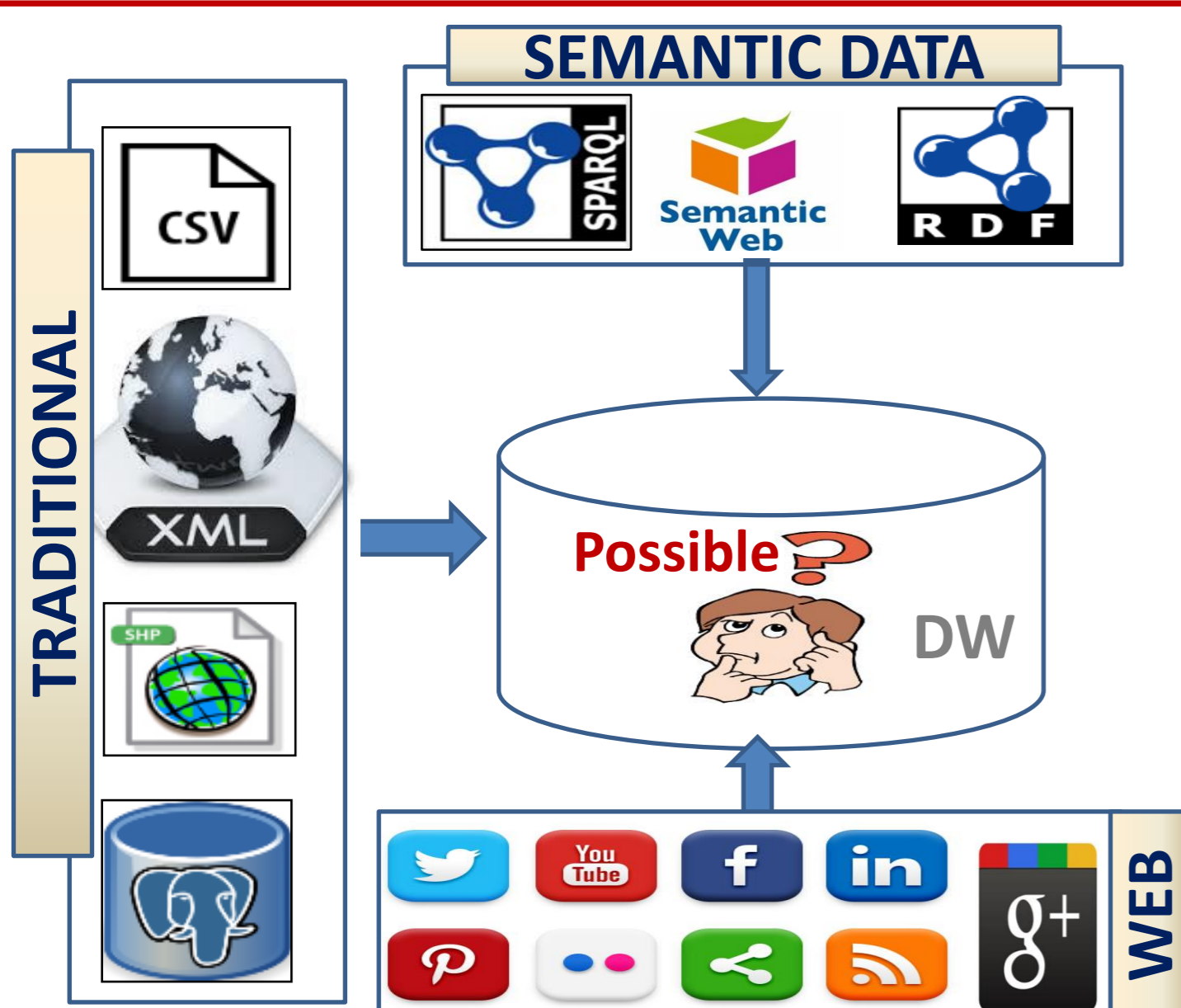


Motivation



Research Gap

Limitations of existing Data Integration Tools:

- ✓ Do not support **semantic Data**
- ✓ Entirely **schema dependent**
- ✓ Do not consider **semantic issues** in integration
- ✓ Do not derive new information by **inferencing**

