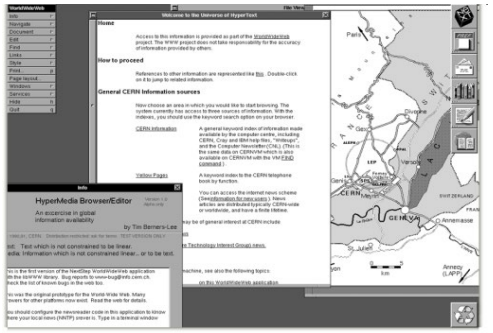
http://info.cern.ch

The world's first-ever web server in 1990

- Tim Berners-Lee

- Infrastructure
  - Internet
  - hypertext (HTML)
  - Web Browser
  - HTTP

Engineer changed the World



2016年图灵奖获得者

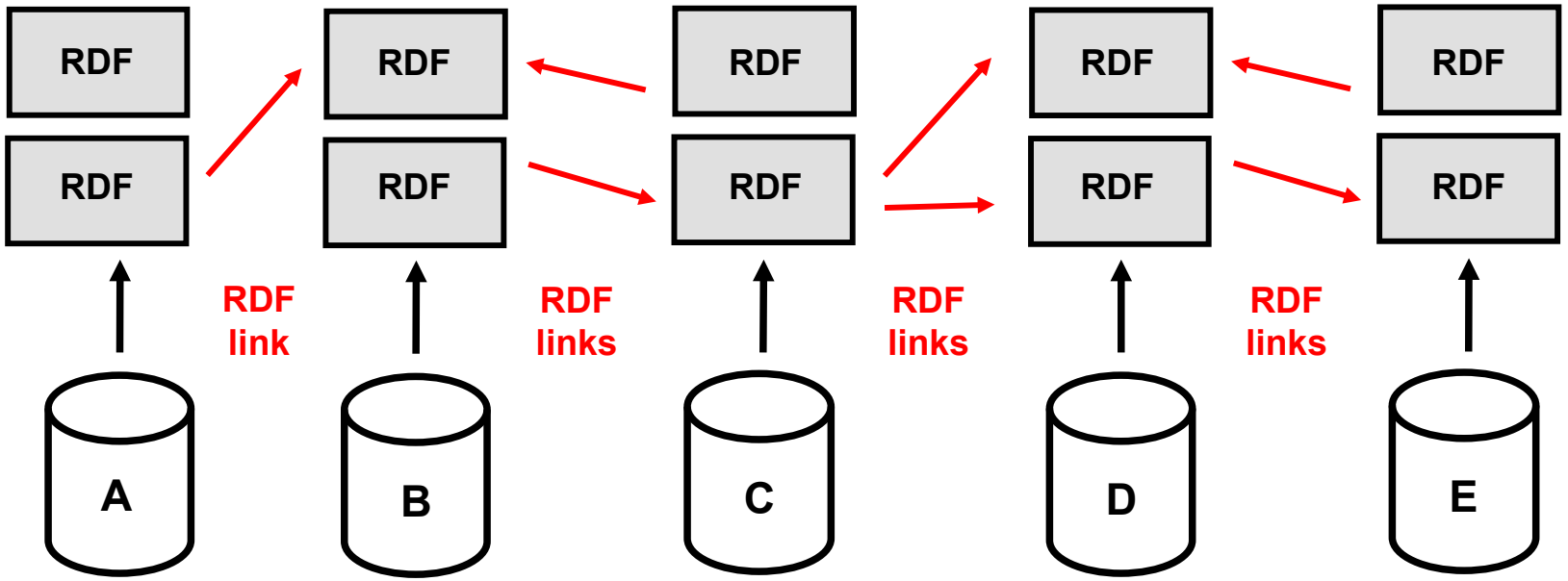
Linked Open Data （LOD）

- A term coined by Tim Berners-Lee
- It describes HTTP-based Data Access by Reference for the Web
- Current web is changing from hyper**text** links (link documents) to hyper**data** links (linking data)
  - Data are small components of the resources
  - It drills deep to the details of the resources
- Linked data provides a powerful mechanism for meshing disparate and heterogeneous data

