Aalto University
School of Science

SeCo

Sampo-UI Framework for Semantic Portal User Interfaces

Digital Humanities in Action: Sampo Model and Portals for Cultural Heritage, 29.10.2020

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Outline

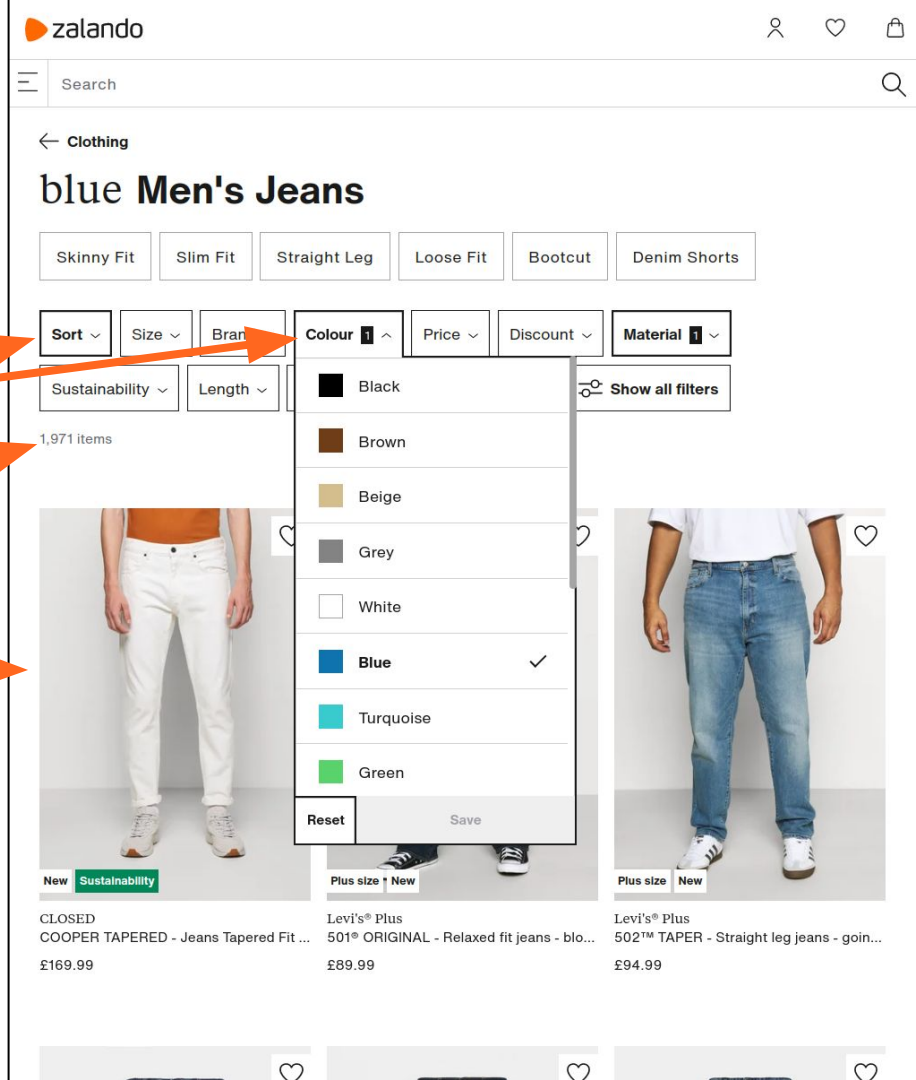
- **Satisfying information needs**
  - Faceted search
  - Faceted search + Ontologies + Linked Data
- **A tool for building user interfaces for semantic portals**
  - Sampo-UI framework

Faceted Search

= de facto approach for accessing information in digital libraries and e-commerce

Elements of Faceted Search

1. **Filters / facets**
2. **Sorting**
3. **Result count**
4. **Results view**



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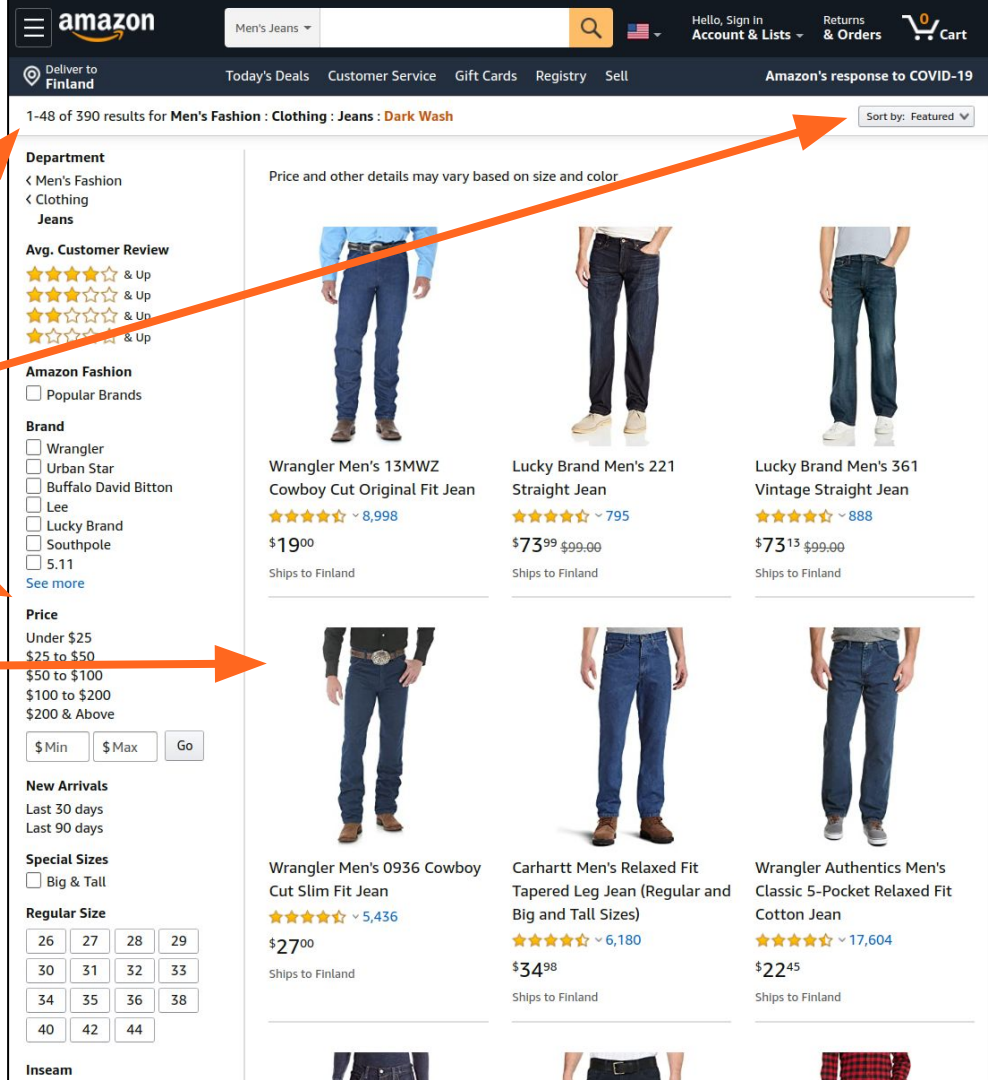

