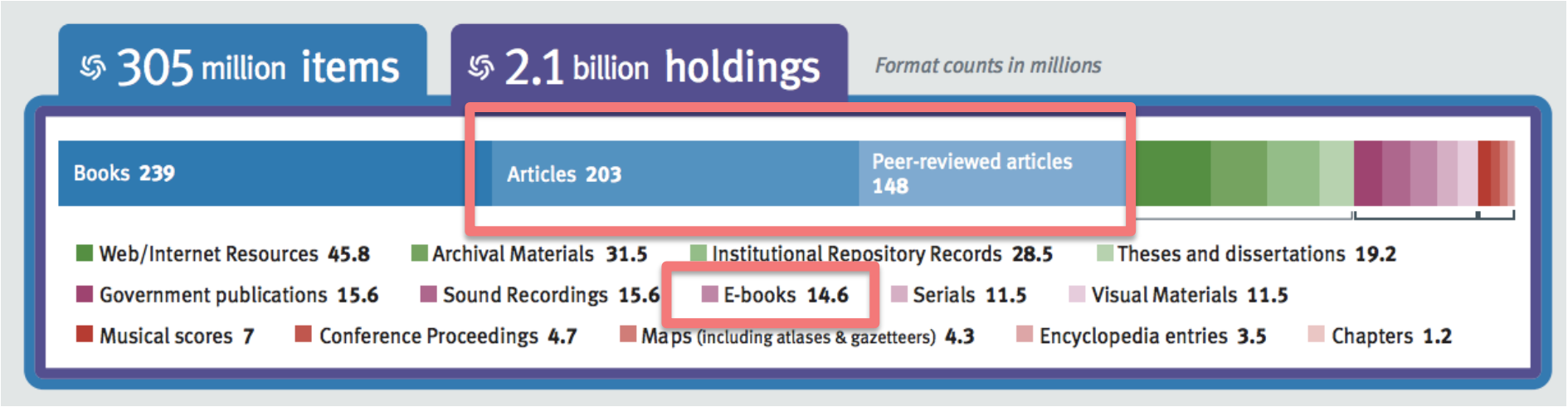


Catalog

- Unique Materials
- Create Authorities

Data Harvesting

What is in a Global Discovery System

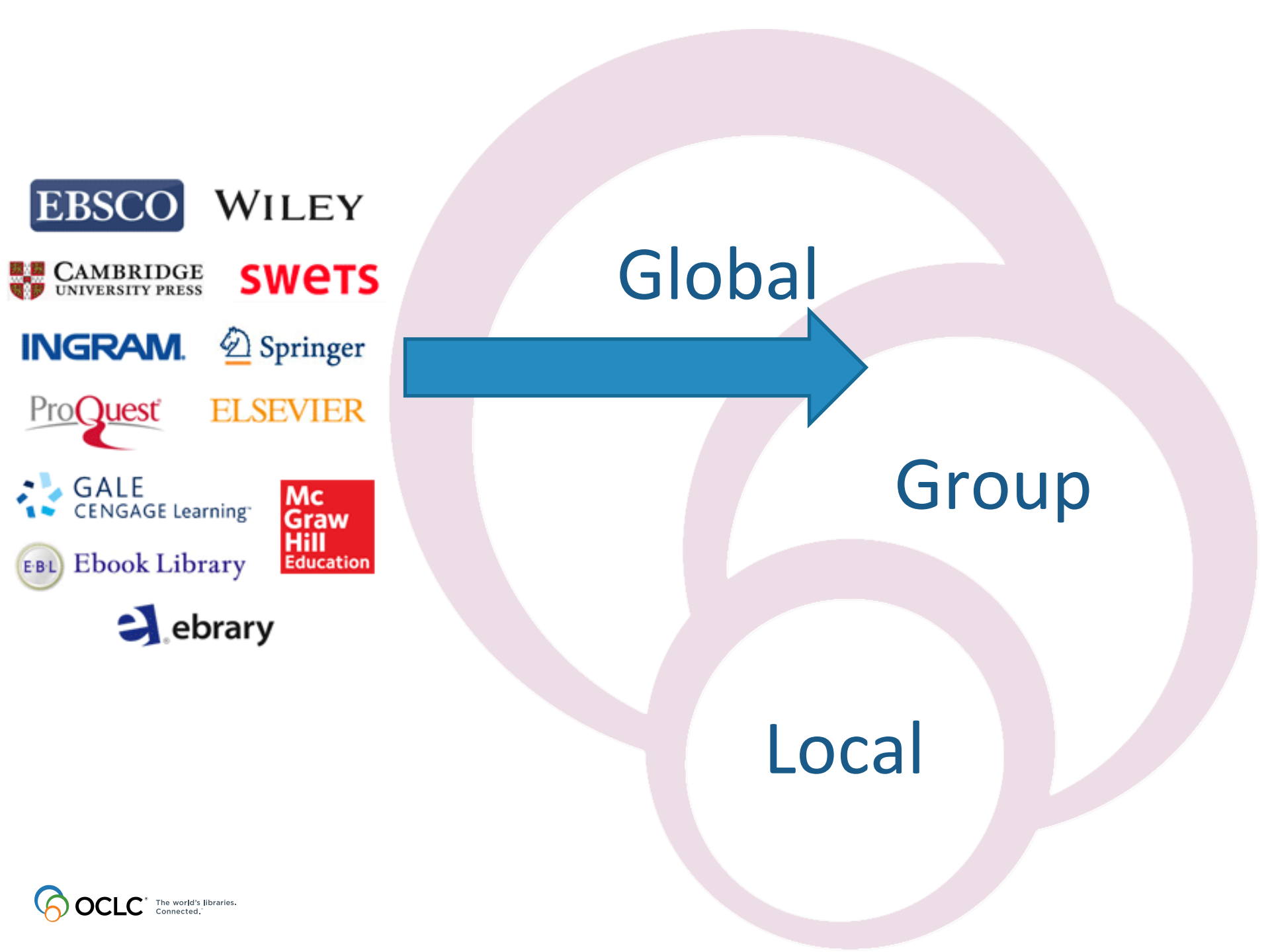


We catalog:

- Books
- Music
- Journal titles
- Authorities

Readers want:

- eBooks
- Articles
- Unique content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Local

