



# Linked Open Data Library Ecosystem Powered by AI

**Yisrael Kuchar, Senior Director of Product Management**  
**Itai Veltzman, Director of Product Management**

# Agenda



What is Linked Open Data for libraries?

---



Metadata flow in a future ecosystem

---



Ex Libris roadmap

- What already exists
  - What is planned
- 



Focus group for Production

---



Primo and Discovery

---

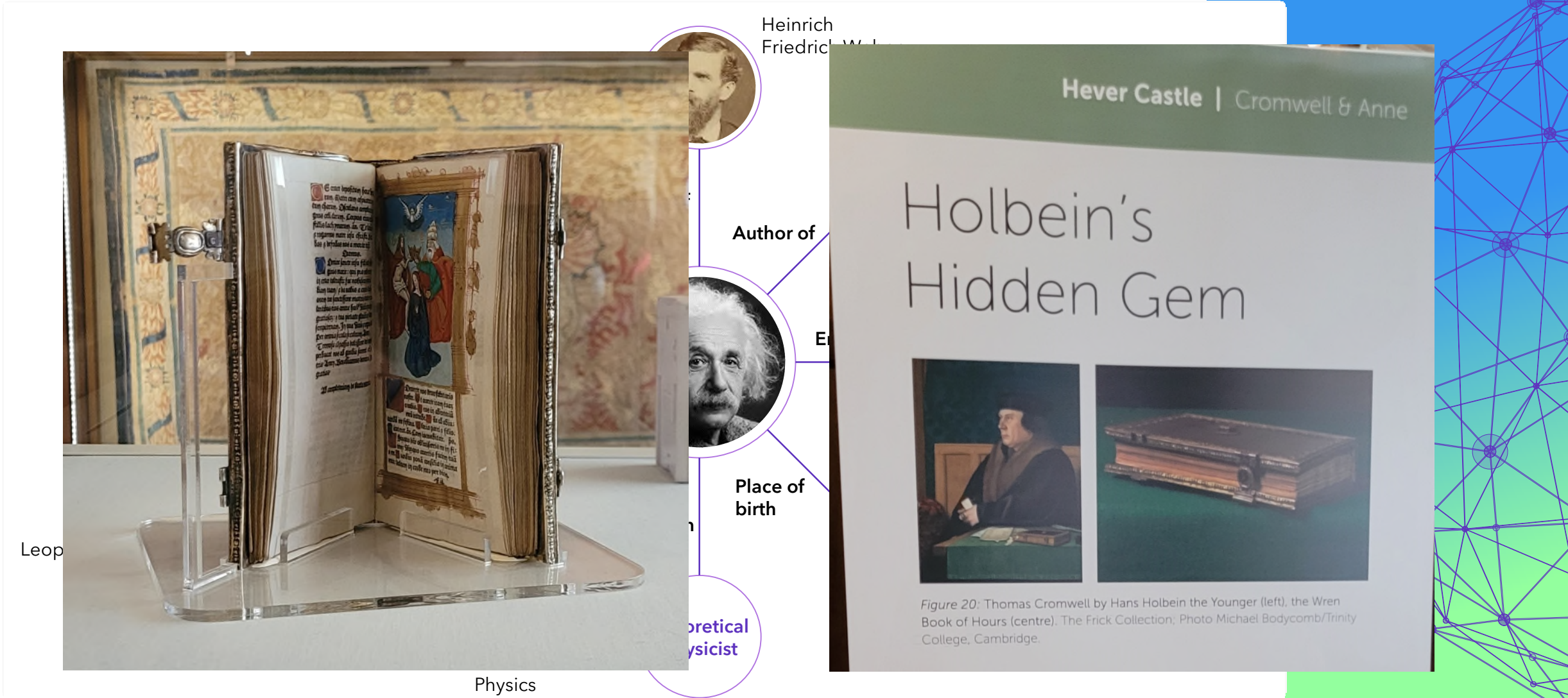


The future of Linked Data and AI together

