

RomanOpenData.eu

An OBDA-based platform promoting Open Science

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At some point in life mathematical logic turned me into a computer scientist. Nowadays I'm a researcher at the SIRIS Lab, working in the areas of:

- logic-based knowledge representation
- modal and description logics
- conceptual and data modelling, and
- ontology-based data management

I studied Philosophy in Milano and did my master's thesis on modal logic-based representations of first order quantification. In year 2006, I finished my PhD dissertation @UNIMIB proposing a knowledge-based system for chemical compound formulations. I have been a postdoc for a while, then I moved to the KRDB Research Centre @FUB. I joined the SIRIS Lab in Barcelona in 2014.

international and interdisciplinary, with seven different nationalities and PhDs in different fields, from archeology to astrophysics, philosophy and computer science.



CELENEC



**Barcelona
Supercomputing
Center**

Centro Nacional de Supercomputación



Production and Distribution of Food
during the Roman Empire: Economic
and Political Dynamics

SIRIS

INTERNATIONAL

SCIENTIFIC



complexity lab barcelona

“Open Science represents **a new approach to the scientific process based on cooperative work** and new ways of **diffusing knowledge** by using digital technologies and new collaborative tools [...] shifting from the standard practices of publishing research results in scientific publications towards **sharing and using all available knowledge** at an earlier stage in the research process”

Open **Innovation**
Open **Science**
Open to the **World**



“I’m an historian of the Roman Market Economy. I’m looking for the full transcription of inscriptions carried by amphoras that have been produced in the Guadalquivir area (Spain) and that have been found in the region of the Adrian’s Wall in the United Kingdom.

I would also like to know a few specific attributes of the amphoras themselves, such as their amphoric types and, possibly, their volumes.”

Information need



inscriptions



amphoric types



geo-located places

Information need



To have a deep **understanding of the datasets**.

To **create the proper queries** that extract all information about each type of entity from each dataset.

To **merge the answers returned** from each dataset, possibly filtering out undesired parts of the answers (e.g., amphoras that were not produced in Spain).



