Semantic Web in a Nutshell

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Overview

- ***Vision: From Semantic Web to the Social Semantic Web***
- Foundation: Semantic Technologies
  - Information- & Knowledge Representation with RDF, RDF-Schema, OWL
  - Vocabularies SKOS, FOAF, SIOC
- *Creating:* Semantic Wikis
  - OntoWiki
  - Semantic MediaWiki
  - MetaWeb's Freebase
- *Extracting:* DBpedia – transforming Wikipedia into a KB
- *Sharing:*
  - Social Semantic Network - Twine
  - Triplify
  - Exhibit
- *Semantic Search & Data Integration*
  - Powerset
  - Potluck

Web 1.0

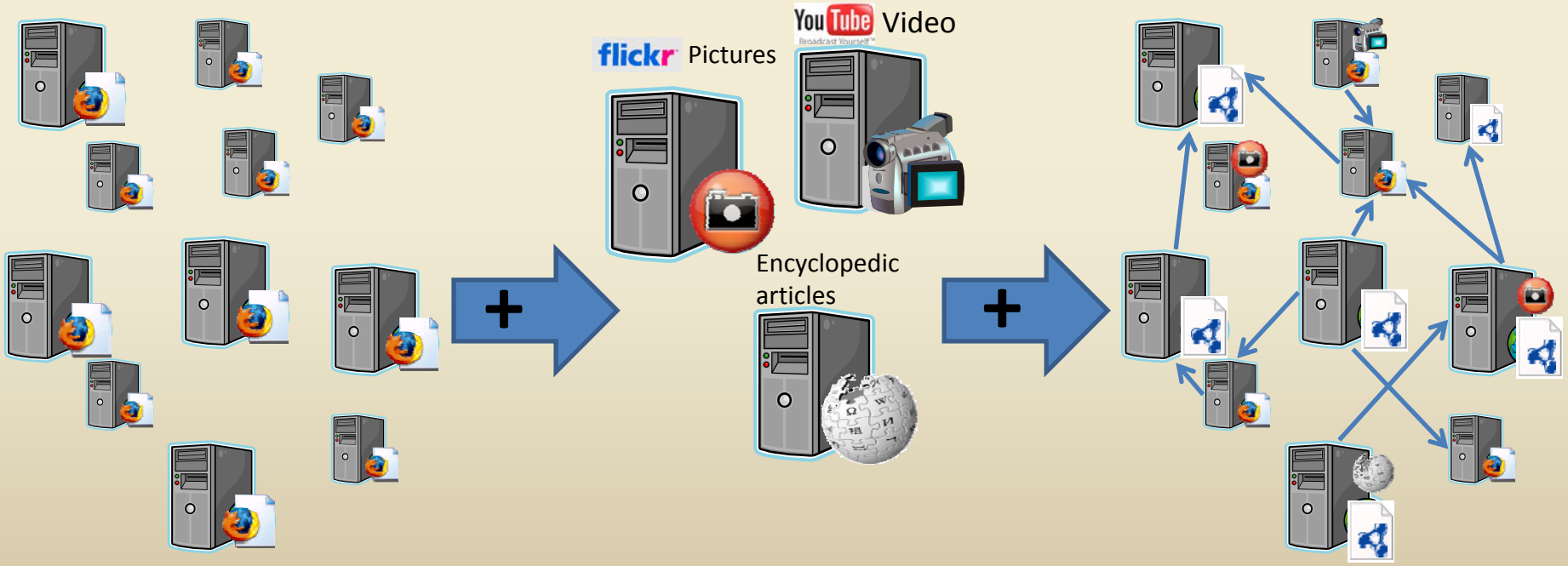
Many Web sites containing unstructured, textual content

Web 2.0

Few large Web sites are specialized on specific content types

Web 3.0

Many Web sites containing & semantically syndicating arbitrarily structured content



The Problem:
From Documents to Concepts

It is **hard** if not impossible on the current Web **to collaboratively create, annotate and query structured content**.

Tools as **Google Docs, Wikis, CMSes follow a document (or article) oriented approach** – result of limitations of legacy technology (typewriter).

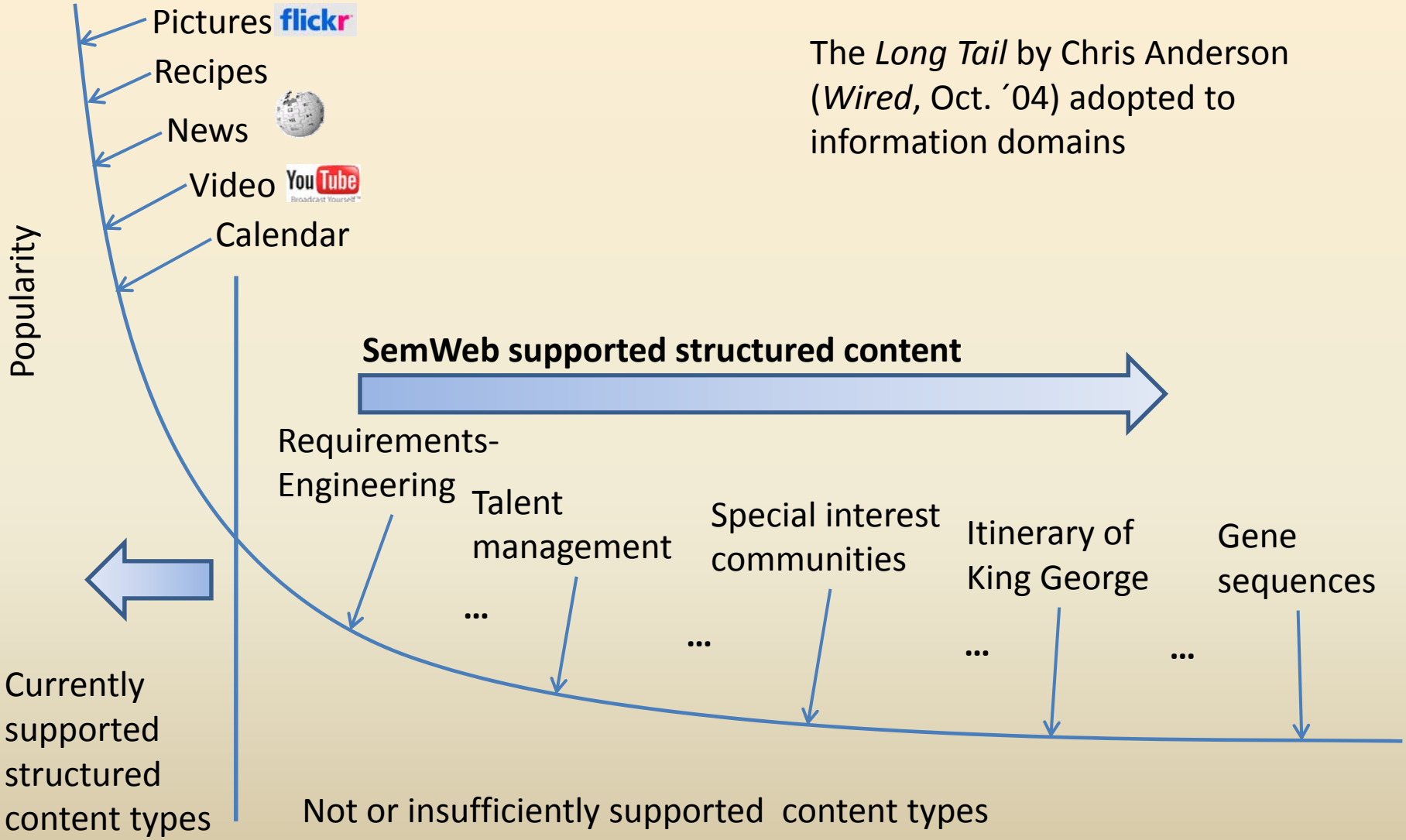
People think rather concept than document oriented – they to want work on structures and relations or attributes rather than writing texts (unless they are poets).

Empowering people to **collaborate easily on semantic structures** can reveal enormous potentials.

Example scenarios

- collection, structuring, annotation, rating, prioritization of ideas & requirements regarding a new product in a company's intranet
- development of shared taxonomies, classification systems for science & medicine or intra-corporate talent management
- collection, structuring and publishing of information in special interest Web communities (e.g. cars, sports, entertainment products, tourism)

The Potential for Changing the Web



The *Long Tail* by Chris Anderson (*Wired*, Oct. ´04) adopted to information domains

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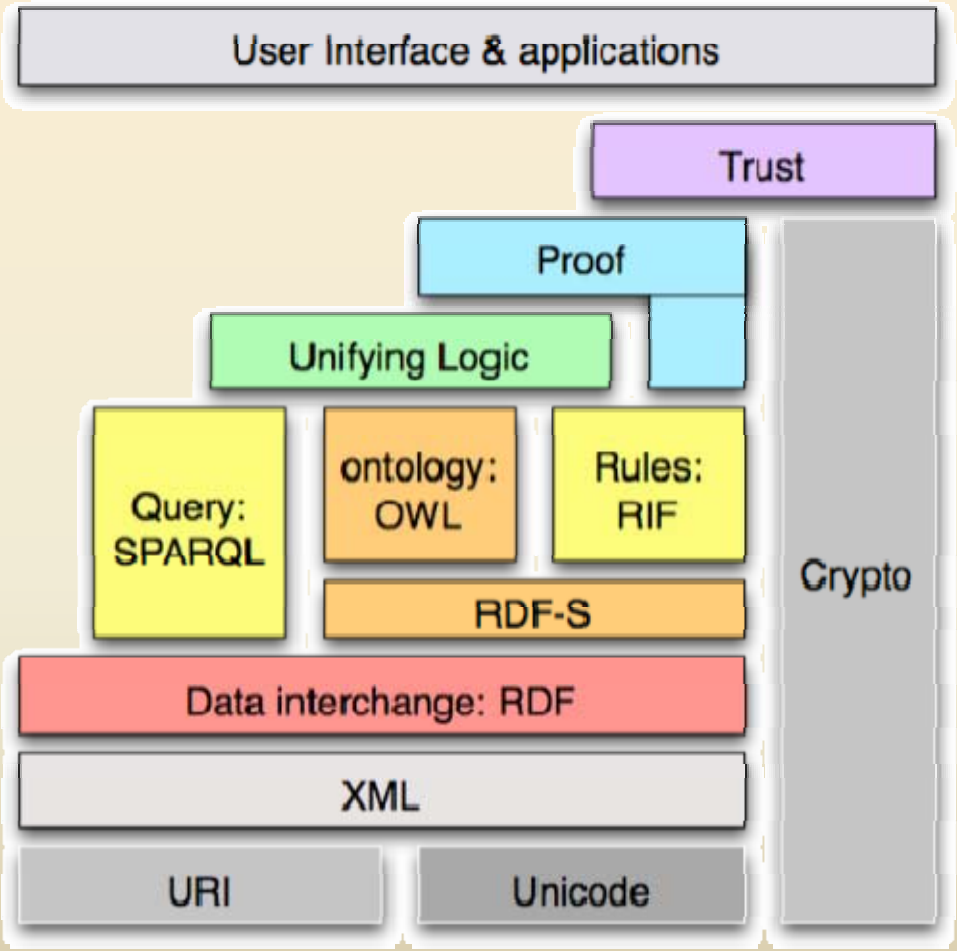
Semantic Web Layer Cake



RDF - Resource Description Framework

Unterscheidet 2 fundamentale **Grundtypen**:

Resourcen

- Komplexe abstrakte oder konkrete Entitäten
- Eindeutig durch URI charakterisiert
- Beispiel: http://DBpedia.org/resource/Vienna

Literale

- Konkrete Datenwerte
- Optional mit Datentyp (xsl:string, xsl:dateTime etc.) oder Sprache (e.g. en, de)
- Beispiel: `"2008-05-31T09:30:00"^^xsd:dateTime` oder `"Wien"@"de"`

RDF Statement / Triple

RDF/N3:

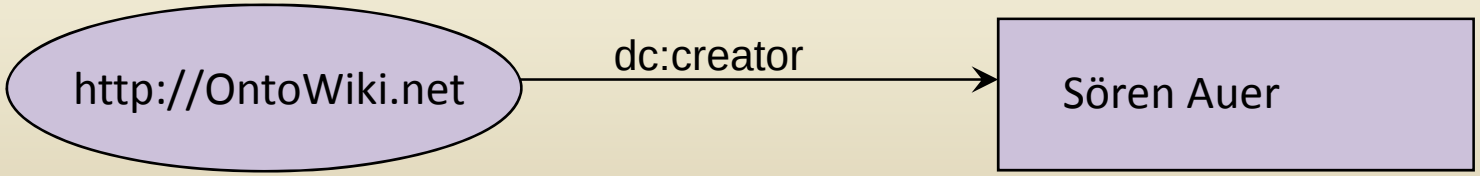
http://OntoWiki.net http://purl.org/metadata/dublin_core#Creator "Sören Auer“