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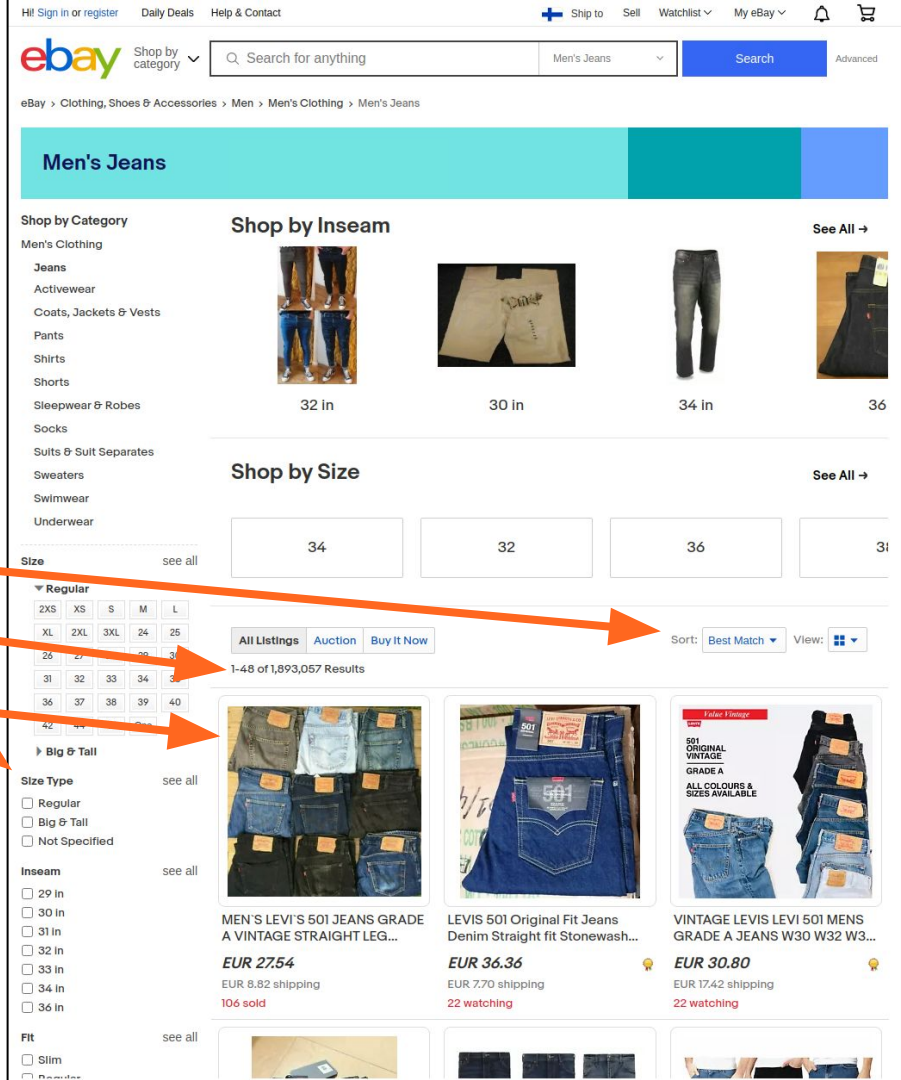

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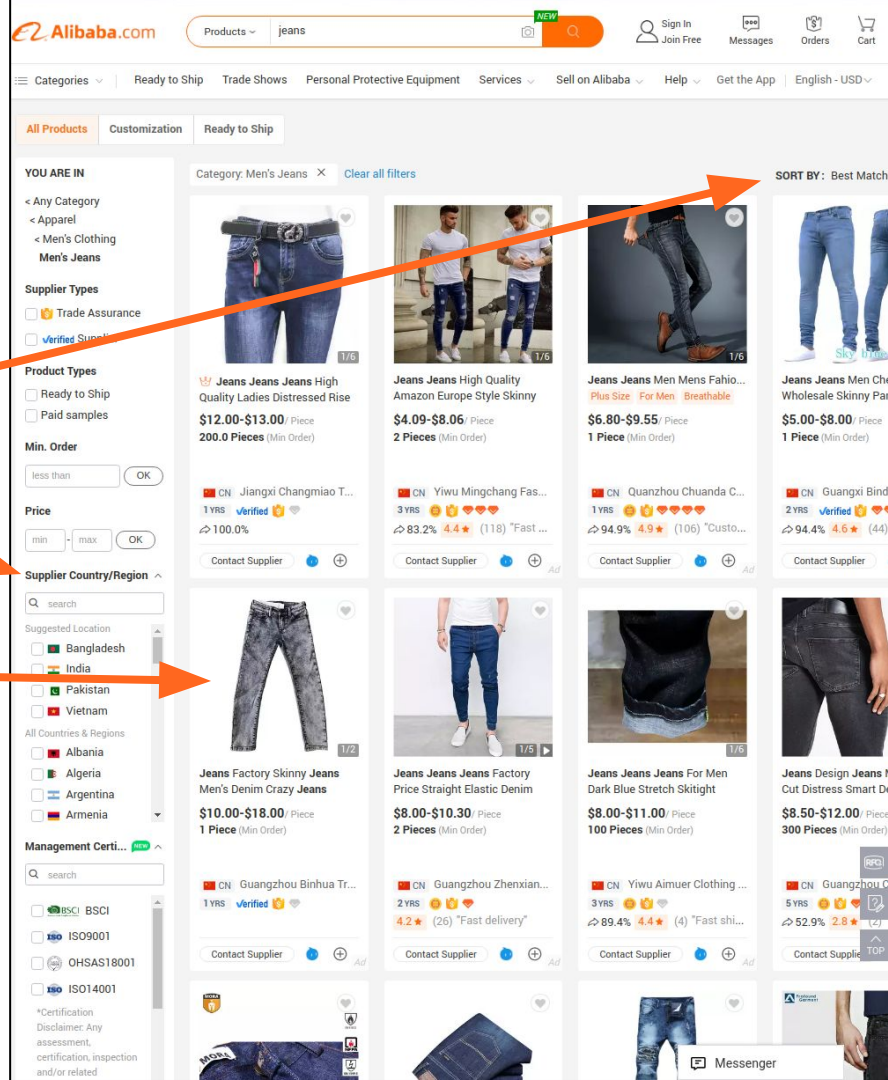
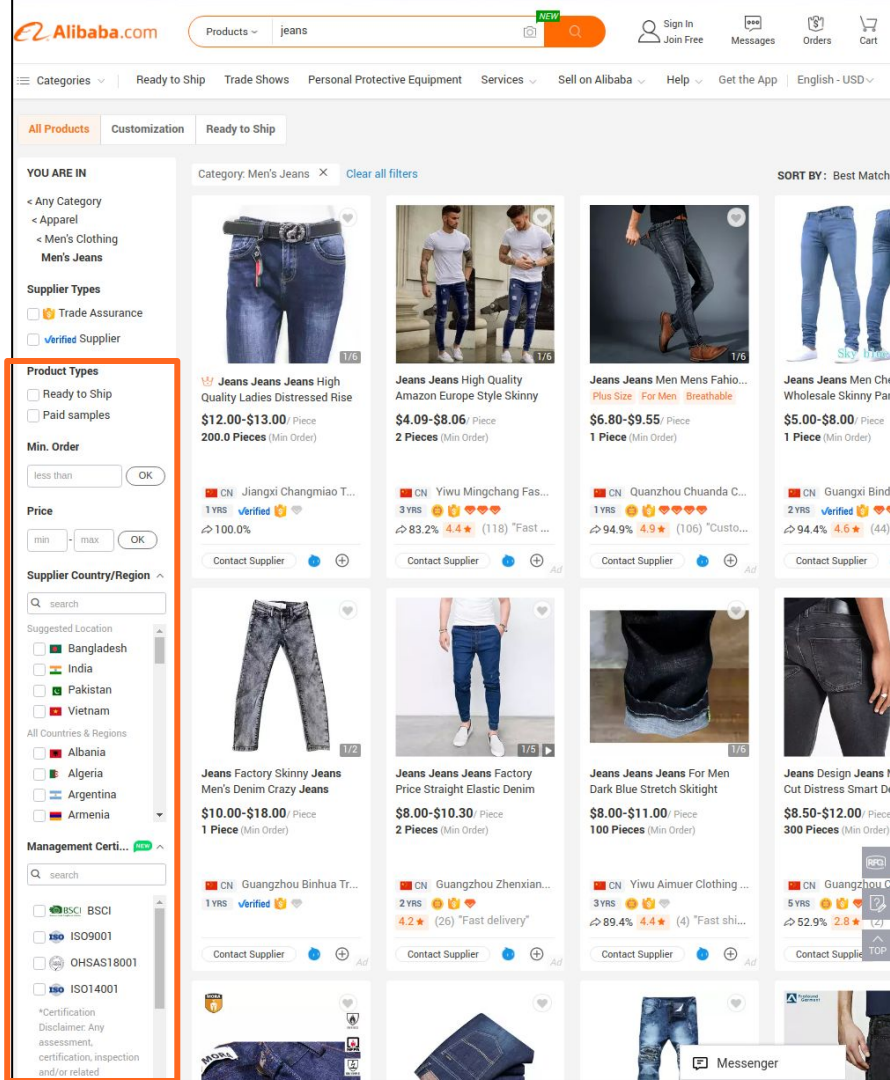


