

# Sharing Library-Based Linked Data Practices and Use Cases

Semantic Web in Libraries '13  
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Semantic Web in Libraries (SWIB) is the conference that I have wanted to attend the most since I first encountered its program a couple of years ago, and found that it was filled with real library-based linked data and semantic web applications. Since then, the conference has provided me with the inspiration to think about possible implementation scenarios with linked data and semantic web technologies that would have a direct impact on the user services in my own institution. I was fortunate enough to attend the conference in 2013, held in Hamburg, Germany, from the 25<sup>th</sup> to the 27<sup>th</sup> of November (<http://swib.org/swib13/>), with the Bibliothek & Information International (BI-International)'s Travel Grant. The two and a half day conference exceeded my expectations and provided me with the opportunity to meet with librarians and developers who have in-depth knowledge and experience in linked data and semantic web works. In addition, numerous presenters shared program source codes that they had developed as open source in GitHub (<https://github.com/>) so that other libraries could freely use them to transform their data into linked data in a semantic web universe, and/or review and access available programs to enhance their library services.

Dorothea Salo's keynote speech<sup>1</sup> made this year's conference even more special to me, as a metadata librarian whose main responsibility is ensuring and maintaining the overall metadata quality that will be transformed into linked data. Her speech brought out the human aspect of linked data, and she challenged developers to make tools and systems that would have a direct impact on the actual library works and be used by other library people in addition to developers and programmers, i.e., instead of "*what you can do with linked data*", the question was "*what we can do with linked data?*" I would like to summarize my experience of the Semantic Web in Libraries 2013 conference in three categories as stated below.

## 1. Understanding Linked Data and Semantic Web

While there has been much hype in about linked data and the semantic web, there are not many tools and materials that can be used to teach and understand linked data. As Dorothea Salo stated in her keynote speech, while talk about linked data and the semantic web has generated excitement about the future of library data, it also has been a frustration to many, including librarians, students, and library science instructors; while understanding the concept and possible benefits of linked data and the semantic web is easy, it is not that easy to teach and work with linked data in real library environments.

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<sup>1</sup> Slides and notes of Dorothea Salo's keynote speech are available at <http://www.slideshare.net/cavlec/soylent-semantic-web-is-people-with-notes>

The way libraries organize and manage their resources has been record-based, not data-driven. For this very reason, library resources cannot easily be found in web portals, notably Google, as of now. In order to allow library resources to be found on the web and shared, both between libraries, as well as with a broader user group, we have to transform library records into data that can ultimately work with other webs of data. While most people understand the growing need for sharing library data outside of the library domain, the optimal method for transforming and sharing library data is not yet in place. In addition, the practice of creating linked data itself has been a big challenge to many people in the library, because there are not many tools that can be used by people who actually work in creating library data.

I attended a workshop called “Introduction to Linked Open Data” by Felix Ostrowski and Adrian Pohl, and had a wonderful hands-on experience with linked data and RDF for more than four and a half hours.<sup>2</sup> The session was designed for creating, publishing, and using linked data in such a way that all participants created triples in Etherpad (etherpad.org/), published them on the web, and then queried triples created by other workshop groups. As far as I can tell, this workshop was the first to put together all the components of linked data, including semantics and ontologies, in one session. I hope that any linked data workshops in the future will adapt, using the structure and contents of this particular workshop so that people can not only have an understanding of linked data, but also realize the importance of linked data to the library and its users.

## **2. Enhancing Library Service with Linked Data**

I had expected to see many presentations that discussed real use cases of linked data and semantic web technologies in libraries, and the conference provided me with many interesting presentations on semantic web based library applications. For example, Leipzig University, Saxon State, and University Library Dresden (SLUB)<sup>3</sup> shared how they manage their electronic resources using linked open data, Mannheim University Library shared how they use linked data in book purchasing,<sup>4</sup> and Stuttgart Media University used automatically created mappings between classification systems for bibliographic data,<sup>5</sup> which would greatly improve the discoverability of library resources. In addition, the Hasso Plattner Institute presented a topic, Cross-Lingual Semantic Mapping of Authority Files,<sup>6</sup> which discussed including names, places, and other entities, to provide better user services. However, the most impressive thing about these examples was that the linked data and semantic web technologies were already widely adapted and used in European libraries, not only in bibliographic control but also in collection development and acquisitions, by reusing library data, which also emphasized the importance of the metadata quality that these linked data and semantic web services are built upon.

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<sup>2</sup> [http://data.graphthinking.com/20131125\\_ostrowski-pohl\\_swib13-lod-workshop.pdf](http://data.graphthinking.com/20131125_ostrowski-pohl_swib13-lod-workshop.pdf)

<sup>3</sup> [http://www.slideshare.net/JensMittelbach/dmp-lightning-talk-swib13?from\\_search=4](http://www.slideshare.net/JensMittelbach/dmp-lightning-talk-swib13?from_search=4)

<sup>4</sup> <http://www.scivee.tv/node/61559>

<sup>5</sup> [http://swib.org/swib13/slides/pfeffer\\_swib13\\_121.pdf](http://swib.org/swib13/slides/pfeffer_swib13_121.pdf)

<sup>6</sup> <http://www.scivee.tv/node/61558>

International linked data and semantic web works were also updated in the conference. The OCLC has been a leader in publishing linked data since 2012, and currently, more than 300 million records are available as linked data using semantics from schema.org. Since there are many discussions on semantic web ontologies, Richard Wallis, Technology Evangelist at OCLC, stressed that using schema.org may not be the best way to exchange library data, but can be enough for sharing library data.<sup>7</sup> This was particularly interesting to me since our institution recently published the library's data as linked data using semantics from schema.org. Since there are not enough sets of semantics that work for library data, it will be a topic of discussion for many metadata and cataloging librarians. Wallis also mentioned OCLC's work on developing a FRBR 'Work' record that can be represented in URIs and will be available in WorldCat soon. I have been closely following the BibFrame (<http://bibframe.org/>) work, and was very curious about the BibFrame presentation. However, I was disappointed that there was not substantial progress in the BibFrame work shared in the conference.

### **3. Sharing Linked Data services as Open Source**

I would like to say that the main benefit of linked data and the semantic web is the re-use and re-purposing of available data, and I am pleasantly surprised that most of the presenters shared their projects in GitHub, so the scripts and codes can be re-used by anyone and any institution. I believe that this '*sharing*' can save us from redundant time and effort to develop largely similar semantic web applications and improve building standardized services and tools.

Linked open data and the semantic web are still a source of frustration and challenges for many librarians since there is no good tool for creating, sharing, and using linked data, nor are there systems and storages that work with them. I was happy to see that the SWIB13 acknowledged that frustration and presented the applications currently being used in the library to assure us that we have to move forward in the linked data and semantic web environment together, both librarians and developers. I look forward to seeing many institutions implement linked data and semantic web applications using scripts and codes available in GitHub in the near future.

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<sup>7</sup> [http://www.slideshare.net/rjw/linked-data-for-libraries-great-progress-but-what-is-the-benefit?from\\_search=11](http://www.slideshare.net/rjw/linked-data-for-libraries-great-progress-but-what-is-the-benefit?from_search=11)