The next evolution
of library metadata

linked data

Linked data frees the knowledge in library collections
and connects it to the knowledge streams that inform
our lives—on the web, through smart devices, and
using technologies like artificial intelligence.

OCLC®

A strategy built on expertise, data, infrastructure, and tools

Evolving library data into linked data frees the knowledge in library collections and connects it to knowledge streams that inform our everyday lives. The move to linked data facilitates greater contextualization of information, makes resources more discoverable, provides opportunities to improve workflows, and supports easier integration of library data into other systems and services.

A new way to advance libraries

As the volume and variety of online information—both valuable and suspect—increases, good metadata is more important than ever. Our communities and institutions need people with the knowledge and expertise to connect library resources to the wider knowledge ecosystem.

Linked data is a way to organize and connect data on the web so it can be easily and programmatically used by various systems and services. Linked data breaks up the valuable, library-focused data locked in MARC records and other fixed data formats and publishes it using uniform resource identifiers (URIs). With linked data, libraries can pave new paths—both within and outside traditional library platforms—that lead users to unexpected discoveries. And it can bring more people to the unique, important materials that are often available only in libraries.

At OCLC, we're building the infrastructure, tools, and expertise to support libraries in this metadata evolution. Our approach to collaborative management of library data at scale has proven successful for 50+ years. We have researched, developed, and standardized many current best practices. And we support the profession's ethics and values while advancing new technologies and services.

Libraries benefit from linked data because it …

Connects and scales library knowledge. Using linked data, libraries can showcase their value by connecting local resources to wider information streams.

Fuels serendipitous discovery. Linked data adds context to the description process and creates connections that can lead to unexpected discovery experiences.

Empowers library experts to focus on high-value knowledge work. The move to linked data expands librarians' role as knowledge workers, enhancing discovery while embedding the library more deeply on campus and in the community.
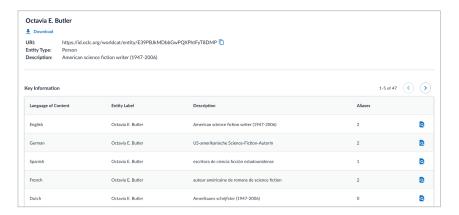
Equips libraries to actively contribute to the global information ecosystem. Linked data harmonizes library metadata with other data formats and services. It makes it consumable by emerging technologies and, ultimately, available in more places.

Some of these benefits will require time. But some can be realized today, connecting linked data to the great cataloging work that libraries have been doing for decades.

Expanding the reach of libraries online

How does linked data work?

Octavia E. Butler

⬇ Download

URI: https://id.oclc.org/worldcat/entity/E39PBJkMDbbGwPQXPhtFyT8DMP 📋
Entity Type: Person
Description: American science fiction writer (1947-2006)

Key Information   1-5 of 47 ‹ ›

Language of Content	Entity Label	Description	Aliases	
English	Octavia E. Butler	American science fiction writer (1947-2006)	2	🔍
German	Octavia E. Butler	US-amerikanische Science-Fiction-Autorin	2	🔍
Spanish	Octavia E. Butler	escritora de ciencia ficción estadounidense	1	🔍
French	Octavia E. Butler	auteur américaine de romans de science fiction	2	🔍
Dutch	Octavia E. Butler	Amerikaans schrijfster (1947-2006)	0	🔍

Library metadata today is largely "walled up" within industry-specific data formats such as MARC. Linked data takes that valuable information and publishes it on the web as descriptions of things and connections between them. Those things are commonly called "entities," and can be any object, person, date, concept, place, etc. Once URIs are created for those entities, they can be connected by informative, contextual relationships that improve searching, research, and analysis.

For example, a line of code on a web page might state:

[Octavia E. Butler] <authored> [The Parable of the Sower]

When computer programs find that information they'll "know" the relationship between those two entities. **For example, another site might use linked data about where famous people are born, and could publish:**

[Pasadena] <is the birthplace of> [Octavia E. Butler]

A third application might pull data from many sites in order to display interesting travel-related information. So, with linked data behind the scenes, people planning trips to Pasadena could connect to library links related to authors from that city.

And when billions of pieces of linked data are published all over the web, we can build applications that utilize formerly disconnected information in powerful new ways.

GLOSSARY

Linked data describes a set of web-based formatting rules for defining data "entities" (people, places, events, organizations, etc.) and the connections between them.

Entities are any named "things" that can be referenced. This includes people, published works, places. Each entity has its own URI, which is published online along with various statements connecting it to other entities.

Uniform Resource Identifiers (URIs) are locations that address resources both on and off the web. URLs (Uniform Resource Locators) are a type of URI used to locate web pages, images, etc. For linked data, URIs represent unique data elements.

Triples describe relationships between things using a format of: Subject | Predicate | Object. This structure expresses connections in a clear, structured way, like "Paris | is the capital of | France."

A **knowledge graph** is a network of linked data connections between entities that describe related resources in a helpful way based on context. For example, showing the works, topics, dates, publishers, etc., associated with a specific author.

OCLC has been at the forefront of linked data research and development **and we'll continue to deliver**.

Our long-term strategy focuses on expertise, data, infrastructure,and tools and takes libraries of all sizes and types into consideration.

We're harnessing our collective expertise, bringing together libraries, other community partners, and OCLC teams so that library-focused metadata can influence and enhance broader knowledge ecosystems.

We're protecting and enhancing library data at scale, publishing existing library information as linked data in ways that immediately support better description and discovery of library resources across the web.

We're creating the technology and systems necessary for libraries to succeed at linked data. By building on our scalable, stable foundation, we're evolving WorldCat® as the sustainable infrastructure to facilitate library linked data integration and interoperability at a global scale.

We're integrating linked data into library workflows today, while planning for tomorrow. We're creating a set of sophisticated tools to add valuable linked data elements to existing records and workflows while maintaining parallel MARC services and applications for the foreseeable future.

Libraries can be confident that the same care and professional ethics that have guided our work for decades will continue in this area. And library leaders and workers know that as a library-focused organization, we have their best interests—and those of the people they serve—at the heart of these endeavors.

"… collaboration and innovation …"

"Linked data for libraries requires a stable and scalable infrastructure. We have that with WorldCat. This foundation enables linked data integration and interoperability at scale. And our focus with this effort, like everything we do, is based on collaboration and innovation—a model proven over 50 years."

Mary Sauer-Games
Vice President, Global Product Management, OCLC

Visit oc.lc/linkeddata.

Sign up for announcements, updates, webinar registration, and opportunities to connect with OCLC staff and library colleagues around topics and projects related to linked data.

Because what is known must be shared.®

 OCLC®