EEXCESS

Information Society Technologies

Challenges in disseminating Scientific and Cultural Resources in the Long Tail

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26.03., Hamburg, Germany

JOANNEUM RESEARCH · Collections Trust · Archäologie und Museum, Bildungs-, Kultur- und Sportdirektion Kanton Basel-Landschaft · MENDELEY · INSA LYON

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Agenda

- Our Content Distribution Process today
  - The Long Tail of Information
  - Popular vs. Scholarly
  - The Filter Bubble – Rich get Richer – Popularity ranking
- EEXCESS – personalised just-in-time recommendation of long tail content
  - Federated Recommendation
  - User and Usage Mining
  - Discovery via visualisations
- Summary

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Motivation

Availability of Digital Resources

- Vast amounts of scientific resources digital available

MENDELEY

europeana
think culture

- Content distribution processes optimized towards highly popular, commercial media content
  - Niches do play less of a role
  - Scientific content **not main stream**
  - Remains hidden in the **Deep Web**
  - Hard to **discover** unknown items
- Lets have a look in detail, why that is the case

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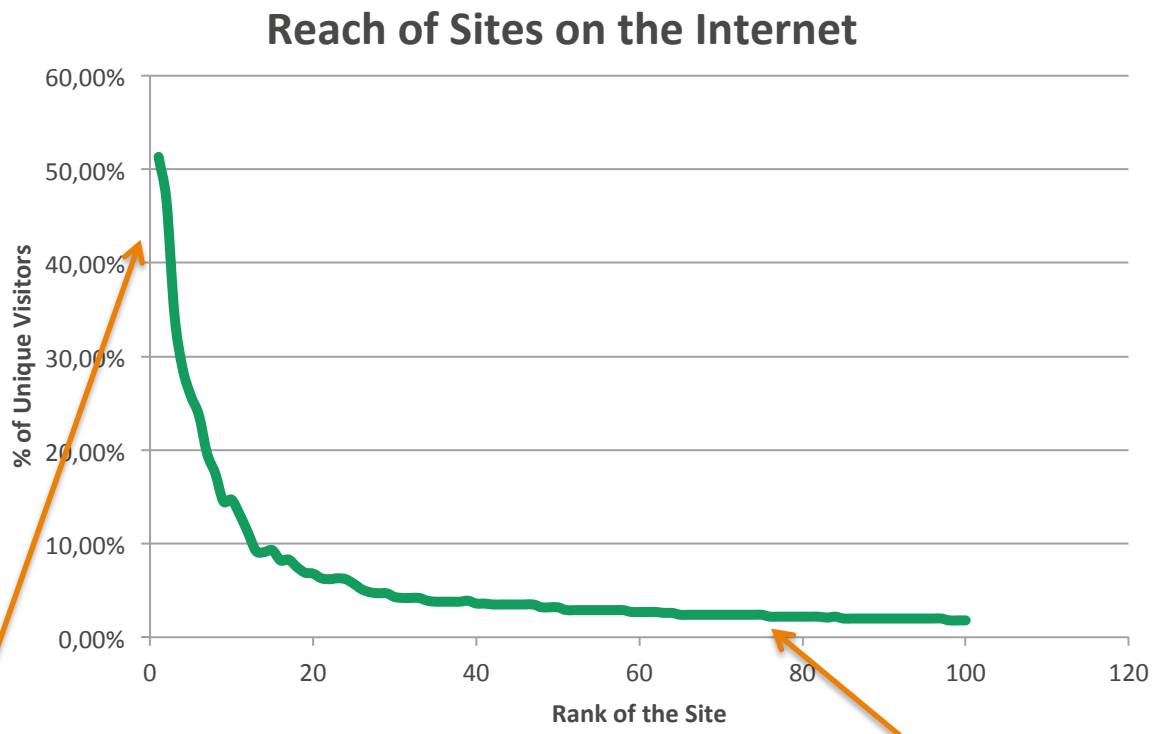
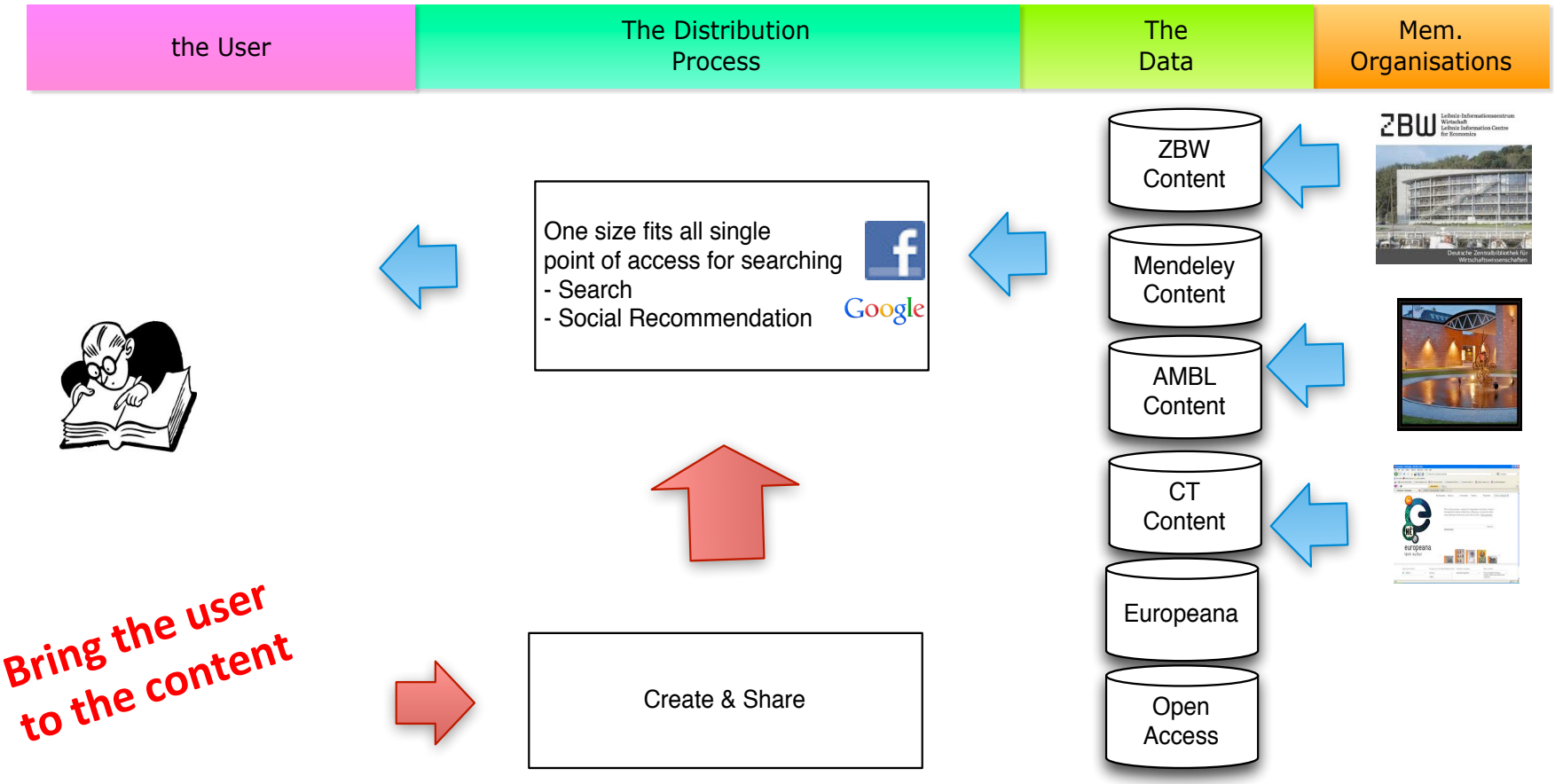
Challenge
The long tail of websites



Search Engine Optimization
Social Media Marketing etc.