RDF/XML:

```
<?xml version="1.0"?>
<rdf:RDF
  xmlns="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:dc="http://purl.org/metadata/dublin_core#">

  <Description about=" http://OntoWiki.net ">
    <dc:Creator>Sören Auer</DC:Creator>
  </Description>

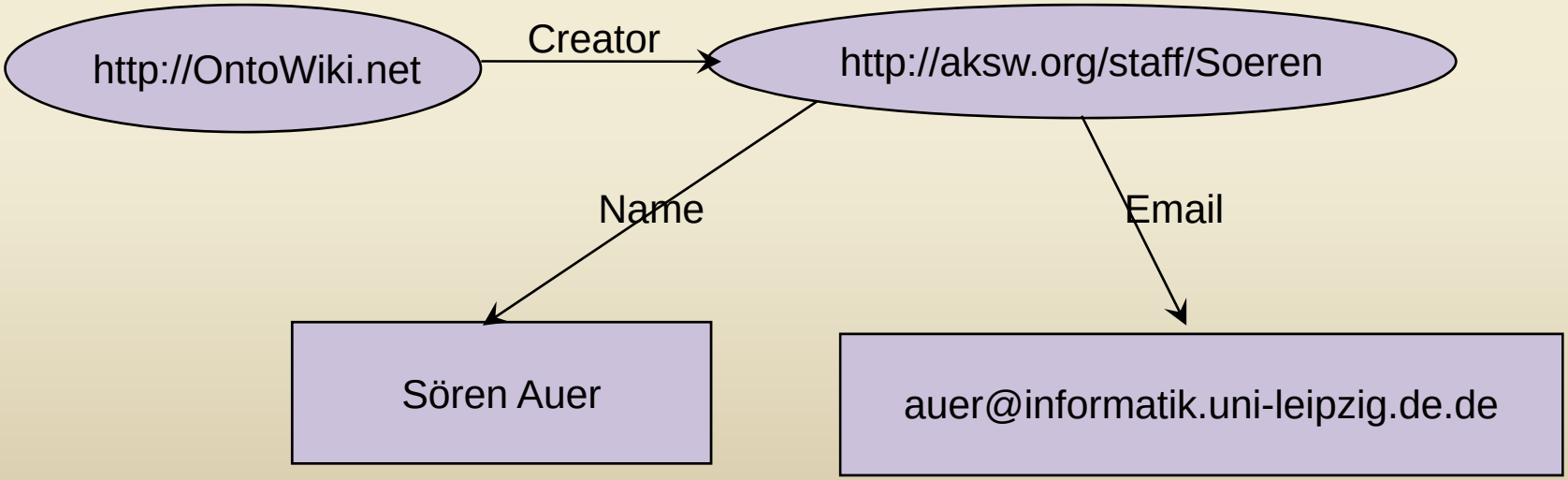
</rdf:RDF>
```



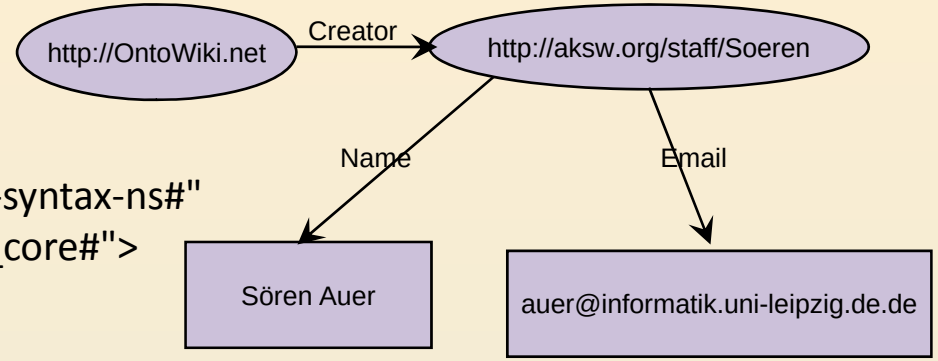
Subject (Resource) | Predicate (Resource) | Object (Resource/Literal)