# We want a global metadata ecosystem that enables users to find what they need and access it in the best way

## The library vision

# Connecting Entities for a Richer Discovery Experience



# What Are the Benefits of Linked Open Data?



**Efficient  
Cataloging**

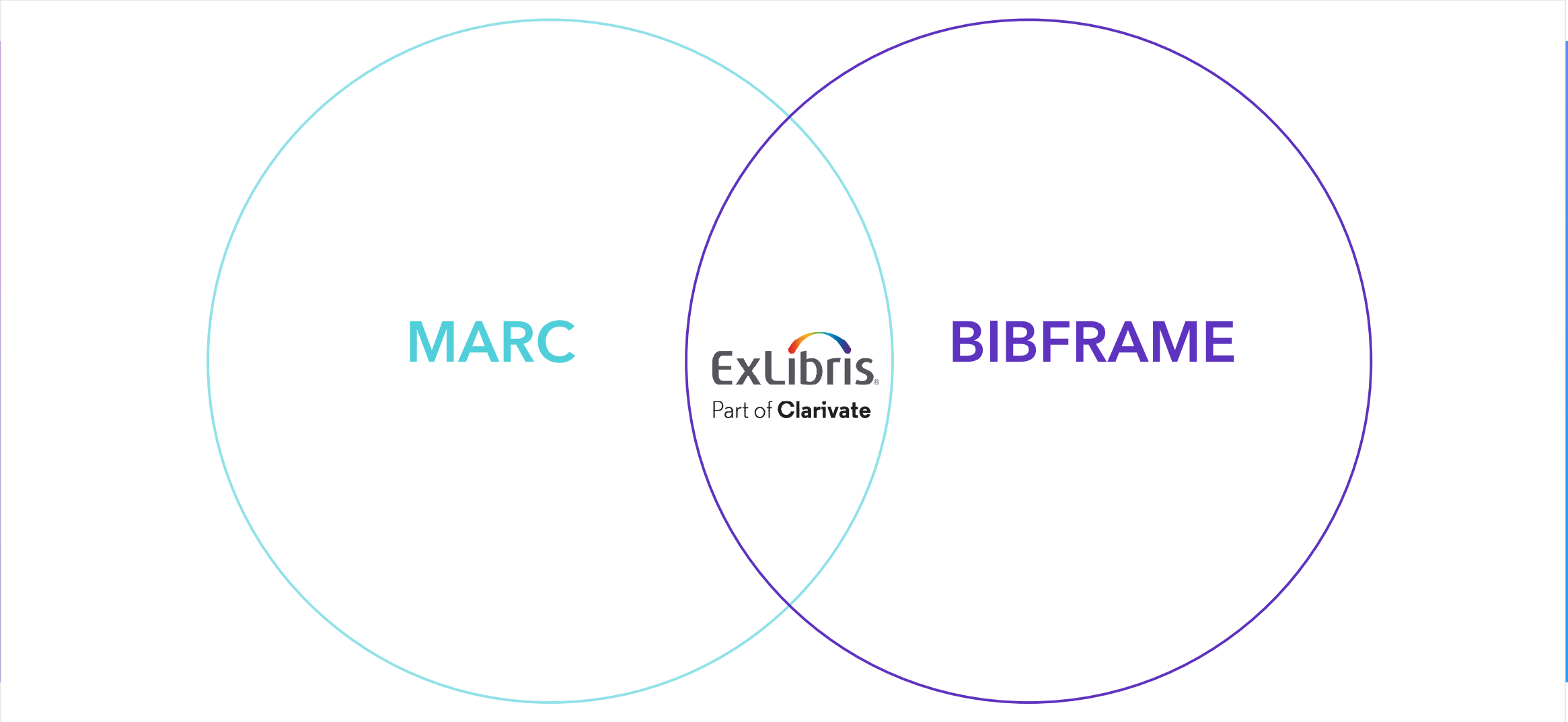


**Better  
Discoverability**



**Global  
Interoperability**

# MARC and Linked Open Data



# What Already Exists

## Ecosystem

APIs and endpoints

Publish and export to  
BIBFRAME



## Management

URI  
enrichment

Alma Refine

Alma

## Discovery

Record enrichment