Challenge

The content distribution process today



- **Discovering** non-main stream cultural, scientific or educational content is challenging
- **Expertise** of memory organisation remains **untapped**, since not part of the distribution process
- **Users are disconnected** from the experts

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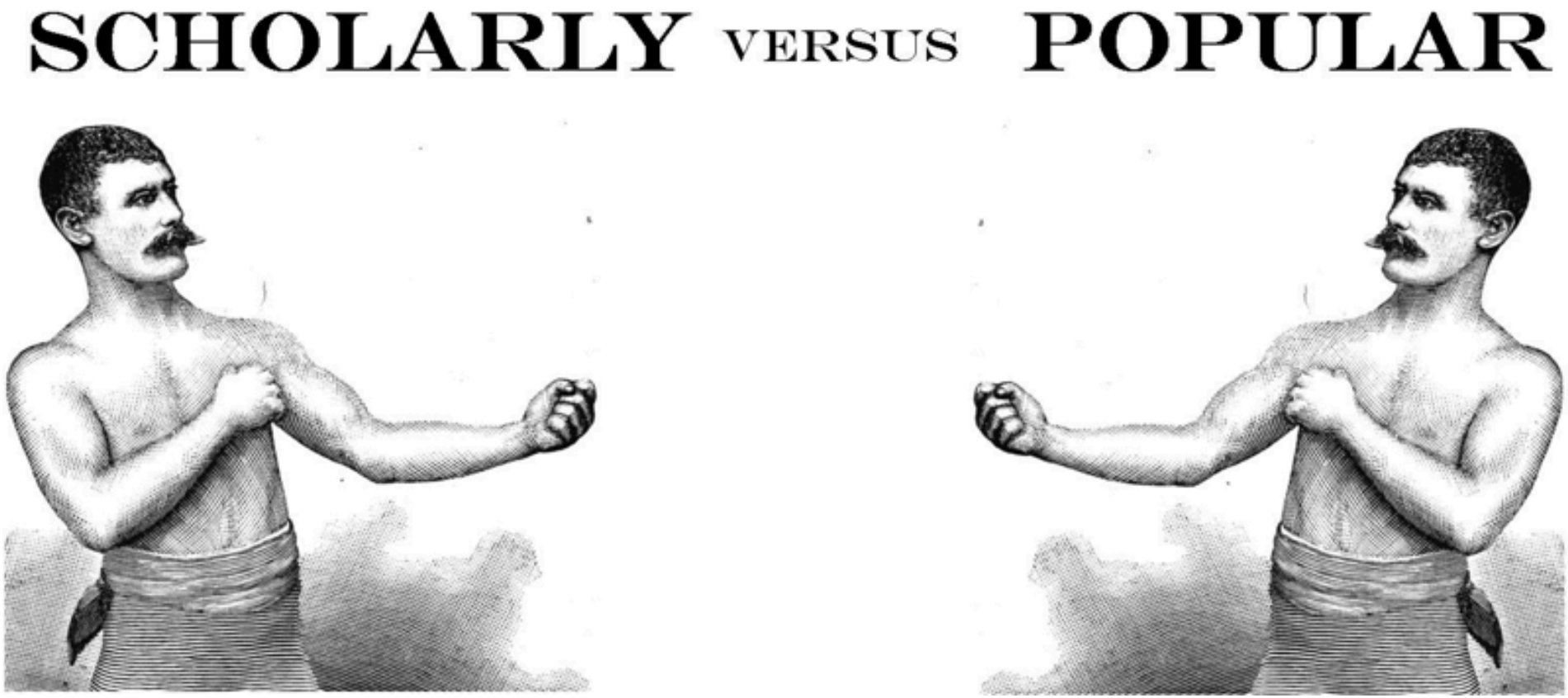
Challenge
Scholarly vs. Popular Resources



http://southwestern.edu/su_blogs/library/files/2012/02/scholar-v-pop-flierTZ.jpg

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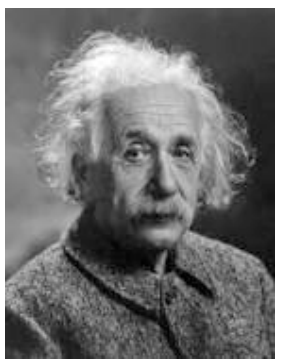
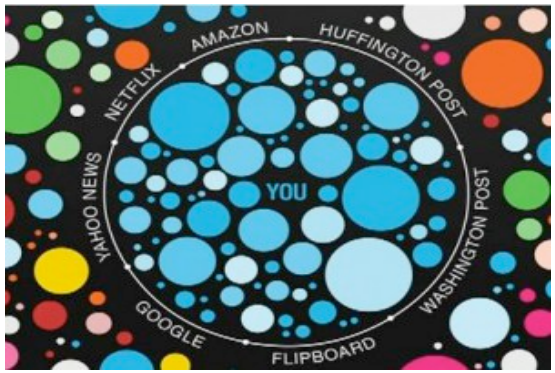
Challenge

What is wrong with popularity?

Phenomena

- Rich-get-Richer effects
  - Hard to become rich when starting in the long tail
- Potential Filter Bubble
- Popularity can make rankings unfair





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Challenge

Is popularity based ranking the best we can do?

Experiment by Salgankik, Dodds, and Watts

- Download site for 48 obscure music songs
  - User get feedback on the popularity of a song
  - Hidden to user: 8 different copies of the system

  ➔8 very different market shares
  - 9th System: no user feedback

  ➔Less variation in market shares of different songs

➔ **Popularity reinforce rich-get-richer phenomena**

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DISCOVERING SCHOLARLY & CULTURAL CONTENT IN THE LONG TAIL

Project Details

- EU FP7 funded Integrated Project
- 10 Partners
  - R&D Partners
  - Memory Organisations

Vision: *Bring the user to the content, not the content to the user*

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A Quick Introduction

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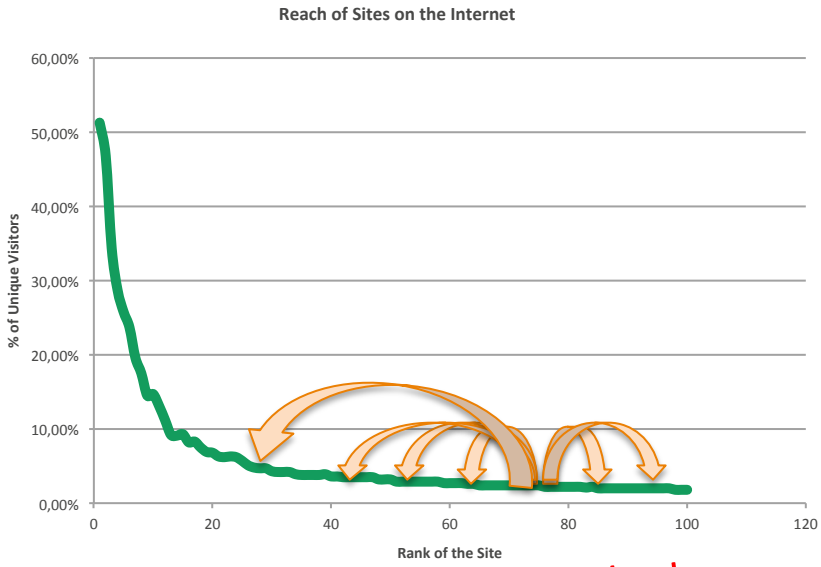
http://www.youtube.com/watch?v=5gy6V1M2R9M

Idea

„Bring the content to the user, not the user to the content“

- Inject cultural and scientific content into existing web channels
  - Websites (Wikipedia, etc.)
  - CMS/LMS
  - Social media channels (Twitter, etc.)
  - Support “head-channels” as well as tail-channels
- Gather user and usage feedback such that memory organisations can learn how resources are distributed and used