RDF Document / Model / Graph

- Einfache Wissensbasis
- Kombiniert mehrere RDF Statements



RDF Serialization

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<?xml version="1.0"?>
<rdf:RDF
    xmlns="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:dc="http://purl.org/metadata/dublin_core#">
 <rdf:Description about="http://OntoWiki.net">
   <dc:Creator>
     <rdf:Description>
     <rdf:Description about="http://aksw.org/staff/Soeren">
       <dc:Name>Sören Auer</dc:Name>
       <dc:Email>auer@informatik.uni-leipzig.de</dc:Email>
     </rdf:Description>
   </dc:Creator>
 </rdf:Description>
</rdf:RDF>
```

http://OntoWiki.net	http://purl.org/metadata/dublin_core#Creator	http://aksw.org/staff/Soeren
http://aksw.org/staff/Soeren	http://purl.org/metadata/dublin_core#Name	"Sören Auer"
http://aksw.org/staff/Soeren	http://purl.org/metadata/dublin_core#Email	auer@informatik.uni-leipzig.de

RDF Anwendung

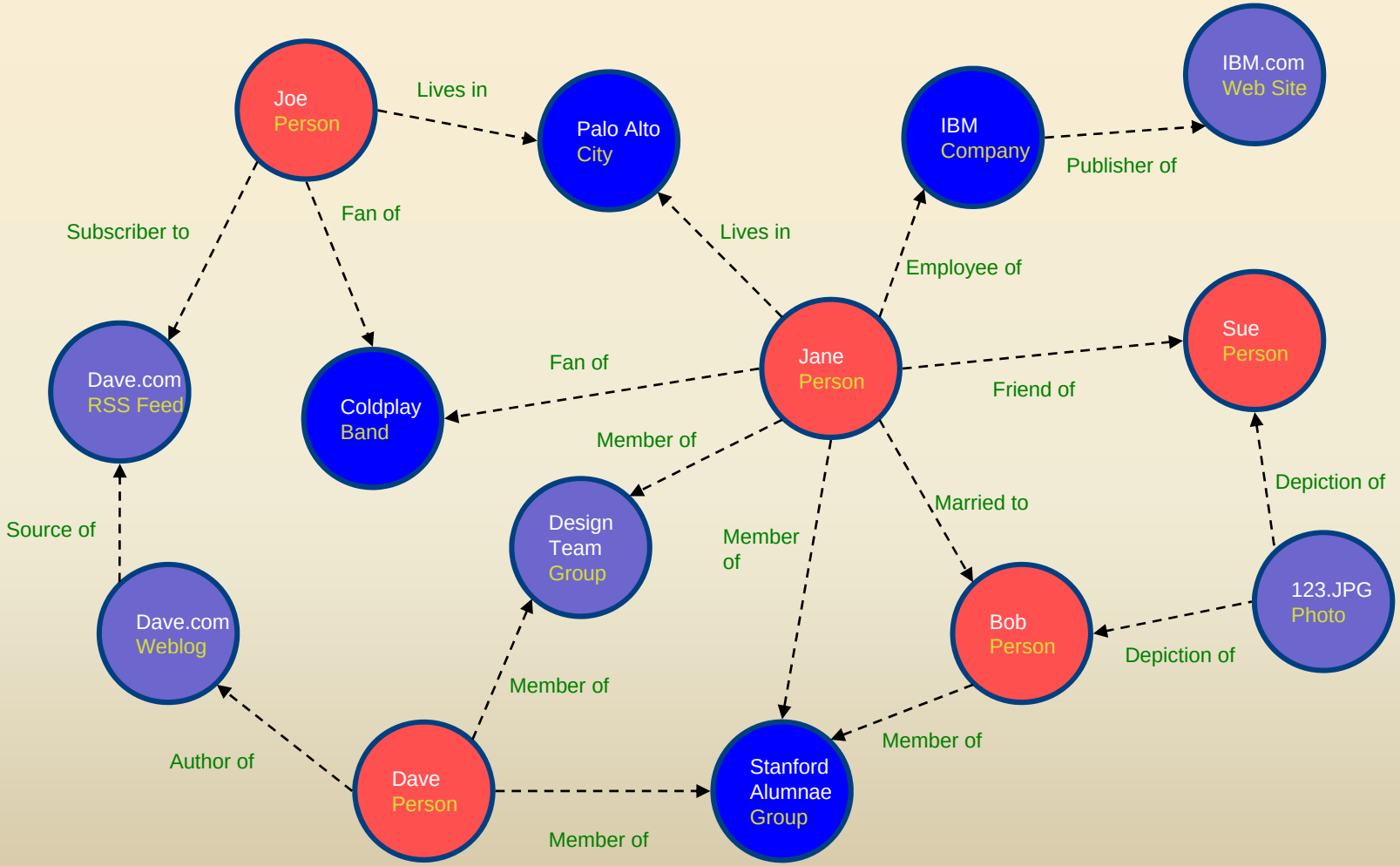
„Eingebettet“

- in HTML/XML bzw. beliebige andere Datenformate
- z.B. PDF / OpenOffice / AVI / P3P

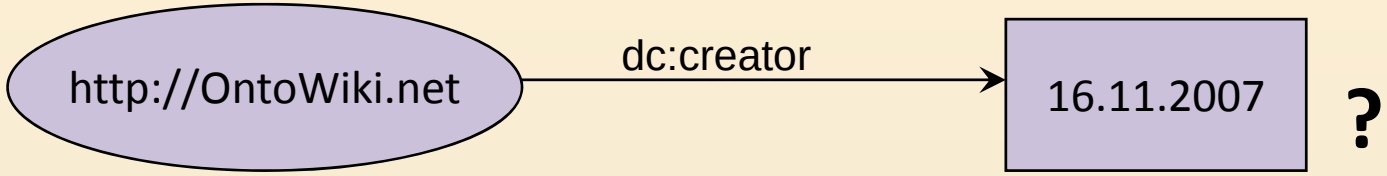
„Standalone“

- Beschreibung einer oder mehrerer „Resourcen“
- Beschreibung von Domainenwissen
  (z.B. zur weltweiten Nutzung im Web bereitgestellt)

Result: A higher resolution Web



RDF Schema



Einschränkung der Verknüpfbarkeit von Resourcen / Literalen

Strukturierung von Vokabularen

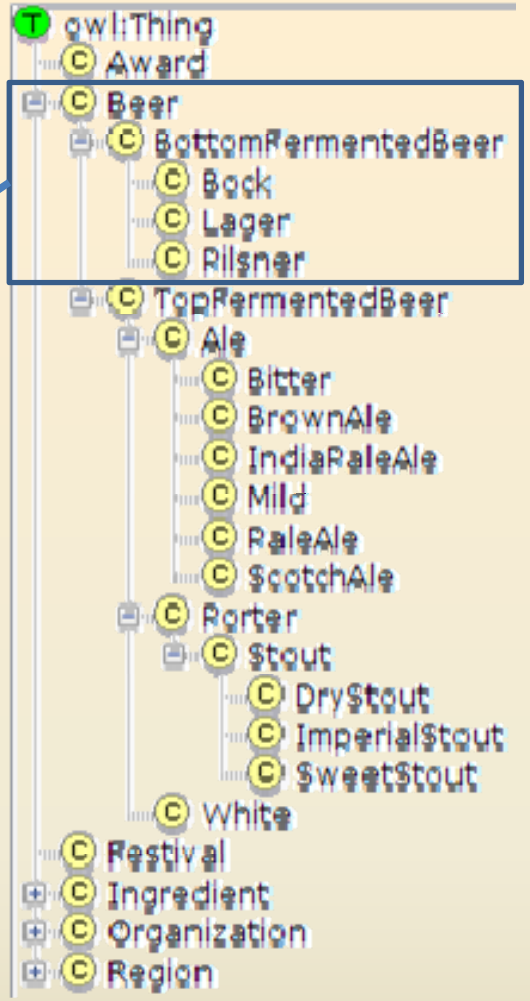
Instanziierung / Klassifikation

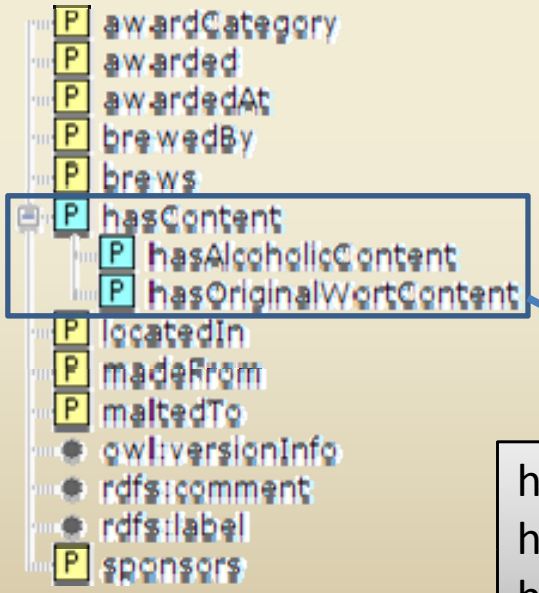
Bereitstellung spezieller Resourcen:

- **Klassen** (Konzepte, Frames)
  http://www.w3.org/2000/01/rdf-schema#Class
- **Attribute** (Eigenschaften, Properties, Slots, Roles)
  http://www.w3.org/2000/01/rdf-schema#Property
- **Instanzen** (Objekte)
  http://www.w3.org/1999/02/22-rdf-syntax-ns#type

RDF-S Class & Property Hierarchies

Beer	rdf:type	rdfs:Class
BottomFermentedBeer	rdfs:subClassOf	Beer
Bock	rdfs:subClassOf	BottomFermentedBeer
Lager	rdfs:subClassOf	BottomFermentedBeer
Pilsner	rdfs:subClassOf	BottomFermentedBeer





hasContent	rdf:type	rdfs:Property
hasAlcoholicContent	rdfs:subPropertyOf	Beer
hasOriginalWortContent	rdfs:subClassOf	BottomFermentedBeer

RDF-S Properties

Werden unabhängig von Klassen definiert verwandt

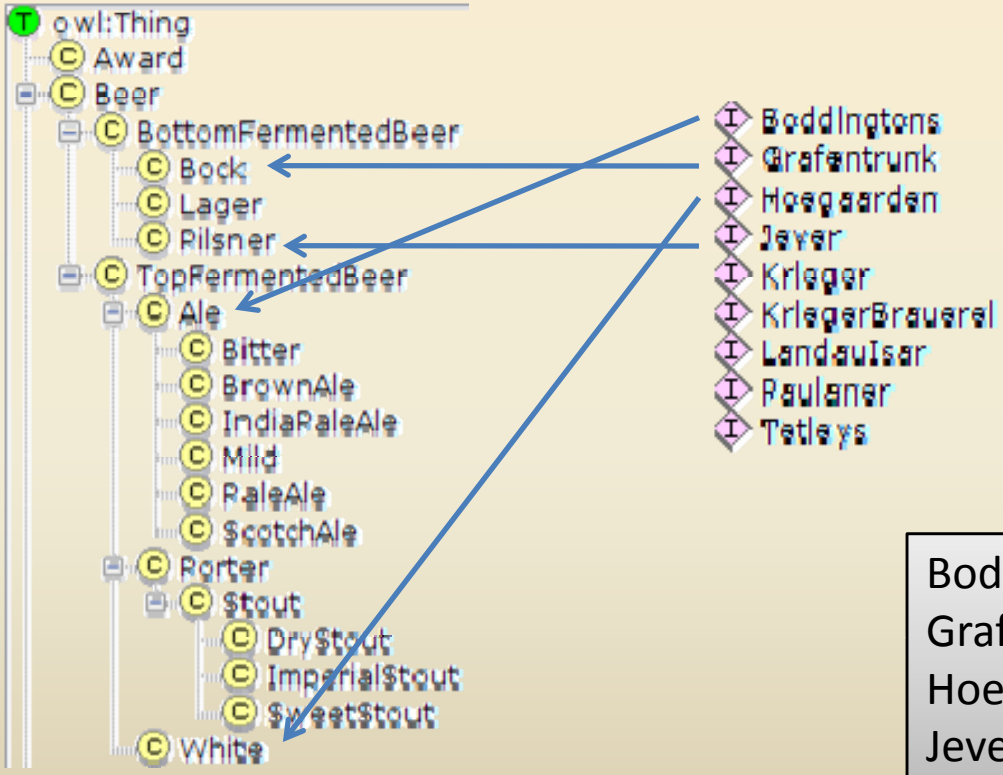
hasAlcoholicContent	rdf:type	owl:DatatypeProperty
hasAlcoholicContent	rdf:type	owl:FunctionalProperty
hasAlcoholicContent	rdfs:domain	Beer
hasAlcoholicContent	rdfs:range	xsd:float
hasAlcoholicContent	rdfs:subPropertyOf	hasContent
brews	rdf:type	owl:ObjectProperty
brews	rdfs:domain	Brewery
brews	rdfs:range	Beer

Domain: Zuordnung zu einer oder mehreren Klassen

Range: Werte welche die Eigenschaft annehmen kann
- Instanzen eine bestimmten Klasse
- Literale eines XML-Schema Datentyps

RDF-S Instances

Sind einer (bzw. mehreren) Klasse(n) zugeordnet:



Boddingtons	rdf:type	Ale
Grafentrunk	rdf:type	Bock
Hoegaarden	rdf:type	White
Jever	rdf:type	Pilsner

OWL Web Ontology Language

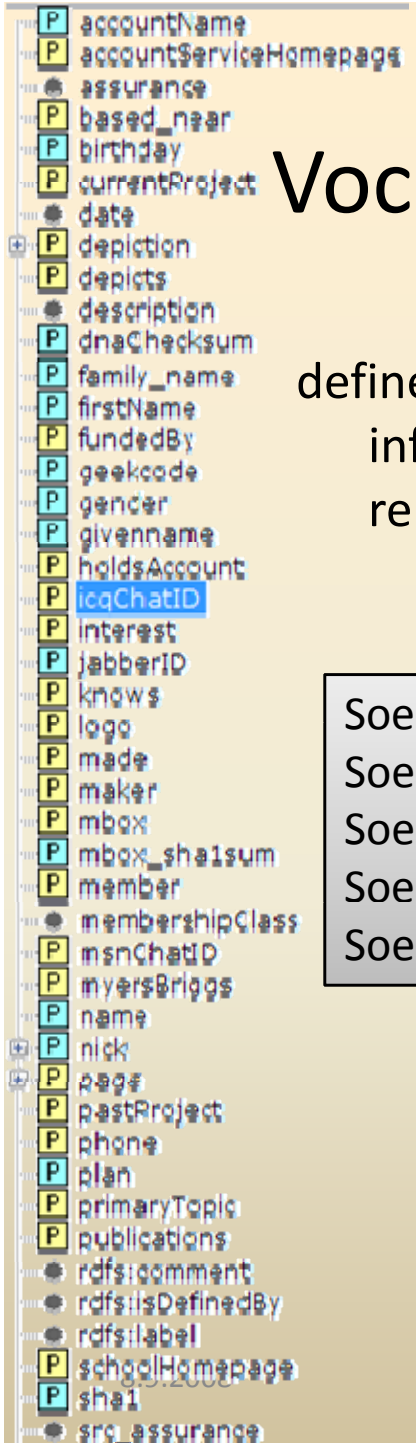
reichert RDF-S um weitere Möglichkeiten an:

- Restriktionen (Constraints)
- Kardinalität (min/max) von Eigenschaften
- Identifikation gleicher Resourcen
- Eigenschaften können funktional, invers funktional, transitiv, symetrisch sein

Äquivalent zu einer entscheidbaren Untermenge der Prädikatenlogik 1. Stufe (Descripton Logic - SHIQ)

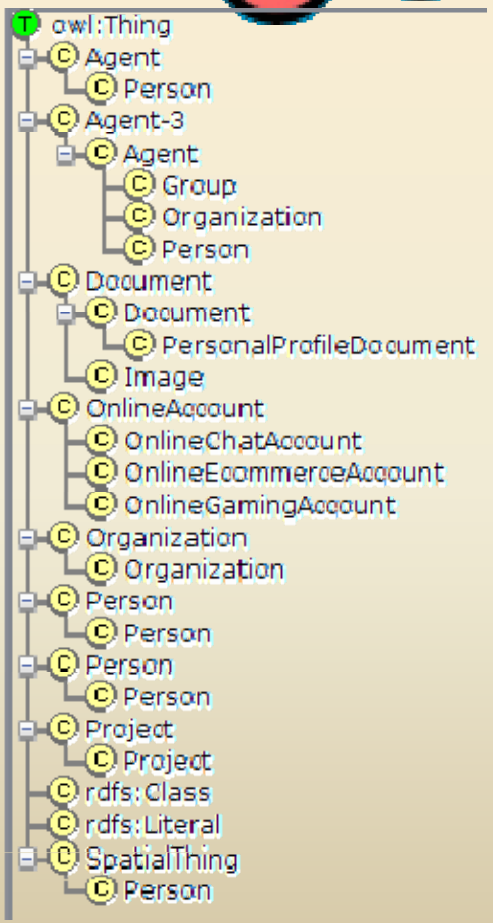
- Automatische Klassifikation
- Konsistenzprüfung
- Einfache Inferenz

Vocabularies: Friend-of-a-Friend (FOAF)



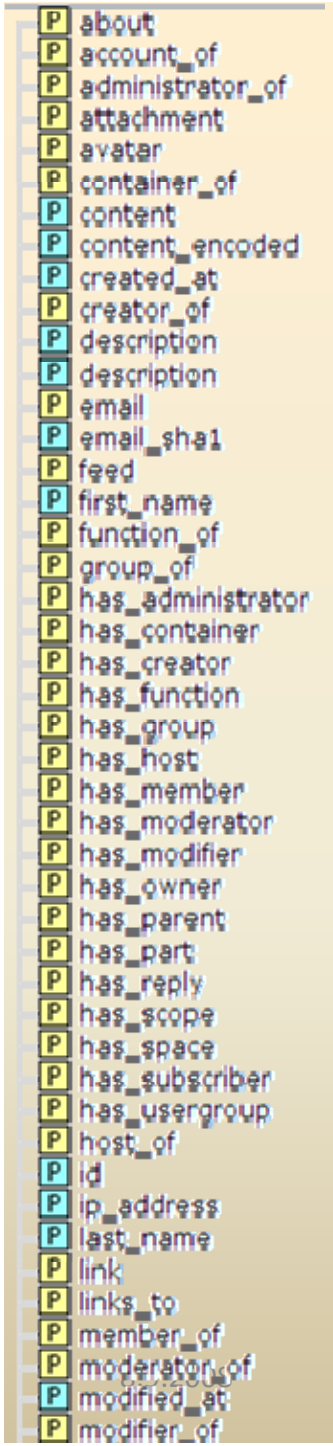
defines classes and properties for representing information about people and their relationships

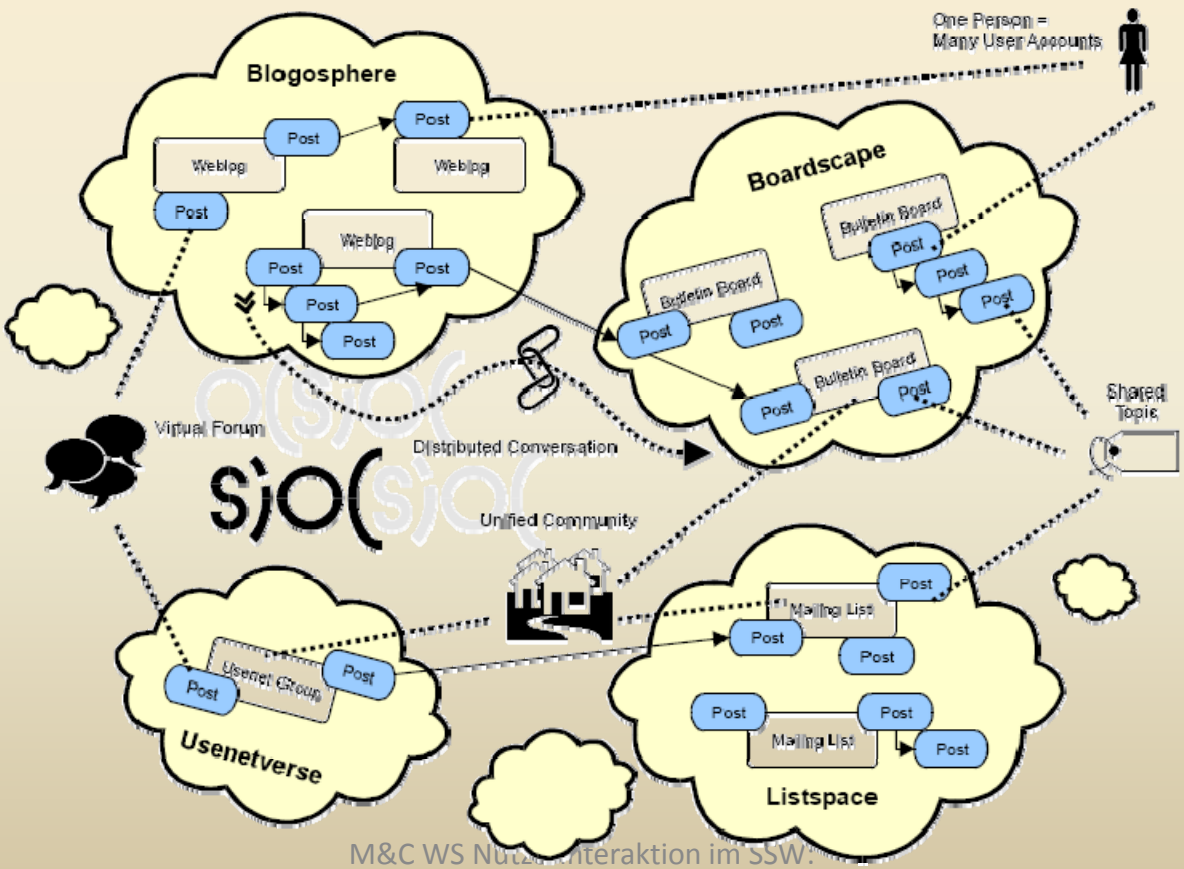