Hypothesis
Semantic Integration can integrate heterogeneous sources

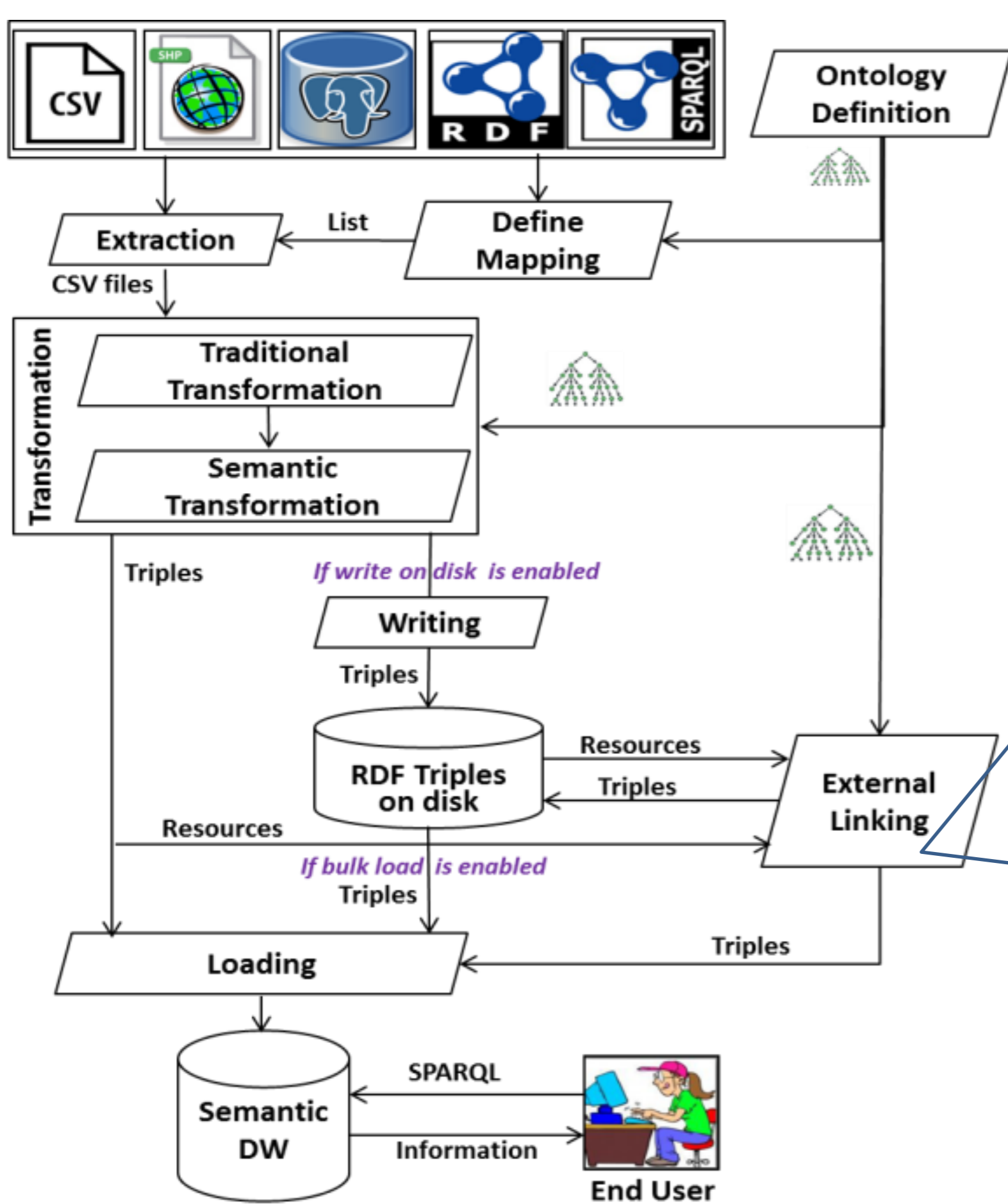


Objectives

Build a Semantic Integration Framework that

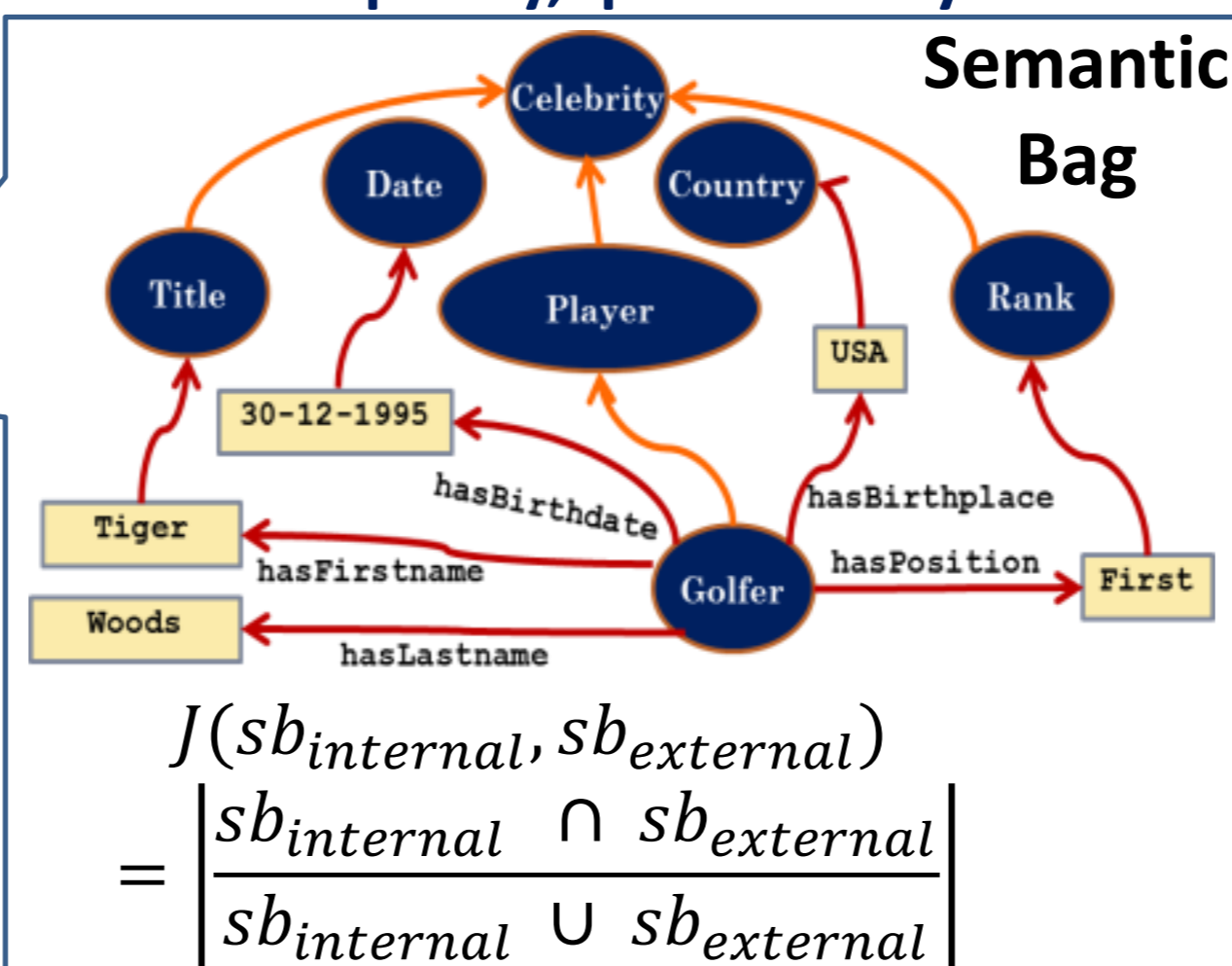
- ✓ supports **semantic data** and **traditional data**
- ✓ allows **semantic integration**
- ✓ links **resources externally and internally**
- ✓ allows **source discovery, external semantic data, automatic mapping**
- ✓ builds **semantic DW**