Requires high-quality, context dependent injections of resources (aka personalised recommendations)

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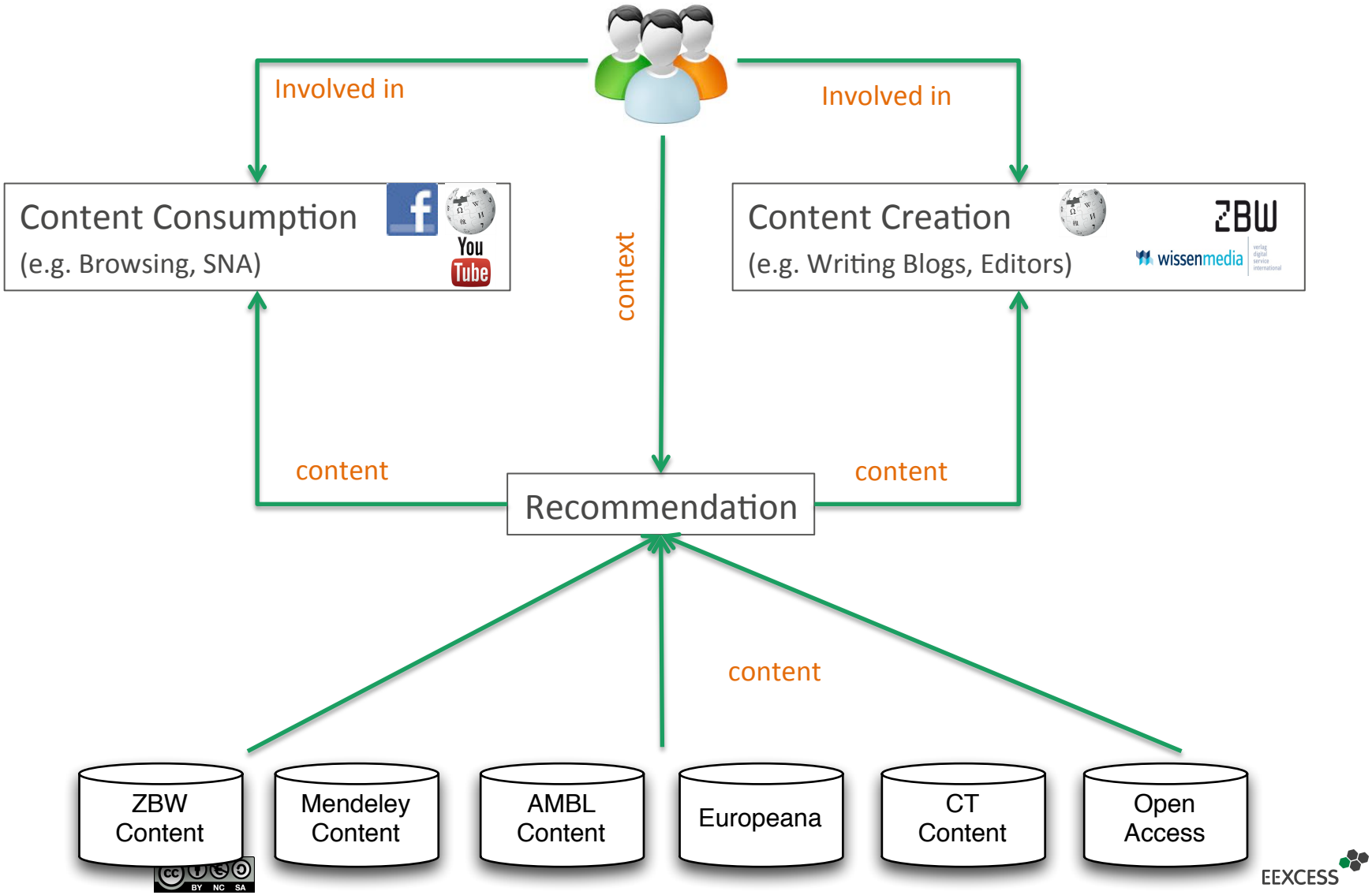
Approach
Overview



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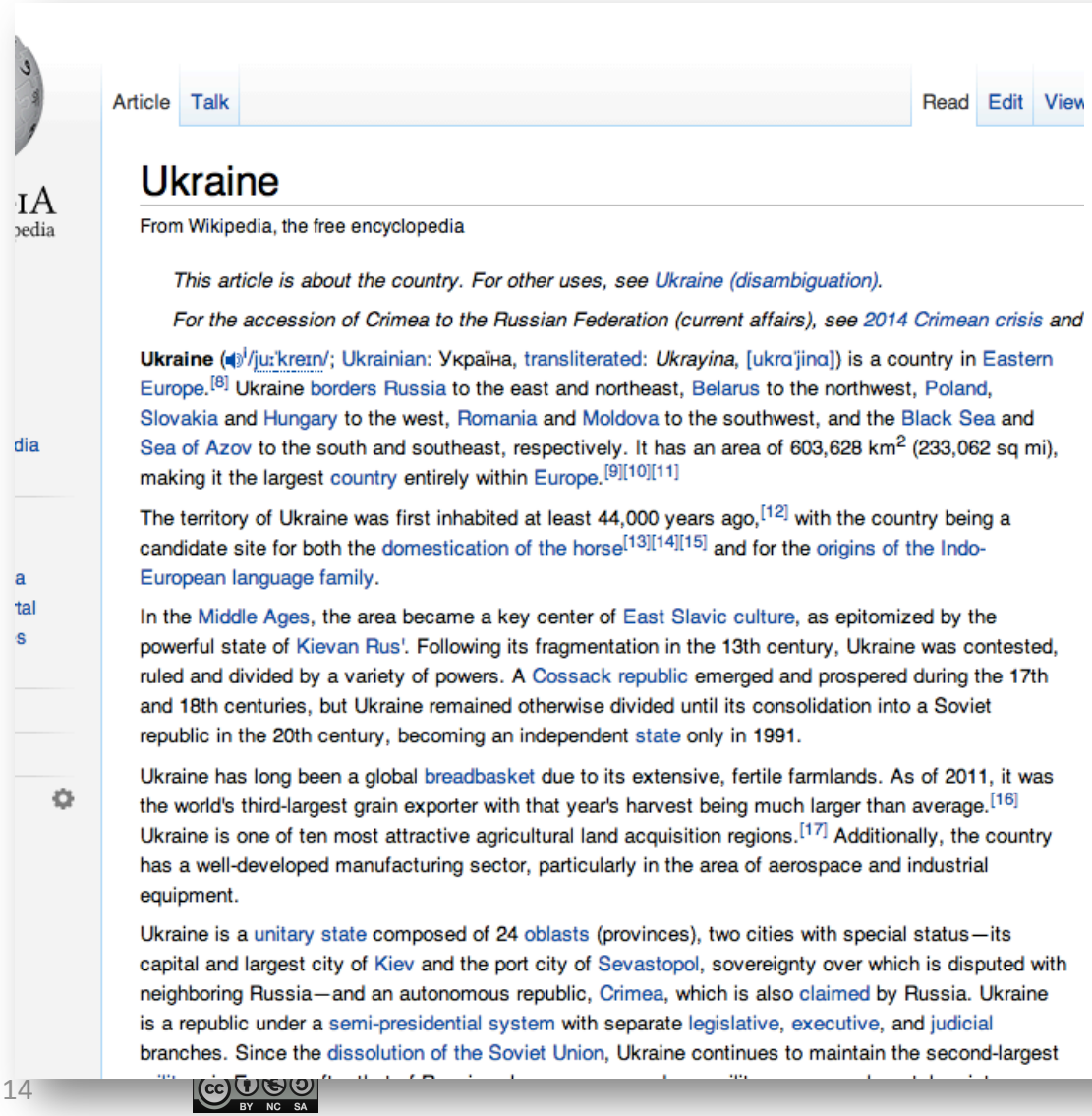
Approach
Example Wikipedia



Article Talk Read Edit View

Ukraine

From Wikipedia, the free encyclopedia

This article is about the country. For other uses, see Ukraine (disambiguation).