Challenges of Traditional Faceted Search

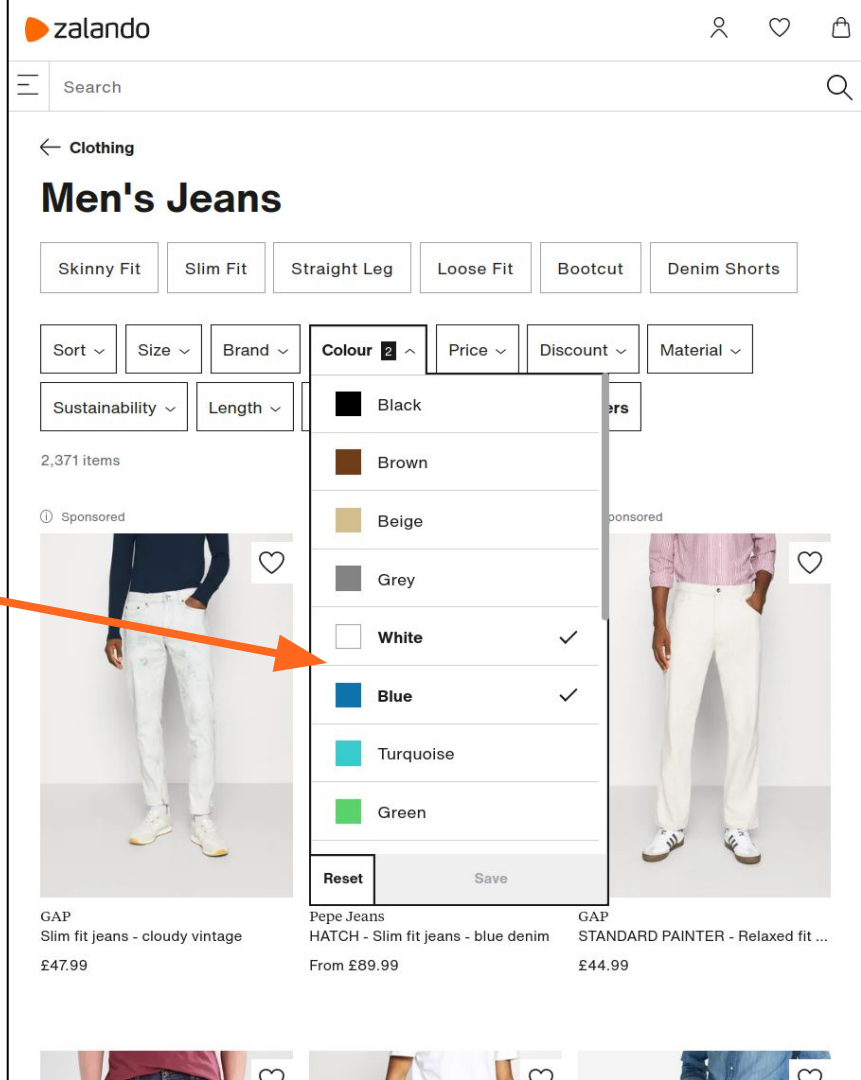
Missing or Unharmonized Data

1. **Facets**
    a. Cannot filter jeans by style, probably because the suppliers have not provided that information uniformly



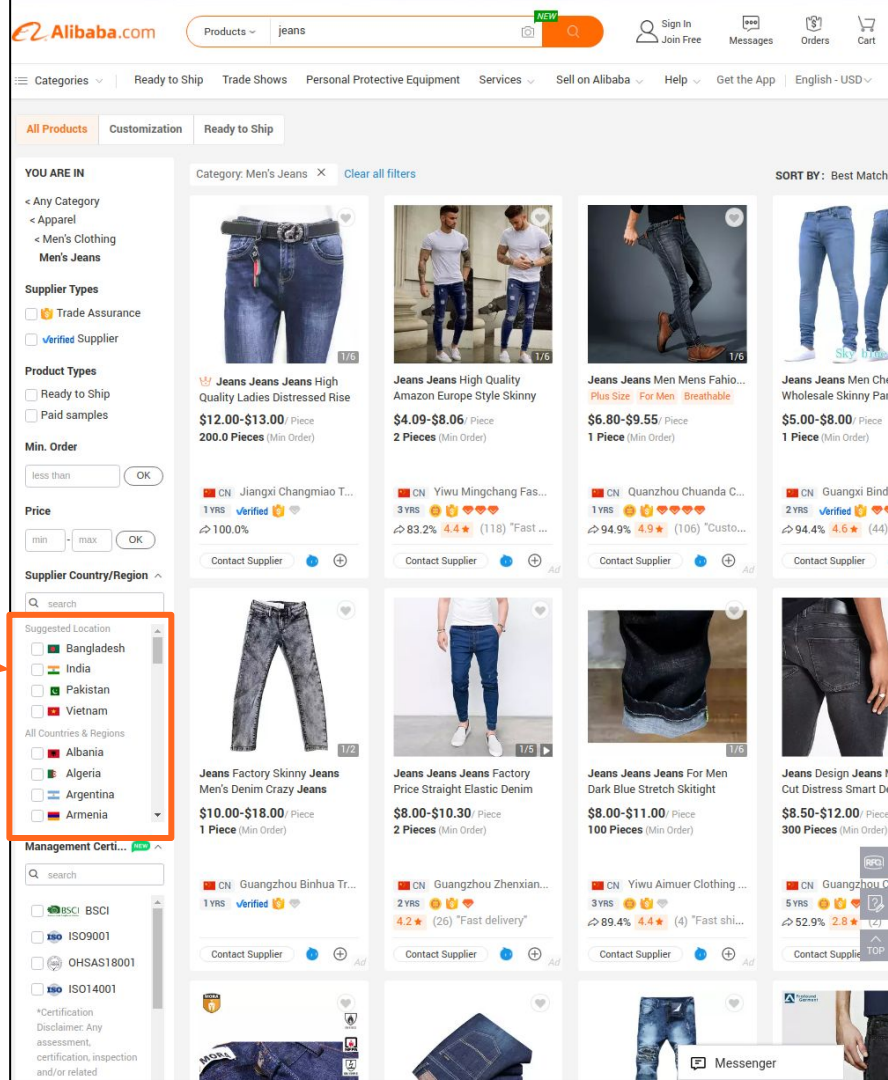
Handling Multiple Selections in Facets

1. **Facets**
   a. blue OR white?
   b. blue AND white?



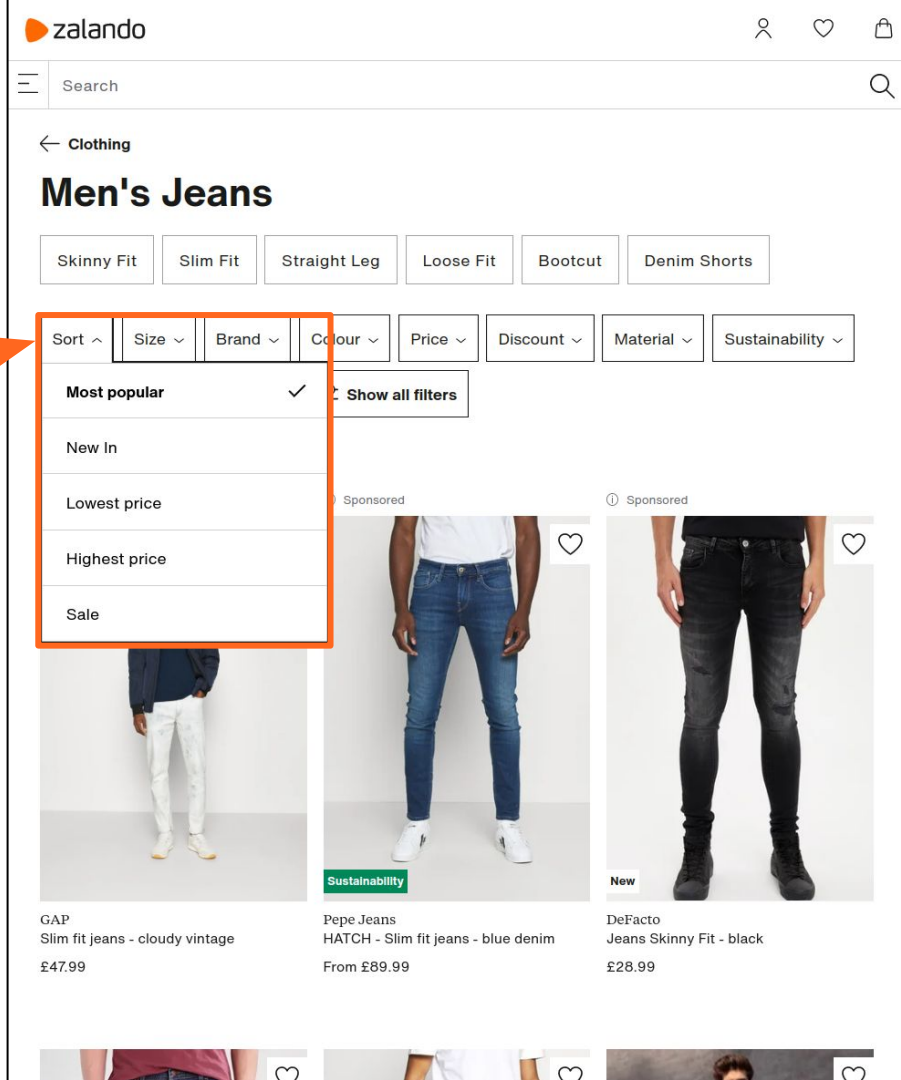
Need for Hierarchical Facets

1. **Facets**
   a. Cannot filter by subcategories, e.g. by a certain city within India.