System Architecture

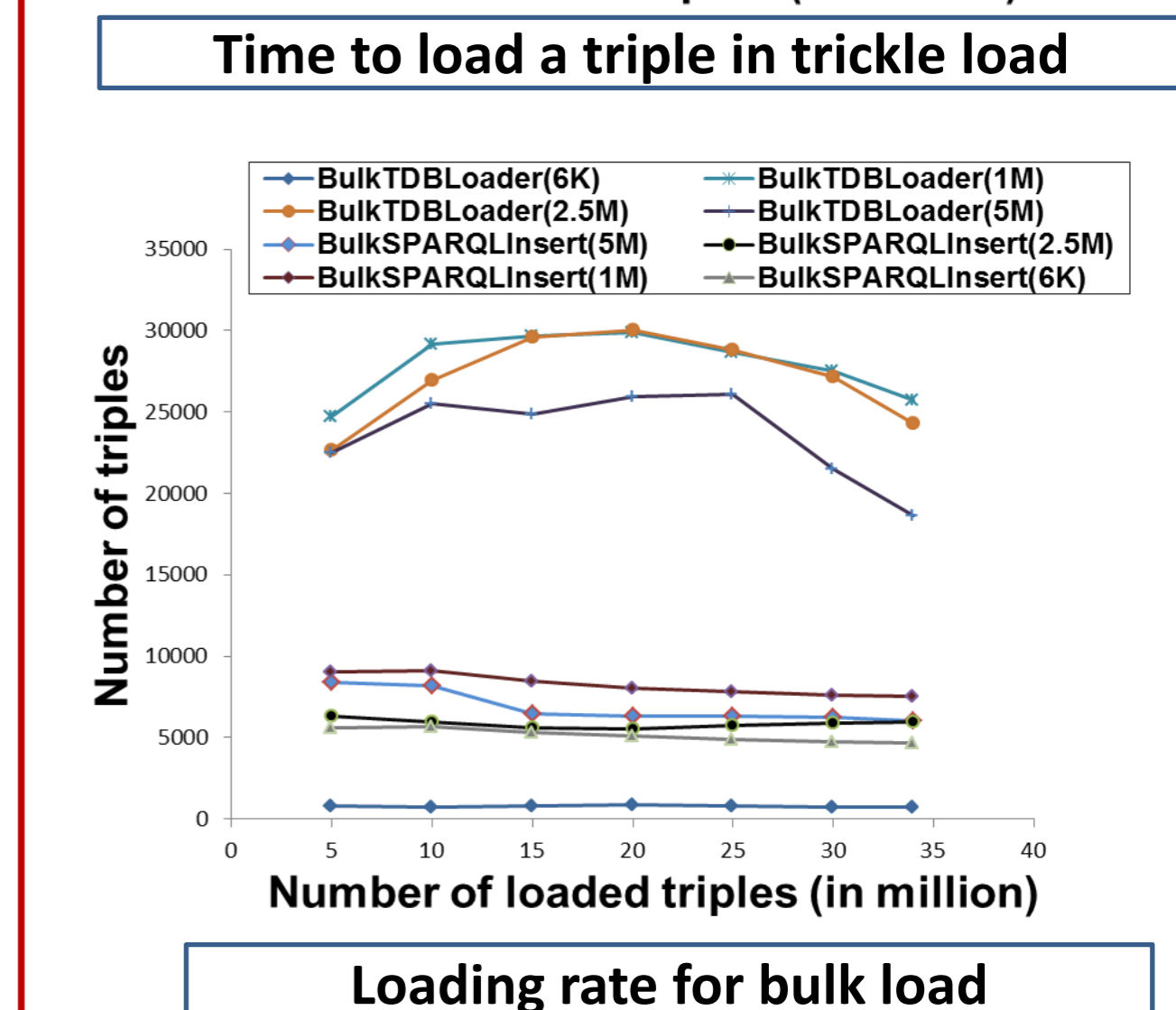