For the accession of Crimea to the Russian Federation (current affairs), see 2014 Crimean crisis and

Ukraine (/juːˈkreɪn/; Ukrainian: Україна, transliterated: *Ukrayina*, [ukrɑˈjinɑ]) is a country in Eastern Europe.[8] Ukraine borders Russia to the east and northeast, Belarus to the northwest, Poland, Slovakia and Hungary to the west, Romania and Moldova to the southwest, and the Black Sea and Sea of Azov to the south and southeast, respectively. It has an area of 603,628 km^2 (233,062 sq mi), making it the largest country entirely within Europe.[9][10][11]

The territory of Ukraine was first inhabited at least 44,000 years ago,[12] with the country being a candidate site for both the domestication of the horse[13][14][15] and for the origins of the Indo-European language family.

In the Middle Ages, the area became a key center of East Slavic culture, as epitomized by the powerful state of Kievan Rus'. Following its fragmentation in the 13th century, Ukraine was contested, ruled and divided by a variety of powers. A Cossack republic emerged and prospered during the 17th and 18th centuries, but Ukraine remained otherwise divided until its consolidation into a Soviet republic in the 20th century, becoming an independent state only in 1991.

Ukraine has long been a global breadbasket due to its extensive, fertile farmlands. As of 2011, it was the world's third-largest grain exporter with that year's harvest being much larger than average.[16] Ukraine is one of ten most attractive agricultural land acquisition regions.[17] Additionally, the country has a well-developed manufacturing sector, particularly in the area of aerospace and industrial equipment.

Ukraine is a unitary state composed of 24 oblasts (provinces), two cities with special status—its capital and largest city of Kiev and the port city of Sevastopol, sovereignty over which is disputed with neighboring Russia—and an autonomous republic, Crimea, which is also claimed by Russia. Ukraine is a republic under a semi-presidential system with separate legislative, executive, and judicial branches. Since the dissolution of the Soviet Union, Ukraine continues to maintain the second-largest

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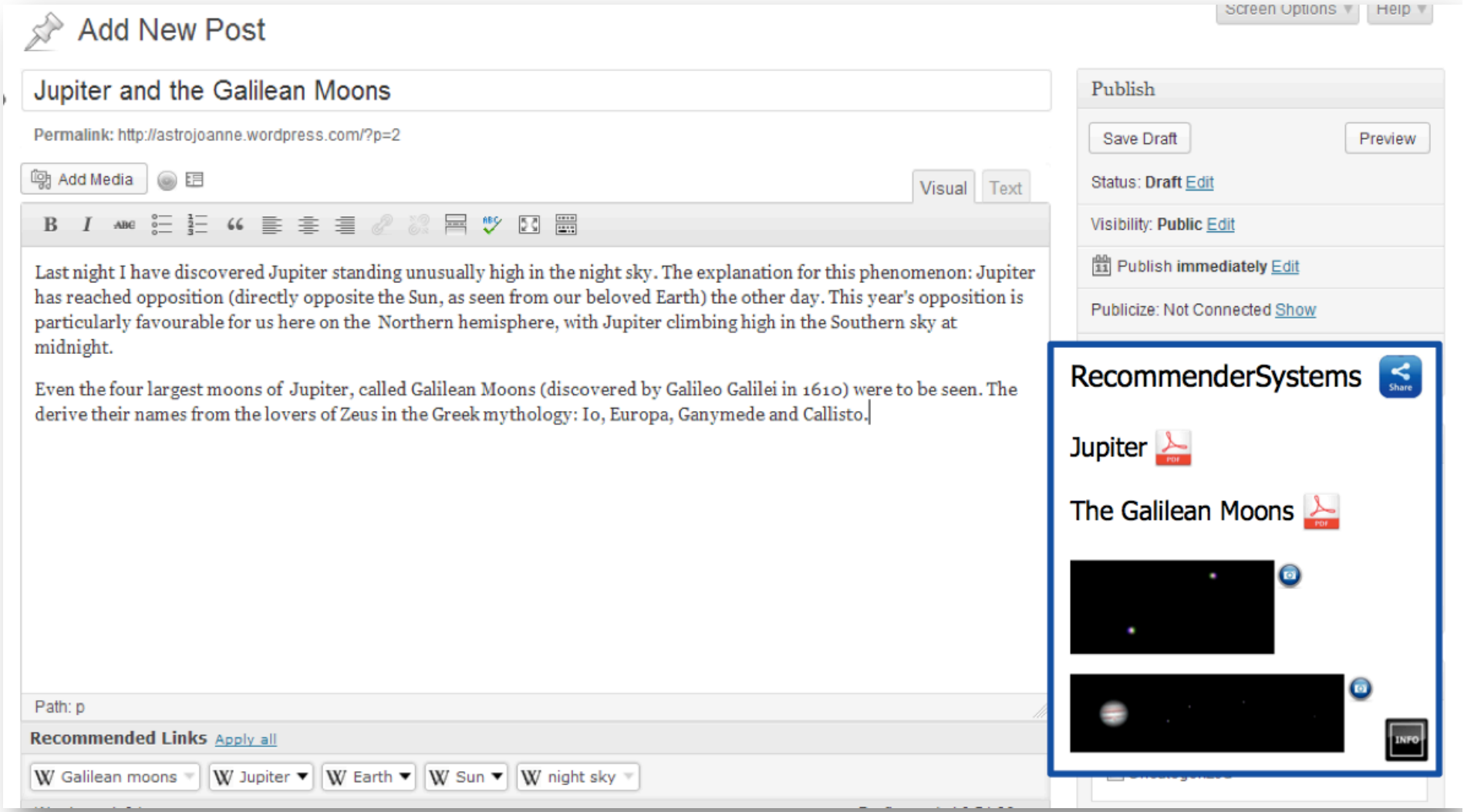
Approach