Soeren	rdf:type	foaf:Person
Soeren	currentProject	http://OntoWiki.net
Soeren	foaf:homepage	http://aksw.org/Soeren
Soeren	foaf:knows	http://sembase.at/Tassilo
Soeren	foaf:sha1	09ac456515dee

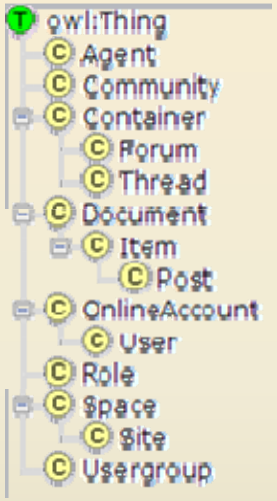


Vocabularies: Semantically Inter-linked Online Communities

Represent content from Blogs, Wikis, Forums, Mailinglists, Chats etc.

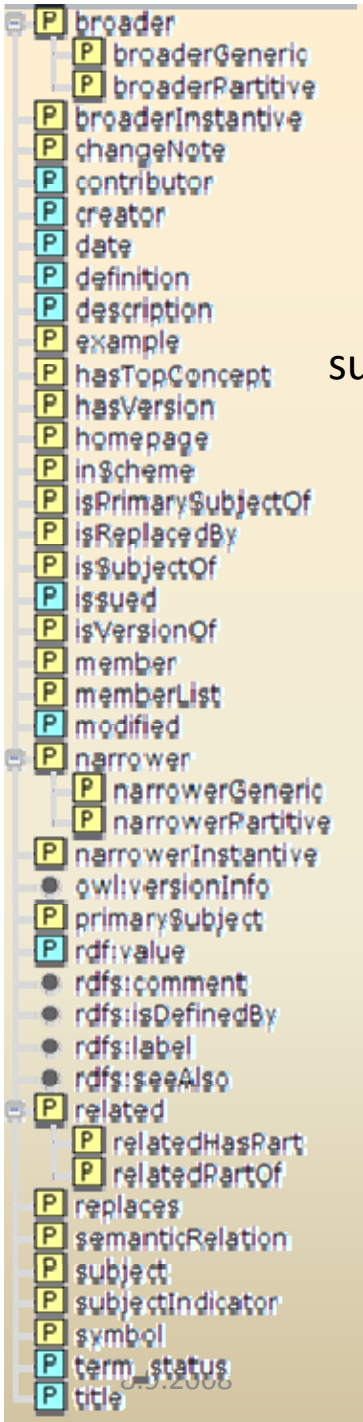


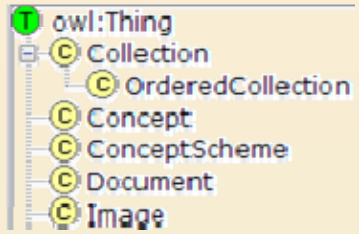


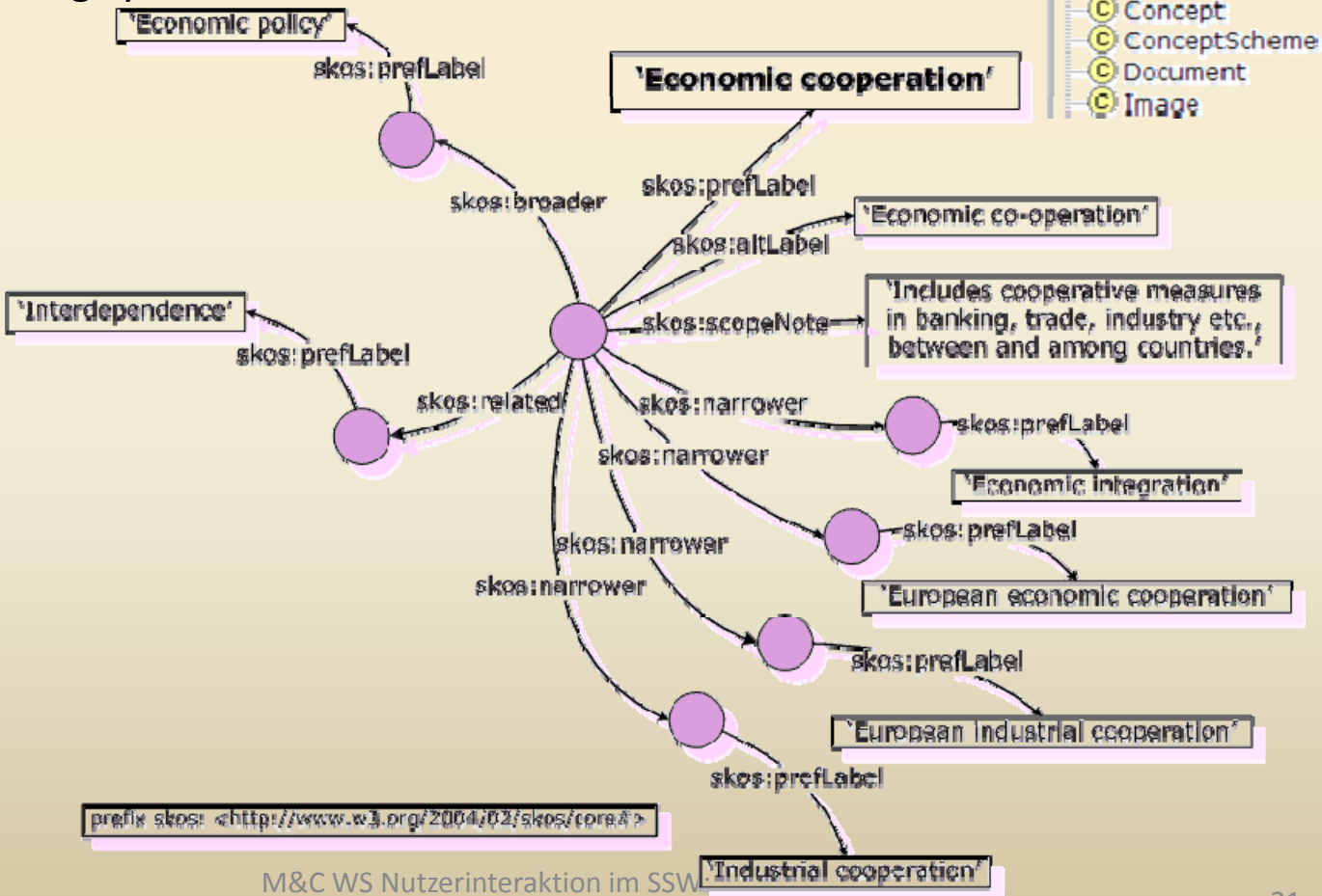


Vocabularies: Simple Knowledge Organization System (SKOS)

support the use of thesauri, classification schemes, subject heading systems and taxonomies







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OntoWiki

Adopting Web 2.0 ideas

Architecture of Participation:

- Employ social interactions
- Leaverage „ant“ intelligence – many people contribute small parts
- Foster agile / adoptive collaboration

Methodological building blocks:

- **Tagging** – annotation with small tags
- **Mashups** – combination of dispersed information
- **Instant gratification** – make benefits of collaboration transparent
- **Feeds** – distribute information

Lightweight technological support:

- **AJAX** (Asynchronous Javascript And XML): WebUIs remastered
- **JSON** (JAvascript Object Notation): data plug‘n‘play
- **REST** (REpresentational State Transfer):

The OntoWiki Approach: Effortless, Semantic Collaboration

Share content

Structure content

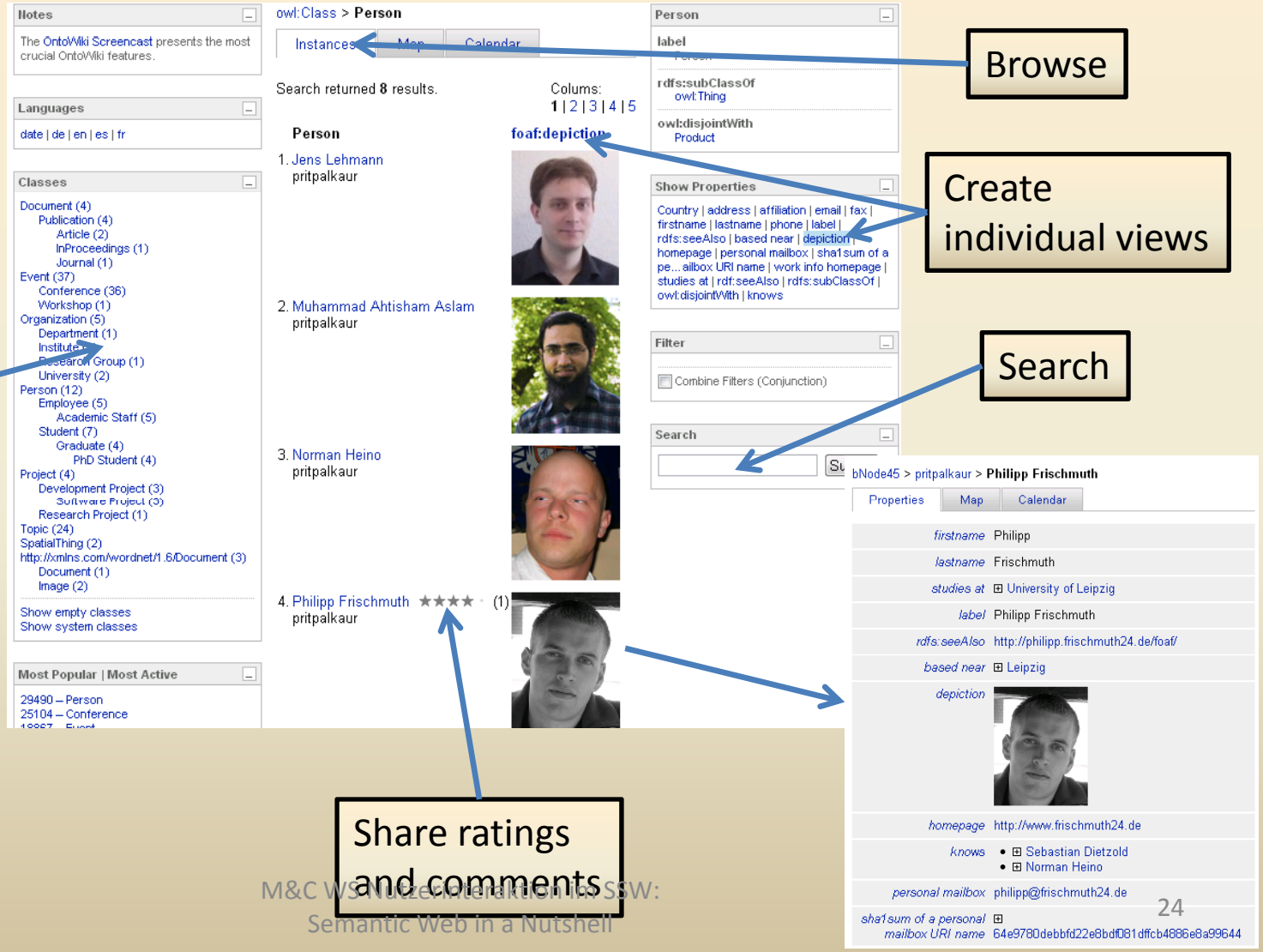
Edit content

Browse

Create individual views

Search

Share ratings and comments



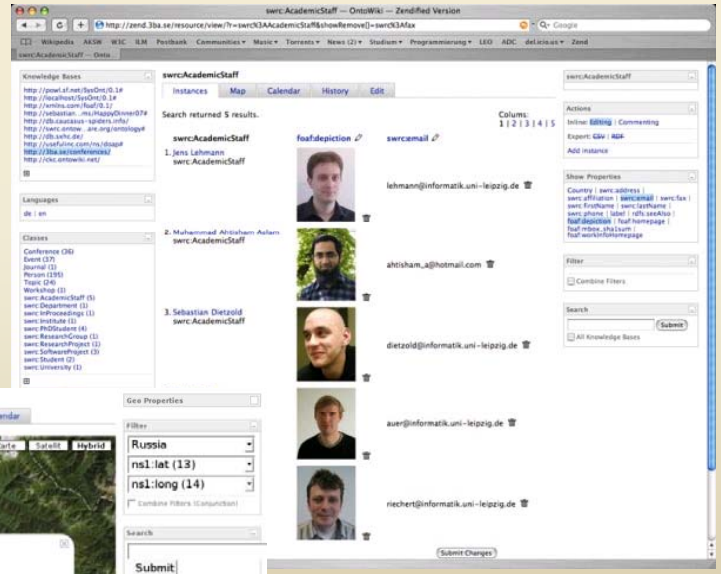
OntoWiki is NOT a Wiki

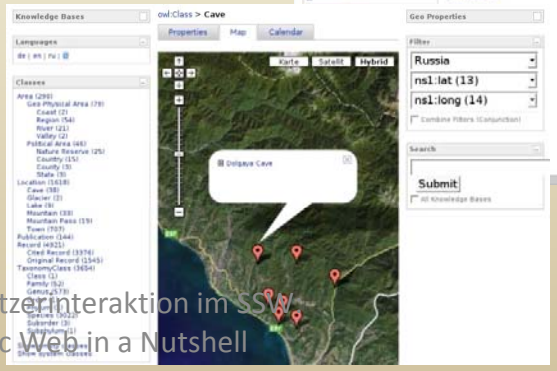
OntoWiki enables users **to structure and interlink arbitrary content** (not only texts or articles)

Based on innovative **Web 2.0** UI techniques and **Semantic Web** / Open Data technologies

Large user base, many possible application scenarios:

Intra-corporate knowledge management
knowledge representation for life sciences,
community knowledge sharing &
publishing (CMS)





Web:
http://ontowiki.net

Sourceforge:
http://sf.net/projects/powl

Demo:
http://demo.ontowiki.net

OntoWiki Architecture

Semantic Web **development platform (foundational framework for SW applications)**

Opensource, **Web-based**, for most deployed Web technologies (PHP/MySQL)

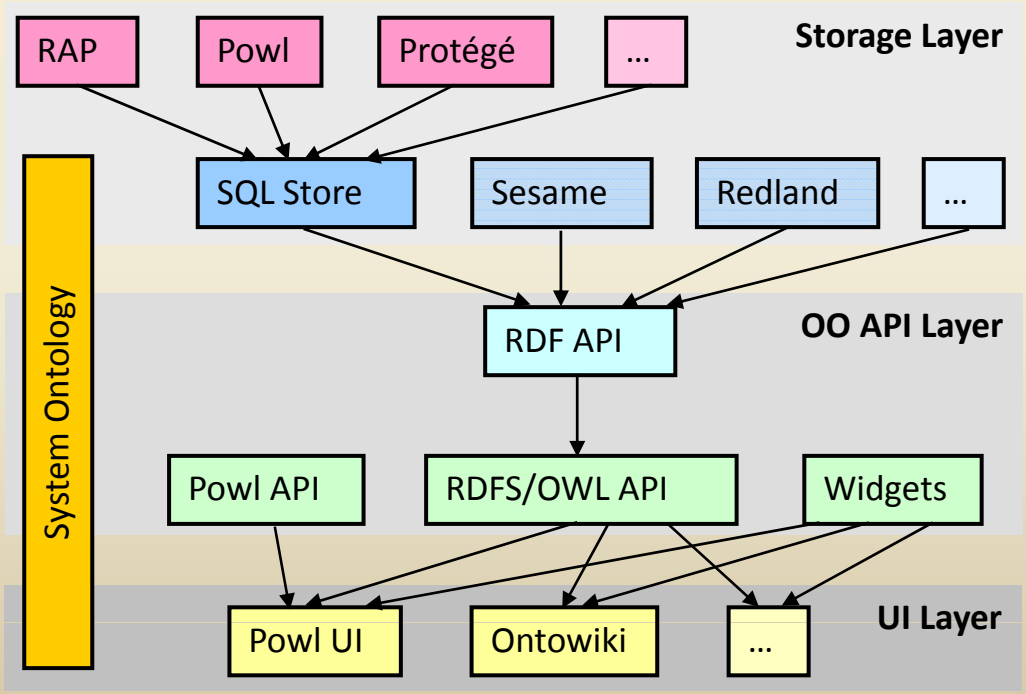
Allows parsing, storing, querying, manipulating, versioning, serving and serializing RDF-S and OWL

Scalable (based on RDBMS)

Supports
Versioning & Caching

Enables the development of
domain specific Powl/ OntoWiki applications

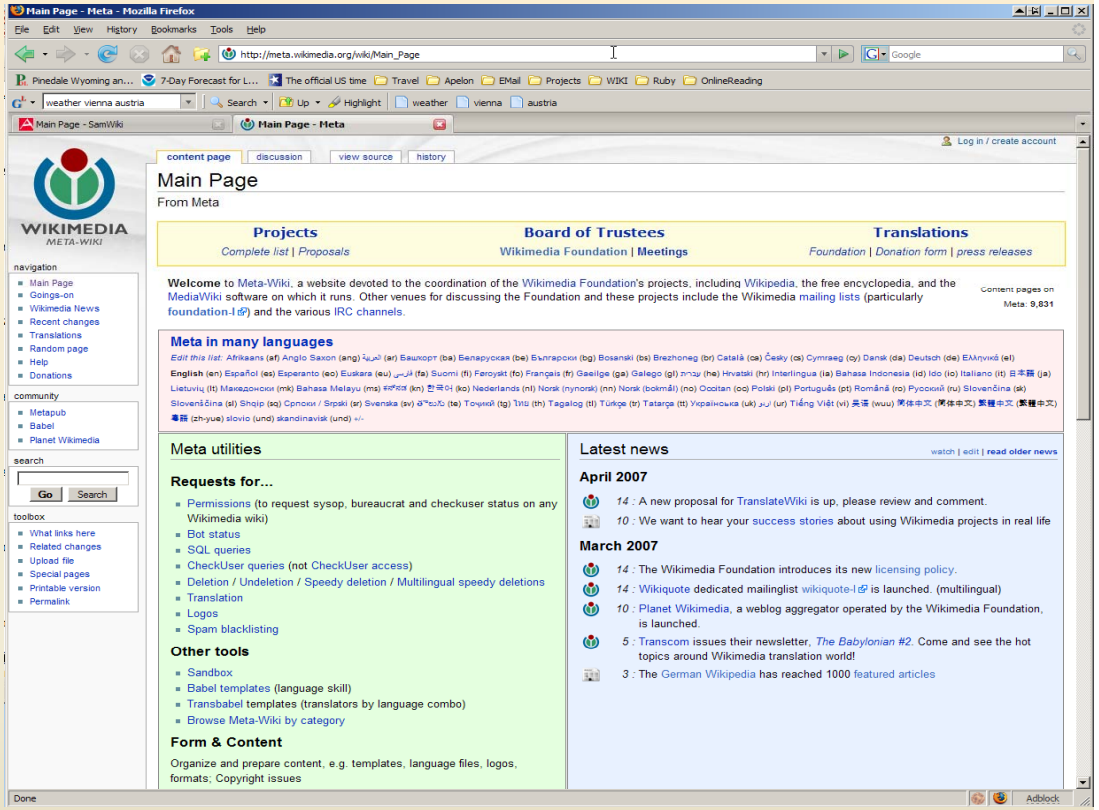
http://ontowiki.net & http://3ba.se



Adding Semantics to MediaWiki

MediaWiki

- http://MediaWiki.org
- Base for WikiPedia and many others…
- Key characteristics
  - Web based editing
  - Page links
  - Categories
  - Templates



- Fully documented using (surprise!) mediawiki
- Rich mechanisms for discussion, curation, export, etc.

MediaWiki Formatting Syntax

- [[Train Transport]] – hyperlink to page named "Train_Transport"
- ''Italic'', '''Bold'''
- * Bullet point
- [http://www.w3c.org/ The W3C] – hyperlink
- … and much more

Semantic MediaWiki

3 Key extensions to MediaWiki

1. **Categories == Class**
   - PageA … [[Category:X]] → pageA rdf:Type category:X
   - Category:Y … [[Category:X]] → category:Y rdfs:subClassOf category:X
2. **Links == Role**
   - PageA … [[PageB]] → PageA …[[hasPart::PageB]]
3. **Attributes == DataProperty**
   - [[population:=32,154,773]]
   - Includes datatypes

Categories and Relations

category | discussion | edit | history | protect | delete | watch | refresh

Editing Category:Country

