Semantic Web in Libraries (SWIB18), Bonn, Germany 28 November 2018

Linked data implementations who, what, why?

VIV.

Karen Smith-Yoshimura

OCLC Research

Ger...

Linking Open Data cloud diagram 2017, by Andrejs Abele, John P. McCrae, Paul Buitelaar, Anja Jentzsch and Richard Cyganiak. http://lod-cloud.net/ by CC-BY-SA license.

TIP



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International Linked Data Surveys for Implementers

Hanging Together

the OCLC Research blog

Linked Data Survey results 1 - Who's doing it (Updated)



have some answers to share!

OCLC Research conducted an international linked data survey f implementers between 7 July and August 2014. This is the first pos the series reporting the results.

We received 122 responses to the international linked data survey conducted between 7 July and 15 August 2014. (So who is using linked data? And for what?) OCLC colleag

also responded to the survey and report no

Although the survey was designed spec projects/services, 26 of the 122 responses said they had not implemente were implementing a linked data project. Seven of them plan on implem a linked data project within the next two years and 10 are planning to a funding to implement one. Some of them also pointed to interesting link

D-Lib[®] Magazine

The Magazine of Digital Library Research

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D-Lib Magazine

July/August 2016 Volume 22, Number 7/8 **Table of Contents**

2015

Analysis of International Linked Data Survey for Implementers

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DOI: 10.1045/july2016-smith-yoshimura



International Linked Data Surveys for Implementers



2014 only 2015 only 2018 only 2 surveys All 3 surveys

Geographic breakdown of 143 responding institutions

50

60



23 countries represented

2018 German Respondents

Bavarian State Library

70

- German National Library
- North Rhine-Westphalian Library Service Centre (HBZ)

Responding institutions by type





How long linked data project or service in production

	2018	2015
Not yet in production	26	37
Less than one year	14	19
More than one year, less than two years	15	10
More than two years	18	46
More than four years	31	
Total	104	112



How linked data is used

	2018	2015
Consume linked data	34	38
Publish linked data	5	10
Both consume & publish	65	64



Success assessment





Indicators of success:

- Usage •
- Data re-use •
- •
- User satisfaction
- Influence
- Interoperability Professional development



Most accessed





LC Linked Data Service Authorities and Vocabularies





PUBLISHING LINKED DATA



Reasons for publishing linked data (n=92 in both 2015 & 2018)	2018	2015
Expose to larger audience on the Web	74%	73%
Demonstrate what could be done with datasets as linked data	65%	64%
Heard about linked data and wanted to try it out by exposing our data as linked data.	45%	47%
Needed to publish linked data in order to consume it	25%	*

Types of data published as linked data



RDF vocabularies/ontologies used



Serializations used



Barriers to publishing linked data	2018
Steep learning curve for staff	41
Inconsistency in legacy data	38
Selecting appropriate ontologies to represent our data	26
Lack of resources	23
Little documentation or advice on how to build the systems	23
Establishing the links	22

CONSUMING LINKED DATA



Reasons for consuming linked data	2018	2015
Provide our users with a richer experience.	54	51
Enhance our own data by consuming linked data from other sources.	49	50
Heard about linked data and wanted to try it out by using linked data sources.	23	17
More effective internal metadata management.	21	32
Experiment with combining different types of data into a single triple store.	20	17
Greater accuracy and scope in our search results	19	27
See if consuming linked data would improve our Search Engine Optimization (SEO)	7	19

Linked Data sources consumed



Some that started consuming Wikidata



	Barriers to consuming linked data	2018	2015
	Matching, disambiguating and aligning source data and linked data resources	48%	39%
	What's published as linked data isn't always reusable/lacks URIs	31%	27%
	Size of RDF dumps	28%	20%
	Unstable endpoints	28%	17%
÷	Service reliability	26%	15%
	Mapping of vocabulary	26%	29%
	Understanding how data is structured before using it	24%	20%

SOME NEW EXAMPLES IN PRODUCTION





National Library of Finland Open Data and Linked Data Service

Open Data Service

Access open data sources maintained by the National Library of Finland

Data Catalog

Our data catalog showcases the open data sets and APIs of the National Library.



Data sets Open data sets available for reuse.



APIs Euse. Interfaces that provide access to our data.