Data Mining & The Web

Global

Group

Local

The Web of …

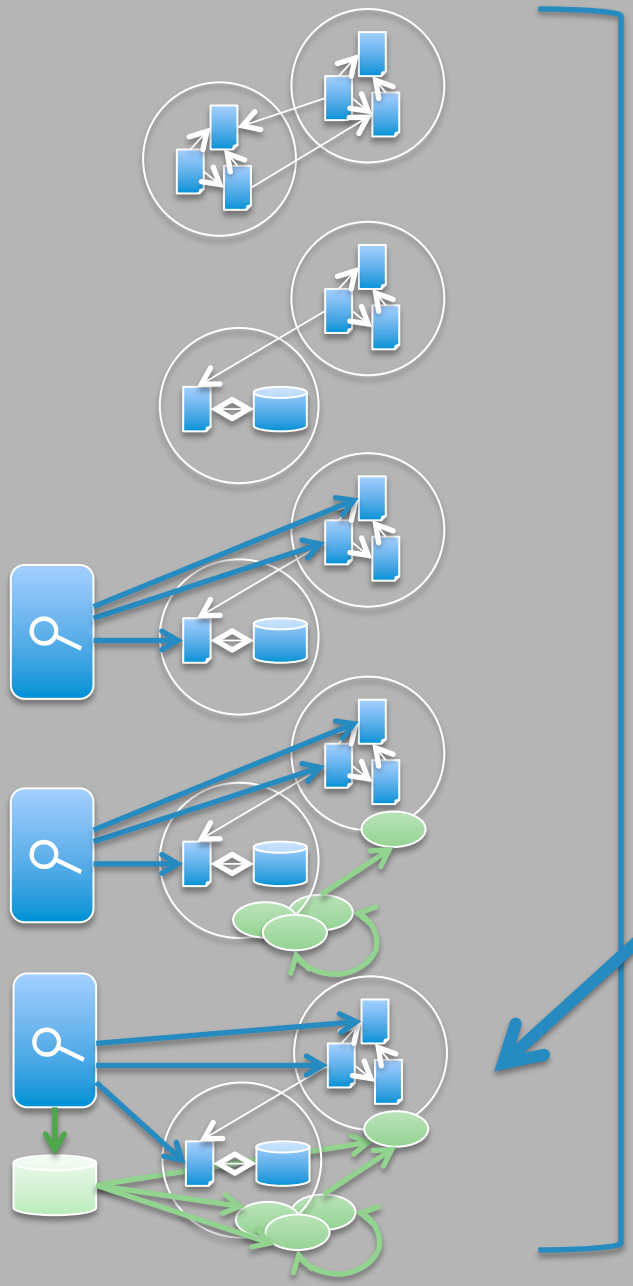
Documents

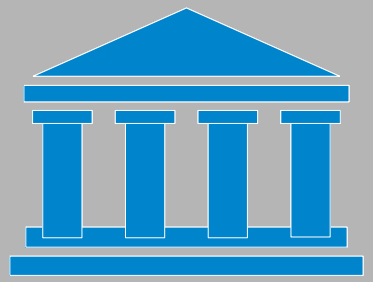
Active Documents

Discovery

Data

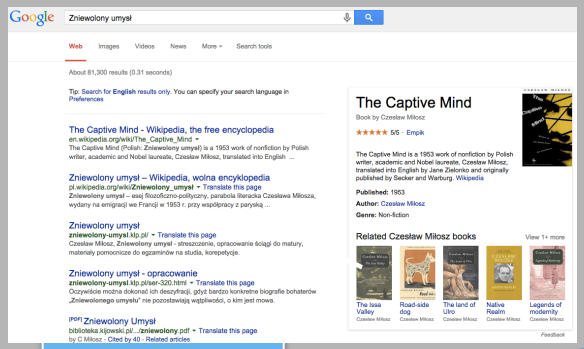
Knowledge

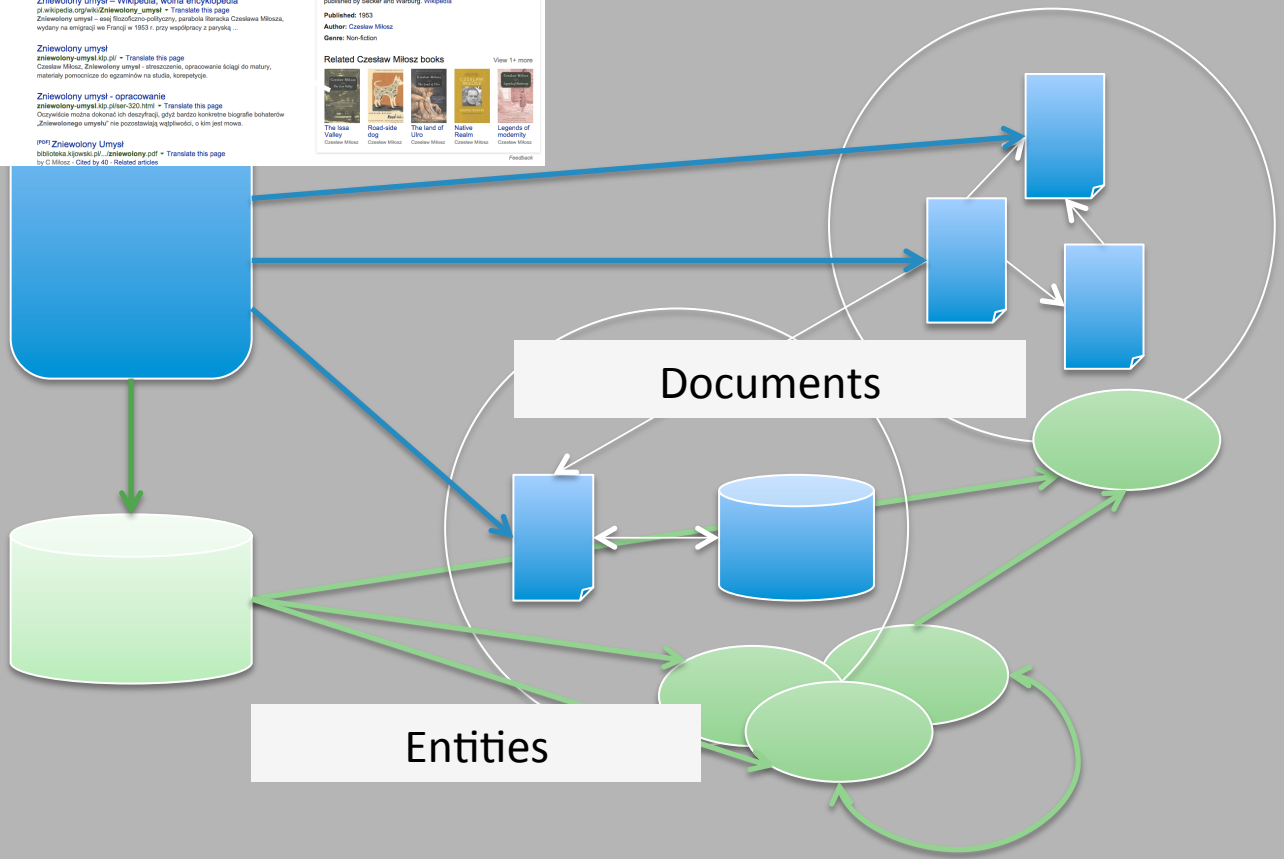


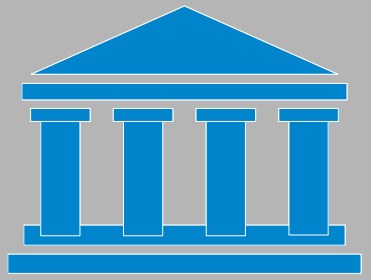


Libraries can connect to the web of knowledge

The Knowledge Graph







Libraries can connect to the web of knowledge

Libraries can create a knowledge graph

Google

Zniewolony umysł

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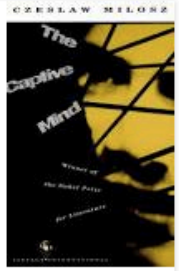

Book by Czesław Miłosz

★★★★★ 5/5 · Empik

The Captive Mind is a 1953 work of nonfiction by Polish writer, academic and Nobel laureate, Czesław Miłosz, translated into English by Jane Zielonko and originally published by Secker and Warburg. Wikipedia

Published: 1953

Author: Czesław Miłosz

Genre: Non-fiction

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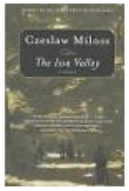
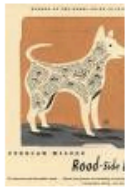
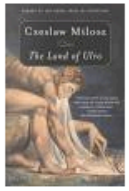


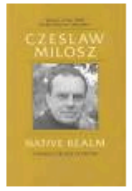
The Issa Valley
Czesław Miłosz



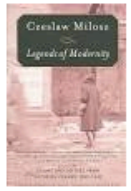
Road-side dog
Czesław Miłosz



The land of Ulro
Czesław Miłosz



