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Linked data as a library data platform

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Linked data is a publication model for publishing structured data on the web. It was specifically designed with the web in mind as its target medium, so that it is considered the web-native data model. It serves as a means for achieving the semantic web vision. We argue that it can be an important part of the library vision as well.

Linked data knowledge technologies enable straightforward data integration via globally unique identifiers and self-describing data formats. The data are provided in a standardized manner through a single, easily accessible interface. The URI identification mechanism makes the entities contained in the data addressable, which in turn increases the possibility of their reuse. URI standardizes the manner in which the entities are referred.

Our aim is to prove that libraries can serve an important role of data producers in the linked data ecosystem. We demonstrate the application of linked data as a library data platform on selected databases from the National Technical Library of Czech Republic.

We begin with the process of choosing the set of accessible and machine-readable datasets consisting of the types commonly found in the library setting, such as bibliographic and authority data. The following step lies in choosing the way of describing the datasets with domain ontologies and creating mapping from the selected datasets.

According to the transformation styles and rules, the datasets are then converted to RDF data model. In this phase we employ techniques such as entity recognition or identity resolution based on partial identifiers. Once the entities are defined, they are interconnected inside our dataset and enriched with links to external data.

In the final stage, the data created are stored in an RDF triple store and a lightweight API for accessing the data is built. We mention the design of URI patterns and further options for application access and front-end user interfaces. Once the prototype of linked data platform is created we move on to delve into the benefits it offers for library services.

Since the library's presence is increasingly shifting towards the web, libraries have to adapt to fit in this broader context. The adoption of linked data as a data platform opens up for a wide spectrum of possible applications and reuse. Linked data allows for a plethora of serializations suited for different purposes. This makes possible the distribution of library data by many other channels than just OPACs. The data are crawlable by search engines which may by implication increase the number of incoming links to the library.

Libraries, on the other hand, can translate their vast experience in managing document collections and providing information services to the new environments. In this way, the library's brand of quality and trustworthiness may be associated with the linked data they produce.

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