```
This is a sample category that represents the class or category of ''country''. It is
defined as being a subclass of [[:Category:Geopolitical Division]] and as being "located on"
(we're not going to get into ontological nuances here - whatever the appropriate located in
is...) one or more land masses.


This page can also be exported in [[:Special:ExportRDF/{{PAGENAME}}|RDF]].

[[Category:Geopolitical Division]]
[[locatedOn::Category:LandMass]]
```

Attributes

article | discussion | edit | history | protect | delete | move | watch | refre

Editing Australia

```
This is a sample page that is used in the SMW documentation
process.  This page represents an "individual" - in this case, the
country of Australia.  ([[:Special:ExportRDF/{{PAGENAME}}|RDF
Rendering]])

According to
https://www.cia.gov/cia/publications/factbook/print/as.html,
Australia [[hasPopulation:=20,264,082|had an estimated population
of 20,264,082]] as of July, 2006.

The country of Australia is [[locatedOn::Australian_Continent]]

[[Category:Country]]
```

Semantic Rendering

article | discussion | edit | history | protect | delete | move | watch | refresh

Australia

This is a sample page that is used in the SMW documentation process. This page represents an "individual" - in this case, the country of Australia. (RDF Rendering)

According to https://www.cia.gov/cia/publications/factbook/print/as.html , Australia had an estimated population of 20,264,082 as of July, 2006.

The country of Australia is Australian_Continent

Facts about Australia — Click + to find similar pages. RDF feed

Relations to other articles

LocatedOn Australian Continent +

Attribute values

HasPopulation 20,264,082 +

Category: Country

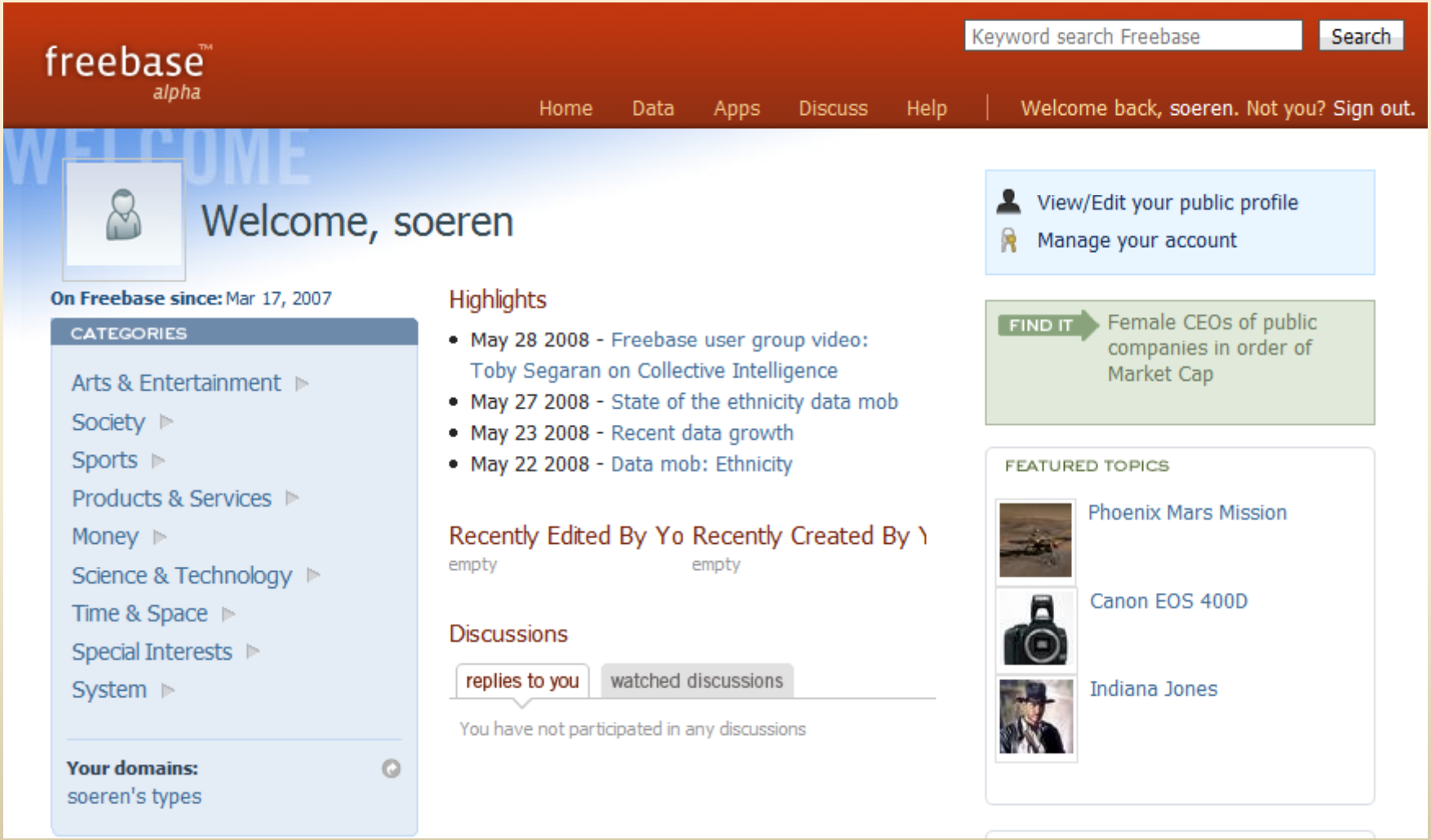
Relation

RDF (!)

Attribute Value

Type (or superClass)

Freebase – Commercial Semantic Wiki



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Querying Wikipedia

☺ Wikipedia is the **8th most popular website** (according to Alexa.com)

☺ Maybe the finest example of truly **collaboratively created content**
(>8M articles in >200 languages written by >300.000 authors)

☺ Covers all possible topics and domains, articles are a result of a **"community consensus"**

ϴ Many **inconsistencies** can be found on different pages/language versions

ϴ **Not very well integrated** with other data sources

ϴ **Lacks structured representations** of content which facilitate querying and search

Simple Questions – hard to answer:

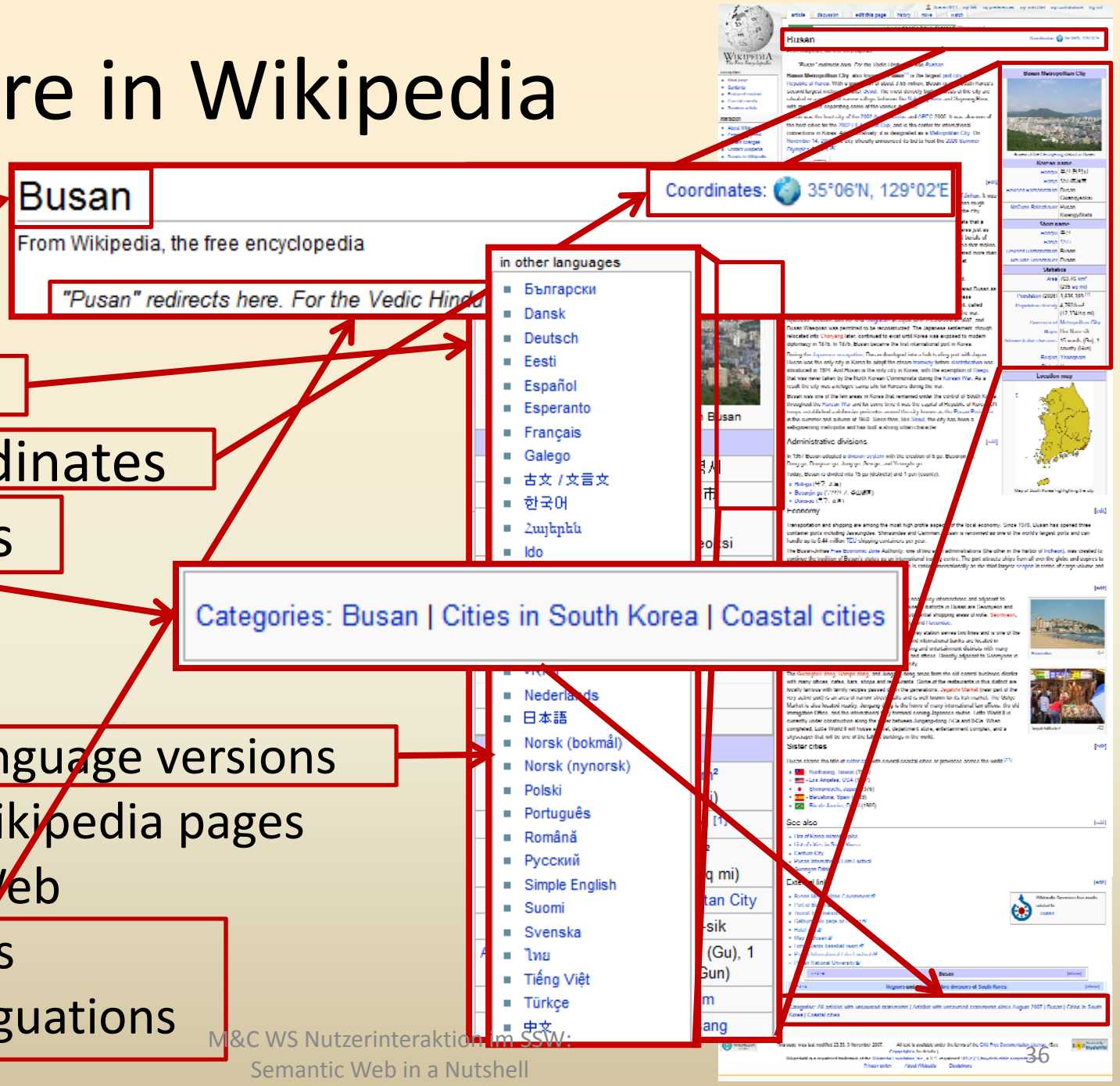
- What have the Semantic Web and Busan in common**?**
- Who are mayors of South-Korean towns elevated more than 1000m**?**
- Which films are longer than 4 hours and had a budget of less than $1 Million**?**

The information required to answer these is contained in Wikipedia**!**

How can we reveal structure and semantics of Wikipedia content?

Structure in Wikipedia

- Title
- Abstract
- Infoboxes
- Geo-coordinates
- Categories
- Images
- Links
  - other language versions
  - other Wikipedia pages
  - To the Web
  - Redirects
  - Disambiguations



Infobox templates

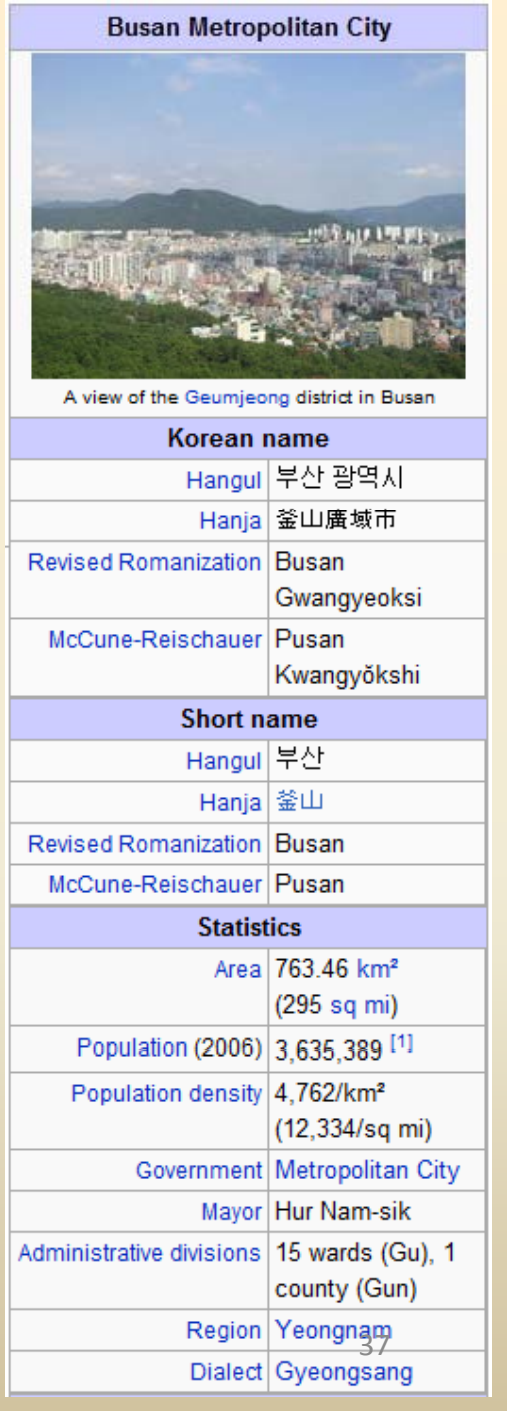
Wikitext-Syntax