Native Realm
Czesław Miłosz



Legends of modernity
Czesław Miłosz

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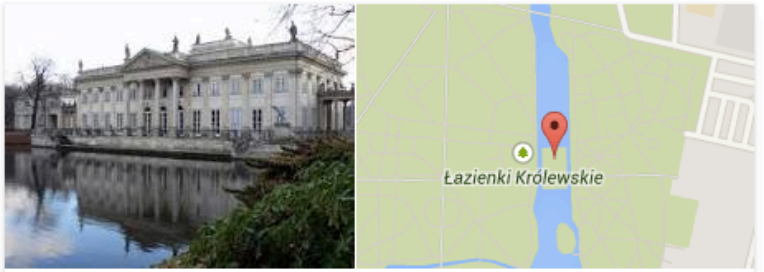

Łazienki Palace

Palace in Warsaw, Poland

Directions Write a review

The Łazienki Palace is a Baroque palace in Warsaw's Royal Baths Park. The Łazienki Palace is located in the largest park in Warsaw that occupies over 76 hectares of the city center. Wikipedia

Address: Agrykoli 1, 00-460 Warszawa

Opened: 1689

Hours: Closing soon · 9:00 am – 6:00 pm

Phone: 22 506 00 28

Architectural style: Neoclassical architecture

Function: Palace

Architect: Domenico Merlini

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Establishing Semantic Identity

For Accurate Representation on the Web

Kenning Arlitsch, Dean of the Library
Patrick OBrien, Semantic Web Research Director

Kenning Arlitsch
Dean of the Library

The Point

Libraries are poorly defined and represented on the Semantic Web…

…but we know how to fix that problem…

…mostly

Google's Perception of MSU Lib - 2012

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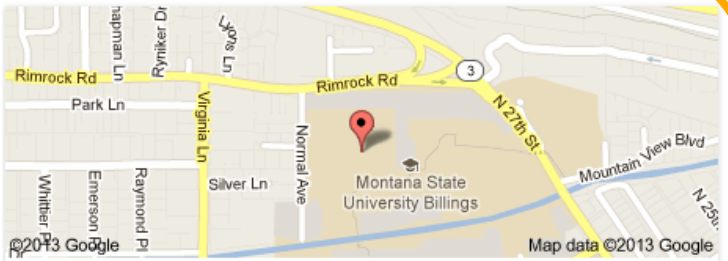

Montana State University Library

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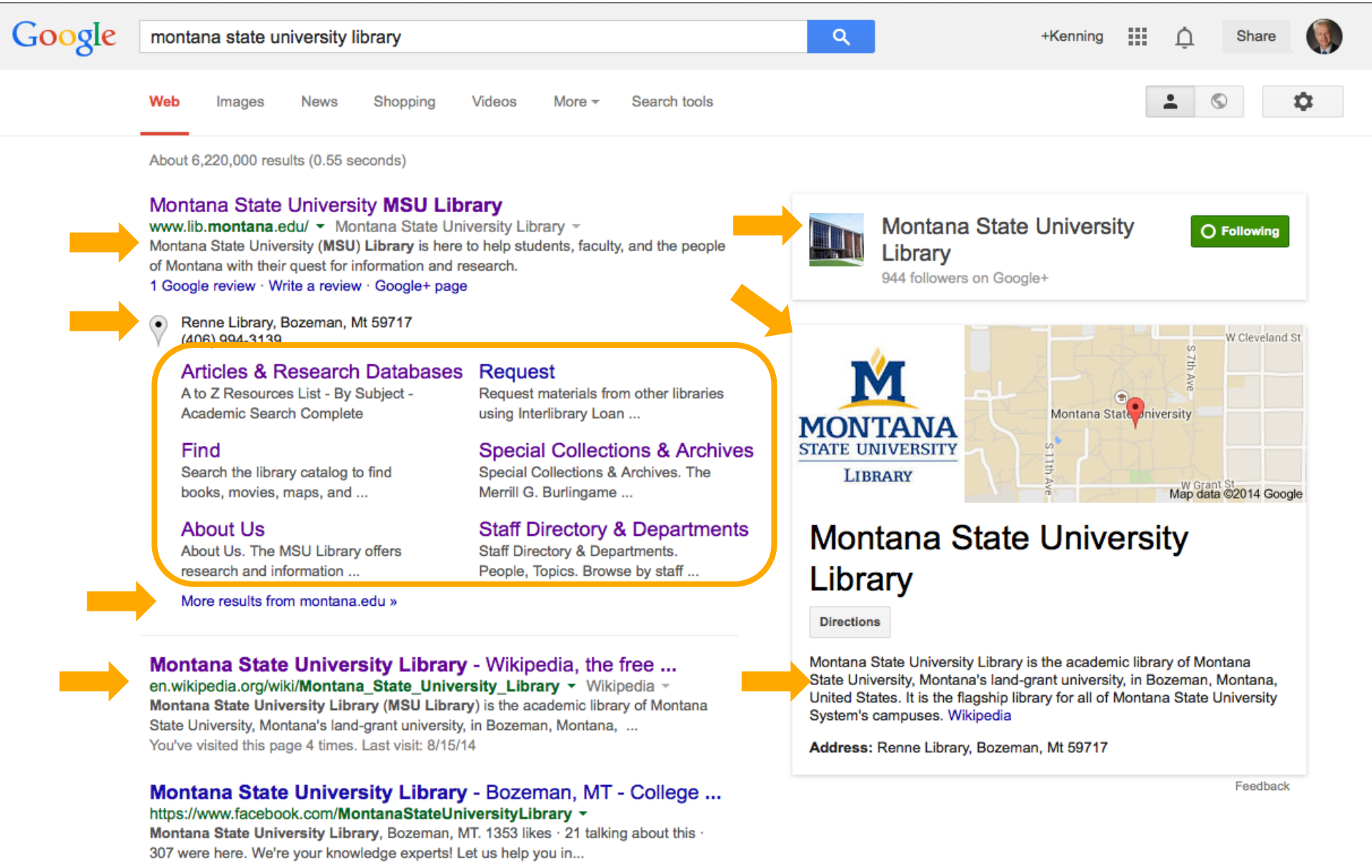
MSU Library - 2014



