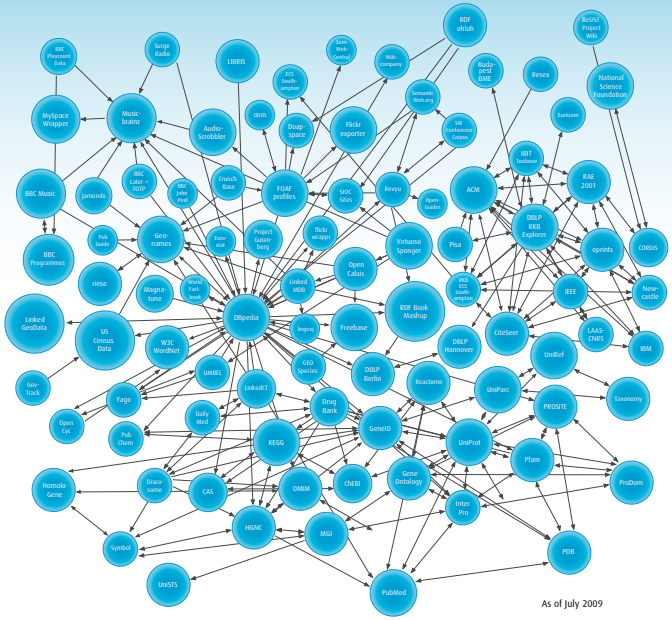
The Linked Open Data (LOD) Web



Depiction of selected datasets published as linked data and interlinked with at least one other dataset in the cloud.

What is Linked Data?
The term Linked Data refers to a set of best practices for publishing and connecting pieces of data, information and knowledge on the Web. Key technologies that Linked Data builds on are Universal Resource Identifiers (URIs) for identifying entities or concepts in the world, the generic graph-based RDF data model for structuring and linking descriptions of things in the world and the Hypertext Transfer Protocol (HTTP) for retrieving resources, or descriptions of resources.
Once traditional Web sites are enriched and complemented with Linked Data descriptions, search engines, mashups or personal agents can use and integrate information in previously unforeseen ways.

LOD2

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SEVENTH FRAMEWORK PROGRAMME

LOD2

Creating Knowledge out of Interlinked Data

Collaborative Project **2010 – 2014**
in Information and Communication Technologies

Creating Knowledge out of Interlinked Data

Research and development of novel, innovative **Semantic Data Web** technologies

Expansion and integration of openly accessible and **interlinked data** on the web

Adoption and implementation of Linked Data for **media, enterprise and government**

http://lod2.eu

Project Summary

The semantic web activity has gained momentum with the widespread publishing of structured data as RDF. The Linked Data paradigm has, thus, evolved from a practical research idea into a very promising candidate for addressing one of the biggest challenges in the area of intelligent information management:
the exploitation of the Web as a platform for data and information integration in addition to document search.

To translate this initial success into a global reality, encompassing the Web 2.0 world and enterprise data alike, the following research challenges need to be addressed:

- improve coherence and quality of data published on the Web,
- close the performance gap between relational and RDF data management,
- establish trust on the Linked Data Web, and
- lower generally the entrance barrier for data publishers and users.

The LOD2 project is tackling these challenges by developing:

1. enterprise-ready tools and methodologies for exposing and managing very large amounts of structured information on the Data Web,
2. a testbed and bootstrap network of high-quality multi-domain, multi-lingual ontologies from sources such as Wikipedia and OpenStreetMap.
3. machine-learning algorithms for automatically enriching, repairing, interlinking and fusing data from the Web.
4. standards and methods for reliably tracking provenance, ensuring privacy and data security as well as for assessing the quality of information.
5. adaptive tools for searching, browsing, and authoring of Linked Data.

LOD2 will integrate and syndicate linked data with large-scale, existing applications and showcase the benefits in the three application scenarios. The resulting tools, methods and data sets have the potential to change the Web as we know it today.

SEVENTH FRAMEWORK PROGRAMME

Semantic Web

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Use Cases

Use Case I – Media & Publishing
Large amounts of data resources from the legal domain are used to test and explore the commercial value of linked data in media and publishing. This data will be interlinked and merged automatically. Data from external sources will be used to semantically enrich the existing datasets. Adequate licensing and business models are also investigated with respect to the management of interoperable metadata.

Use Case II – Enterprise Data Web
Linked Data is a natural addition to the existing document and web service intranets and extranets. Corporate data intranets based on Linked Data technologies can help to substantially reduce data integration costs. Using the LOD2 Stack for linking internal corporate data with external references from the LOD cloud will allow a corporation to significantly increase the value of its corporate knowledge with relatively low effort.

Use Case III – Linked Governmental Data
The project will showcase the wide applicability of the LOD2 Stack through the design, specification, implementation, testing and user evaluation of a case study targeting ordinary citizens of the European Union. LOD2 will establish a network of European governmental data registries in order to increase public access to high-value, machine-readable data sets generated by European, national as well as regional governments and public administrations. The semi-automatic classification, interlinking, enrichment and repair methods developed in LOD2 will create a significant benefit, since they allow governmental data to be more easily explored, analyzed and mashed together.

The main outcome of the project is a comprehensive Linked Data stack, which builds on, integrates and extends a large number of tools, services and knowledge bases including:

DBpedia · indice · OntoWiki · Learner · poolparty · SIG.MA · OPENLINK VIRTUOSO · Exalead Enterprise Search · SILK · D2R