```
{{Infobox Korean settlement
| title        = Busan Metropolitan City
| img          = Busan.jpg
| imgcaption   = A view of the [[Geumjeong]] district in Busan
| hangul       = 부산 광역시
...
| area_km2        = 763.46
| pop          = 3635389
| popyear      = 2006
| mayor        = Hur Nam-sik
| divs         = 15 wards (Gu), 1 county (Gun)
| region       = [[Yeongnam]]
| dialect      = [[Gyeongsang]]
}}
```

http://dbpedia.org/resource/Busan

RDF representation

```
dbp:Busan   dbpp:title     "Busan Metropolitan City"
dbp:Busan   dbpp:hangul    "부산 광역시"@Hang
dbp:Busan   dbpp:area_km2  "763.46"^xsd:float
dbp:Busan   dbpp:pop       "3635389"^xsd:int
dbp:Busan   dbpp:region    dbp:Yeongnam
dbp:Busan   dbpp:dialect   dbp:Gyeongsang
```



Busan Metropolitan City	
A view of the Geumjeong district in Busan	
Korean name	
Hangul	부산 광역시
Hanja	釜山廣域市
Revised Romanization	Busan Gwangyeoksi
McCune-Reischauer	Pusan Kwangyŏkshi
Short name	
Hangul	부산
Hanja	釜山
Revised Romanization	Busan
McCune-Reischauer	Pusan
Statistics	
Area	763.46 km² (295 sq mi)
Population (2006)	3,635,389 [1]
Population density	4,762/km² (12,334/sq mi)
Government	Metropolitan City
Mayor	Hur Nam-sik
Administrative divisions	15 wards (Gu), 1 county (Gun)
Region	Yeongnam
Dialect	Gyeongsang

Infobox Extraction Statistics

Template/ Class	No. of Instances	Used properties
Music album	35190	name, artist, cover, released, recorded, genre, length, label, producer, reviews, last album, next album
Species	29116	binomial, genus, genus_authority, classis, phylum, subfamilia, regnum, species, subdivision
Film	12733	starring, producer, writer, director, music, language, budget, released, distributor, image, runtime
Cities	4872	population_total, population_as_of, subdivision_type, area_total, timezone, utc_offset, population_density, leader_name, leader_title
Book	4576	author, genre, release_date, language, publisher, country, media_type, isbn, image, pages, image_caption

Statistics:

Template types	5,499
Template instances	754,358
Templates per type	137.18
Attributes per instance	8.84
Categories	106,049
Classes	111,548
Instances	647,348
Properties	8,091
Triples	8,415,531

Templates:

succession_box	72262
election_box	48206
infobox_album	35190
taxobox	29116
fs_player	25535
nat_fs_player	15312
imdb_title	15042
infobox_film	12733
imdb_name	12449
fs_squad2_player	10078
infobox_cvg	7930
infobox_single	7039
runway	6653

Attributes:

name	301020
title	143887
image	110939
years	89387
before	79960
after	78806
genre	77987
type	74670
released	74465
votes	59659
reviews	58891
starring	57112
producer	53370

Extraction results

Extraction algorithm with the English Wikipedia content (http://dumps.wikimedia.org/enwiki)

<1h needed to extract templates and convert them to RDF (>2M English Wikipedia articles, >10GB raw data)

more than 15M statements extracted from infobox templates alone

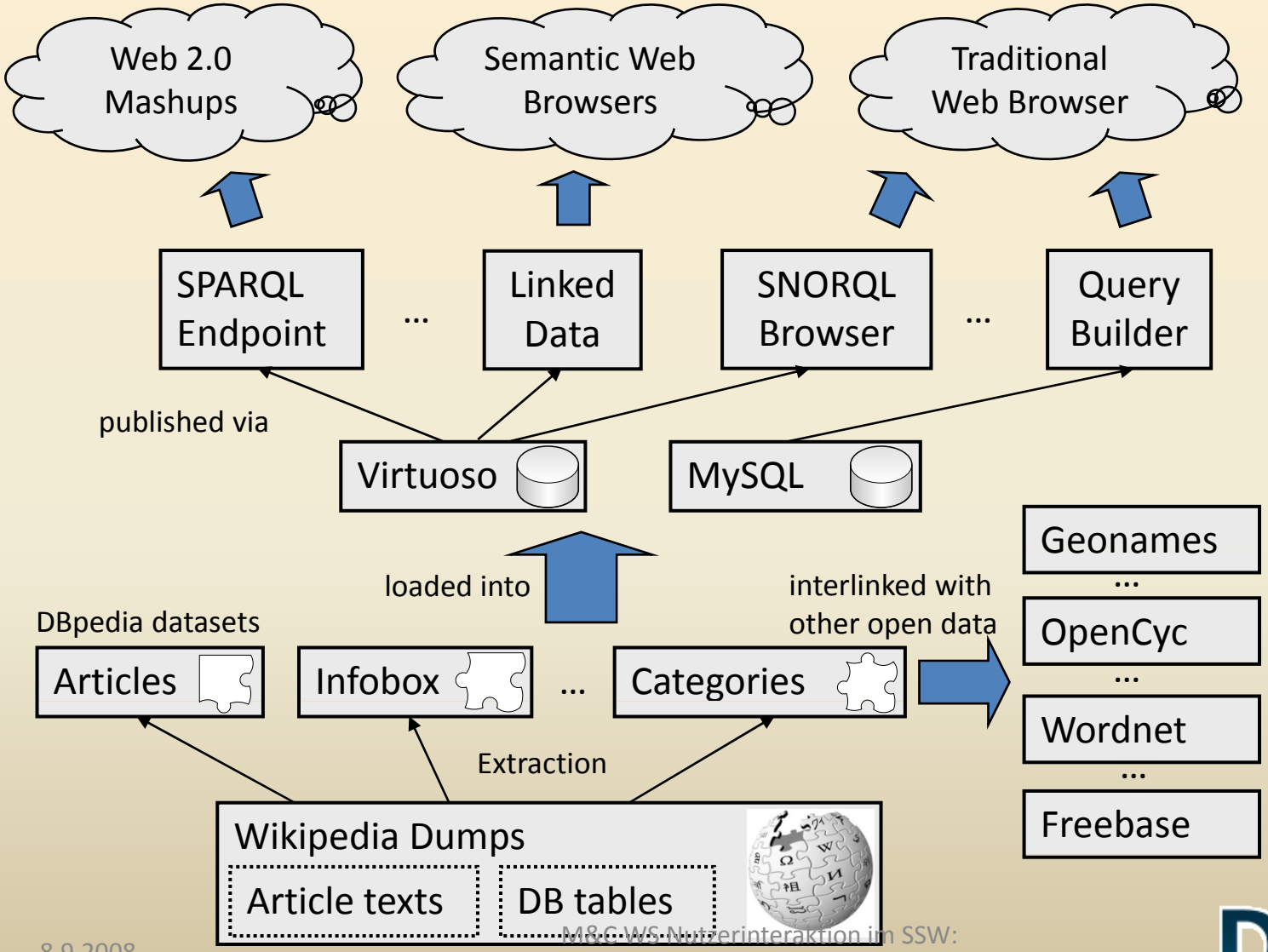
Sample checks reveal: ~**90% accuracy**, 9% redundant information, 1% erroneous

multi-domain ontology covering a large body of domains

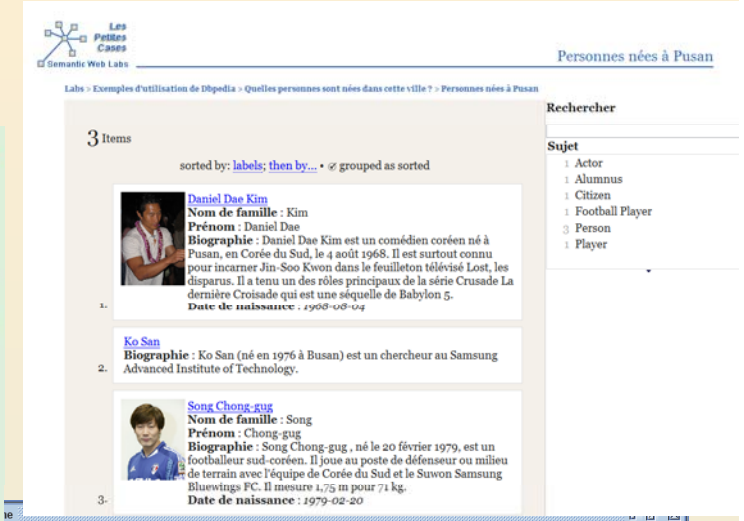
extraction results and source code of the extraction algorithm **available at http://dbpedia.org**

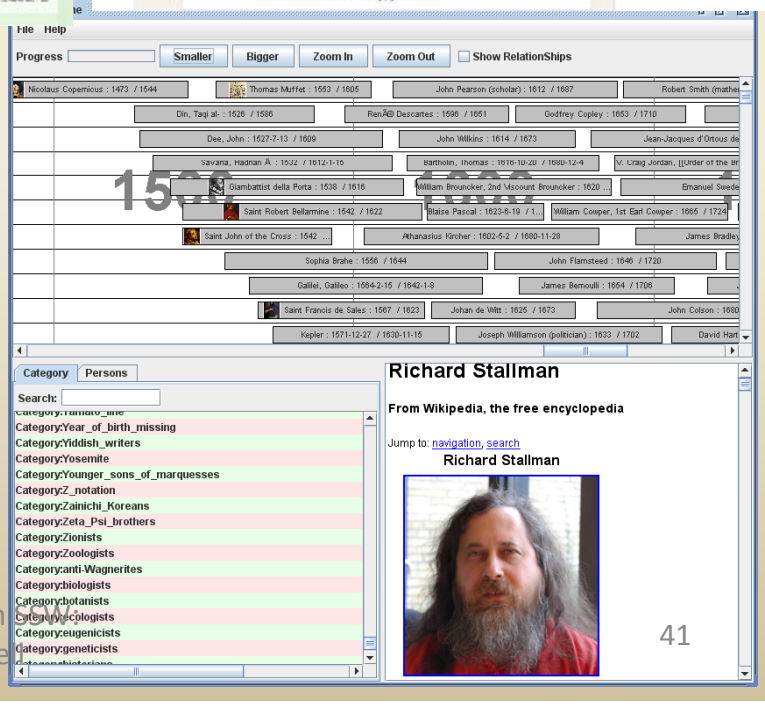
Dataset	Triples
Articles	7.6M
Abstracts	2.1M
External Links	1.6M
Categories	5.2M
Infoboxes	15.5M
Persons	560k
Yago Classes	2M
Wordnet Classes	338k
Geo-coordinates	450k
Mapping to Flickr, DBLP, Eurostat, CIA-Factbook, Musicbrainz, Project Gutenberg, US Census, …	100k
Mapping to OpenCyc	45k

DBpedia Components



User Interfaces



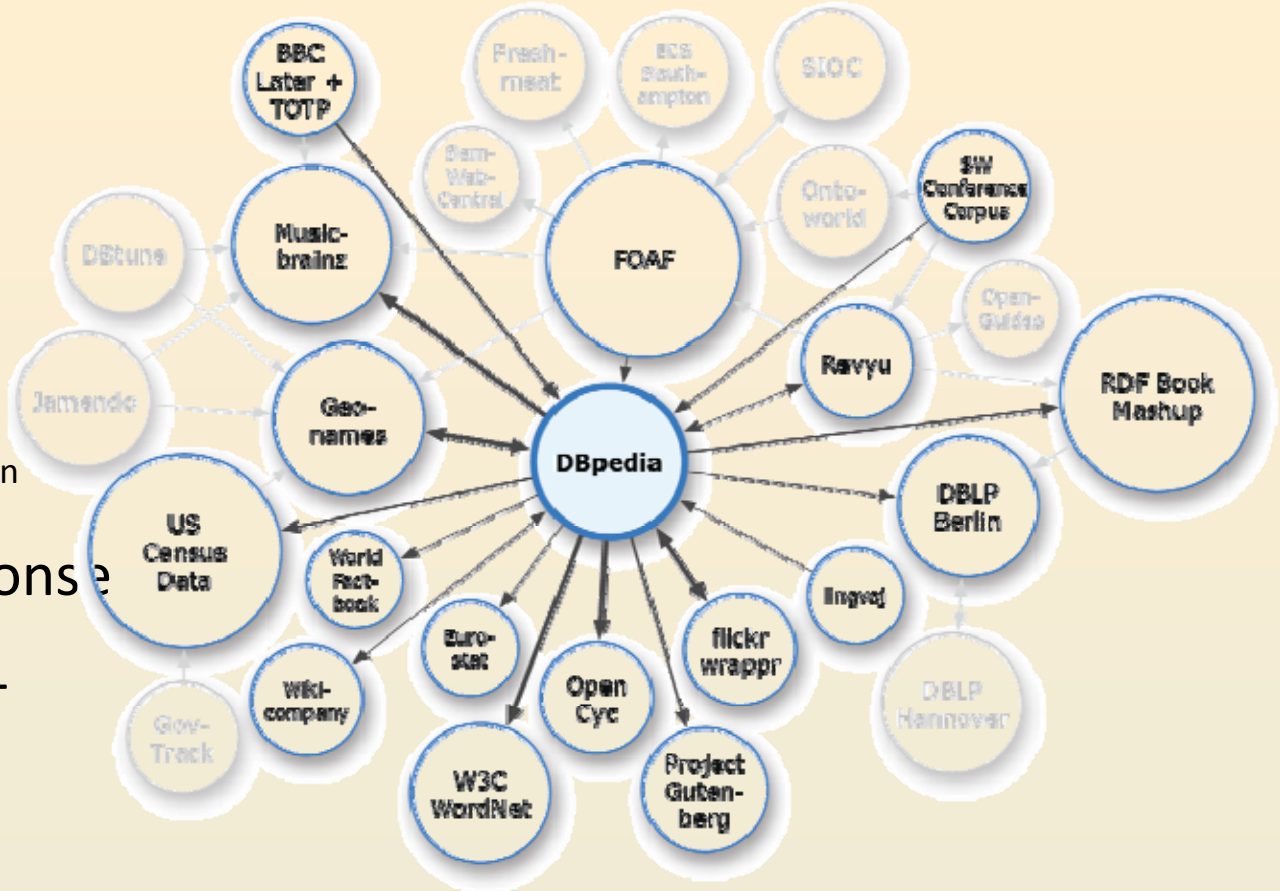


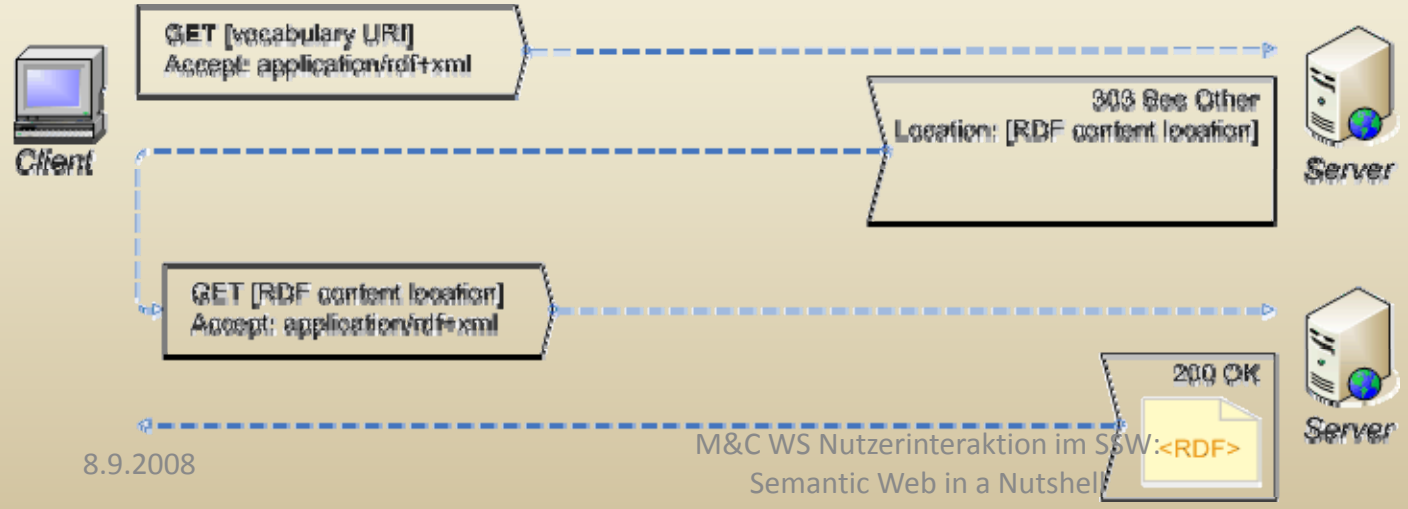
Linked Data

- De-referenceable RDF-URIs, e.g.:

  http://dbpedia.org/resource/Busan

- Different HTTP response depending on HTTP-Accept-Header





SPARQL-Endpoint

