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Relationship status: Libraries and linked data in Europe

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Linked data: what we know

• Semantic Web = enhanced form of web; content expressed in machine-readable format (Berners-Lee, Hendler, Lassila, 2001)
• SW = goal; LD = means to reach it (Bizer et al., 2009)
• LD as “a means to dismantle data silos” (Heath, 2009)
• W3C standards
• LD applied to library data: Baker et al., 2011; Tallerås, 2013; Shiri & Davoodi, 2016; OCLC surveys 2014, 2015, 2018 (Karen Smith-Yoshimura)
Linked data use across European national libraries: methodology

- Literature review
- Semi-structured interviews (n=15; Skype, email)
- Departmental ethics approval
- Recruitment through Twitter, libraries’ email addresses, electronic mailing lists
- Online resources analysis (n=26; Semantic Radar)
‘Linked Data: Opening Scotland’s library content to the world’: methodology

• Short online Qualtrics survey
• Departmental ethics approval
• Recruitment through Twitter, SLIC, CILIPS
• Open from 03/05/17 to 18/05/2017
• n=113 completed responses
Scottish library types participating in the survey

- Public
- School
- Academic
- Other
- National
- Did not specify
Scottish Government’s Open Data Strategy (2015)

“This strategy seeks to create a Scotland where non-personal and non-commercially sensitive data from public services is recognised as a resource for wider societal use and as such is made open in an intelligent manner and available for re-use by others.”

Source: [http://www.gov.scot/Publications/2015/02/6614](http://www.gov.scot/Publications/2015/02/6614)
Open Government Data

- Open government initiatives spreading worldwide
- Transparency (fight corruption / improve accountability)
- Enable citizens’ participation
- Strengthen democracy
- Data generated, gathered and stored by government agencies (e.g., national, school, public libraries) using public money (through taxes) should be available to everyone
Findings

- Two individual studies revealed similar results
- Status of awareness of “linked data” and “Semantic Web” concepts
- Linked data uses
- Reasons for, challenges/benefits of linked data implementation
- Recommendation and best practice
Linked data awareness

• European national libraries: lack of awareness among staff (e.g., IT) hinders projects design and actuation

• Scottish libraries:

Do you know what the term 'linked data' means?
- Definitely yes
- Probably yes
- Might or might not
- Probably not

Do you know what the term ‘Semantic Web' means?
- Definitely yes
- Probably yes
- Might or might not
- Probably not
Linked data implementation status

European nat. libraries

Scottish libraries

- Have Implemented
- Have plans to implement
- Not implemented
- Have no current plans to implement
- Taking steps towards
- No response
Uses of linked data

European nat. libraries

• Provide data to LD data sets (VIAF, Wikidata, Europeana)
• Publish bibliographic and authority data
• National bibliographies
• Digitized resources
• Thesauri and ontologies

Scottish libraries

• MARC catalogue records
• Digitized resources
• Social media
• Research outputs using RDF, Dublin Core, SPARQL
• OWL, SKOS, Europeana Data Model
Reasons for implementing linked data

- Popularity of linked data on international scene (perceived/expected benefits)
- Improve data visibility and discoverability
- Enhance existing data sets
- Enriched, open, reusable information, available for various purposes to the wider community
- Adhere to standards (W3C)
- Open up data silos
Challenges of implementation

• Lack of awareness
• Lack of expertise / time / staff
• Difficulties in obtaining management buy-in
• Licencing constraints (permission needed from database providers to link)
• Potential loss of control of data
• Lack of agreement on standards
• Lack of tools / guidelines
Benefits of implementation

- Augment visibility and discoverability of library data
- Support interoperability
- Overcome linguistic barriers
- Acquire better understanding of linked data potential
- Enable cataloguing efficiency and innovation (e.g., workload reduction)
- Obtain authoritative position as data provider (to which other institutions will refer to)
Best practice

• Is LD the right technology for your scope?
• Design a detailed roadmap before acting
• Consider legal issues
• Training
• Adopt tools to support implementation
• Contact/collaborate with LD implementers
• Seek expert developers, if necessary
• URI syntax maintenance
• Reuse data /existing vocabularies, whenever possible
• Adopt entity-based approach to data
Recommendations

• Teach practitioners what linked data can achieve
• Familiarize yourself with LD
• Focus on goals, rather than technical matters
• Involve your institution/community of stakeholders
• Look at examples offered by successful projects
• Focus on data specific to your institution
• Consider needs of wider community (not just library community)
• Collaborate with local universities/institutions and benefit from their expertise – Collaboration is key!
Further research / directions

• Encourage open data movement at government level
• Case studies: Successful implementation examples
• Re-use vs creation of ontologies
• Licensing constraints
• Step-by-step implementation guidelines
• Improve communication between system providers/technicians and information professionals
• Collaboration towards design and adoption of a common model, to facilitate data integration
Conclusions

• Still far from the SW as envisaged by Berners-Lee, Hendler, and Lassila in 2001 – SW enabling better “understanding between humans and machines”

• No agreed-upon standards = risk of “LD silos”

• Need for spreading awareness and advocate for LOD with government / public bodies
Thank you!
References


• Berners-Lee, T., Linked Data: http://www.w3.org/DesignIssues/LinkedData.html


References


- The Linking Open Data cloud diagram: http://lod-cloud.net/