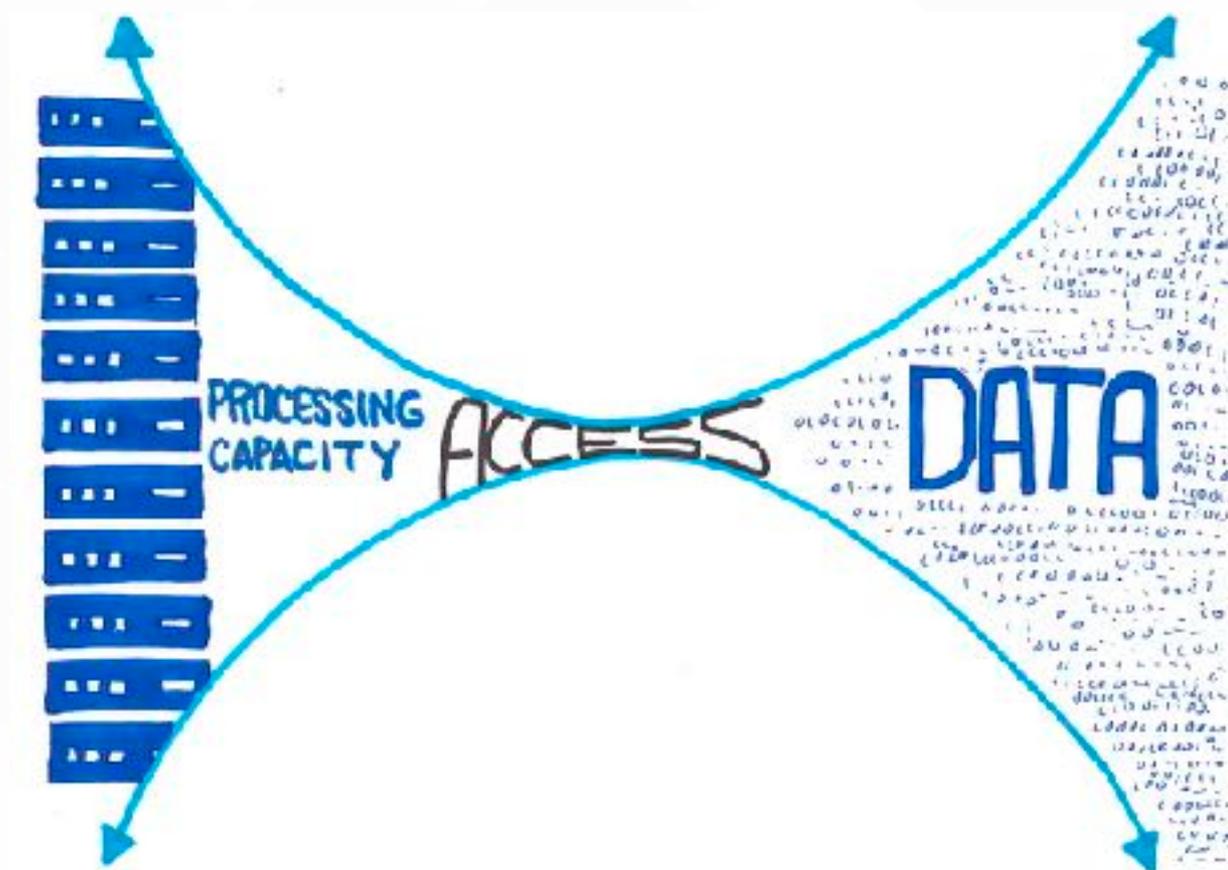
inscriptions

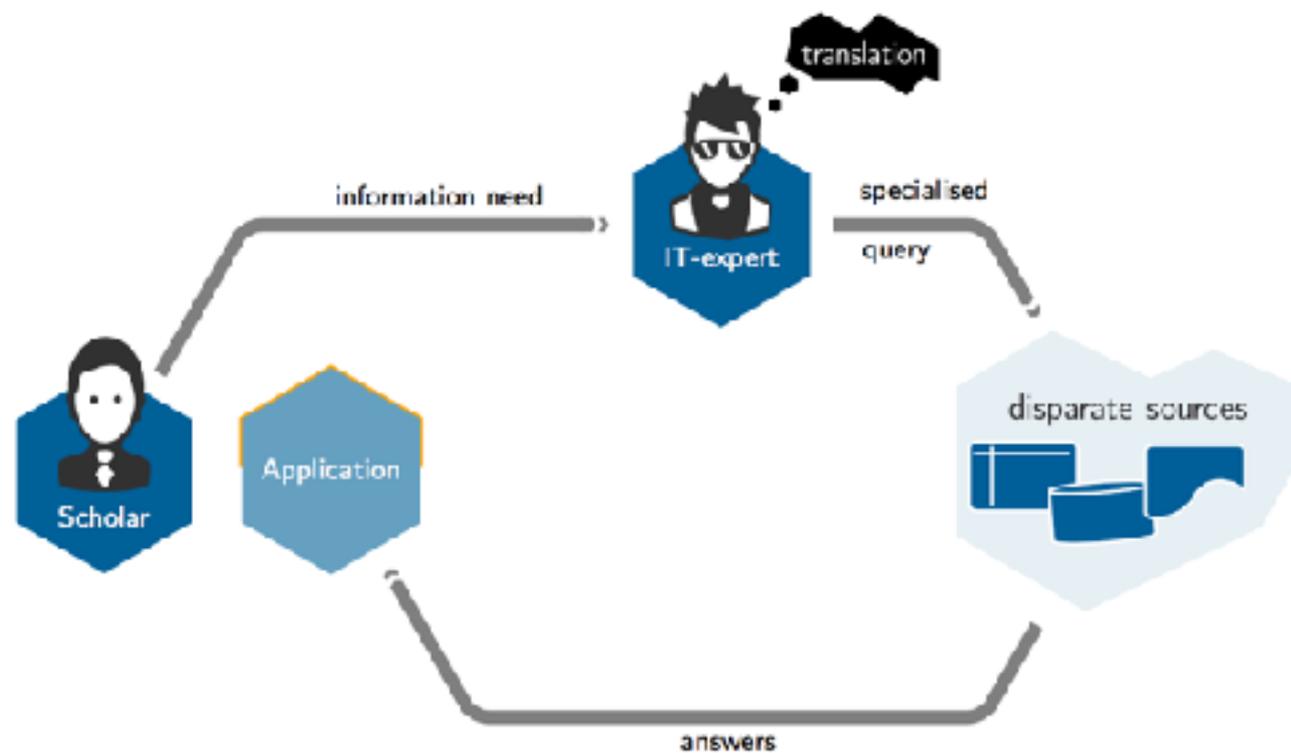


amphoric types



geo-located places





RomanOpenData provides end-users with:

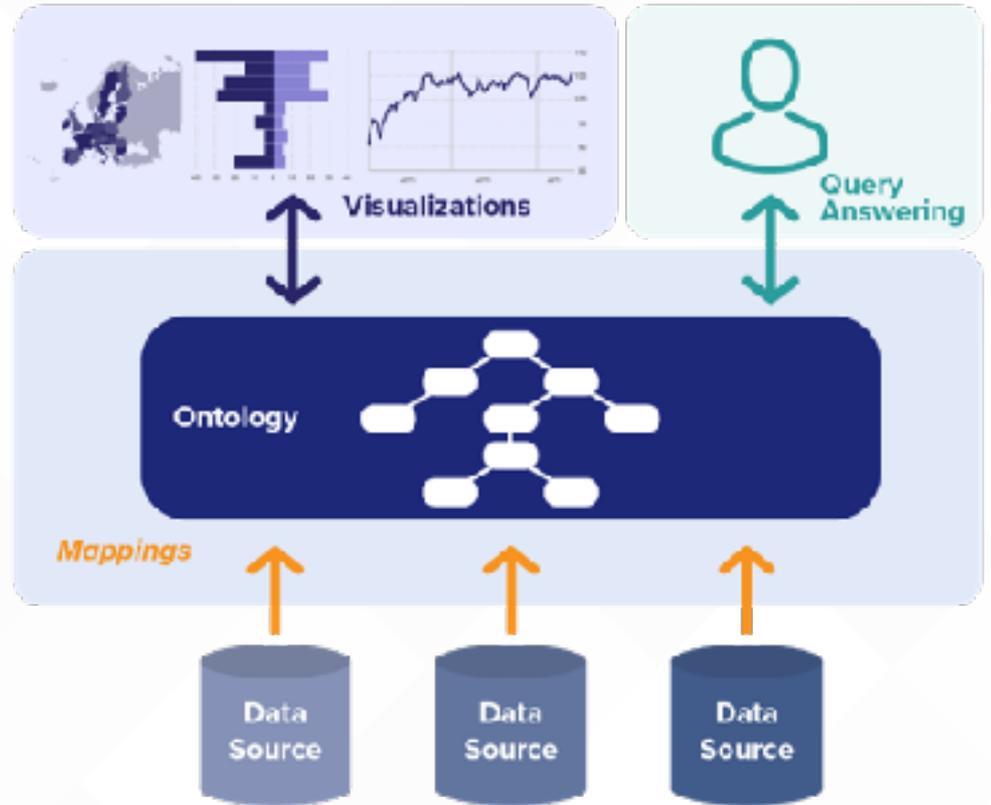
- a running technology for accessing data in a way that is conceptually sound with the **experts domain knowledge**.
- a **good understanding of the data**, that are this way ready to acquire and be complemented with new data from different sources.
- a way to rapidly formulate **intuitive queries** using the ontology (which provides a familiar vocabulary and conceptualisations), and not the data sources.