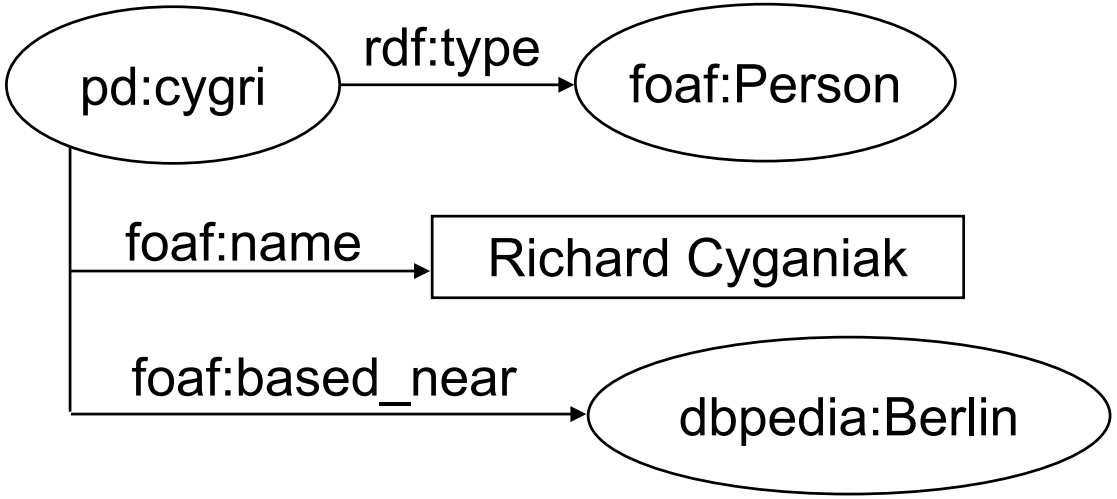
Linked Data

Use Semantic Web technologies to

1. publish structured data on the Web,
2. set links between data from one data source to data within other data sources.



Linked data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rdf:type
foaf:Person
foaf:name
Richard Cyganiak
foaf:based_near
dbpedia:Berlin