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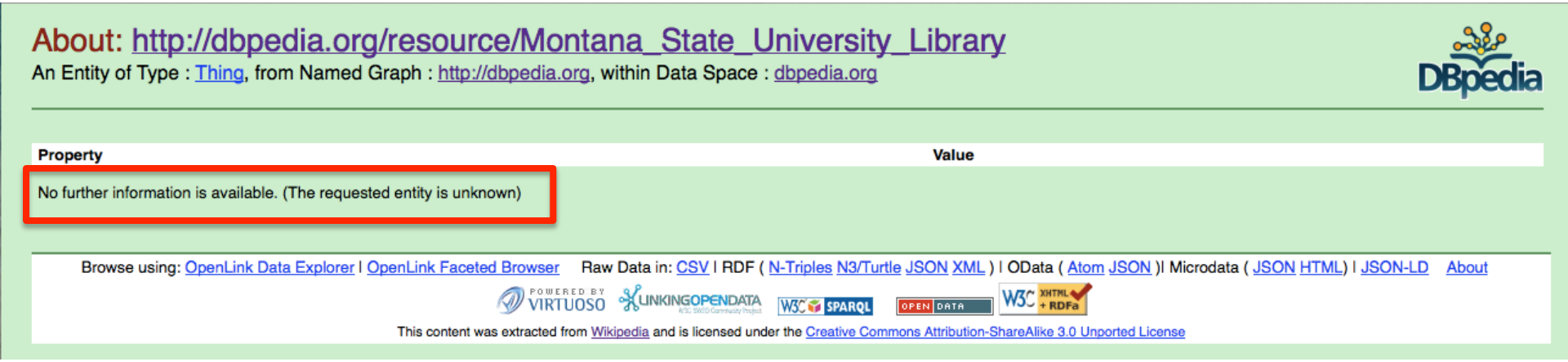

2014 DBpedia entry

About: Montana State University Library

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Property	Value
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dbpprop:established	January 1894
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dbpprop:libraryName	Montana State University Library
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DBPedia entry - 2012

About: http://dbpedia.org/resource/Montana_State_University_Library

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Property	Value

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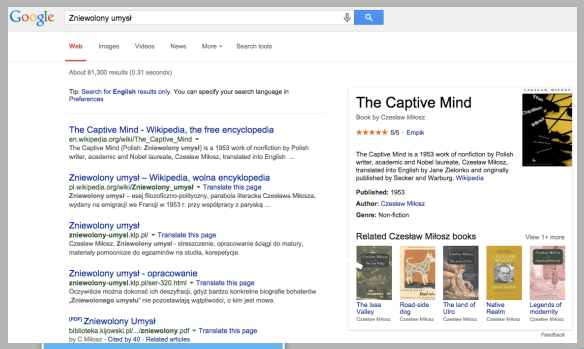
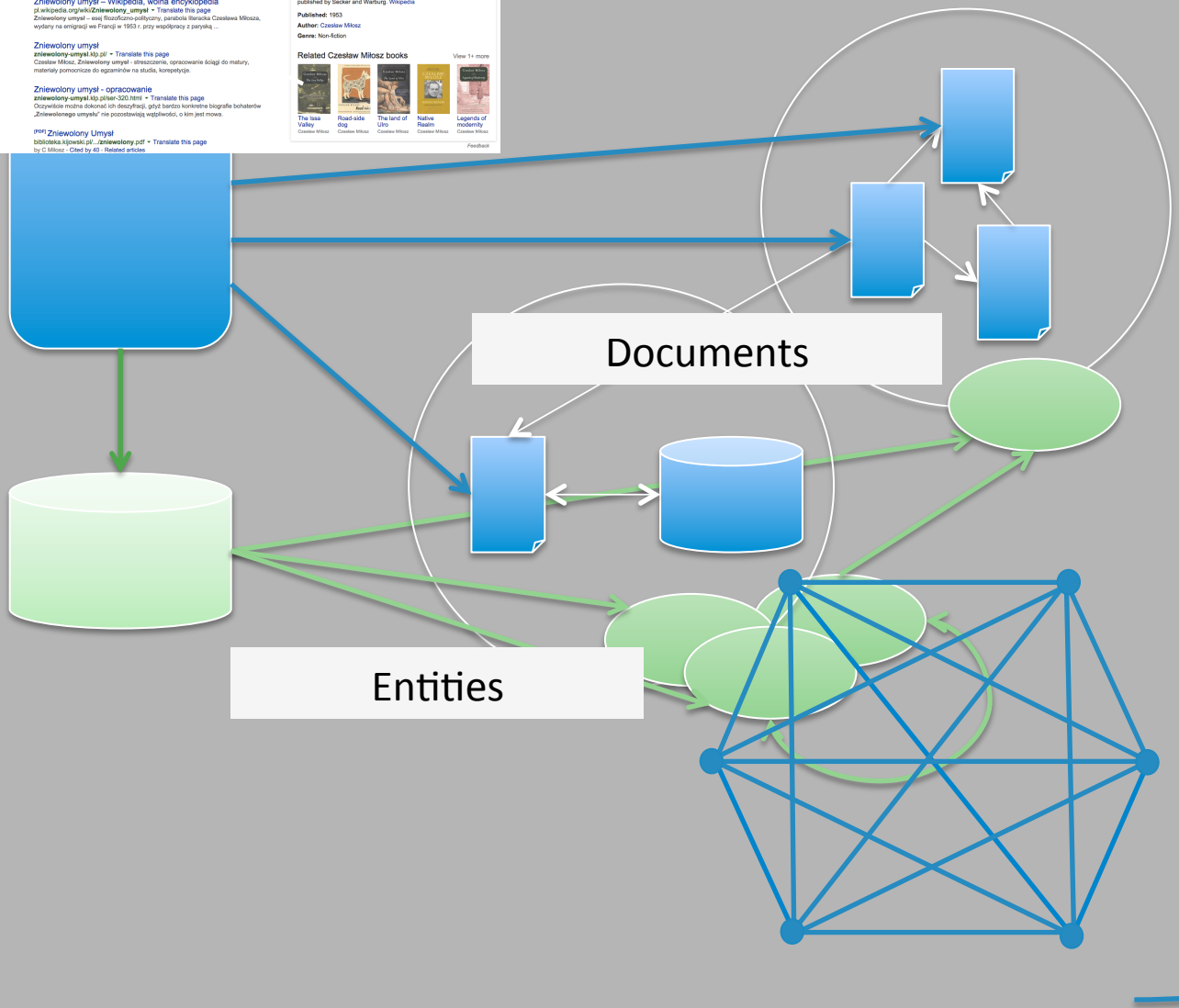
2014 Dbpedia entry