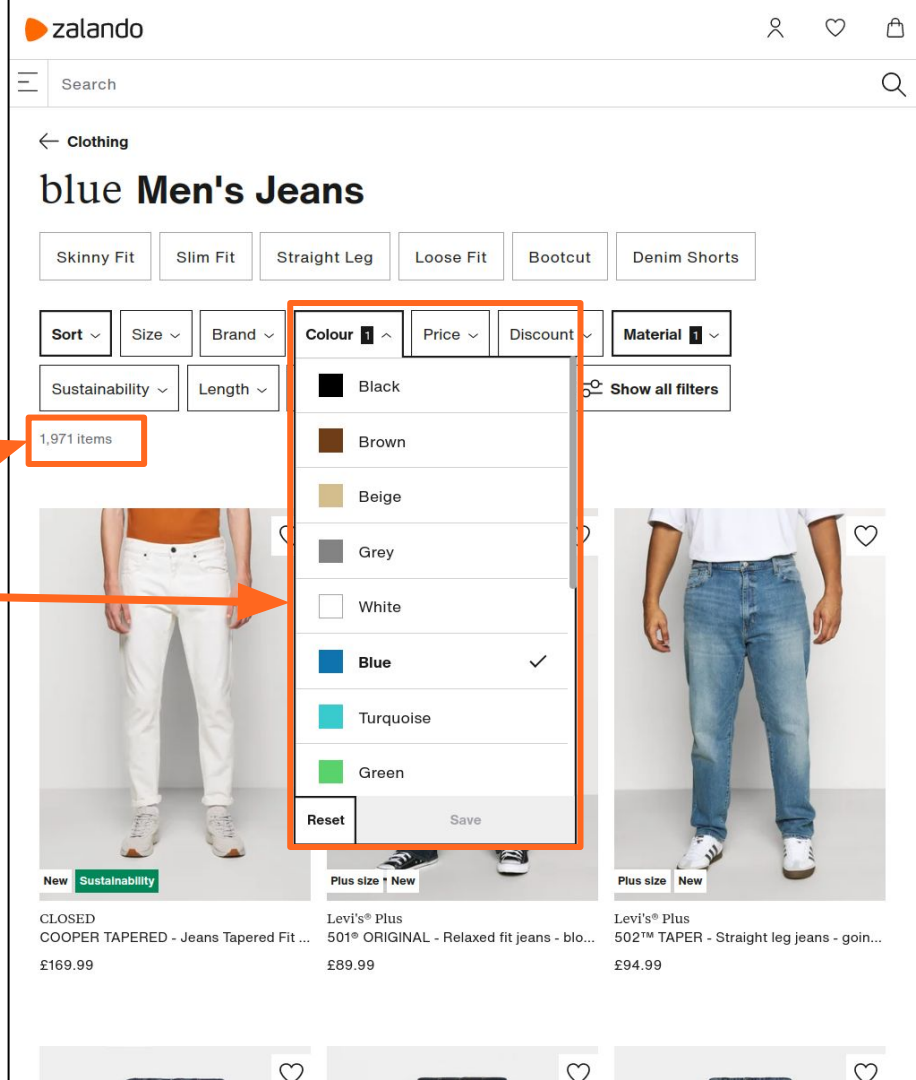
Limited Sorting Options

1. **Facets**
2. **Sorting**
    a. Cannot sort by style or material



Hit Counts Not Available

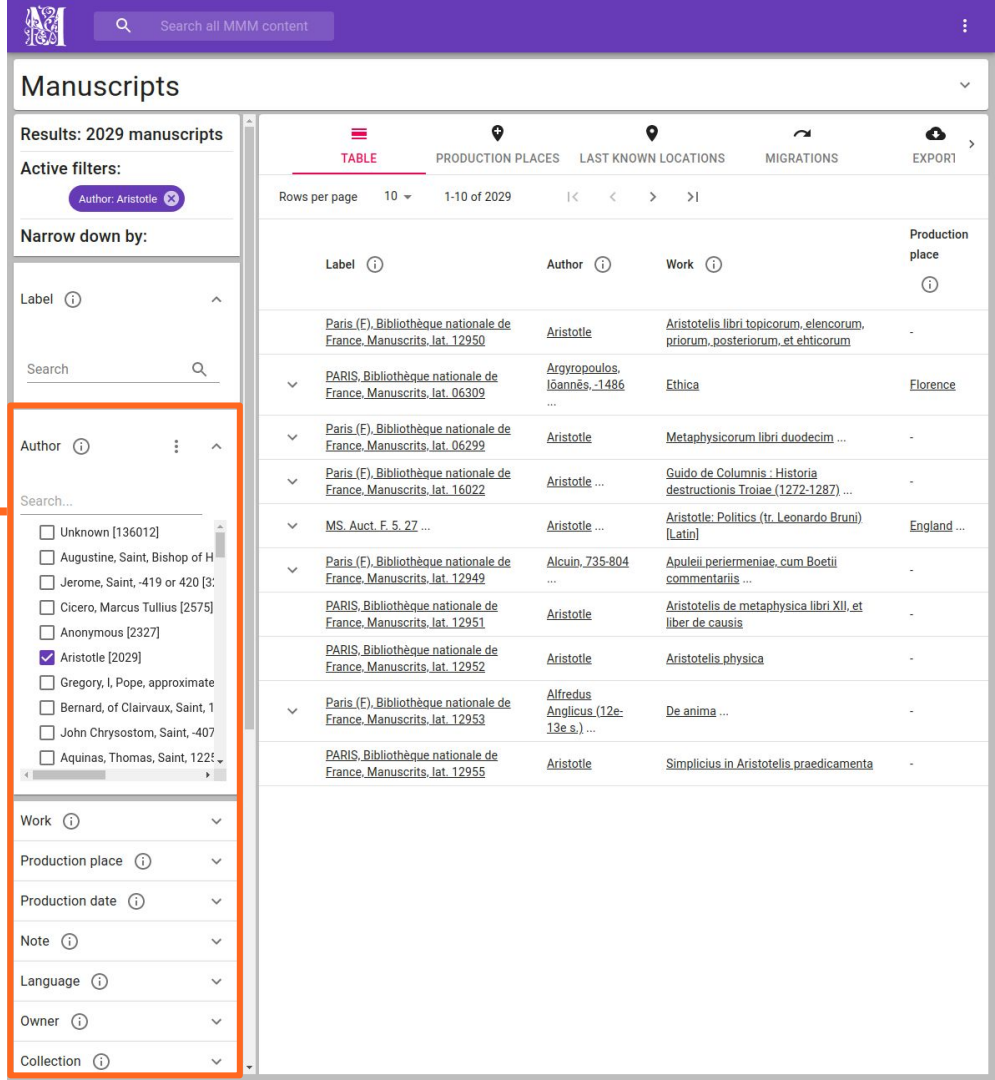
1. **Filters / facets**
2. **Sorting**
3. **Result count**
   a. Got 1 971 results after selecting “Blue”. What about the number of results for other colours?