Linked Data <u>http://data.nationallibrary.fi</u>

Linked Bibliographic Data

The national bibliography Fennica is available as RDF Linked Open Data.

Browse our Linked Data

Collections

Fennica

Concept Schemes

- Finnish Corporate Names
- YSO General Finnish ontology
- YSO places

Access

- SPARQL endpoint
- Linked Data Fragments server
- Downloadable data dumps

Documentation

- Fennica RDF data model documentation
- What is included in Fennica (in Finnish)

http://v.mek.oszk.hu/FlintSparqlEditor /index-mek.html

SPARQL EDITOR a Magyar Elektronikus Könyvtár RDF metaadatainak lekérdezéséhez

mek.oszk.hu

Linked Open Data





https://dati.cobis.to.it/

Dati RDF

Galileo Galilei

(1564 – 1642) scienziato italiano

Il suo nome è associato a importanti contributi in dinamica e in astronomia (legati al perfezionamento del telescopio, che gli permise importanti osservazioni astronomiche) oltre all'introduzione del metodo scientifico (detto spesso metodo galileiano o metodo scientifico sperimentale). Di primaria importanza fu anche il suo ruolo nella rivoluzione astronomica, con il sostegno al sistema eliocentrico e alla teoria copernicana. Sospettato di eresia e accusato di voler sovvertire la filosofia naturale aristotelica e le Sacre Scritture, Galileo fu processato e condannato dal Sant'Uffizio, nonché costretto, il 22 giugno 1633, all'abiura delle sue concezioni astronomiche e al confino nella propria villa di Arcetri. Solo 359 anni dopo, il 31 ottobre 1992, papa Giovanni Paolo II, alla sessione plenaria della Pontificia accademia delle scienze, ha dichiarato riconosciuti "gli errori commessi" sancendo la conclusione dei lavori di un'apposita commissione di studio da lui istituita nel 1981.



Nascita: 1564-2-24, Pisa

Morte: 1642-1-7, Arcetri

Interlink

WD LoC GND BNF SBN DBI VIAF

Opere (97)

Opere di Galileo Galilei a cura di Franz Brunetti	loannis Kepleri Dioptrice seu demonstratio eorum quae visui & visi	Discorsi e dimostrazioni matematiche, intorno à due nuoue scienze atte	Vsus et fabrica circini cuiusdam proportionis, per quem omnia fere tum				
Opere di Galileo Galilei	1611	1638	1655				
Linceo nobile fiorentino Al serenissim 1655-1656	Quinto libro degli elementi d'Euclide, ovvero Scienza universale delle	Galilaei Galilaei Systema cosmicum. In quo dialogis 4. de duobus m	Tomo 2 1718				
	1674	1699					



- 4 { ?isValueOf ?property <http://data.carnegiehall.org/names/36136> }
 5 }
- 6 ORDER BY ?property ?hasValue ?isValueOf
- 7 LIMIT 1000

Run

Browse JSON http://data.carnegiehall.org

Marches

 Sample Queries
 Configuration

 Select first 100 triples
 Find people

 Find triples about a specific person
 Find works

 Find works
 Find works by string in the title (case-insensitive)

 Find performances of a specific work
 Find events

 Find events
 Find triples about events in a specific year

 Find venues
 Find instruments

 Find ensembles URIs
 Find roles

http://archesproject.com/

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An open source data management platform for the heritage field

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Test Drive 📐

Download U

SOME ADVICE FROM IMPLEMENTERS & IMPLICATIONS



Advice from implementers

- Learn from others
- Focus on your use cases
- Collaborate with others
- Integrate linked data into your daily workflows
- Analyze what legacy data should be converted
- Never underestimate the amount of data cleanup that will be required.
- Use existing identifiers and ontologies
- Iterate based on user feedback
- Expect benefits only after reaching scale



Implications

- Emergence of service providers
- Growing diversity of linked data implementations
- Most linked data projects and services remain experimental or educational in nature.

"This is the future of data for libraries and the longer we wait the further behind we're going to fall."



Details of all responses

oc.lc/ld-survey-responses

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Semantic Web in Libraries (SWIB18), Bonn, Germany 28 November 2018

Thank you!

Contact: Karen Smith-Yoshimura

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