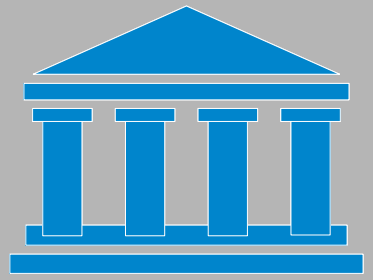
Summary

- Define library organization in Wikipedia
  - Beware of *pedia culture and process
- Engage with other trusted data sources
  - FreeBase
  - Google Places/Google My Business
  - Google+
- Mark-up metadata with Schema.org

The Knowledge Graph

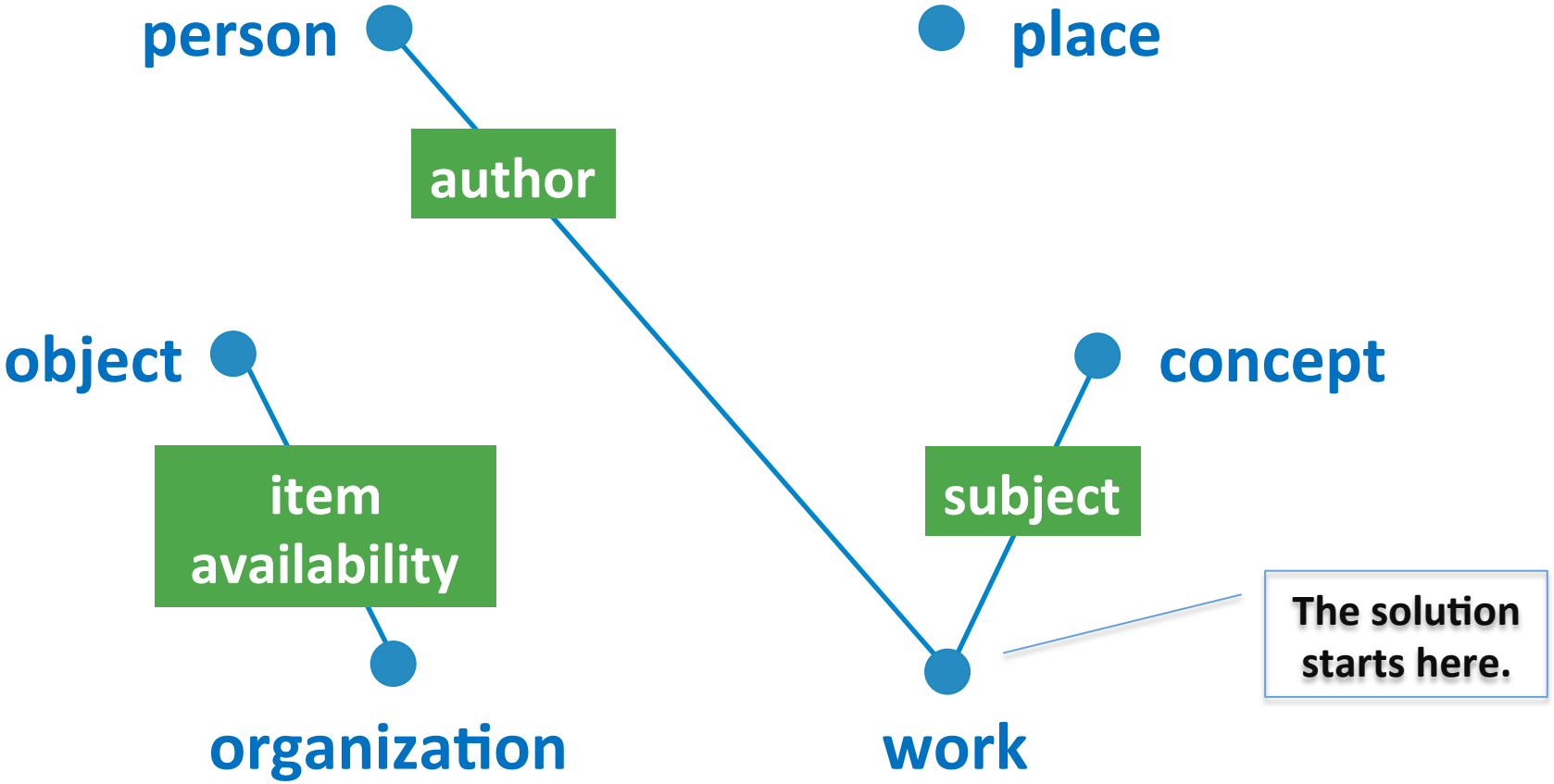




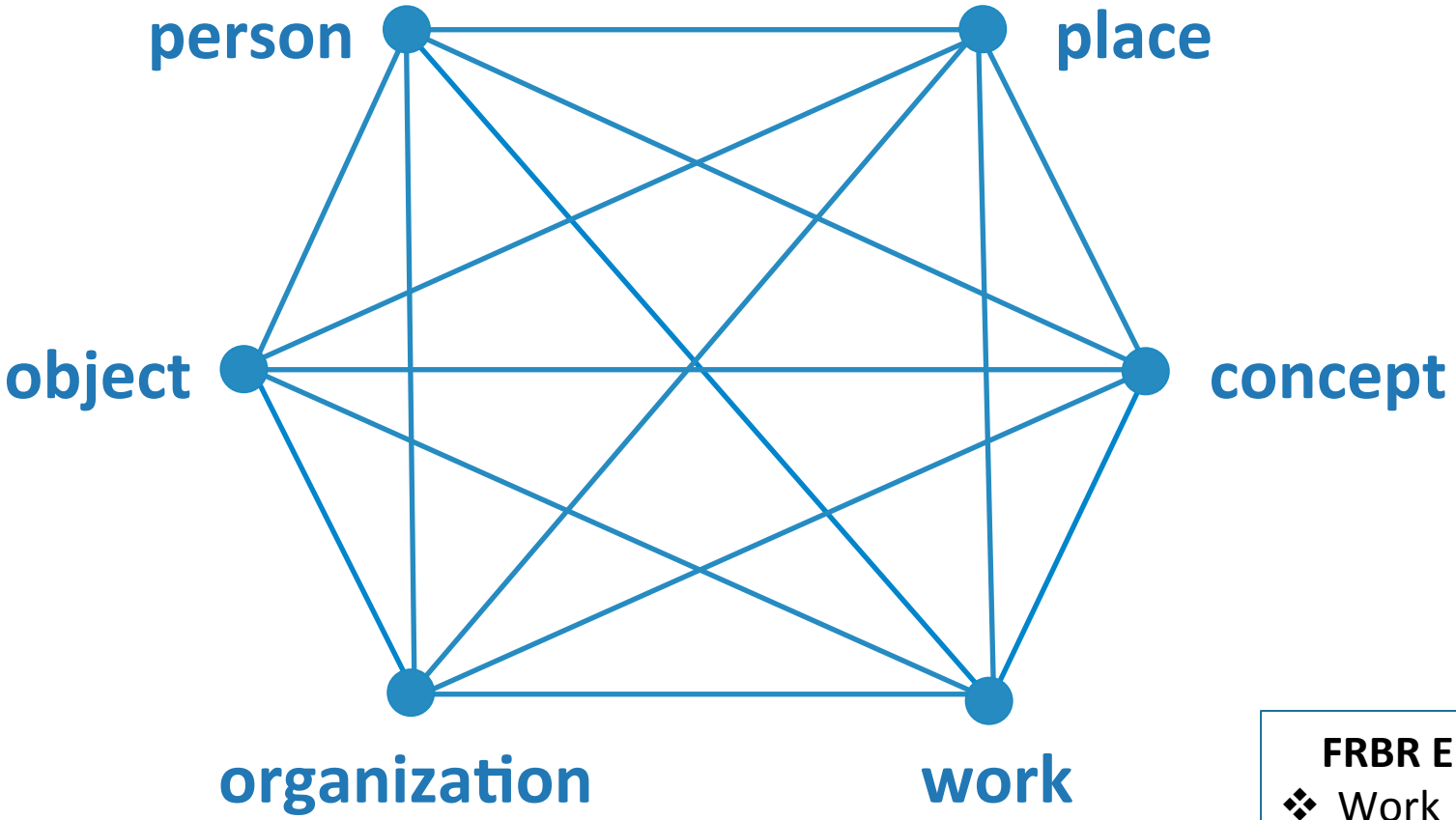


Libraries can connect to the web of knowledge