Example Blog Writing



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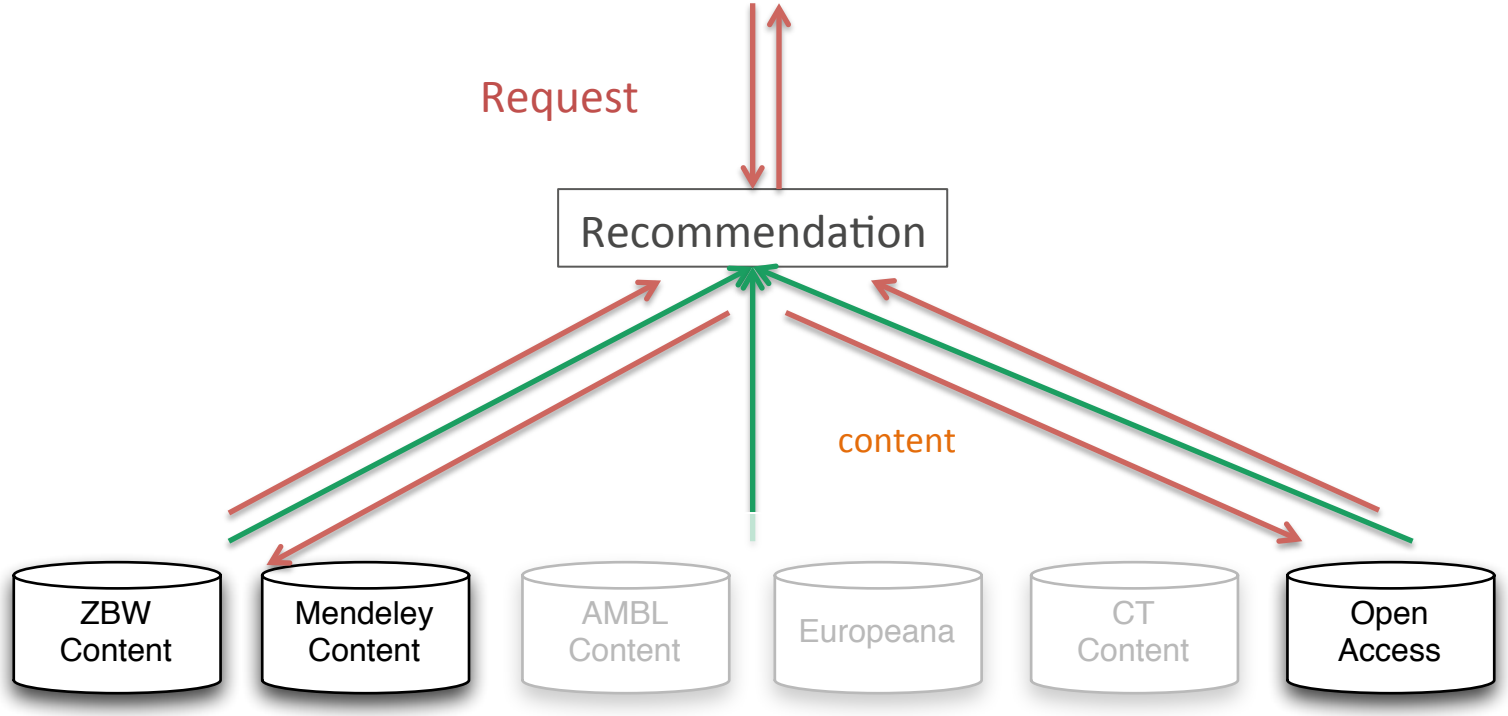
Approach
Federated Recommendation



1. Select appropriate source
2. Forward request
3. Gather and merge results
4. Return results

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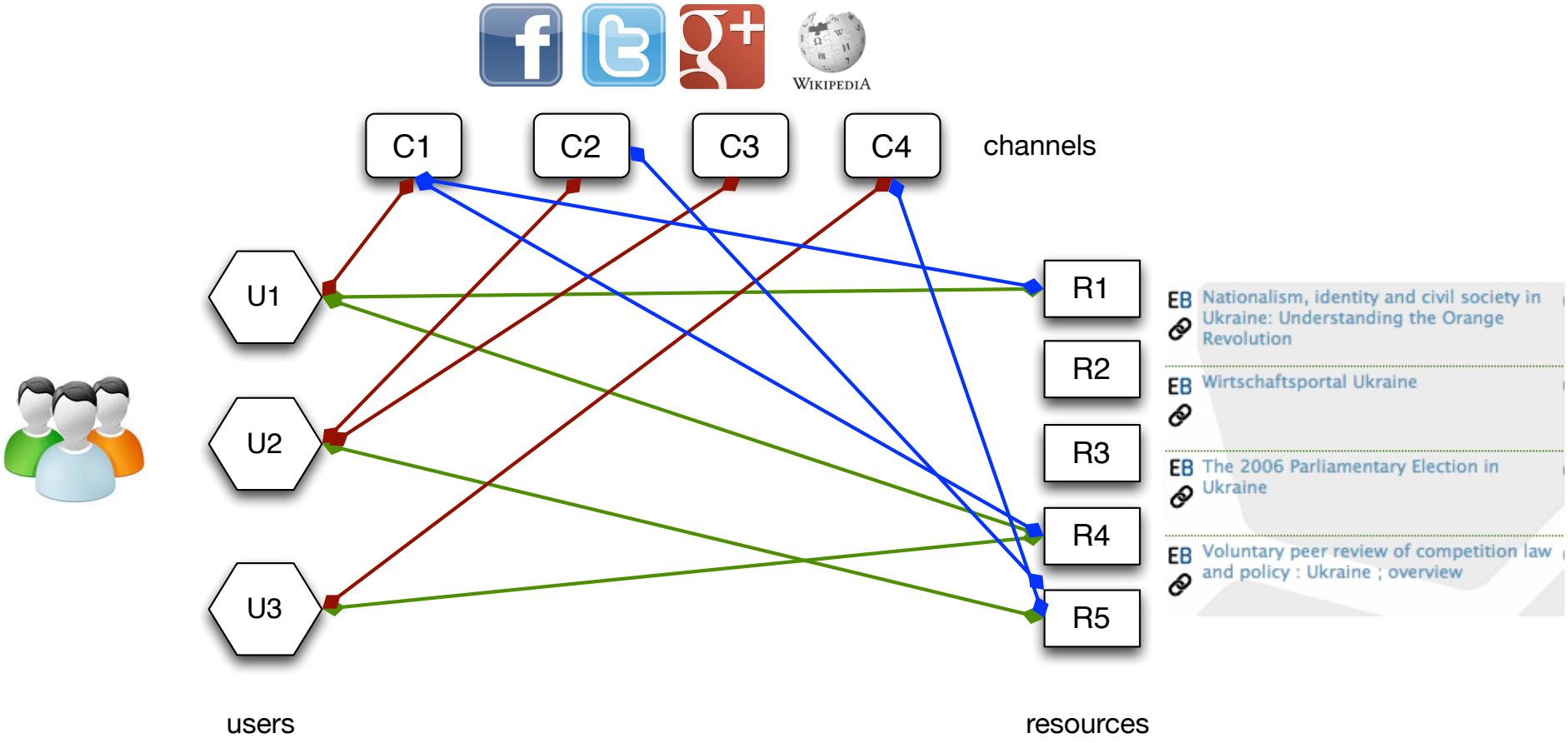
Approach
User and Usage Mining

- Obtaining knowledge over user and usage while retaining privacy



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Approach
Intelligent User Interfaces

- Beyond 10 results through visualisation
  - Recommendation Results
  - Relationships among items
  - Metadata
- Empower user to discovery interesting resources in the long tail content