Solutions Based on Linked Data Infrastructure

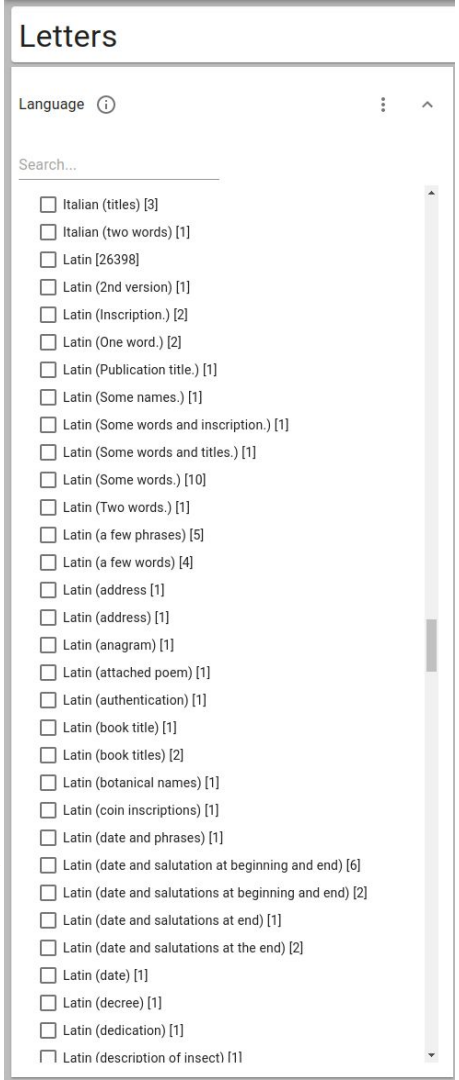
Semantic Faceted Search

1. **Facets** based on domain ontologies



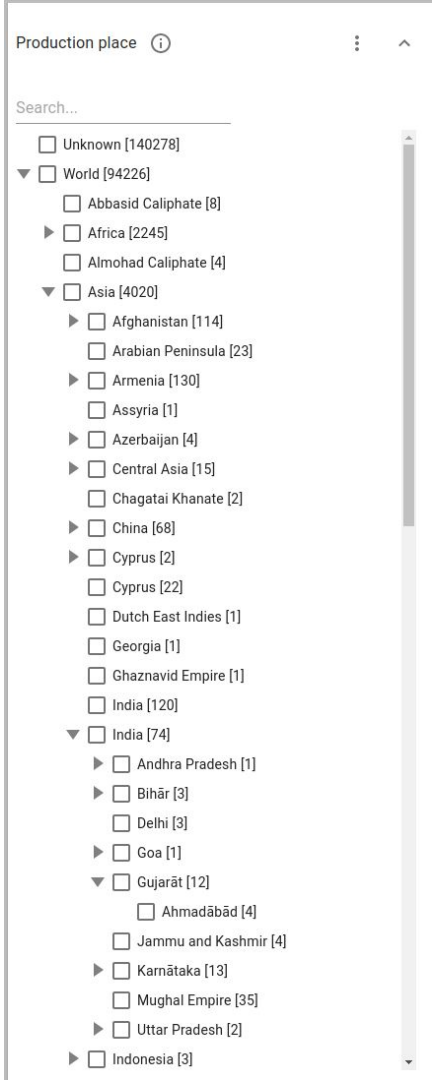
Semantic
Faceted Search

1. **Facets based on domain ontologies**
    a. Using domain ontologies requires plenty of manual or programmatic harmonization
        i. *A facet with unharmonized data is unusable*



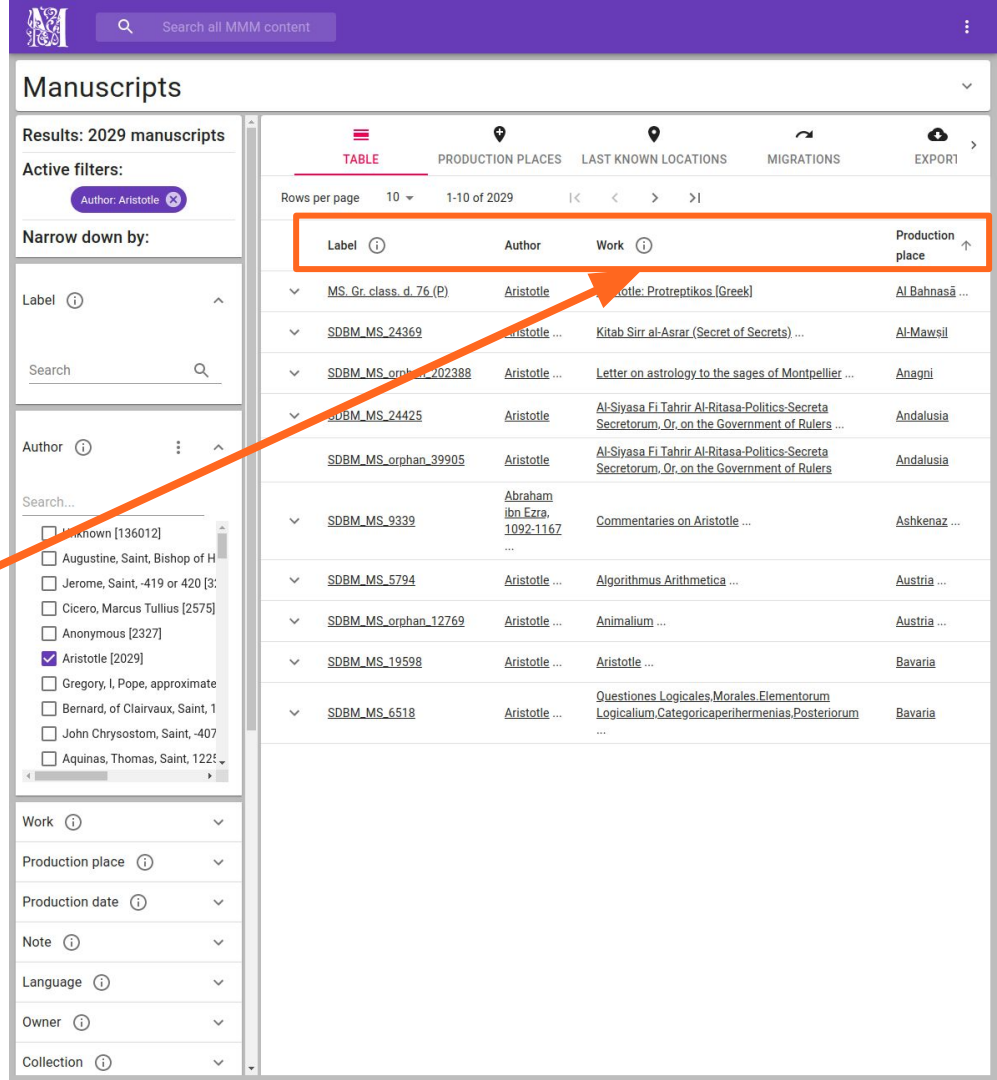
Semantic Faceted Search

1. **Facets based on domain ontologies**
   a. The hierarchical structures in domain ontologies can be used for creating hierarchical facets
      i. *An example based on the Getty Thesaurus of Geographic Names*