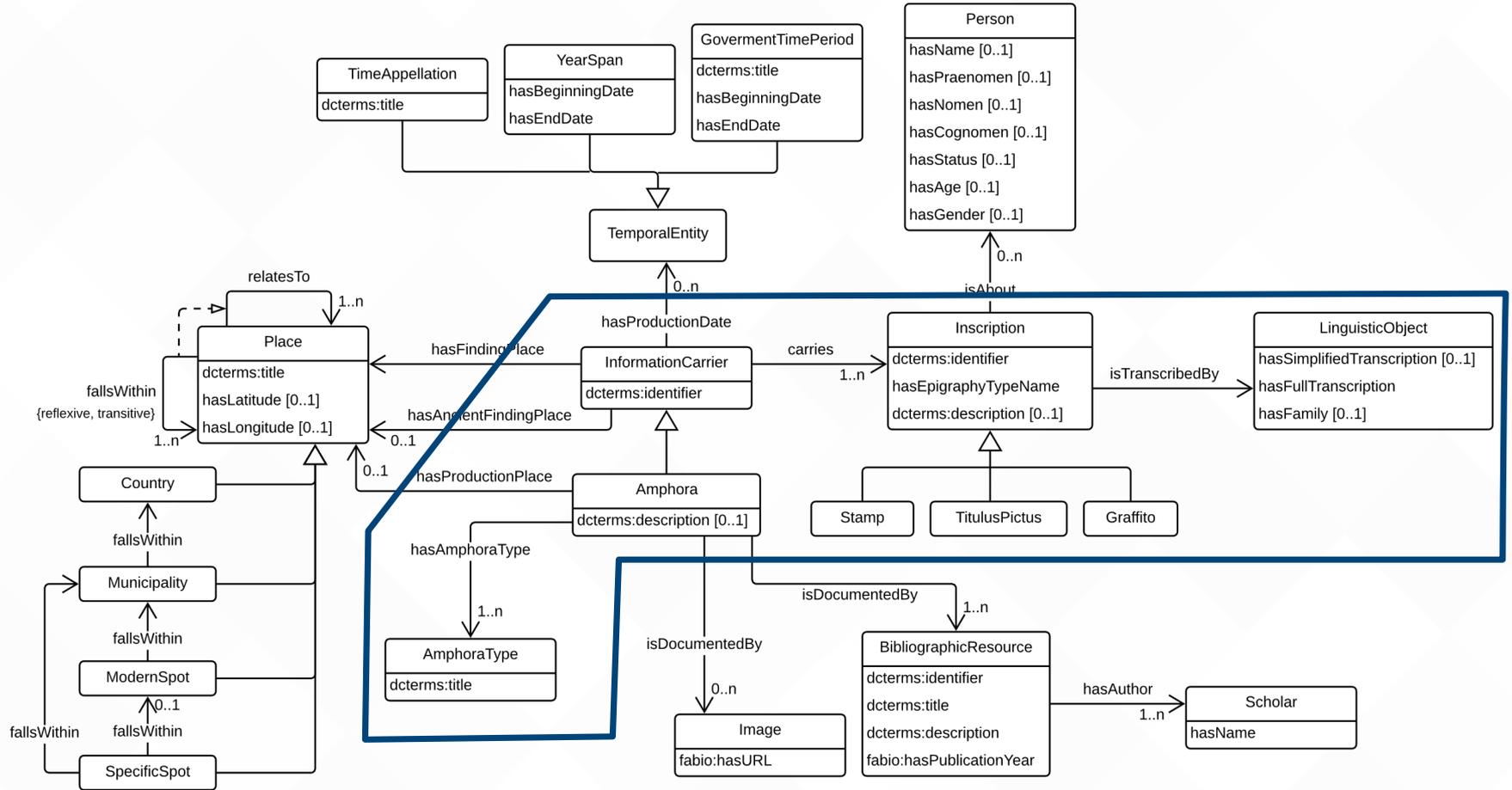


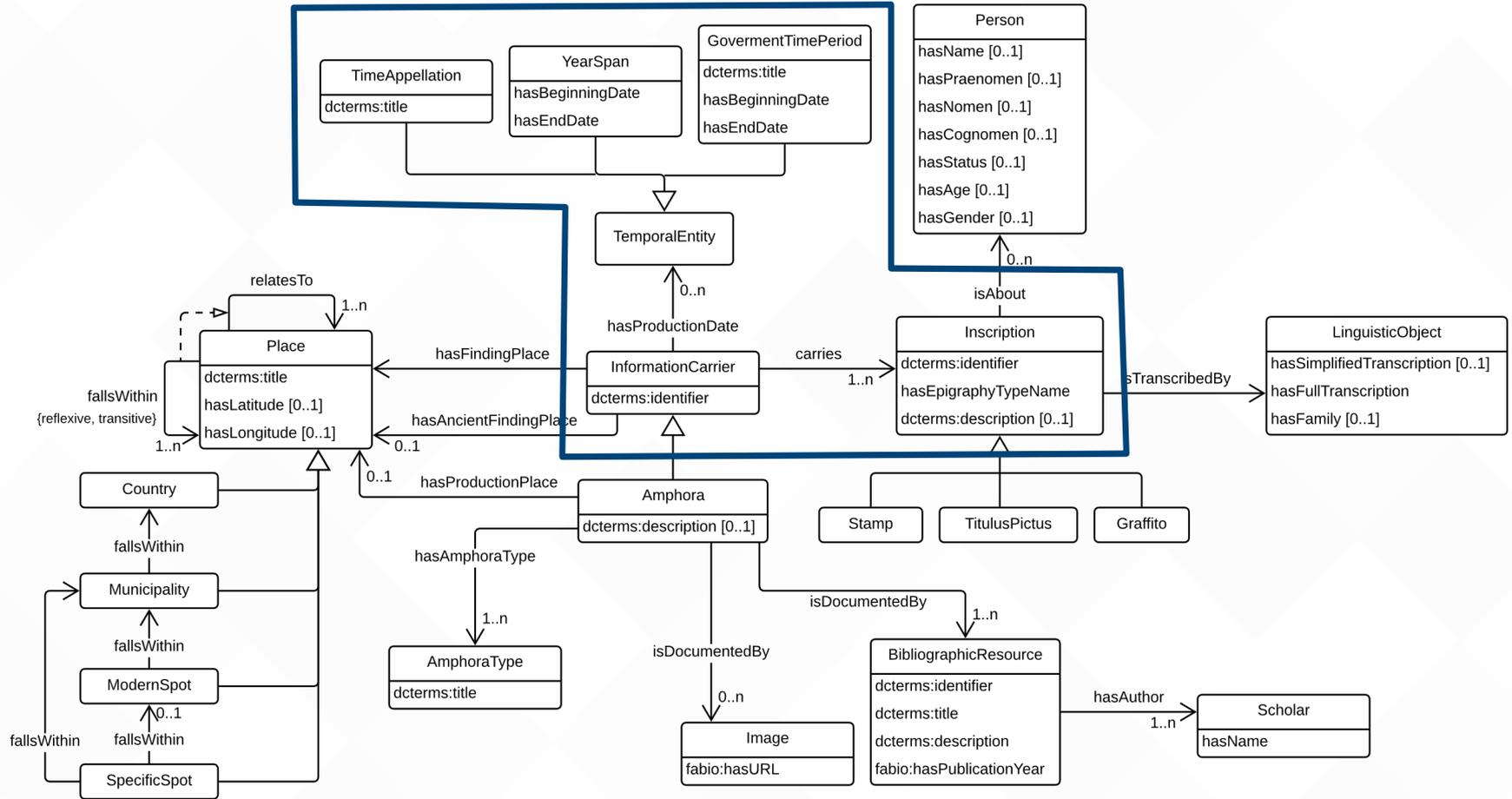
Accepts as input the intuitive queries posed by the users over the **ontology**. **Combines and filters** the extracted data to provide to the users the answers to their requests.