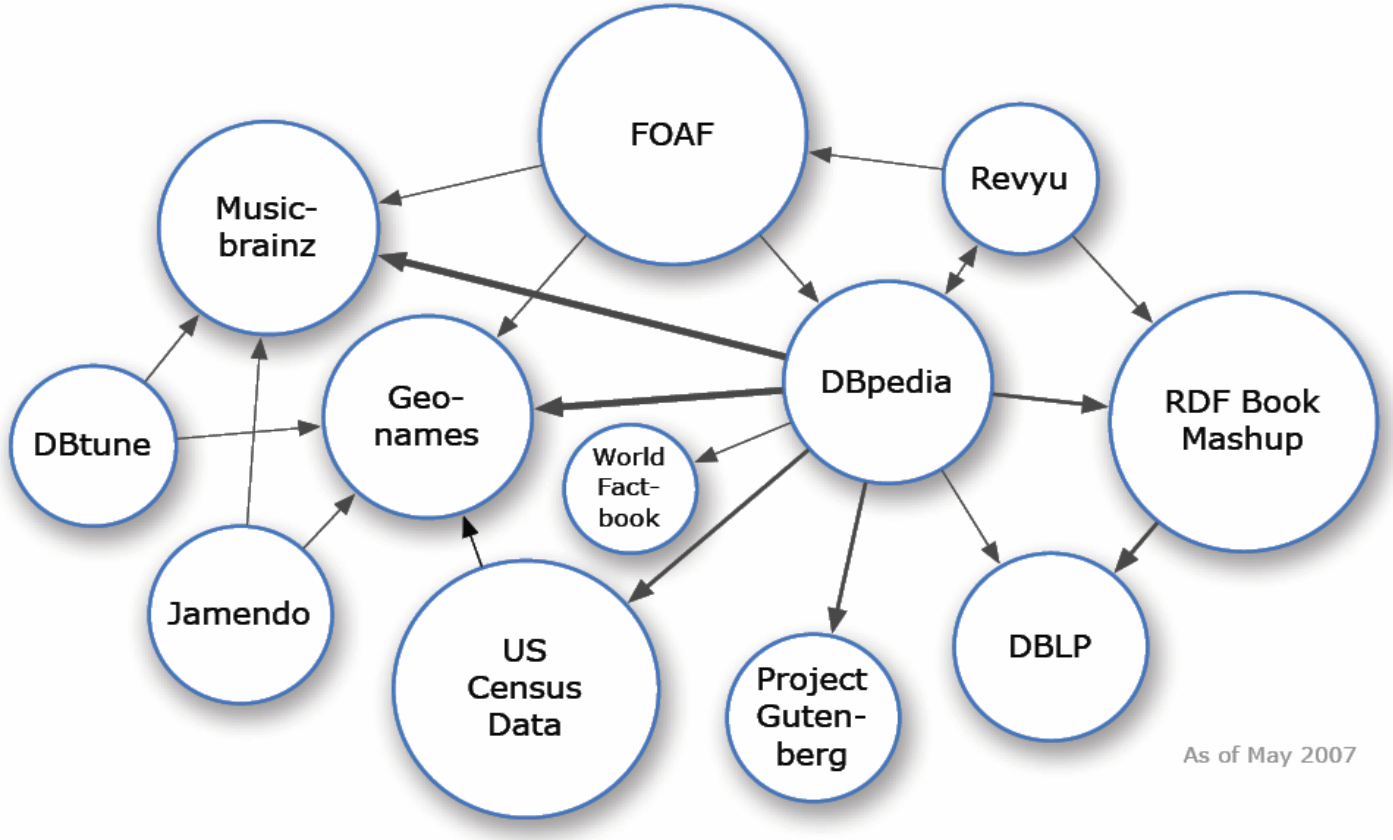
Properties of the Web of Linked Data

- Anyone can publish data to the Web of Linked Data
- Entities are connected by links
  - creating a global data graph that spans data sources and enables the discovery of new data sources.
- Data is self-describing
  - If an application encounters data represented using an unfamiliar vocabulary, the application can resolve the URIs that identify vocabulary terms in order to find their RDFS or OWL definition.
- The Web of Data is open
  - meaning that applications can discover new data sources at run-time by following links.