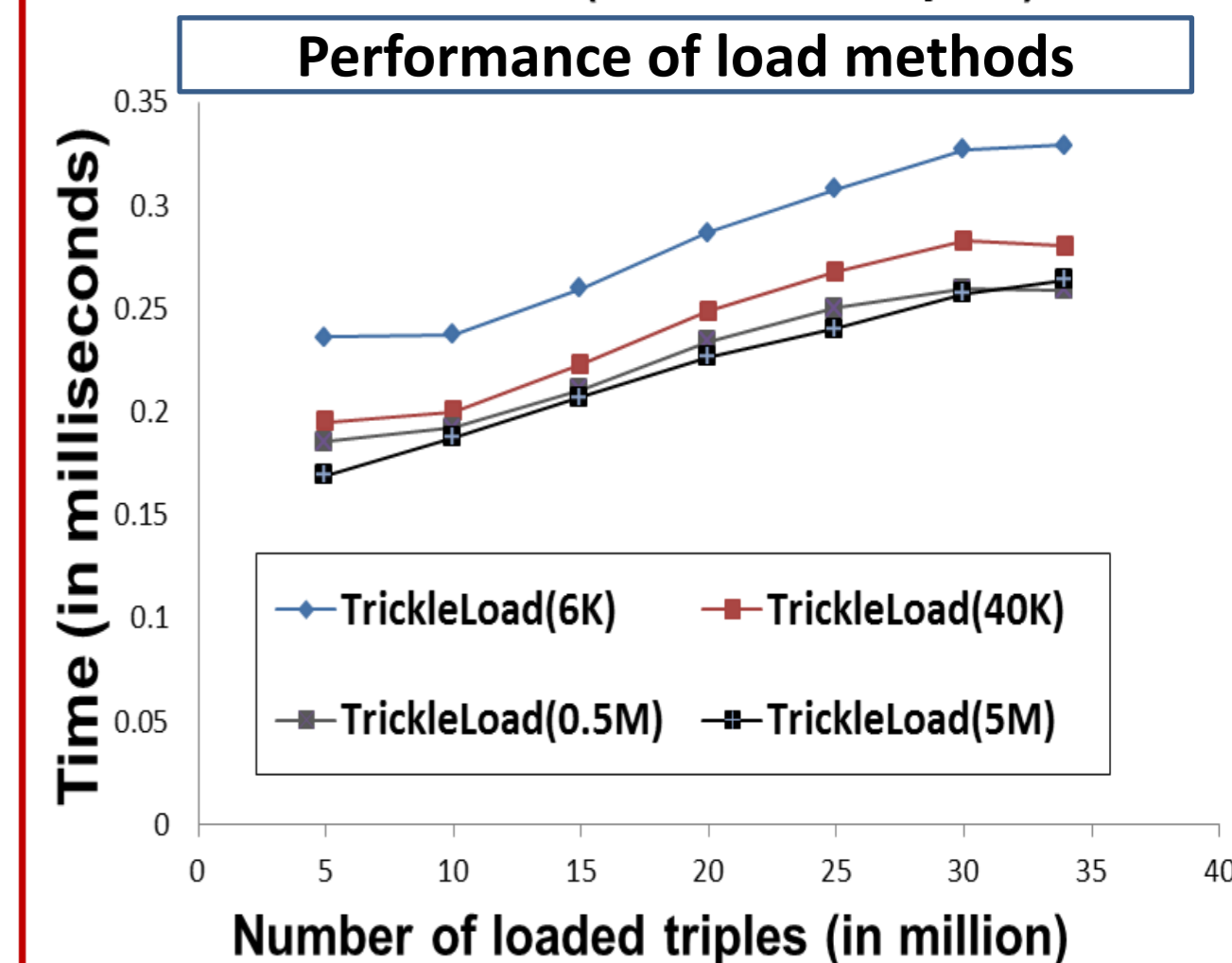
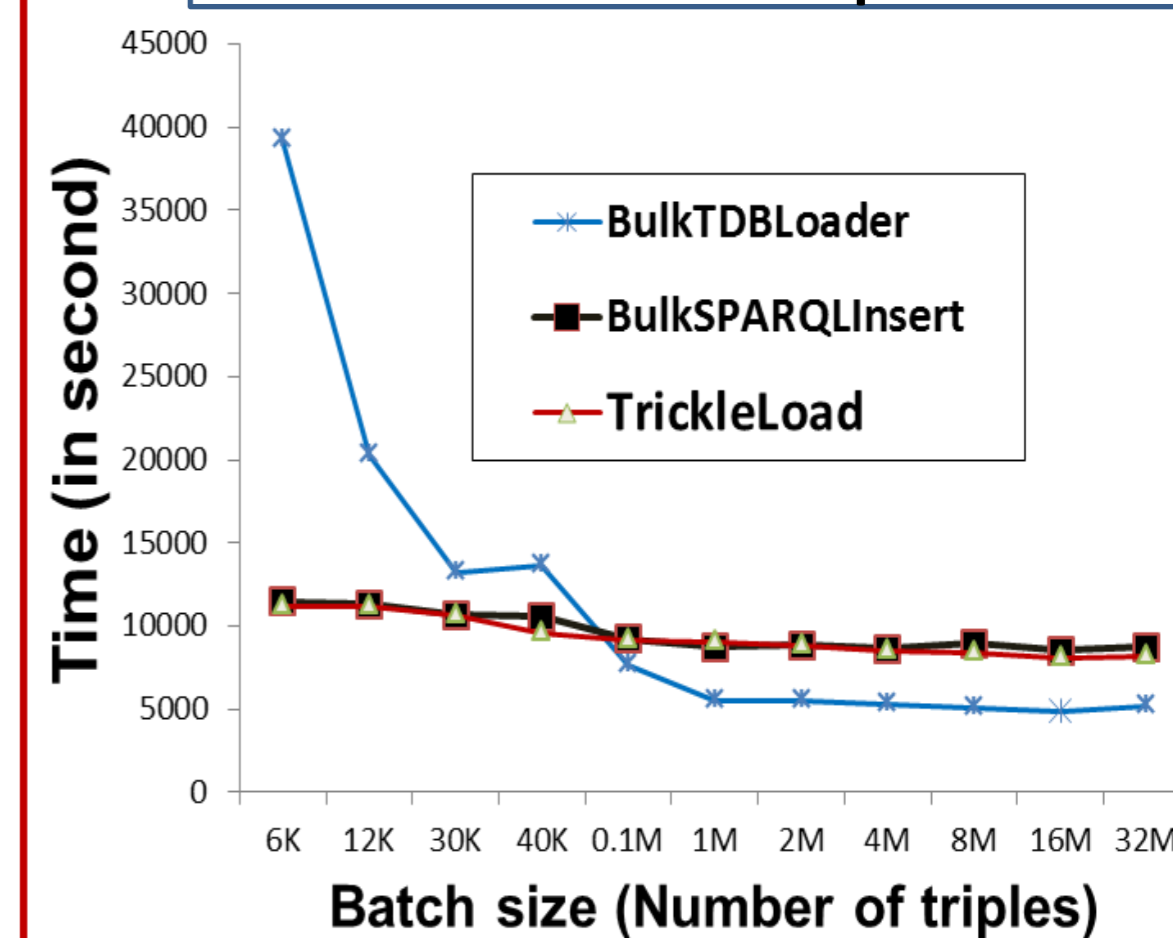