Recommendations

Search Engine Optimization

Primo

# Alma Refine - MARC Enrichment

Allows enrichment of MARC records with  
Linked Data URIs from various sources

WikiData

Getty

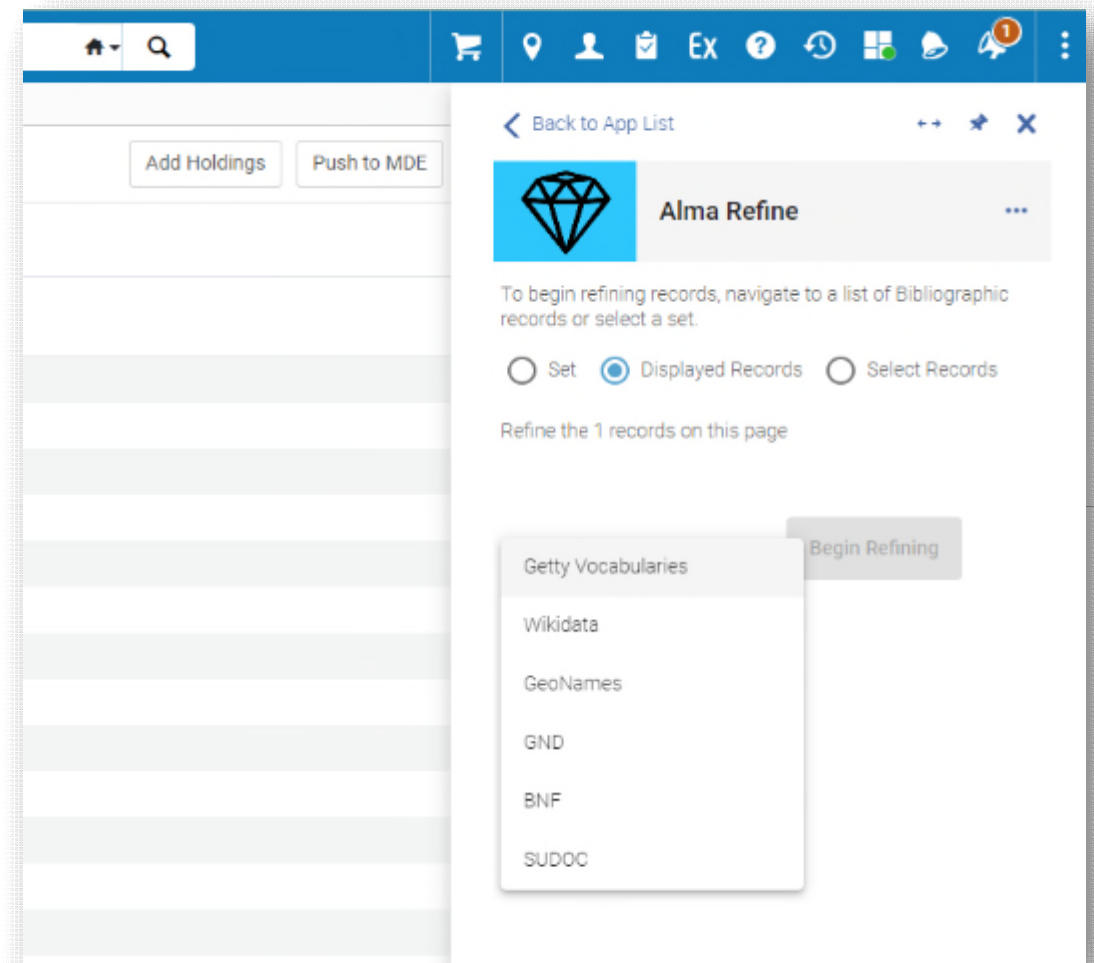
GND

BNF

SUDOC

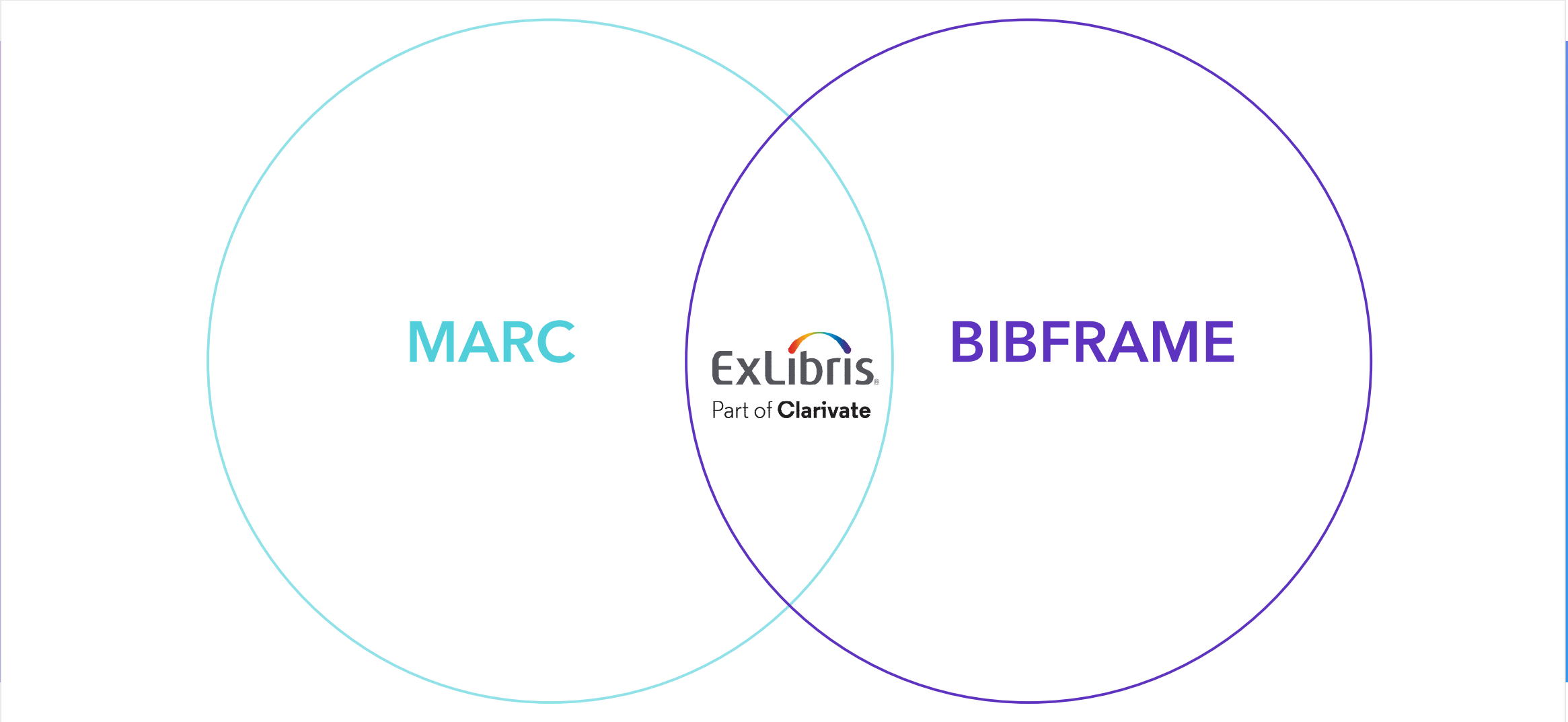
GeoNames

**ORCID was added to vocabularies  
in August 2023 release**





# Moving to Full Support of Linked Open Data



# Ex Libris Linked Open Data Focus Group



Princeton

Harvard

*Working with the community, for the community*

# What We Want to Achieve with Our Community

## Management



- Infrastructure for global connectivity
- Curated richness and efficient cataloging
- Shift focus to unique materials

## Discovery



- Improved Discovery experience
- Simpler and quicker research discovery flows
- Easy navigation to related information

# Focus Group Goal 2024: End-to-End Workflow



# What it Will Look Like - from Sinopia, via Alma to Primo

The image displays three overlapping screenshots of library catalog interfaces, illustrating the transition from Sinopia to Alma to Primo.