W3C Linking Open Data Project

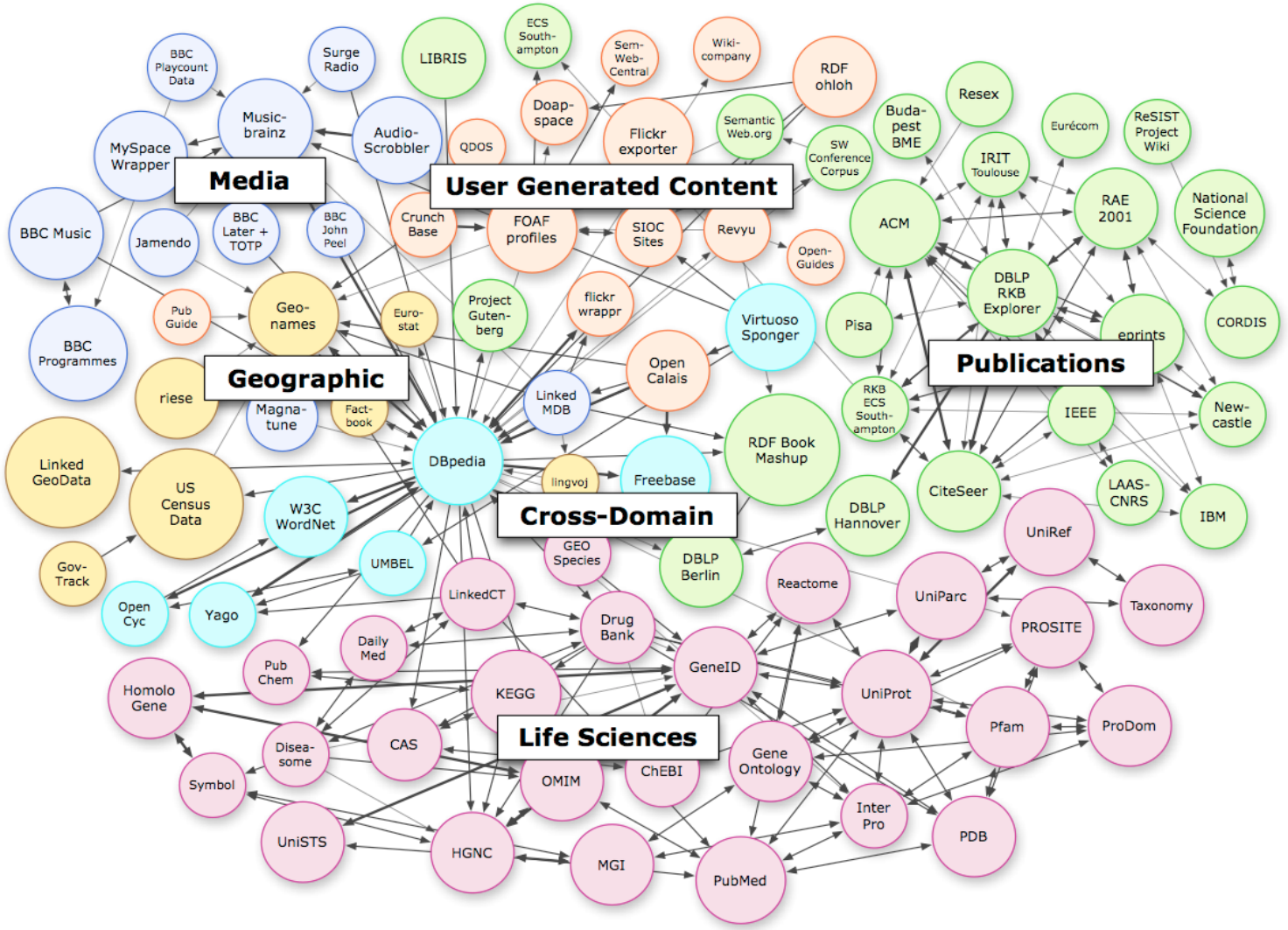
- Grassroots community effort to
  - publish existing open license datasets as Linked Data on the Web
  - interlink things between different data sources