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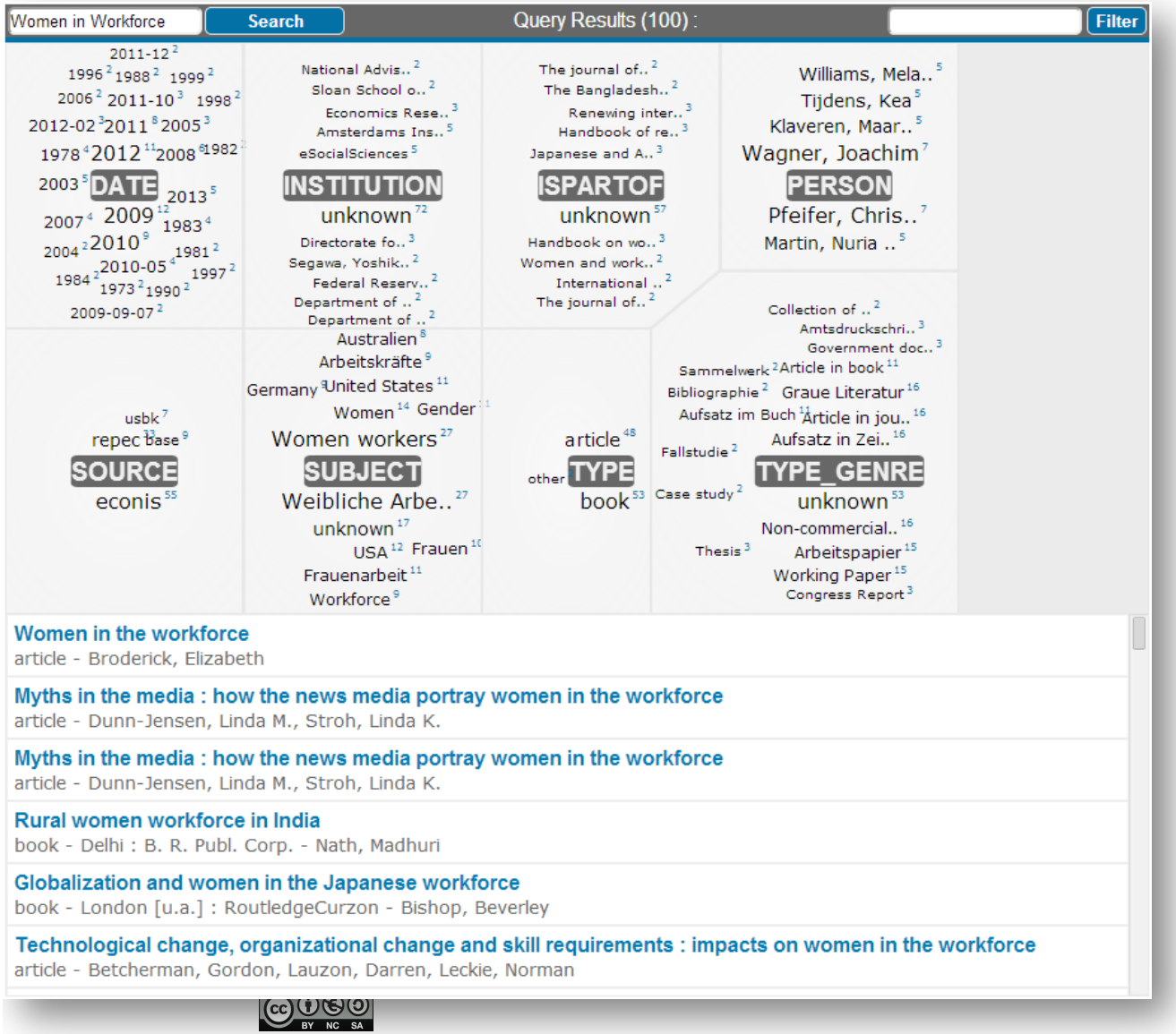
Approach

Intelligent User Interfaces



- Facetted browsing of large result lists for discovery purpose

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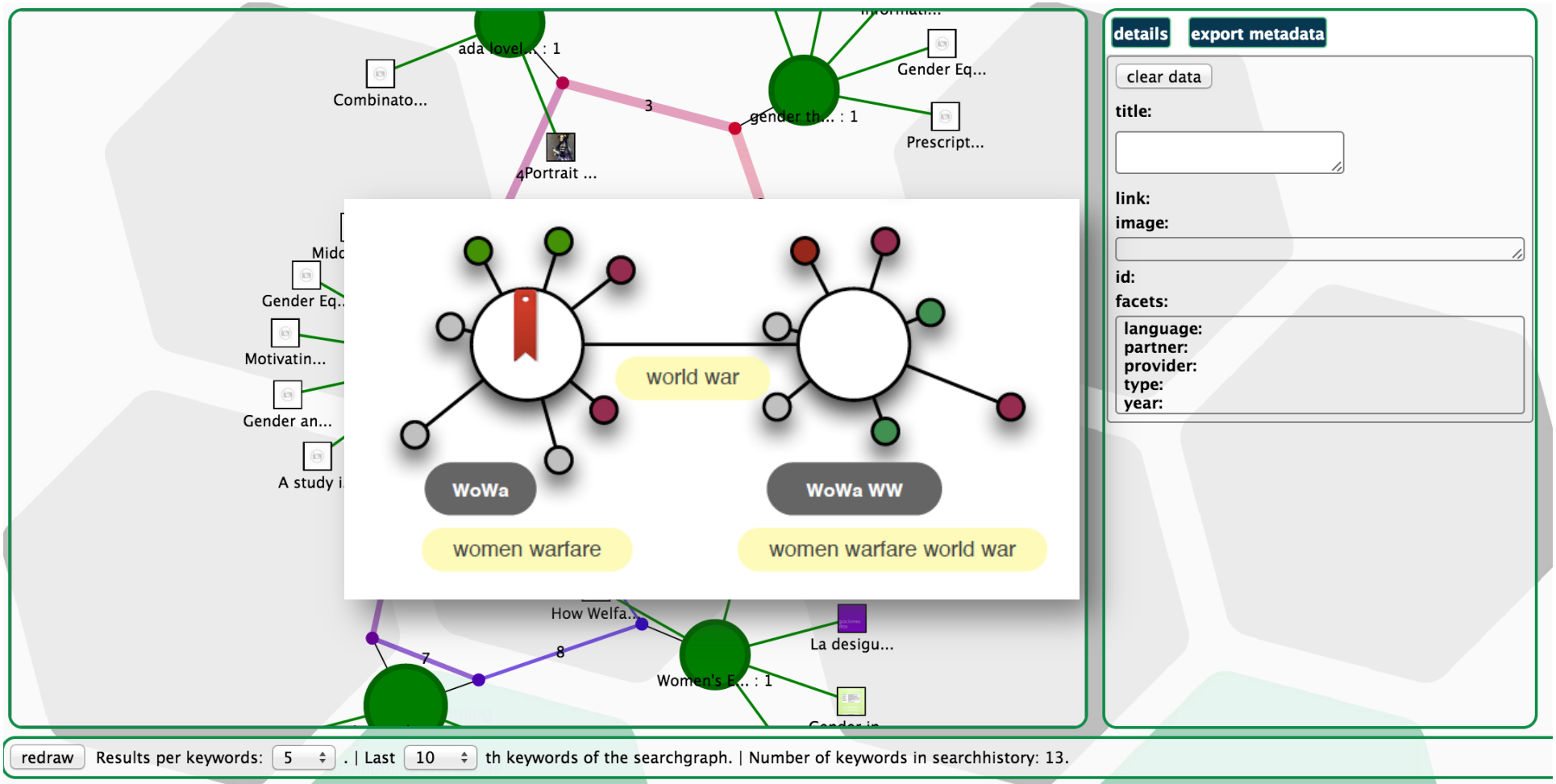
EEXCESS