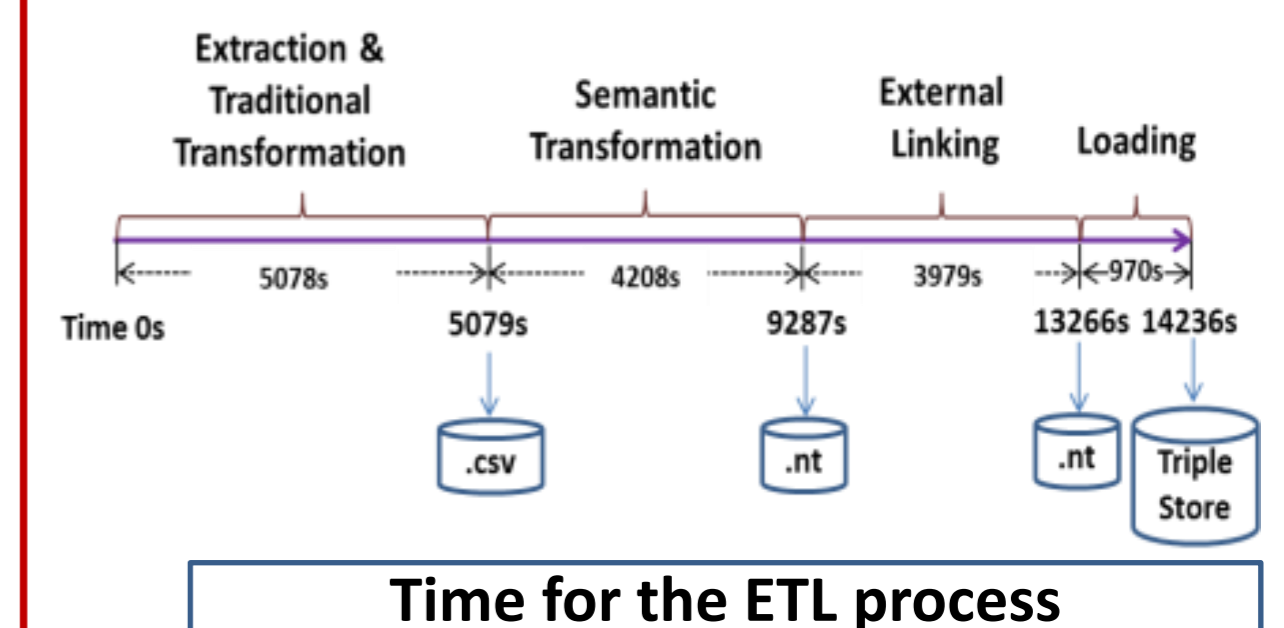