- Sinopia (Left):** Shows a "Monograph Instance (BIBFRAME)" for "Harry Potter and the Chamber of Secrets". The interface includes a navigation sidebar with sections like "Title Information", "Statement of Responsibility", "Edition Statement", "Transcribed Provider Statement", "Publication, Distribution, Manufacture, Production", "Copyright Date", and "Series Statement". A search bar at the top contains "harry potter".
- Alma (Middle):** Shows the "Instance View" for the same title. The interface includes a search bar, "Open Metadata Editor", "Customer Parameters", and "Monitor Jobs". The main content area displays the instance details, including the title "Harry Potter and the Chamber of Secrets" and the publication statement "New York, NY: Arthur A. Levine Books; 2007".
- Primo (Right):** Shows the "Instance View" for the same title. The interface includes a search bar, "Open Metadata Editor", "Customer Parameters", and "Monitor Jobs". The main content area displays the instance details, including the title "Harry Potter and the Deathly Hallows, Part 1" and the publication statement "New York, NY: Warner Home Video (Firm); 2011".

Demo by Jim Hahn,  
Head of Metadata Research at the University of Pennsylvania Libraries



# Sinopia RDF to Alma

Jim Hahn

[jimhahn@upenn.edu](mailto:jimhahn@upenn.edu)