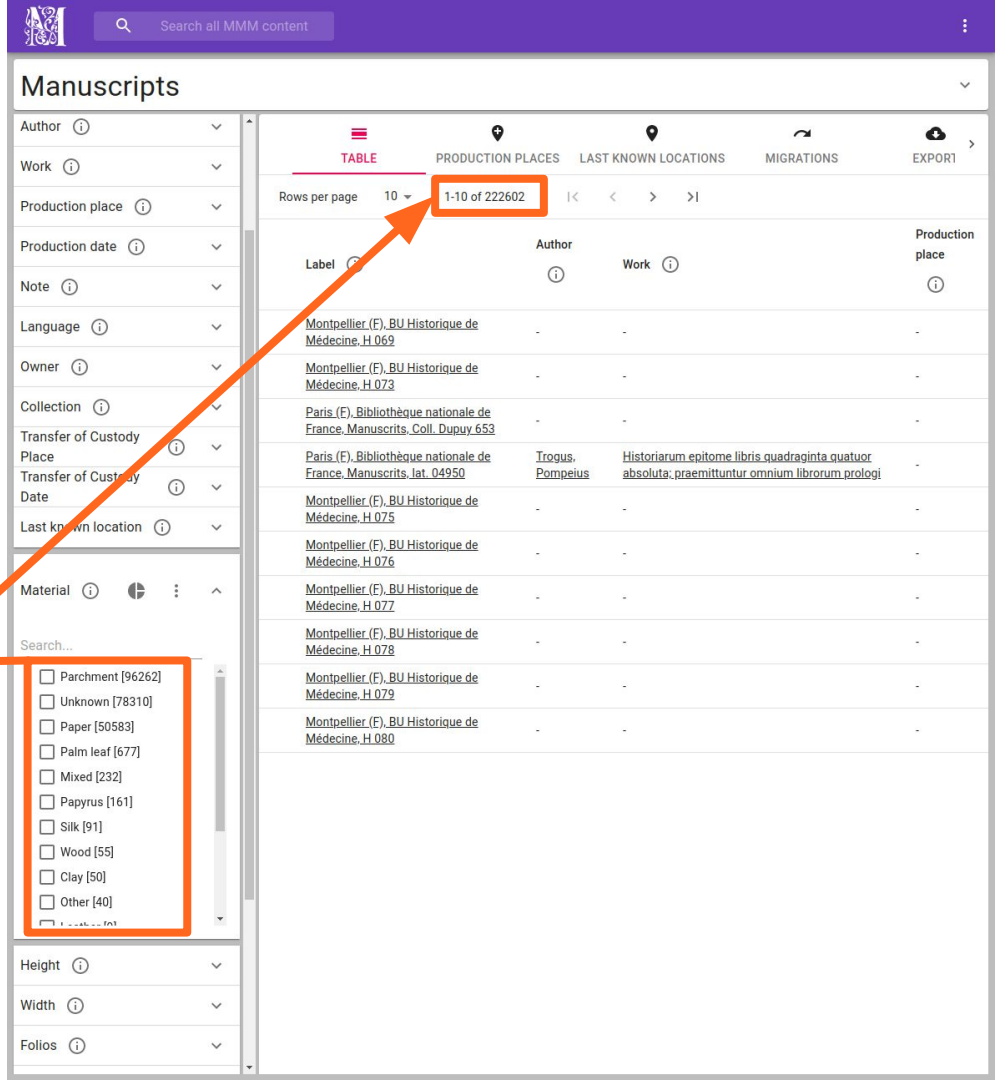
Semantic
Faceted Search

1. **Facets** based on domain ontologies
2. **Sorting** by any property



Semantic
Faceted Search

1. **Facets** based on domain ontologies
2. **Sorting** by any property
3. **Result count** + hit counts



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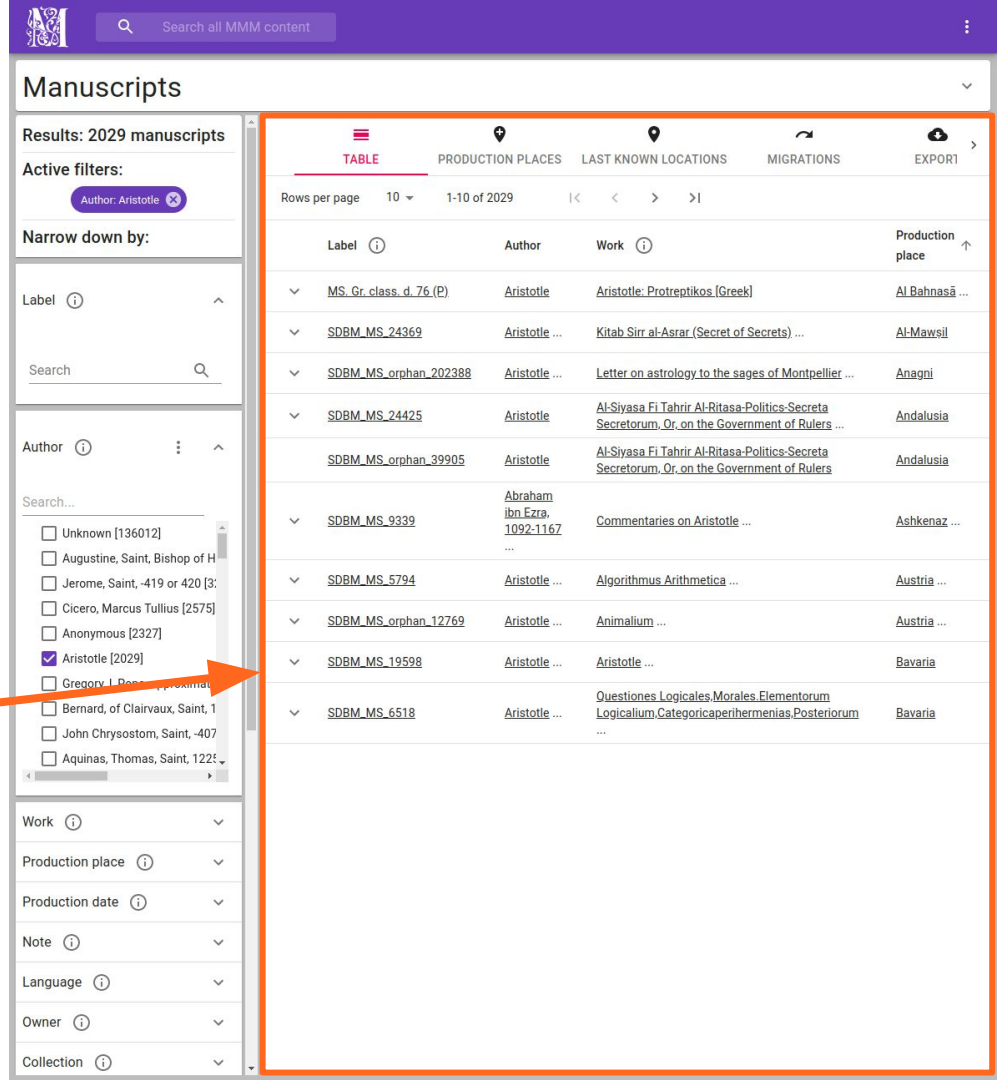
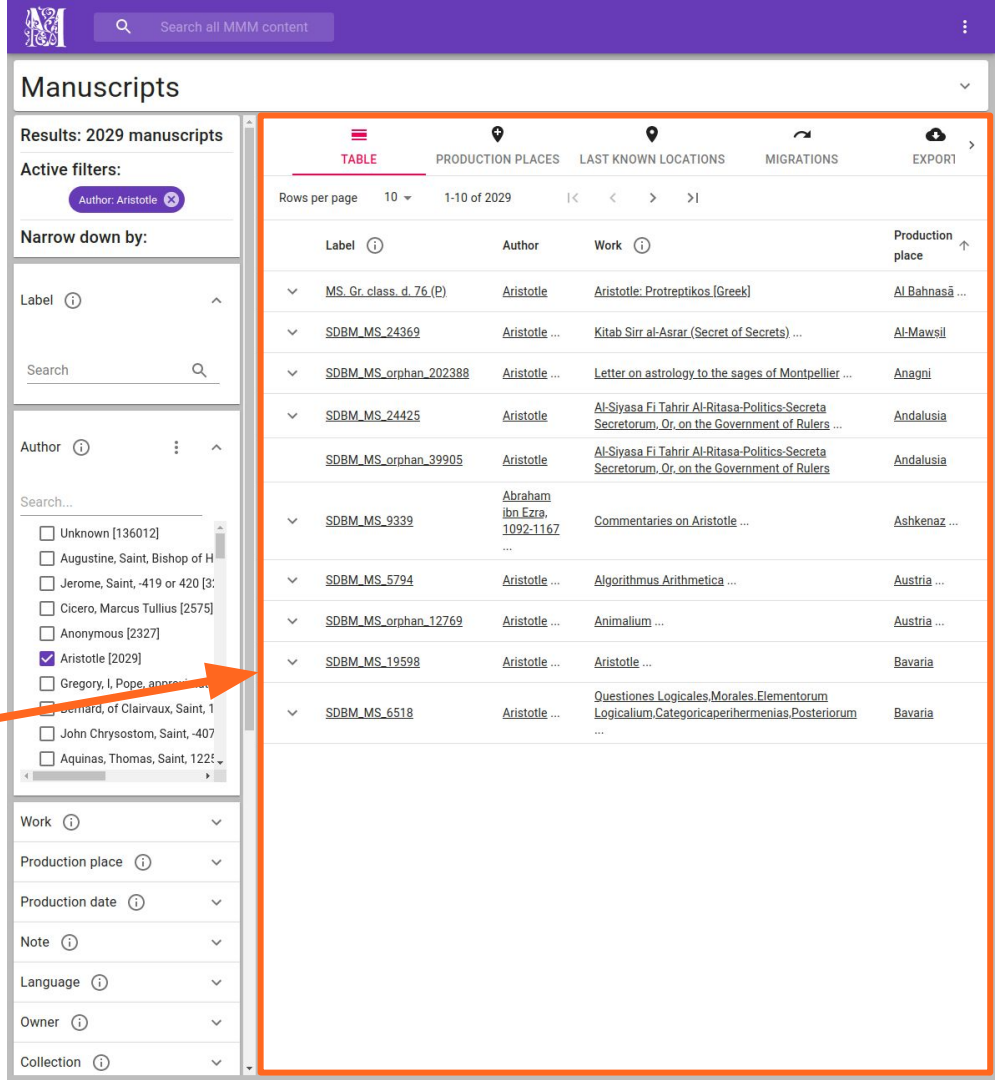