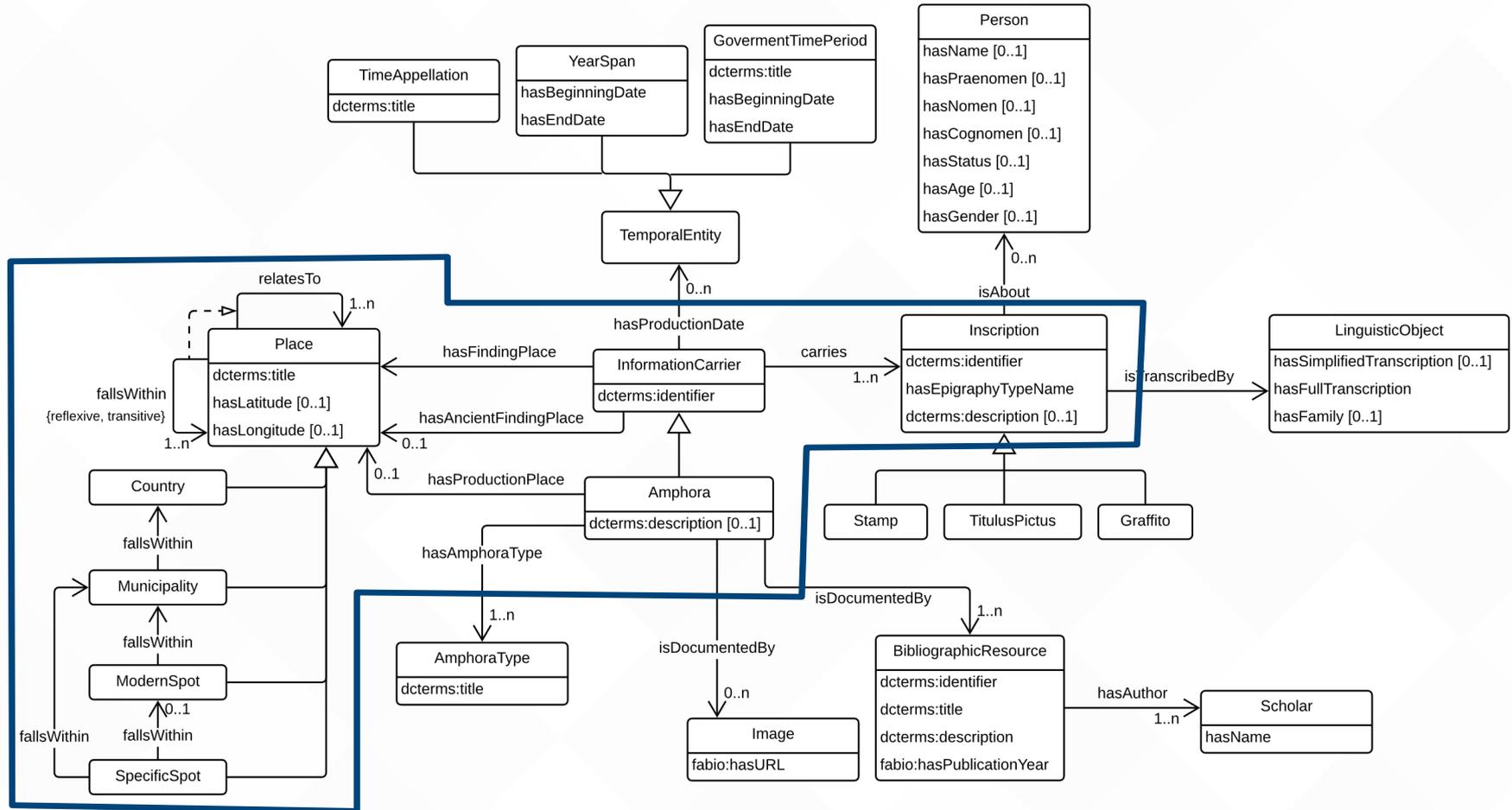
Exploits the **domain knowledge** to enrich the extracted answers.