Penn  
Libraries

# Looking to the Future: Linked Open Data Entities

## Opportunities

### Connect to data pool

Integrating with open large databases directly

### Accurate linking

Using URI/IRI (Resource Identifier) base linking to an entity

### Diverse information

Displaying diverse information from multiple systems to the users

## Challenges

### Distributed data

Data is distributed between multiple systems

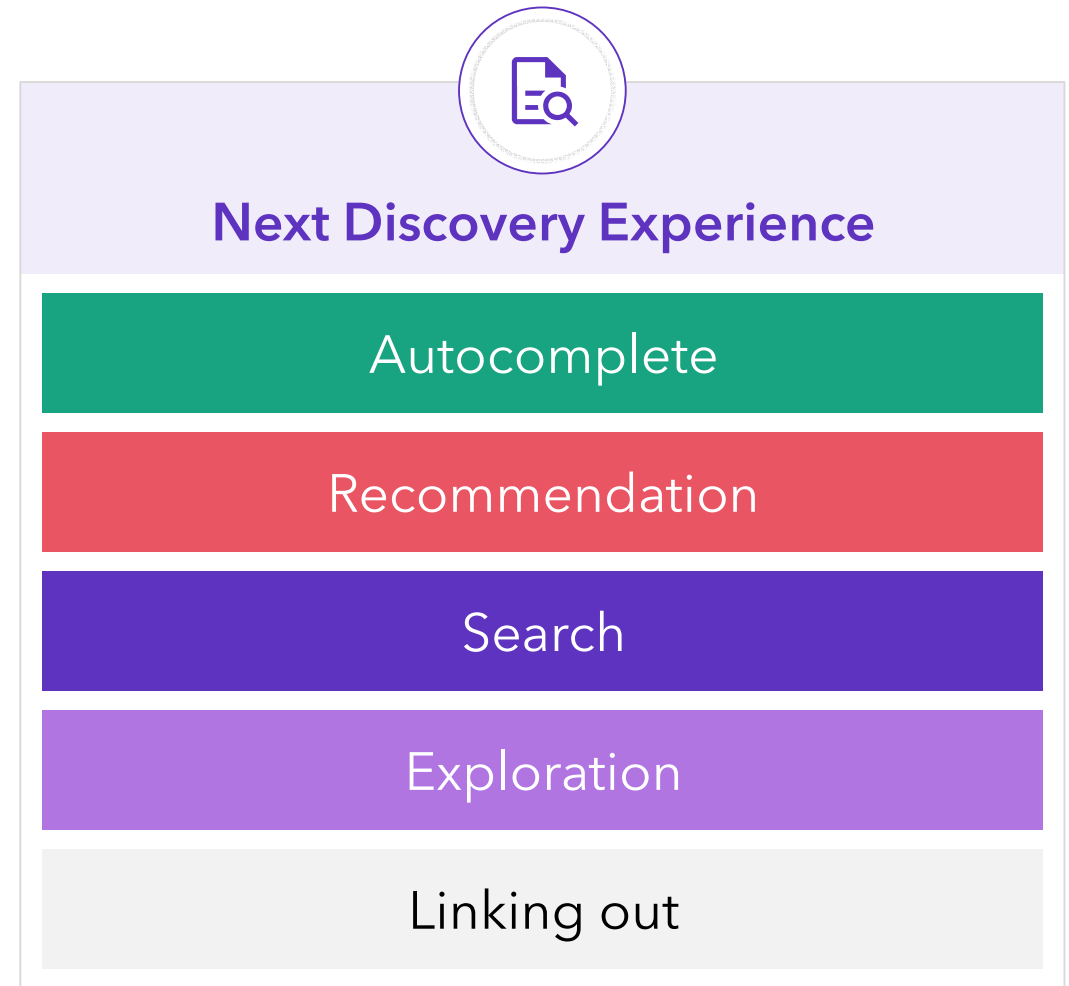
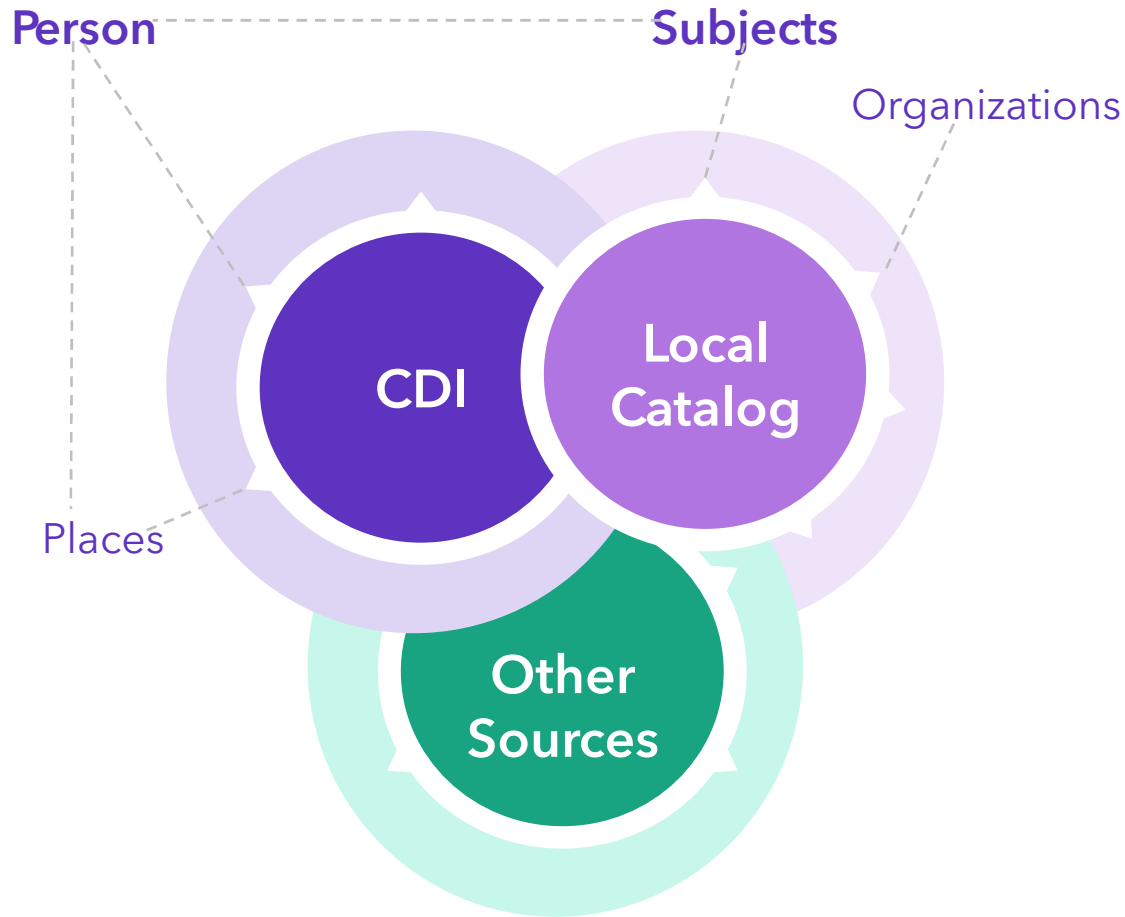
### Human readability