Semantic Faceted Search + Data Analysis

1. **Facets** based on domain ontologies
2. **Sorting** by any property
3. **Result count** + hit counts
4. **Result views**
   a. Table / Grid
   b. Map
   c. Statistics
   d. Network
   e. Animation
   f. CSV download
   g. …



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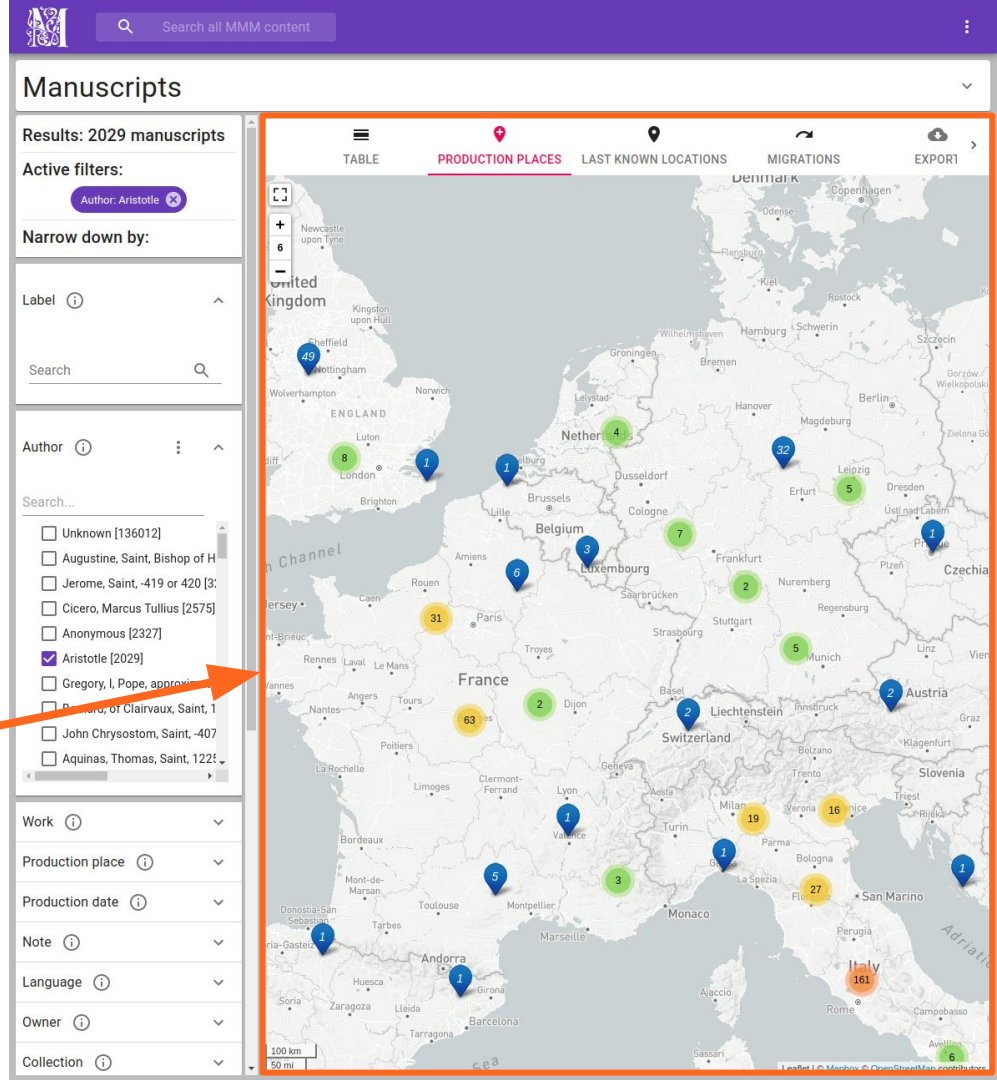

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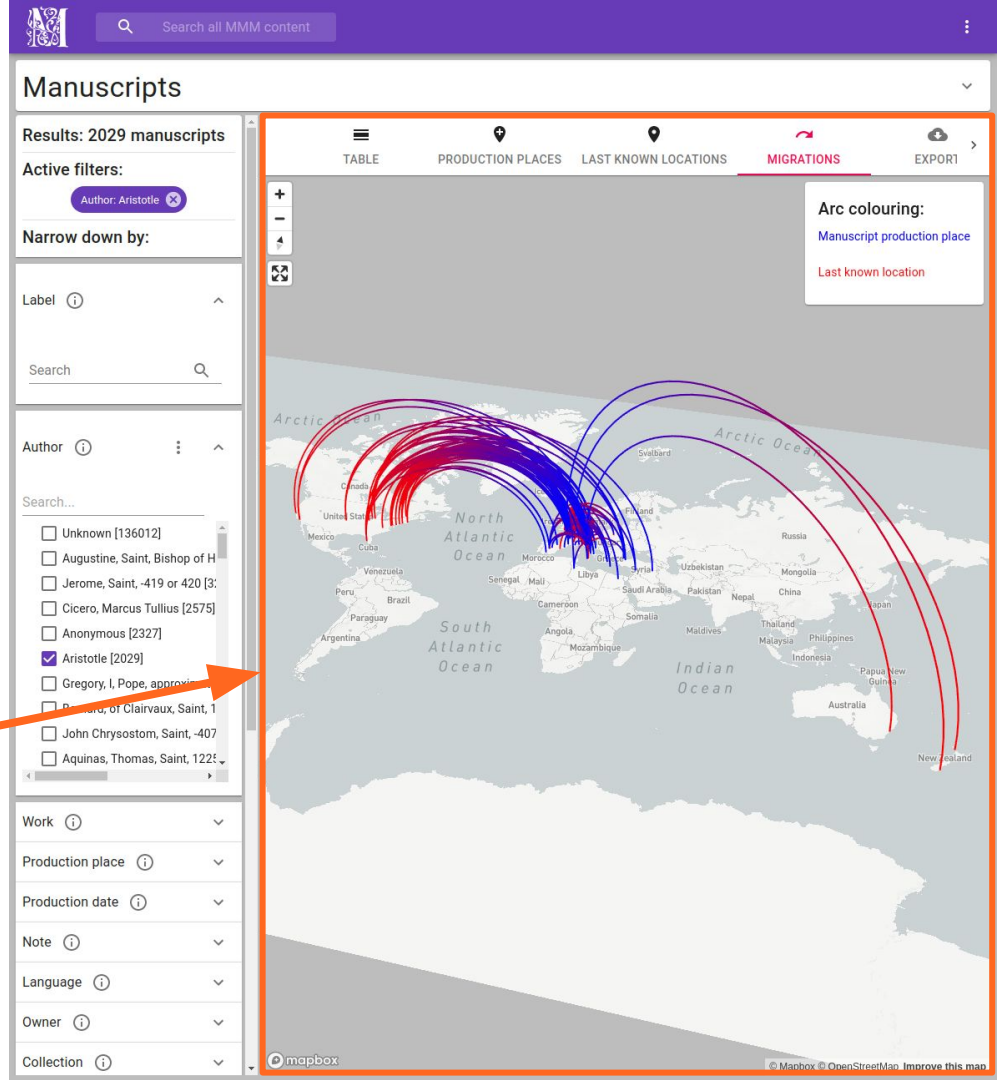