```
SELECT ?name ?birth ?description ?person WHERE {
    ?person  dbp:birthPlace  dbp:Berlin .
    ?person  skos:subject    dbp:Cat:German_musicians .
    ?person  dbp:birth       ?birth .
    ?person  foaf:name       ?name .
    ?person  rdfs:comment    ?description .
  FILTER (LANG(?description) = 'en') .
} ORDER BY ?name
```

name	birth	description	person
"Moser, Edda"@de	"1938-10-27"^^xsd:date	"The German soprano Edda Moser was born on October 27, 1938 in Berlin, Germany. She is the daughter of the musicologist Hans Joachim Moser."@en	:Edda_Moser
"Möbius, Ralph Christian""@de	"1950-01-09"^^xsd:date	"Rio Reiser (January 9, 1950 - August 20, 1996), was a German rock musician and singer of the famous rock group Ton Steine Scherben. He was born Ralph Christian Möbius in Berlin and died at the age of 46 in the little German town of Fresenhagen. Rio Reiser was politically active during his whole life. In the early 70ies he participated in the squatter scene, for which he wrote the famous Rauchhaussong.""@en	:Rio_Reiser
"Straube, Karl"@de	"1873-01-06"^^xsd:date	"Montgomery Rufus Karl/Carl Siegfried Straube (January 6, 1873, Berlin - April 27, 1950, Leipzig) was a German church musician , organist, and choral conductor, famous above all for championing the abundant organ music of Max Reger."@en	:Karl_Straube
"Tricht, Käte van""@de	"1909-10-22"^^xsd:date	"Käte van Tricht (October 22, 1909–July 13, 1996), was a German organist, pianist, harpsichordist, and pedagogue.""@en	:K%C3%A4te_van_Tricht
"Urlaub, Farin"@de	"1963-10-27"^^xsd:date	"Jan Ulrich Max Vetter, better known as Farin Urlaub (like German "Fahr in Urlaub!" ("Go on holiday!"), after his love of travelling) was born on October 27, 1963 in what was then West Berlin, Germany. He is best known as the guitarist/vocalist for the German punk rock band Die Ärzte.""@en	:Farin_Urlaub
"Voormann, Klaus"@de	"1938-04-29"^^xsd:date	"Klaus Voormann (born 29 April 1938) is a German artist, musician, and record producer who was associated with the early days of The Beatles in Hamburg and later designed the cover of their album Revolver."@en	:Klaus_Voormann

Overview

- *From Semantic Web to the Social Semantic Web*
- *Creating:* Semantic Wikis
  - OntoWiki
  - Semantic MediaWiki
  - MetaWeb's Freebase
- *Extracting:* DBpedia – transforming Wikipedia into a KB
- ***Sharing:***
  - Social Semantic Network - Twine
  - Triplify
  - Exhibit
- *Semantic Search & Data Integration*
  - Powerset
  - Potluck

Twine a Social Semantic Network

- Twine is a new service for managing & sharing information on the Web

twine™
tie it all together

- Works for content, knowledge, data, or any other kinds of information

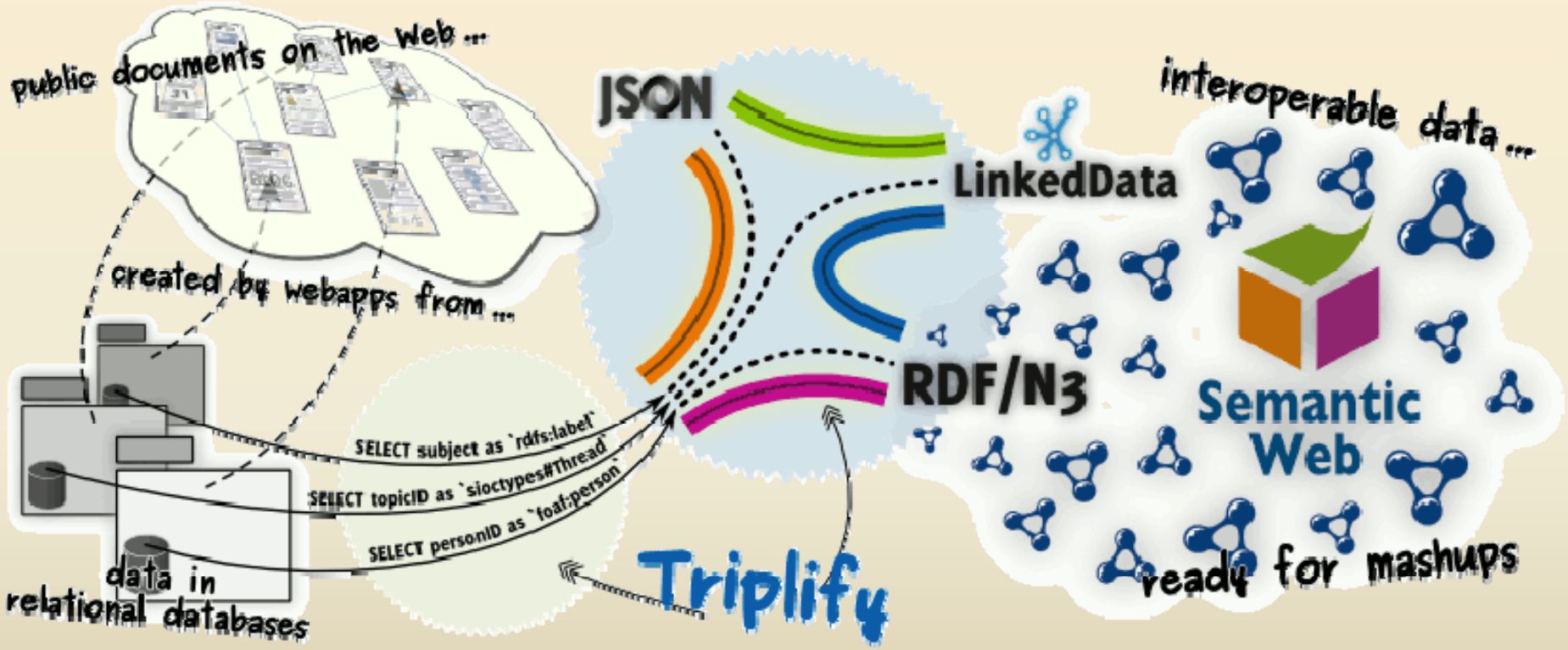
- Designed for individuals and groups that need a better way to organize, search, share and keep track of their information

Triplify Motivation

- growth of semantic representations is probably still outpaced by the growth of traditional Web pages
- **overcome the chicken-and-egg dilemma of missing semantic representations and search facilities on the Web**
- Triplify tackles this dilemma by leveraging relational representations behind existing Web applications
- These are often open-source and deployed hundred thousand times
- structure and semantics encoded in relational database schemes (behind Web apps) is not accessible to Web search engines, mashups etc.

Project	Area	Downloads
phpBB	discussion forum	235480
Gallery	photo gallery	166005
XOOPS	CMS	115807
Coppermine	photo gallery	113854
Typo3	CMS	63641
Liferay Portal	Portal	39615
eGroupWare	group ware	33865
Alfresco	CMS	31914
e107	CMS	19996
Lifetype	Blogging	16730
Plone	CMS	13993
Compiere	ERP + CRM	13718
WebCalendar	Calendar	12832
Nucleus	Blogging	12739
Tikiwiki	Wiki	6368

Triplify Big Picture



Triplify Approach

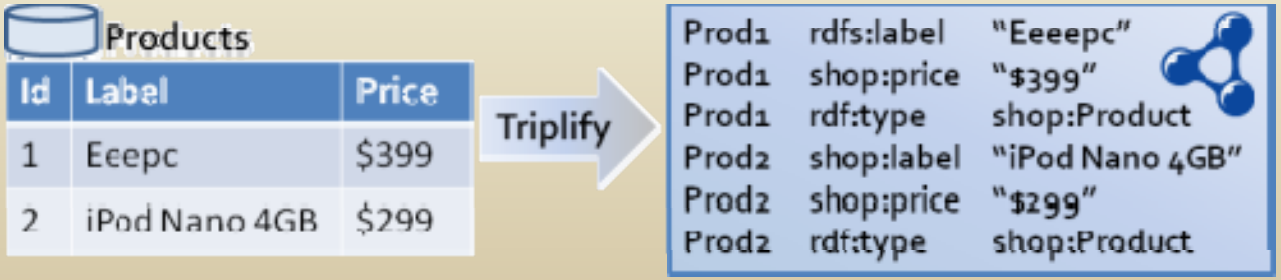
- Expose semantics as simple as possible
  - No (new) mapping languages
  - Few lines of code – easy to plug-in
  - Simple, reusable configurations
- Available for most popular Web app languages
  - PHP (ready), Ruby/Python under development
- Works with most popular Web app DBs
  - MySQL (extensively tested), PHP-PDO DBs (SQLite, Oracle, DB2, MS SQL, PostgreSQL etc.) should work, not needed for Virtuoso ☺
- Triplify exposes RDF/Ntriples, LinkedData and RDF/JSON

Triplify Solution: SQL-SELECT queries map relational data to RDF

Triplify Configuration basically consists of a definition of a number of SQL queries selecting information, which should be made publicly available.

In order for Triplify to be able to convert the results of your SQL queries into RDF the query results are required to have a certain structure:

- the **first column must contain identifiers** which can be used to generate instance URIs (i.e. the primary key of your database table)
- **column names will be used to generate property URIs**, by renaming the columns of your database table (e.g. SELECT id,name AS 'foaf:name' FROM users) you can reuse properties from existing vocabularies such as Dublin Core, FOAF, SIOC.
- the **individual cells of the query result contain data values or references to other instances** and will eventually constitute the objects of resulting triples



Example Config