Libraries can create a knowledge graph



The library knowledge graph



FRBR Entities

- Work
- Expression
- Manifestation
- Item

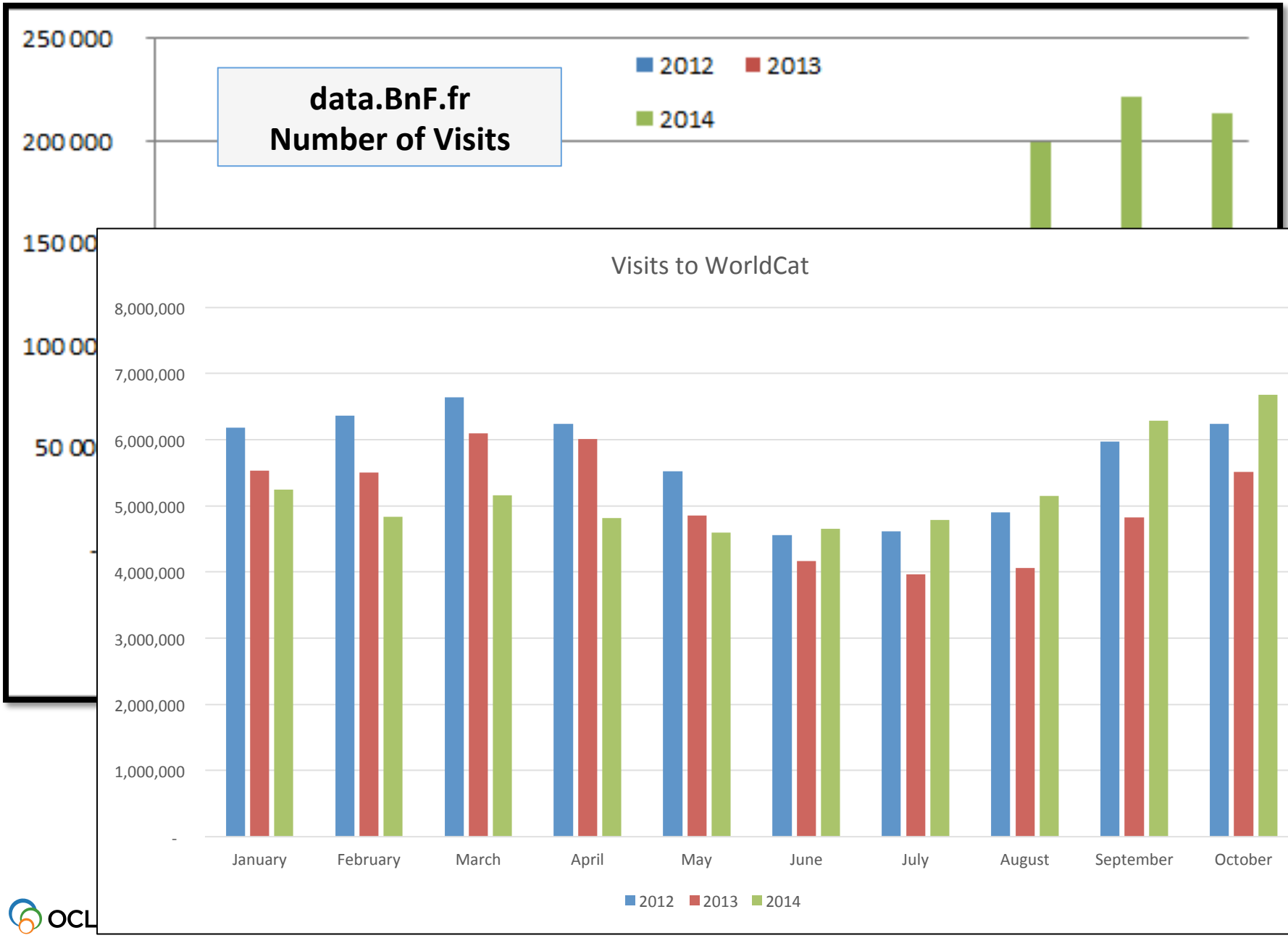
The library knowledge graph

http://www.ifla.org/publications/functional-requirements-for-bibliographic-records

Example of benefits…

Discovery

Example of Benefits: Web Exposure



How does data mining work?