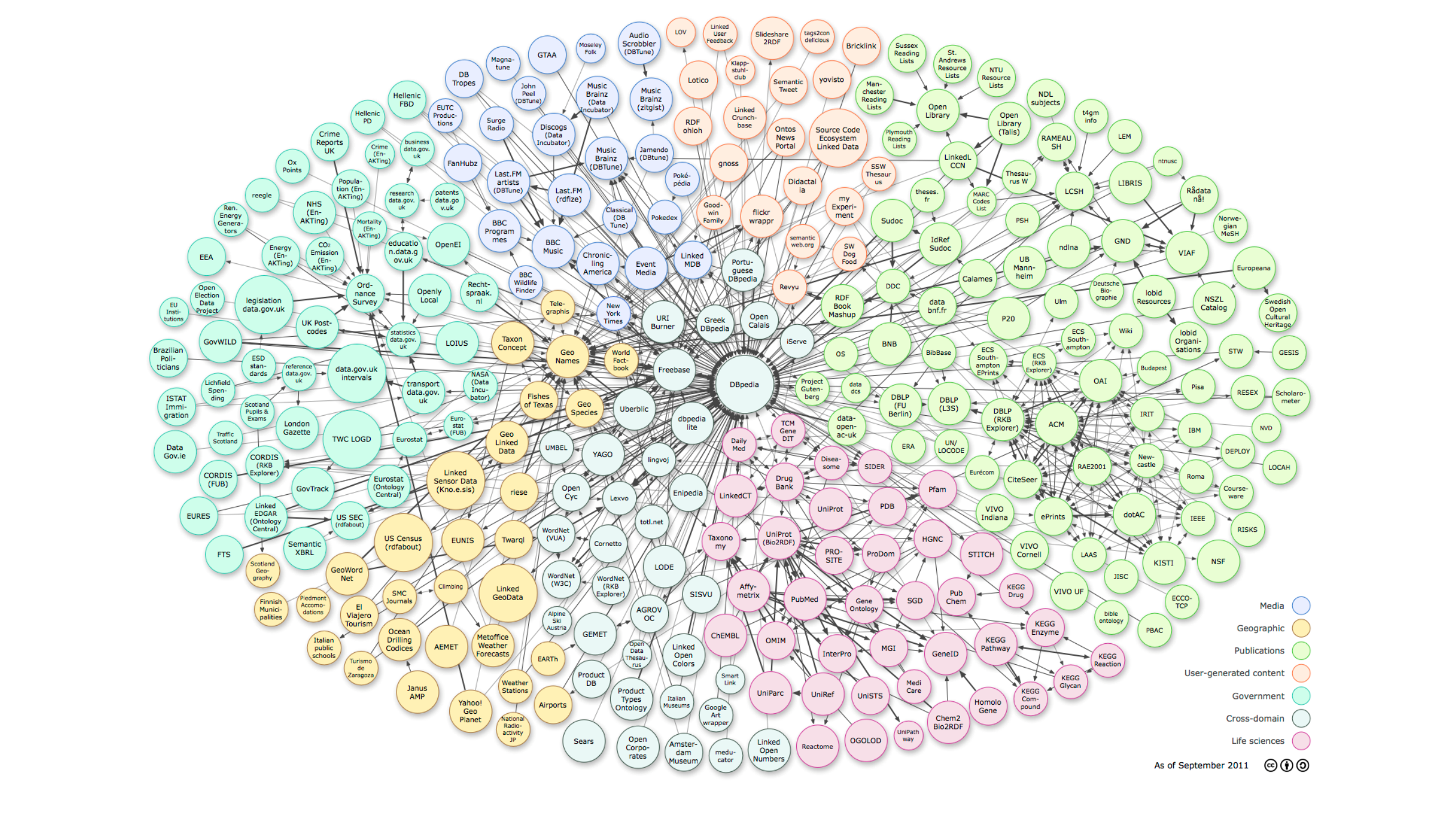
LOD Datasets on the Web: May 2007



- Over 500 million RDF triples
- Around 120,000 RDF links between data sources

LOD Datasets on the Web: July 2009




DBpedia
Freebase
Geo Names
Taxon Concept
Fishes of Texas
Geo Species
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Linked Sensor Data (Kno.e.sis)
Linked Geo Data
Linked Open Colors
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Product DB
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Homolo Gene
KEGG Compound
KEGG Glycan
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KEGG Enzyme
KEGG Pathway
KEGG Reaction
KEGG Glycan
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Metoffice Weather Forecasts
Yahoo! Geo Planet
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Linked Open Colors
Smart Link
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Swedish Open Cultural Heritage
NSZL Catalog
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MARC Codes List
LinkedL CCN
Plymouth Reading Lists
Open Library (Talis)
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Man-chester Reading Lists
Sussex Reading Lists
St. Andrews Resource Lists
NTU Resource Lists
NDL subjects
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Ontos News Portal
Semantic Tweet
Linked Crunch-base
Klapp-stuhl-club
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Music Brainz (Data Incubator)
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EUTC Produc-tions
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GTAA
Moseley Folk
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Chronic-ling America
Event Media
Linked MDB
Portu-guese DBpedia
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Poké-pédia
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Music Brainz (zitgist)
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Didactal ia
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Geographic
Publications
User-generated content
Government
Cross-domain
Life sciences
As of September 2011