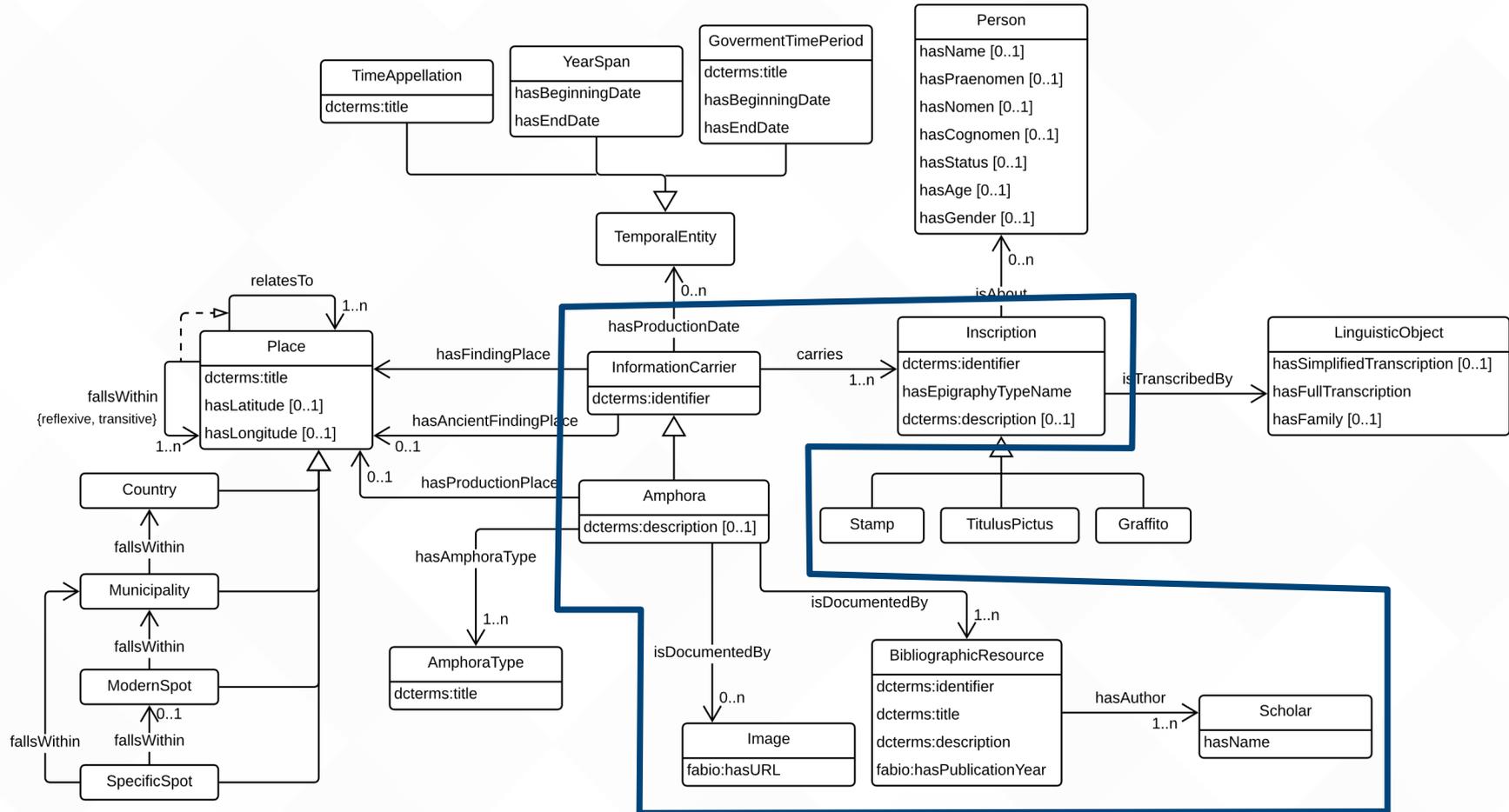
Deals with the **variety and complexity of the data sources**, extracting from them the necessary data.













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I would also like to know a few specific attributes of the amphoras themselves, such as their **amphoric types** and, possibly, their usual **capacity**.”



Scientific results in OBDA clearly show that *data access*, and *data integration* from distributed heterogeneous sources, are tasks that nowadays can be also performed by **scholars having little background in computer science**.

They offer new **ways of querying large amount of data and interact with them** at a conceptual level, while **sharing an explicit and unambiguous representation of the data** and of the **expert knowledge** in place...

Something that was simply impossible to imagine just a couple of decades ago ;-)

Questions?