A record may not even contain any human-readable creator/subject information, just URIs

### Remote data

How can remote information be used efficiently in searching and cataloging

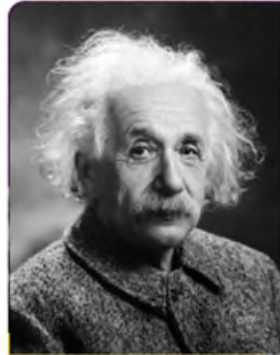
# New Linked Data Network - Connect the dots for a richer discovery experience



Providing a Linked Data experience to all libraries, regardless of the record format



# How will the Next Discovery Experience leverage a person entity to reach its triplets?



## Albert Einstein, 1879–1955 Q Person Information



German-born theoretical physicist; developer of the theory of relativity

Albert Einstein was a German-born theoretical physicist, widely acknowledged to be one of the greatest physicists of all time. Einstein is known for developing the theory of relativity, but he also made important contributions to the development of the theory of quantum mechanics. Relativity and quantum mechanics are together the two pillars of modern physics. His mass–energy equivalence formula  $E = mc^2$ , which arises from relativity theory, has been dubbed "the world's most famous equation". His work is also known for its influence on the philosophy of science. He received the 1921 Nobel Prize in Physics "for his services to theoretical physics, and especially for his discovery of the law of the photoelectric effect", a pivotal step in the development of quantum theory. His intellectual achievements and originality resulted in "Einstein" becoming synonymous with "genius".

|               |   |
|---------------|---|
| Born          | March 14, 1879, Ulm, Germany  |
| Died          | April 18, 1955, Princeton, New Jersey, United States  |
| Employer      | University of Bern, Swiss Federal Institute of Intellectual Property, University of Zurich, German University in Prague, ETH Zürich, Kaiser Wilhelm Society, Princeton University |
| Occupation    | theoretical physicist, philosopher of science, inventor, science writer, pedagogue  |
| Field of work | theoretical physics   |