```
<?php
    include('../wp-config.php');

    $triplify['namespaces']=array(
      'vocabulary'=>'http://triplify.org/vocabulary/Wordpress/',
      'foaf'=>'http://xmlns.com/foaf/0.1/',
       … );

    $triplify['queries']=array(
      'post'=>array(
        "SELECT id,post_author 'sioc:has_creator',post_date 'dcterms:created',post_title 'dc:title', post_content 'sioc:content',
            post_modified 'dcterms:modified' FROM {$table_prefix}posts WHERE post_status='publish'",
        "SELECT post_id id,tag_id 'tag:taggedWithTag' FROM {$table_prefix}post2tag",
        "SELECT post_id id,category_id 'belongsToCategory' FROM {$table_prefix}post2cat",
      ),
      'tag'=>"SELECT tag_ID id,tag 'tag:tagName' FROM {$table_prefix}tags",
      'category'=>"SELECT cat_ID id,cat_name 'skos:prefLabel',category_parent 'skos:narrower' FROM {$table_prefix}categories",
      'user'=>array(
        "SELECT id,user_login 'foaf:accountName',SHA(CONCAT('mailto:',user_email)) 'foaf:mbox_sha1sum',
            user_url 'foaf:homepage',display_name 'foaf:name' FROM {$table_prefix}users",
        "SELECT user_id id,meta_value 'foaf:firstName' FROM {$table_prefix}usermeta WHERE meta_key='first_name'",
        "SELECT user_id id,meta_value 'foaf:family_name' FROM {$table_prefix}usermeta WHERE meta_key='last_name'",
      ),
      'comment'=>"SELECT comment_ID id,comment_post_id 'sioc:reply_of',comment_author AS 'foaf:name',
          SHA(CONCAT('mailto:',comment_author_email)) 'foaf:mbox_sha1sum', comment_author_url 'foaf:homepage',
          comment_date AS  'dcterms:created', comment_content 'sioc:content',comment_karma,comment_type
        FROM {$table_prefix}comments WHERE comment_approved='1'",
    );

    $triplify['objectProperties']=array(
      'sioc:has_creator'=>'user', 'tag:taggedWithTag'=>'tag', 'belongsToCategory'=>'category','skos:narrower'=>'category','sioc:reply_of'=>'post');

    $triplify['classMap']=array('user'=>'foaf:person', 'post'=>'sioc:Post', 'tag'=>'tag:Tag', 'category'=>'skos:Concept');

    $triplify['TTL']=0; // Caching

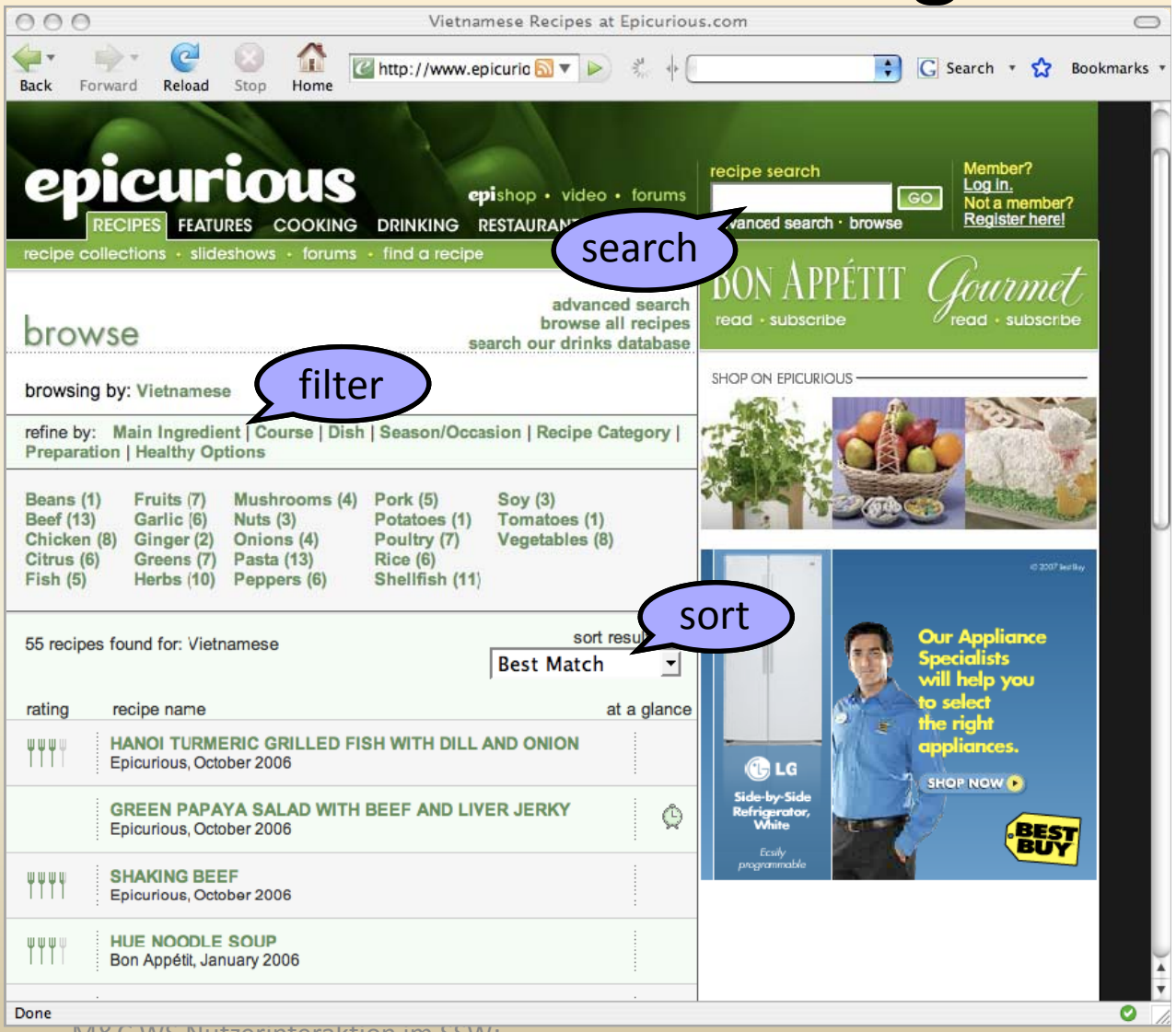
    $triplify['db']=new PDO('mysql:host='.DB_HOST.';dbname='.DB_NAME,DB_USER,DB_PASSWORD);
?>
```

Triplify: Current state

- Configurations exist for
  - Joomla!, Wordpress, WackoWiki, OpenConf, OpenJournalSystems
- Aim is for Triplify to become integral part of Web app distributions (GSoC Joomla! project)
- Much work to convince/explain SemWeb and Triplify to Web app developer communities
- Triplification Challenge awards best “semantifications” (technologically not limited to Triplify)
- Very simple registry for Triplify endpoints
  - currently around 20 installations registered
  - Tip of the iceberg: registration optional and requires special PHP functionality (allow_url_fopen)

Exhibit – Facet Based Browsing

Publish & browse data and semantics



Overview

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- Foundation: Semantic Technologies
  - Information- & Knowledge Representation with RDF, RDF-Schema, OWL
  - Vocabularies SKOS, FOAF, SIOC
- *Creating:* Semantic Wikis
  - OntoWiki
  - Semantic MediaWiki
  - MetaWeb's Freebase
- *Extracting:* DBpedia – transforming Wikipedia into a KB
- *Sharing:*
  - Social Semantic Network - Twine
  - Triplify
  - Exhibit
- ***Semantic Search & Data Integration***
  - Powerset
  - Potluck

Powerset - Semantic Search using NLP

Powerset

Wikipedia Articles

Feedback Need Help? Powerlabs

who is jon stewart | search

Jon Stewart | Footballer

source: freebase (view topic) ?

watch demo video

Jon Stewart (born Jonathan Stuart Leibowitz; November 28, 1962) is an American comedian, satirist, actor, writer,pundit, and producer. He is best known as the host of Comedy Central's "The Daily Show" and for his political satire. Stewart started as a stand-up comedian, but later branched out to television,... Read complete Wikipedia article

Date of Birth: 1962
Place of Birth: New York
Nationality: United States
Profession: Comedian
Books: America (The Book)
Film Roles: The Faculty, Mixed Nuts, Big Daddy (6 hidden)
... more

ADD THIS

add Powerset to your search bar

Factz from Wikipedia: we found the following about **Jon Stewart** advanced ?

Jon Stewart	hosted :	show, Academy Awards, The Daily Show, years,	more
	made :	fun, obsess, obsession, joke, Transferring, appear,	
	produced :	episodes, The Colbert Report, The Donor, production, routines	

more showing 3 of 90

Wikipedia Articles: results 1 - 10 of 2539 advanced ?

Jon Stewart In addition to his interest in soccer, **Jon Stewart** is also an avid baseball **fan**; his favorite team is the New York Mets. \ independent".

The Daily Show Reruns were shown until **Jon Stewart**'s debut 4 weeks later. ... "Is **Jon Stewart** helping or hurting?", Toronto Star, 2006-05-21.

Potluck - Light-weight Data Integration

Data origins: MIT CSAIL Faculty web site and CCNMTL Staff web site

Export tsv | Export json

You've just done: Add facet position Undo

VIEW AS: TABLE • MAP

show Details column • condense details • expand all details • collapse all details • export tsv • export json

	email email	New Column	Details
1.	edelman@csail.mit.edu (edit)	drag and drop fields to create columns	**Alan Edelman** label : Alan Edelman origin : MIT CSAIL Faculty web site email : edelman@csail.mit.edu floor : 6th floor group : unknown last-name : Edelman office : 32-G606 phone : 253-1355 photo : http://www.csail.mit ... PI/72dpi/edelman.jpg position : faculty tower : Gates url : http://www.csail.mit ... rint.php?PeopleID=75 type : Person
2.	maurice@columbia.edu (edit)		**A. Maurice Matiz** label : A. Maurice Matiz origin : CCNMTL Staff web site bio : Maurice is a co-founder of the Columbia Center for New Media Teaching and Learning and currently pla ... ('82) in Computer Science from the School of Engineering and Applied Science at Columbia University.

Facets

origin
- 33 CCNMTL Staff web site
- 92 MIT CSAIL Faculty web site

group
- 33 missing this field
- 9 algorithms
- 1 center for biological & computational learning
- 2 clinical decision making group

position
- 33 missing this field
- 2 adjunct professor
- 5 assistant professor
- 8 associate professor
- 1 co-director
- 1 director

Thanks!

Dr. Sören Auer

UNIVERSITÄT LEIPZIG

- auer@informatik.uni-leipzig.de
- research group Agile Knowledge Engineering & Semantic Web (AKSW): http://aksw.org
- http://Triplify.org
- http://DBpedia.org
- http://OntoWiki.net

This presentation includes material from:

- Twine (Nova Spivack, http://www.mindingtheplanet.net)
- MIT SIMILE (David Huynh, David Karger, Rob Miller)
- Apelon, Inc. (Harold Solbrig)