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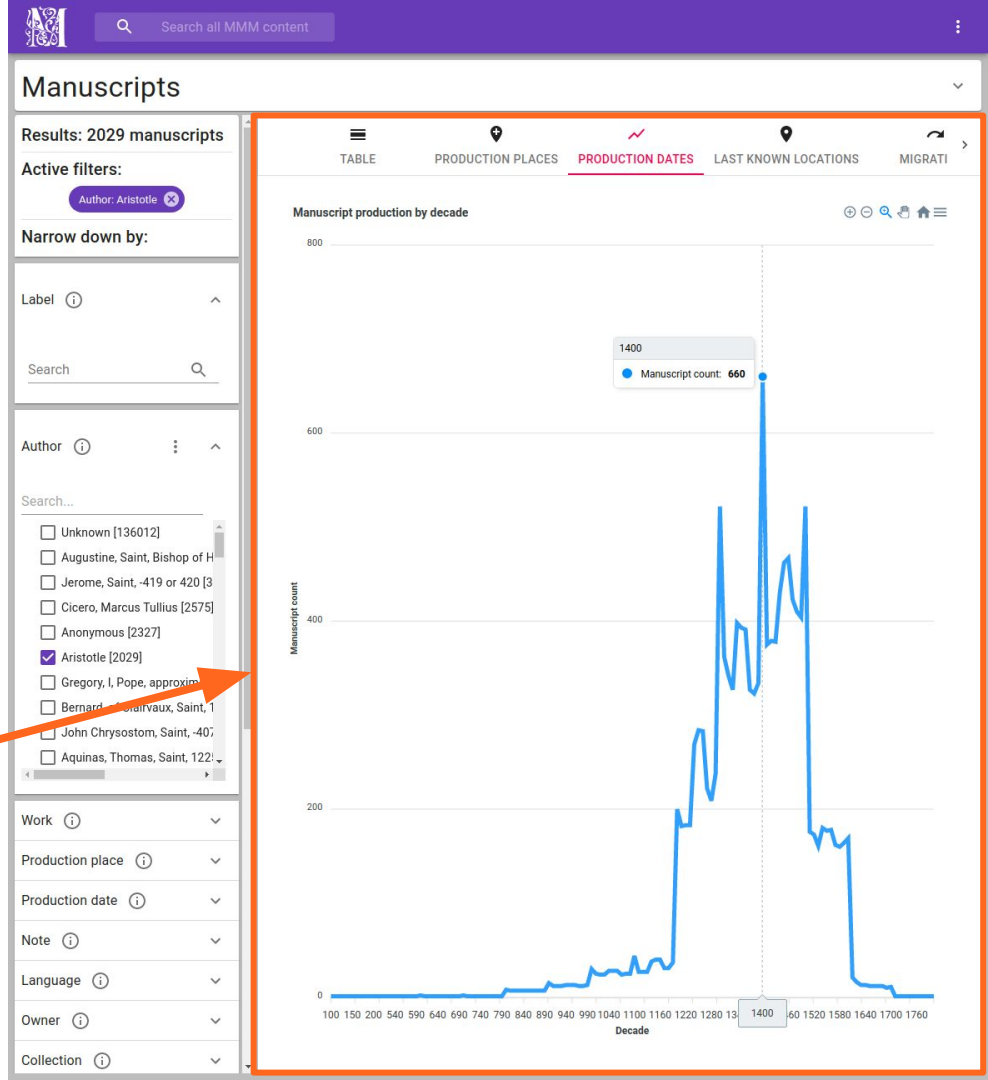

Generic Tool for Building User Interfaces for Semantic Portals: Sampo-UI Framework

Aalto University
School of Science

Department of
Computer Science

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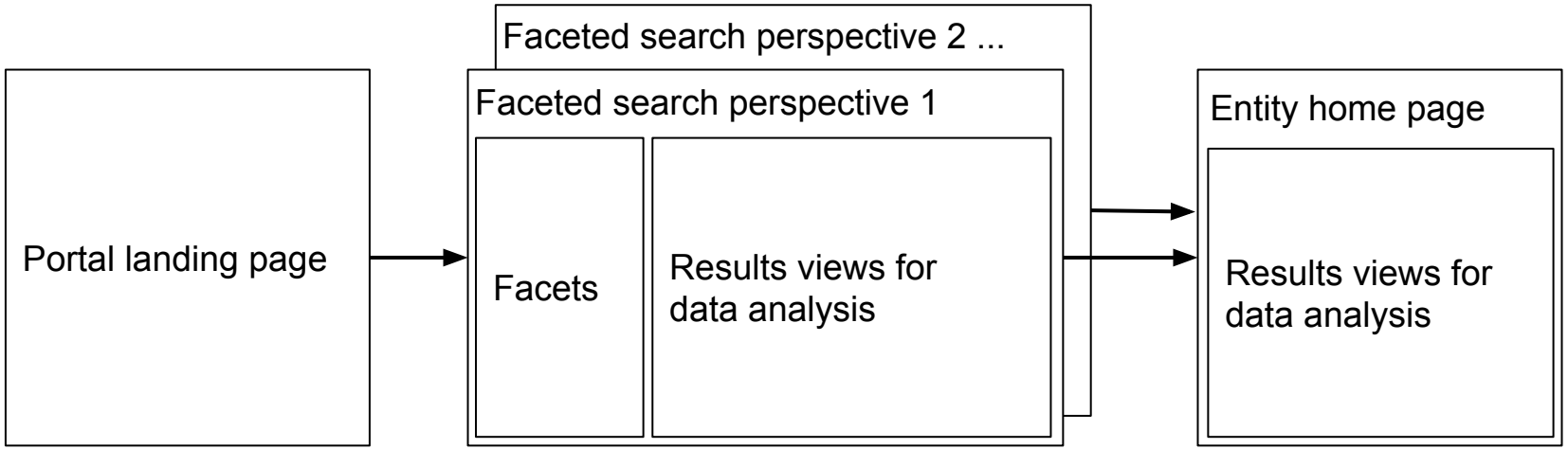
Requirements Based on Experiences in Developing the Sampo Portals Since 2002

- **Distinct perspectives to the underlying data**
- **Multiple search paradigms**
  - Semantic faceted search
  - Free text search
  - Geospatial search
- **Data analysis for result sets**
- **A homepage for each entity of interest**
- **Integration of external raster and vector data sources**

Main Views of a Semantic Portal



These views can be built with a selection of ~120 ready-to-use Sampo-UI components.

Sampo-UI Technical Details

- **Targeted to software developers**
  - a “starting base" of a modern JavaScript web application complemented with a read-only API for accessing Linked Data
- **Code and documentation available on GitHub**
  - Open source license
  - Design philosophy
  - Developer guide
  - Issue tracker

Portals Built Using the Sampo-UI Framework

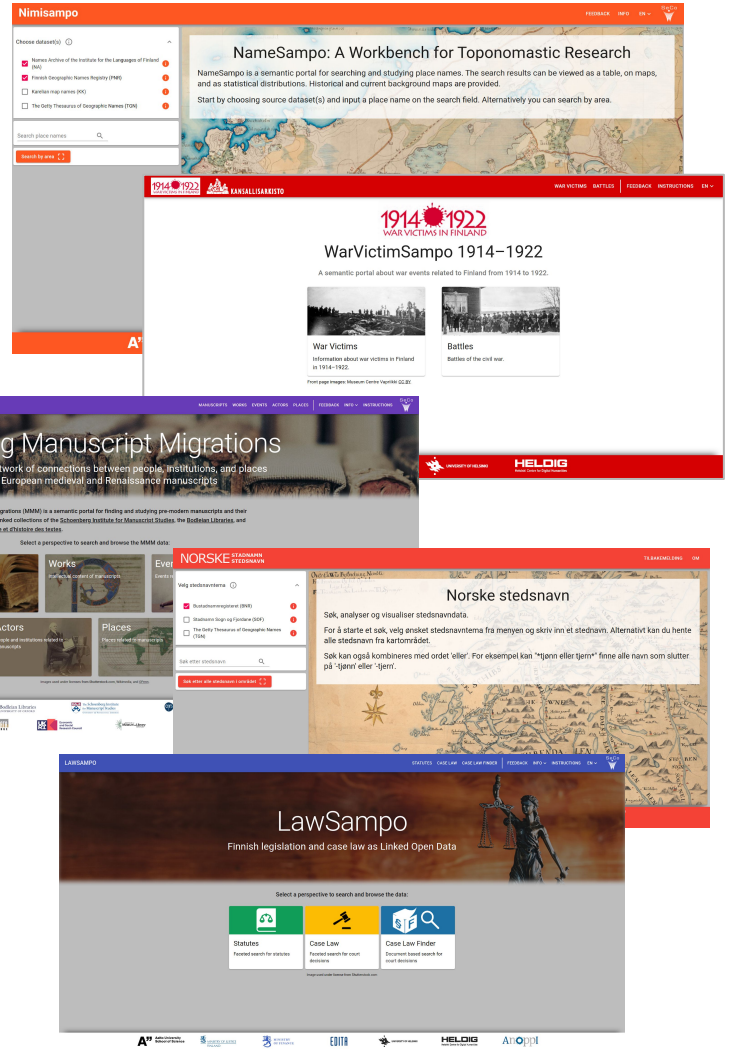
Sampo series

1. NameSampo (2018)
2. WarVictimSampo 1914-1922 (2019)
3. Mapping Manuscript Migrations (2020)
4. LawSampo (TBA)
5. AcademySampo (TBA)
6. FindSampo (TBA)
7. HistorySampo (TBA)
8. LetterSampo (TBA)
9. ParliamentSampo (TBA)

External portals

1. Norske stadnamn (*University of Bergen* and *Norwegian Mapping Authority*, 2019)
2. Staff portal (*Lingsoft Ltd.*, 2019)

More comprehensive list: https://seco.cs.aalto.fi/applications/sampo



Thank you!

Questions?