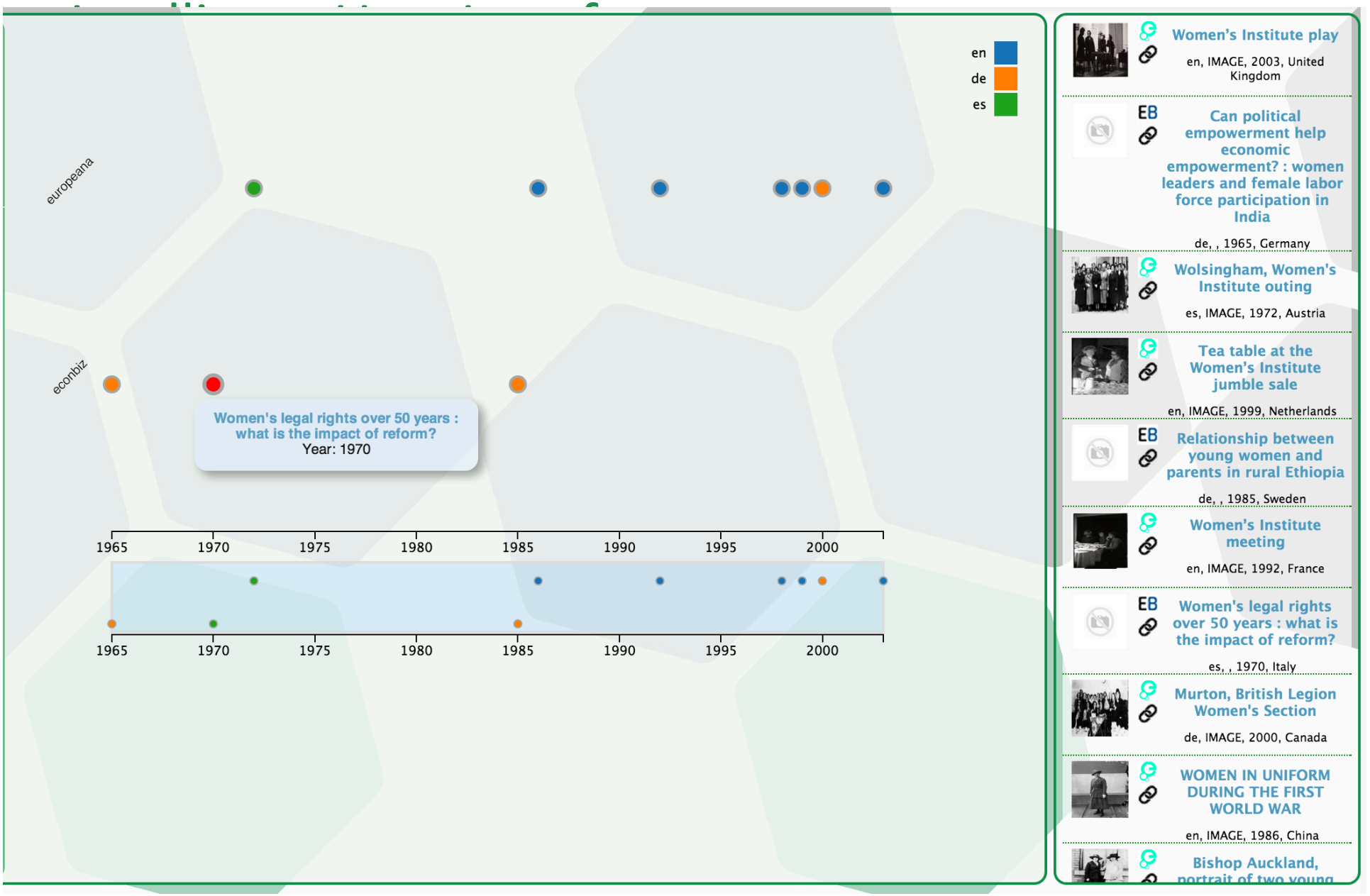
Approach

Intelligent User Interfaces

- Query Summary



Approach


en
de
es
europeana
econbiz
Women's legal rights over 50 years : what is the impact of reform?
Year: 1970
1965
1970
1975
1980
1985
1990
1995
2000
Women's Institute play
en, IMAGE, 2003, United Kingdom
Can political empowerment help economic empowerment? : women leaders and female labor force participation in India
de, , 1965, Germany
Wolsingham, Women's Institute outing
es, IMAGE, 1972, Austria
Tea table at the Women's Institute jumble sale
en, IMAGE, 1999, Netherlands
Relationship between young women and parents in rural Ethiopia
de, , 1985, Sweden
Women's Institute meeting
en, IMAGE, 1992, France
Women's legal rights over 50 years : what is the impact of reform?
es, , 1970, Italy
Murton, British Legion Women's Section
de, IMAGE, 2000, Canada
WOMEN IN UNIFORM DURING THE FIRST WORLD WAR
en, IMAGE, 1986, China
Bishop Auckland,

Approach
Evaluation in 3 Testbeds

Educational Support
- Cultural/scientific resources injected to LMS
- Pupils, Teachers

Scholarly Communication
- Interconnecting cultural and scientific resource
- Students, Lecturers, Researchers

General Public Education
- Disseminate cultural/scientific content to the general public
- Regionally interested users, culturally interested users, media consumers

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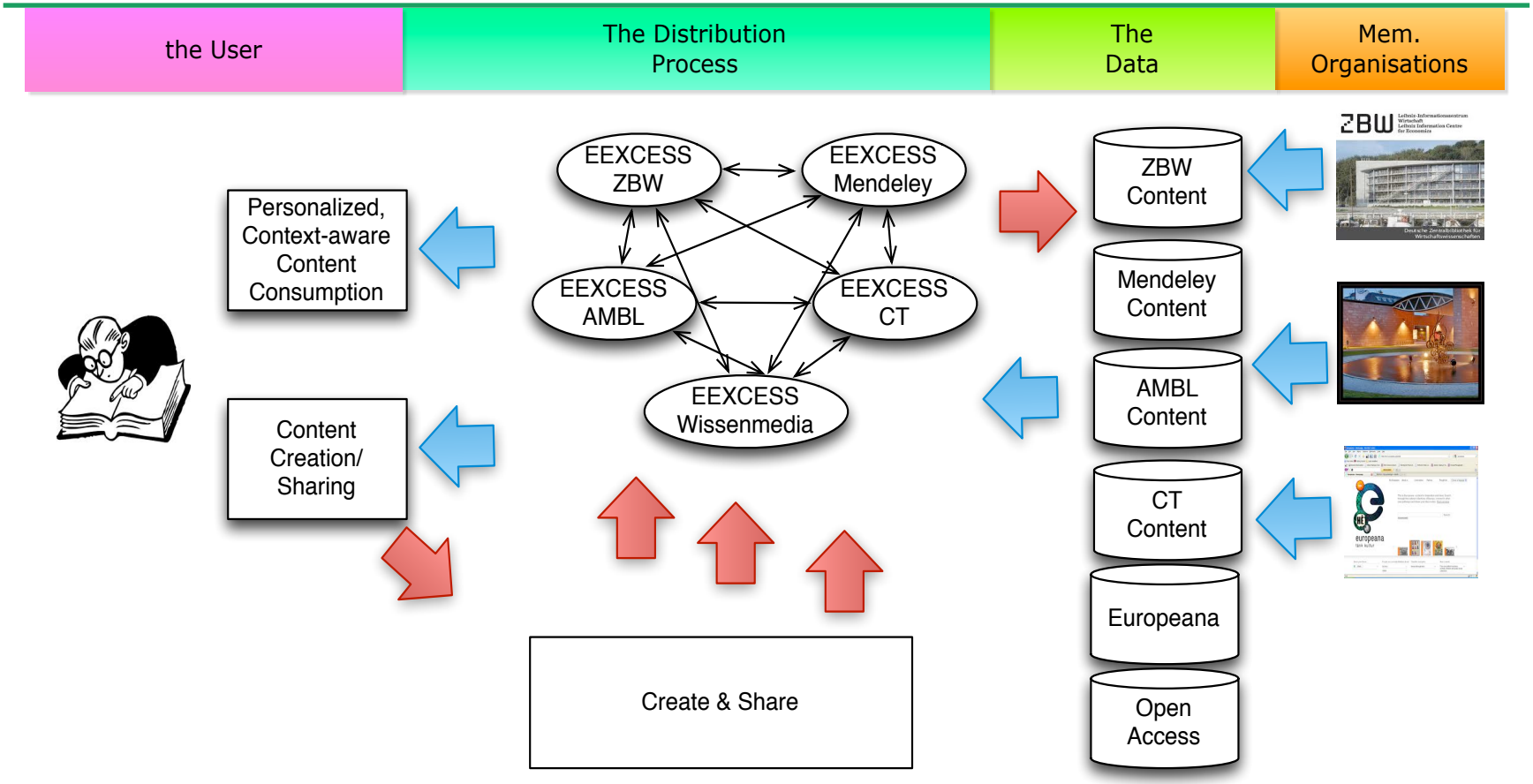
Outcome

New content distribution processes



- **Empower** memory organisations to shape their content distribution process and bring in their expertise
- **Enrich** existing content consumption and creation processes (e.g. blogging)
- **Personalized** recommendation of relevant content based on user and usage analysis
- **Transparent and trusted** distribution processes