# Person Entity - Components

## Person Entity Details

Storing all the persons and their relevant details

## Search

Person and its relevant details available for search

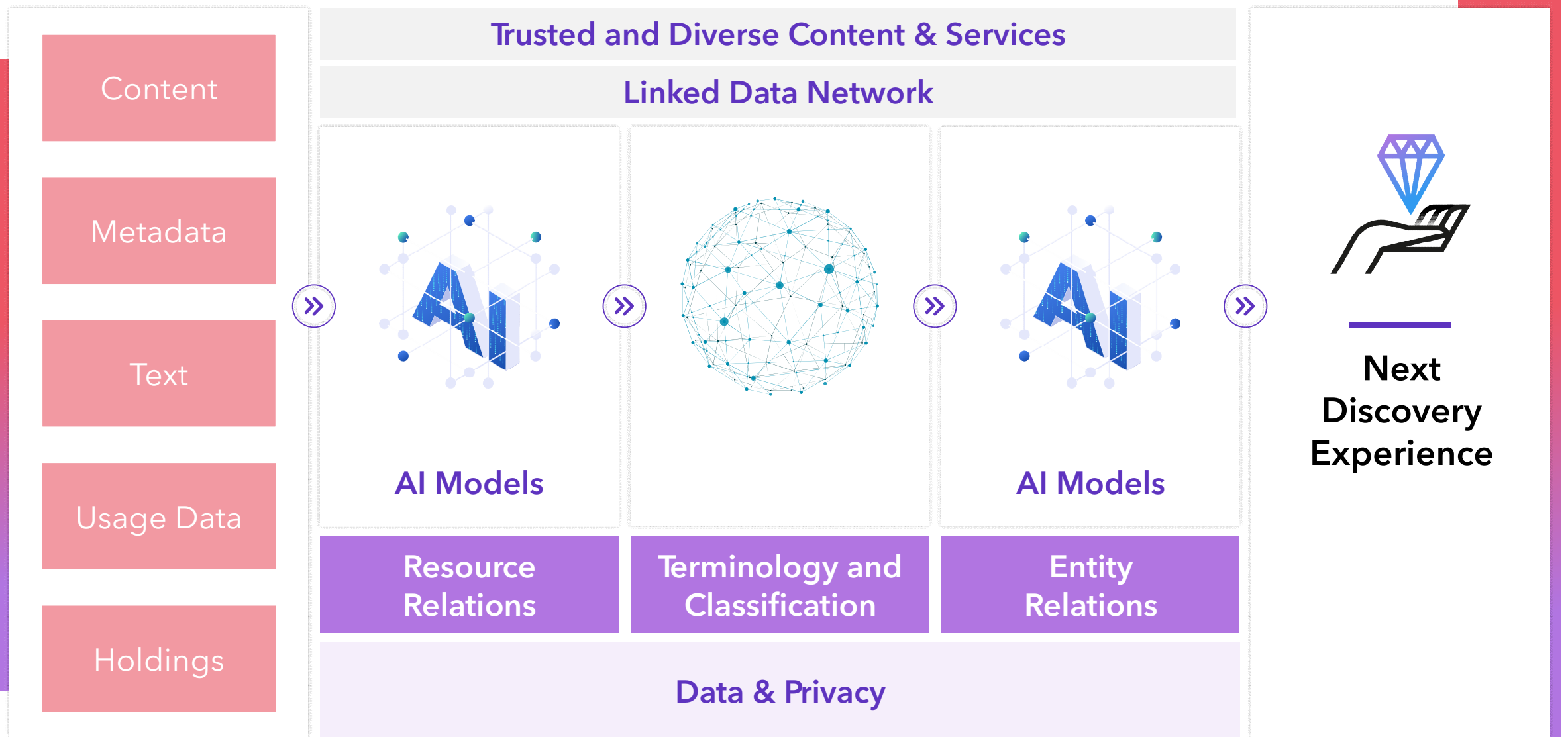
## Autocomplete

New dedicated autocomplete, which includes the info we need for search and display

## Relations

Creating relations between entities, like:  
person to title  
person to person

# Thoughts on the Future of Linked Open Data and AI Together



# Summary



Libraries are breaking out of their walls and boundaries



The library community is designing its future



Ex Libris is working with the community towards a linked future



There is lots we can do already!

Want to hear more? Talk to us!



[Yisrael.Kuchar@clarivate.com](mailto:Yisrael.Kuchar@clarivate.com)



[Itai.Veltzman@clarivate.com](mailto:Itai.Veltzman@clarivate.com)

ExLibris®  
Part of Clarivate

IGOLU  
International Group of Ex Libris Users

Thank You!

© 2023 Clarivate

Clarivate and its logo, as well as all other trademarks used herein are trademarks of their respective owners and used under license.