Semantic ETL for Semantic DWs

- ✓ A programmable semantic ETL framework
- ✓ Allow semantic data sources
- ✓ Ontology to define target Semantic DW
- ✓ Trickle and Bulk load
- ✓ Use case: Danish agricultural dataset
- ✓ Evaluation criteria: performance, data quality, productivity



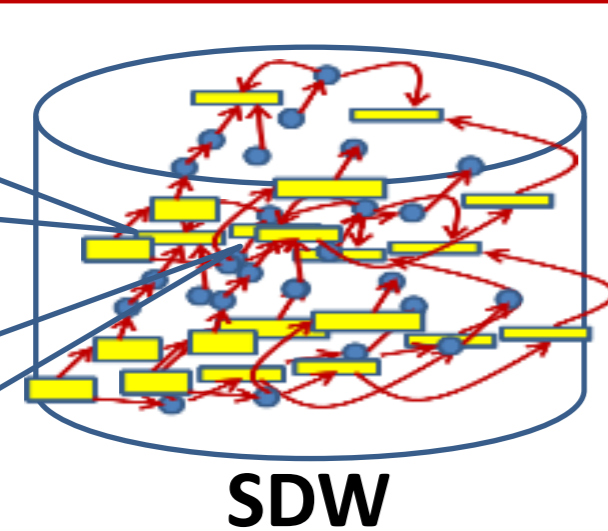
Result



Future Tasks: Incremental development

Slowly changing dimension

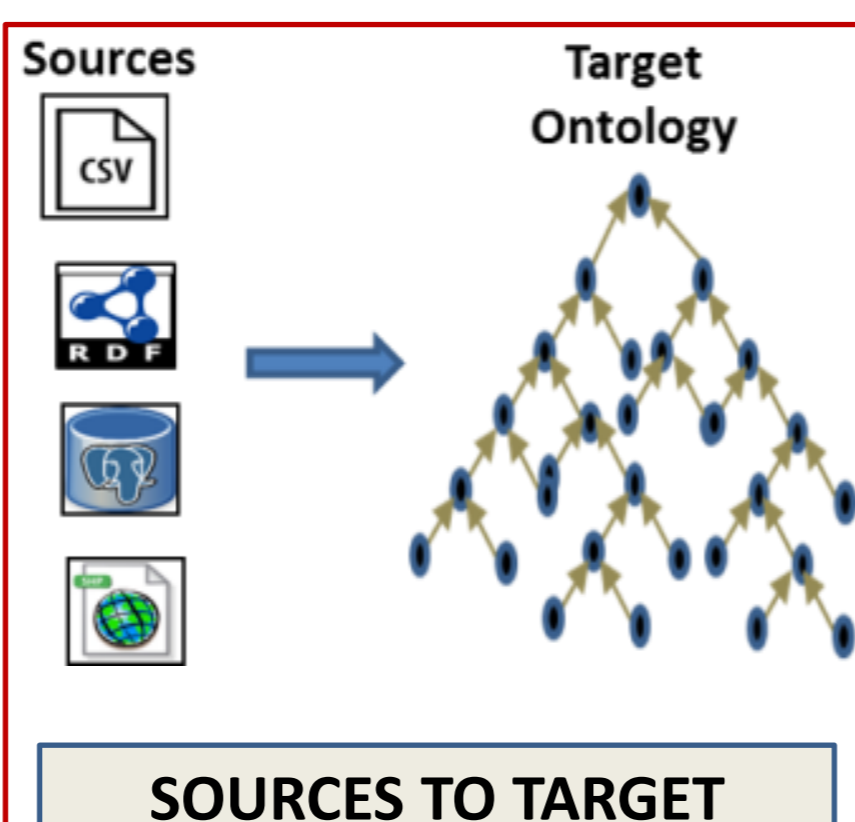
Rapidly changing dimension