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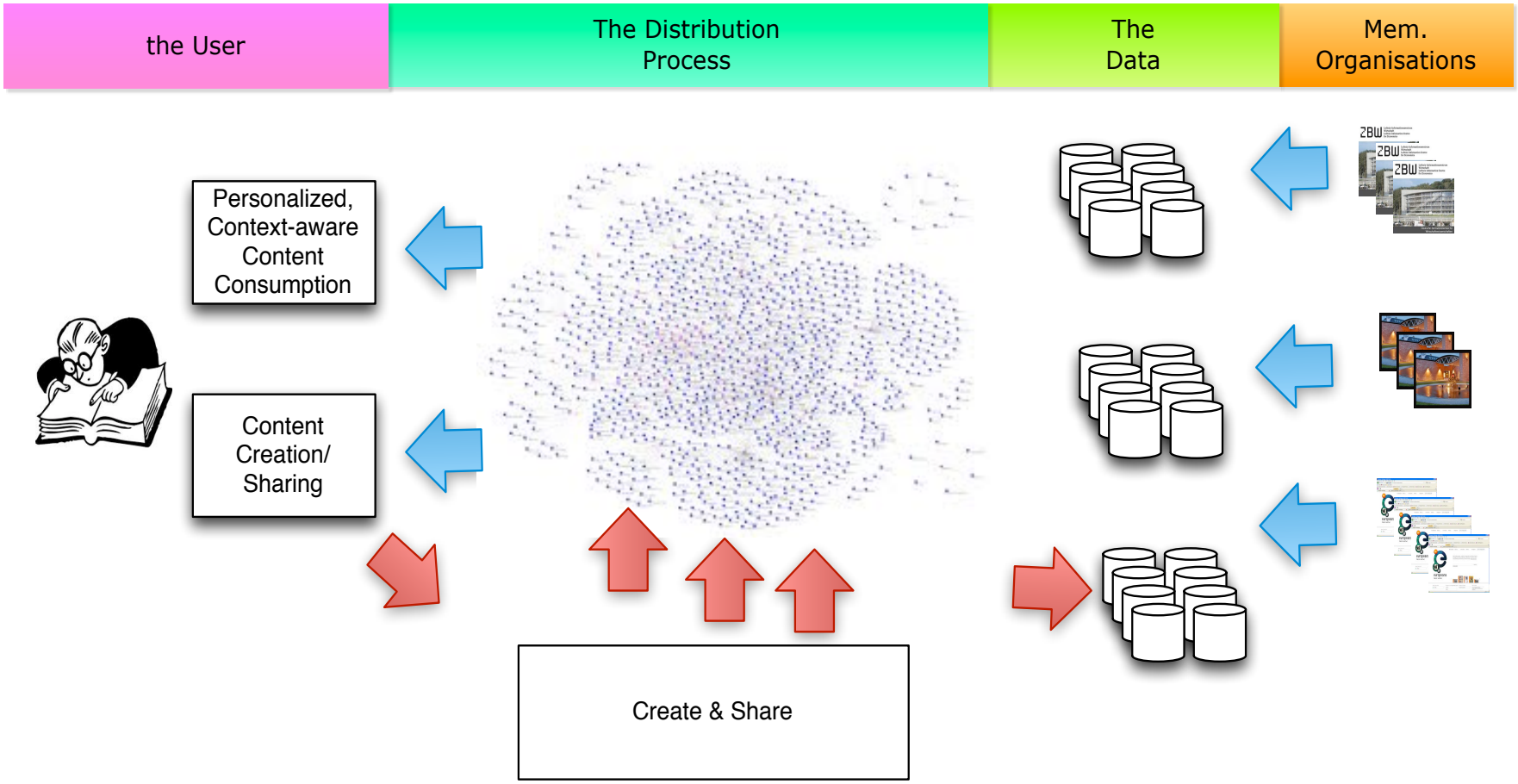
Future Vision:
Scale beyond EEXCESS



- **Adoption** by a large number of different memory organisations
- **Enriching** the Web with cultural, educational and scientific content

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Summary

Popular vs. Scholarly

- Long tail content matters
- Challenge in overcoming the content distribution process today

Bring the content to the user

- Federated Recommendation
- User and usage mining while preserving privacy
- Intelligent user interfaces to foster discovery

Connecting users and experts (again)

If you are interested to integrate your portal, do not hesitate to contact us.

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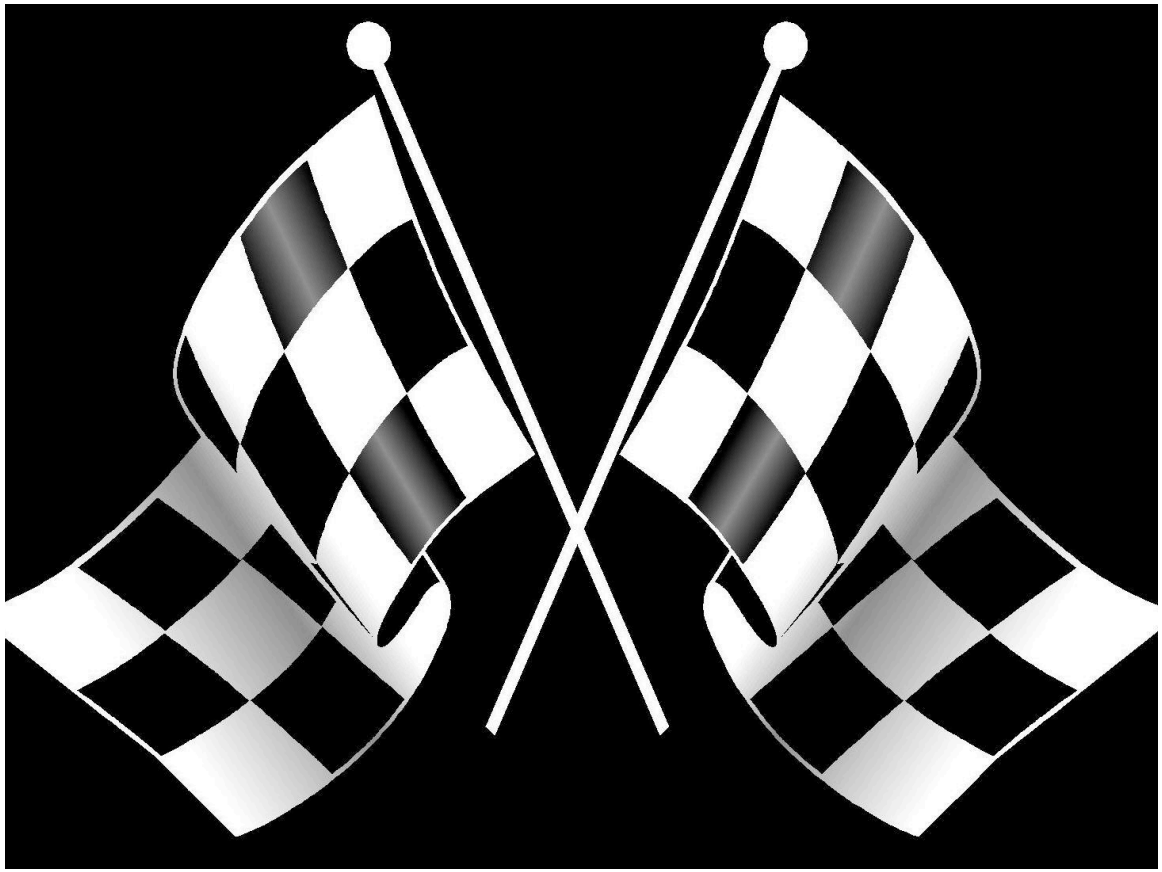

In theory there is no difference between theory and practice. In practice there is. (Yogi Berra)