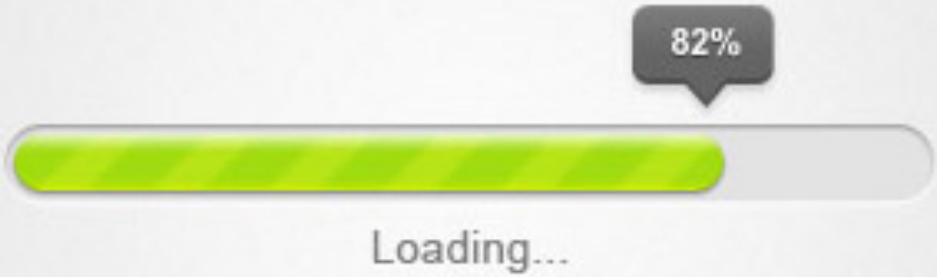
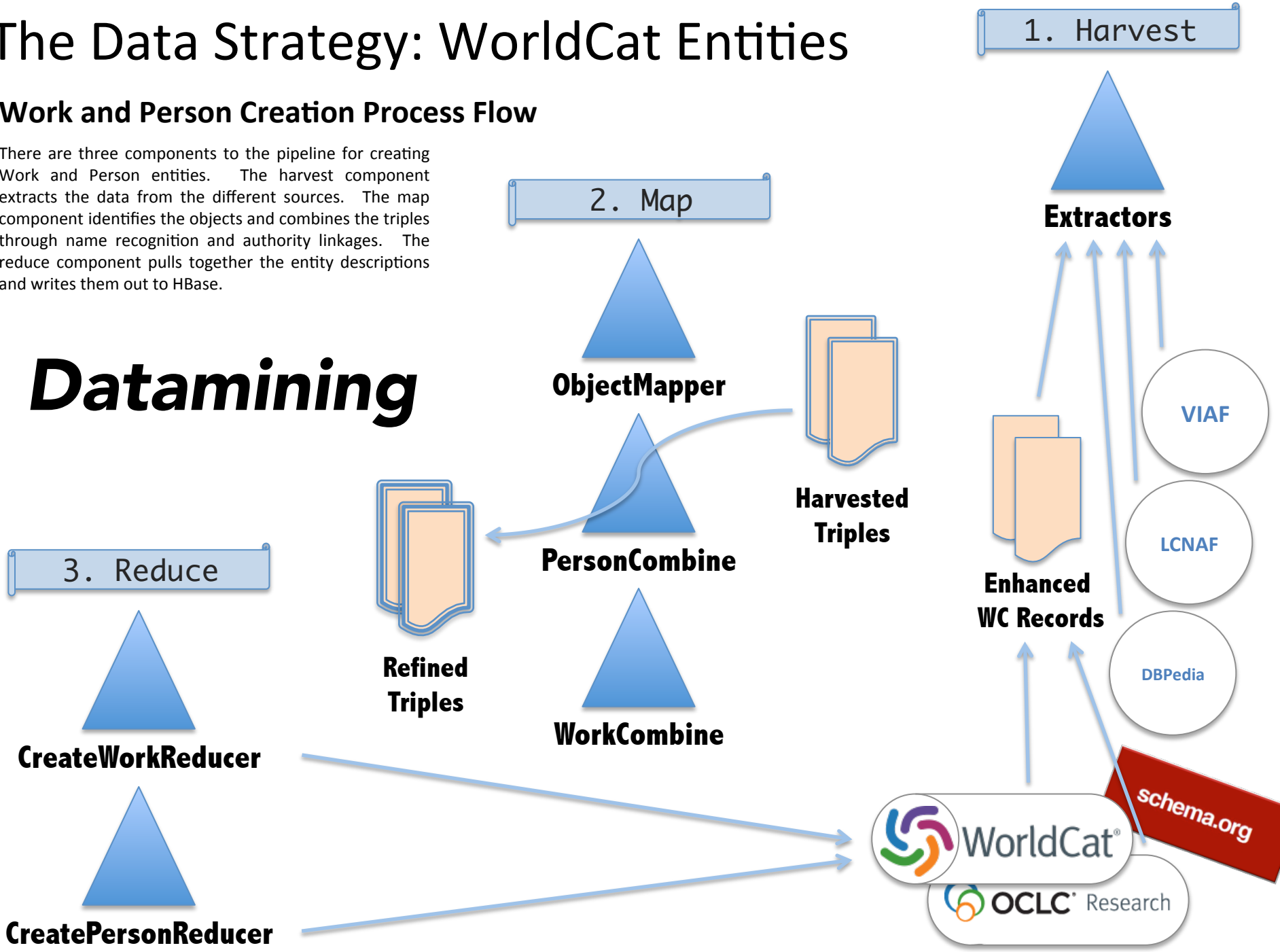


Photo credit: http://media02.hongkiat.com/freebies-for-web-designers-2011/progress-bar.jpg

The Data Strategy: WorldCat Entities

Work and Person Creation Process Flow

There are three components to the pipeline for creating Work and Person entities. The harvest component extracts the data from the different sources. The map component identifies the objects and combines the triples through name recognition and authority linkages. The reduce component pulls together the entity descriptions and writes them out to HBase.