HIGH LEVEL ETL CONSTRUCTS

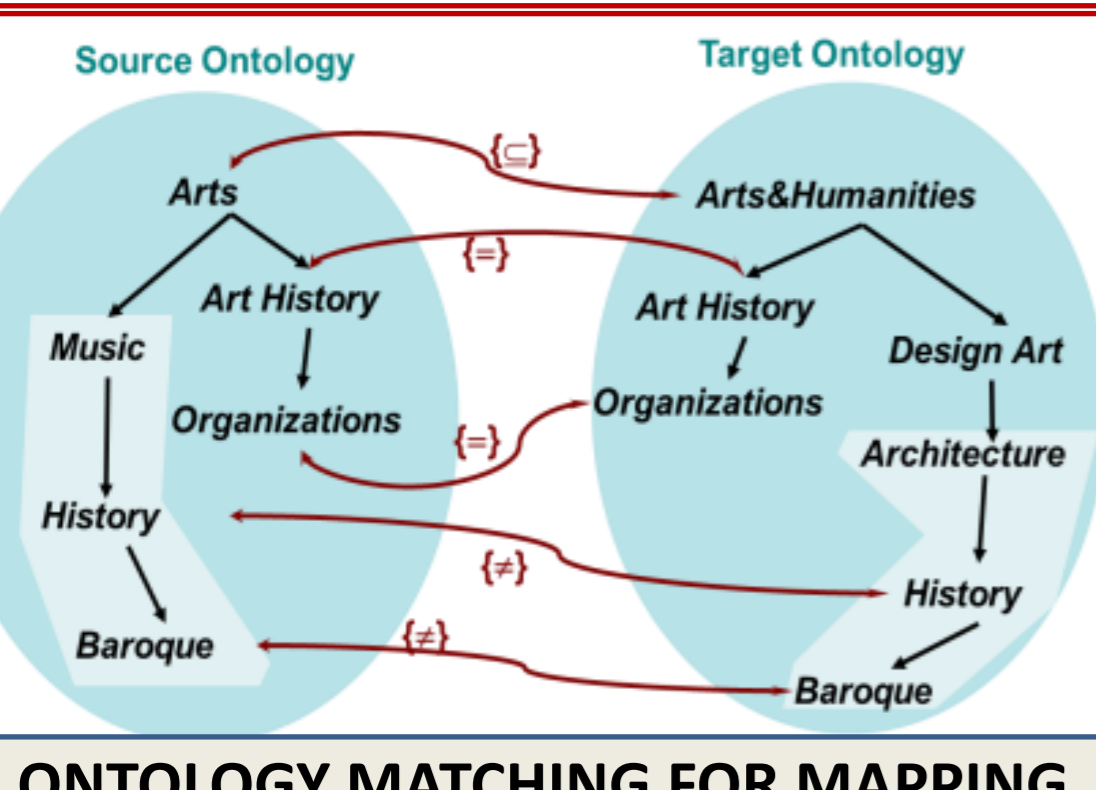
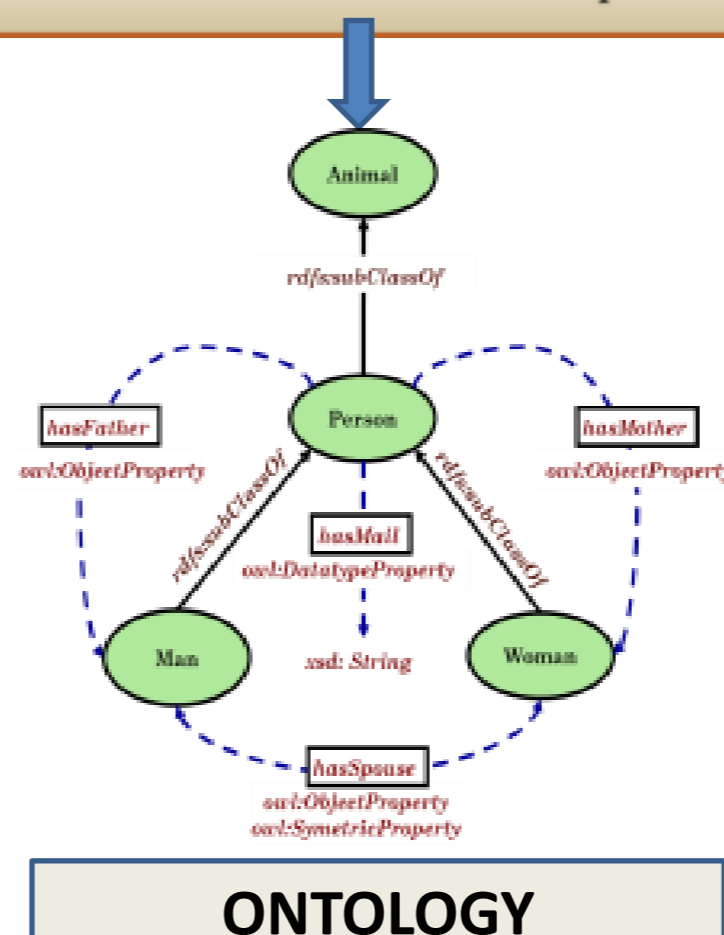
Suggestions

- ✓ Mappings
- ✓ Data Sources
- ✓ Resources
- ✓ Target Schema



Sources with no schema

ex:Dilip ex:hasSpouse ex:Purnima.
ex:Purnima ex:hasSpouse ex:Dilip.
ex:Purnima ex:hasEmail "pu@cu.bd".
ex:Purnima rdf:type ex:Woman.
ex:Prithu ex:hasMother ex:Purnima.
ex:Prithu ex:hasFather ex:Dilip.



SOURCES TO TARGET

ONTOLOGY

ONTOLOGY MATCHING FOR MAPPING