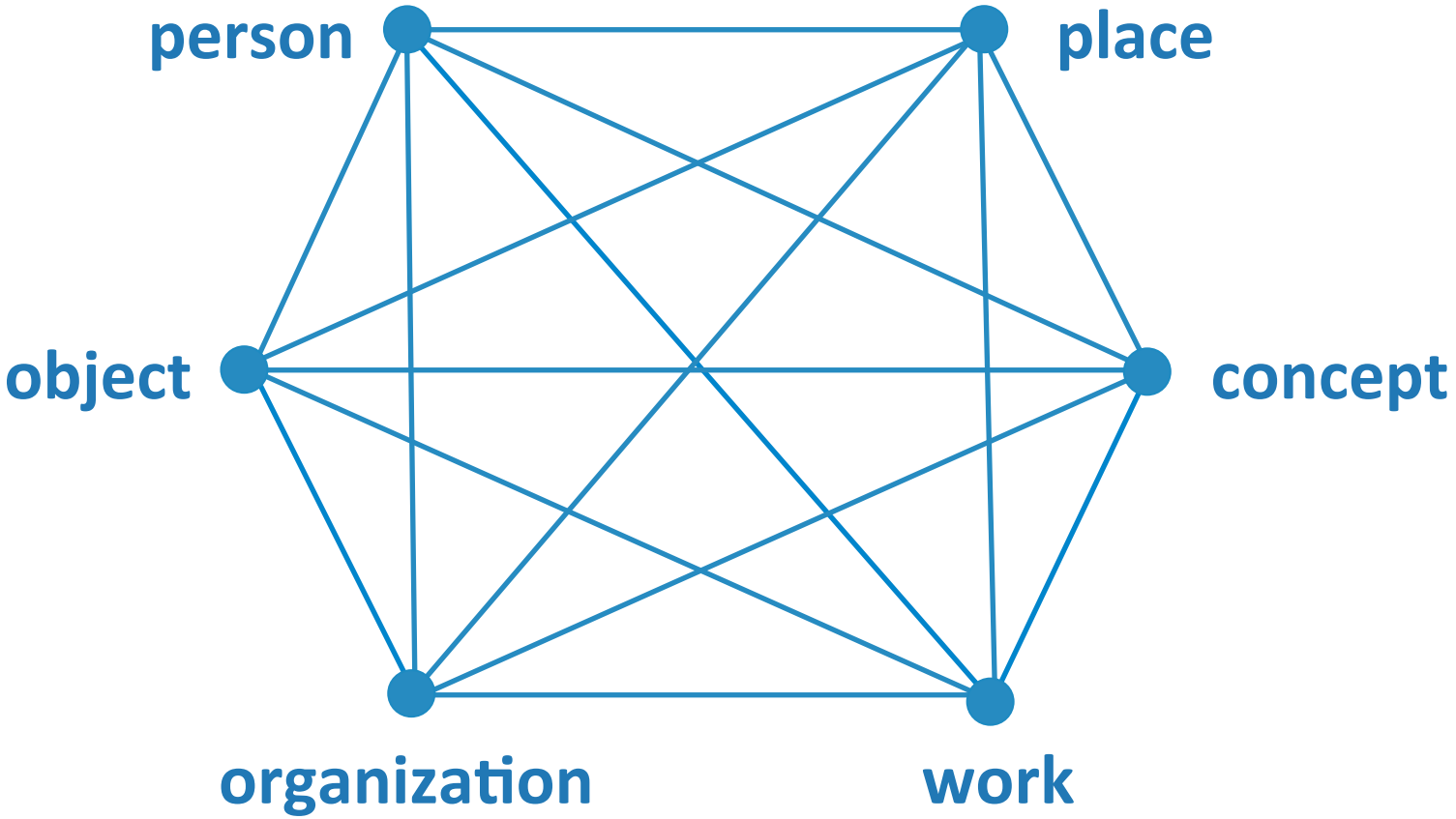
Datamining

The Work Entity

- **197+ million Work descriptions and URIs**
- Schema.org + BiblioGraph.net
- RDF Data formats
  - RDF/XML, Turtle, Triples, JSON-LD
- Links to WorldCat manifestations
- Links to Dewey, LCSH, LCNAF, VIAF, FAST
- Open Data license via Linked Data Explorer
  - 2015: Discovery API, Metadata API
- Released April 2014

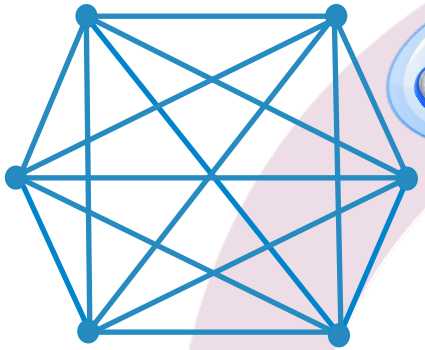
The Person Entity

- **98+ million Person descriptions and URIs**
  - **Person entities with authority: 20.2 million**
  - **Person entities without authority: 78.3 million**
- Schema.org + BiblioGraph.net
- Harvested from WorldCat data and enriched from other hubs RDF Data formats
  - RDF/XML, Turtle, Triples, JSON-LD
- Links to WorldCat Works. Added links from WC Works.
- Open Data license via Linked Data Explorer
  - 2015: Linked Data Explorer, Discovery API



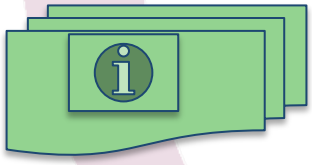
The library knowledge graph

Datamining



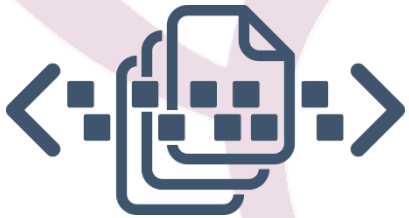
Global

Harvesting



Group

Cataloging

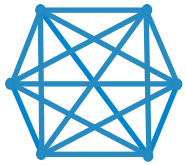


Local

The Future

So, what should we do?

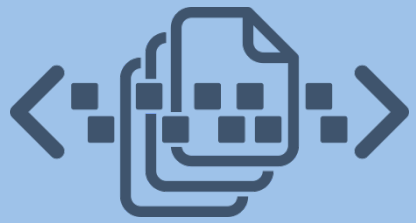
1. Catalog unique materials
2. Create authorities
3. Use harvesting and data mining for



everything else

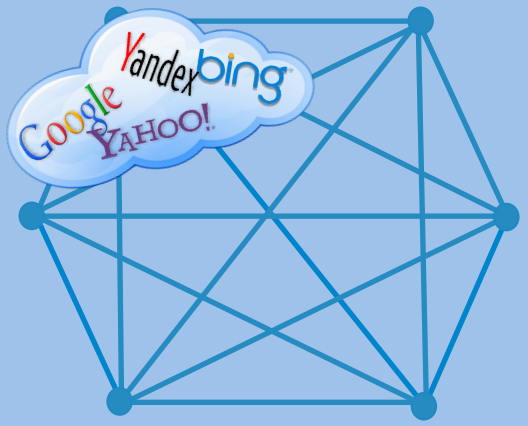
The Future

Cataloging



Harvesting

Datamining



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Discussion