A panoramic banner image of Bled, Slovenia, featuring a lake, a church on an island, and mountains in the background.

eLEX2011

electronic lexicography in the 21st century

10-12 November 2011, Bled, Slovenia

# Will there still be dictionaries in 2020?

Piek Vossen,  
VU University Amsterdam

YES.

Will there be dictionary publishers in 2020?

NO.

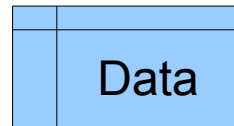
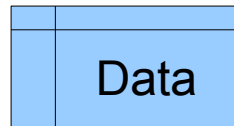
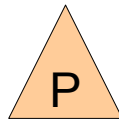
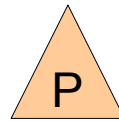
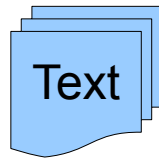
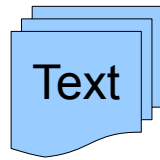
Perhaps they (publishers) are no longer what we  
used to think.

# Who are the users of lexical data?

Language

Extraction  
And/or  
editing

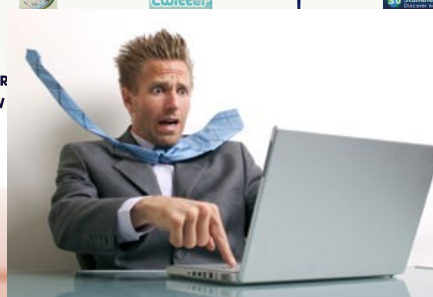
Database



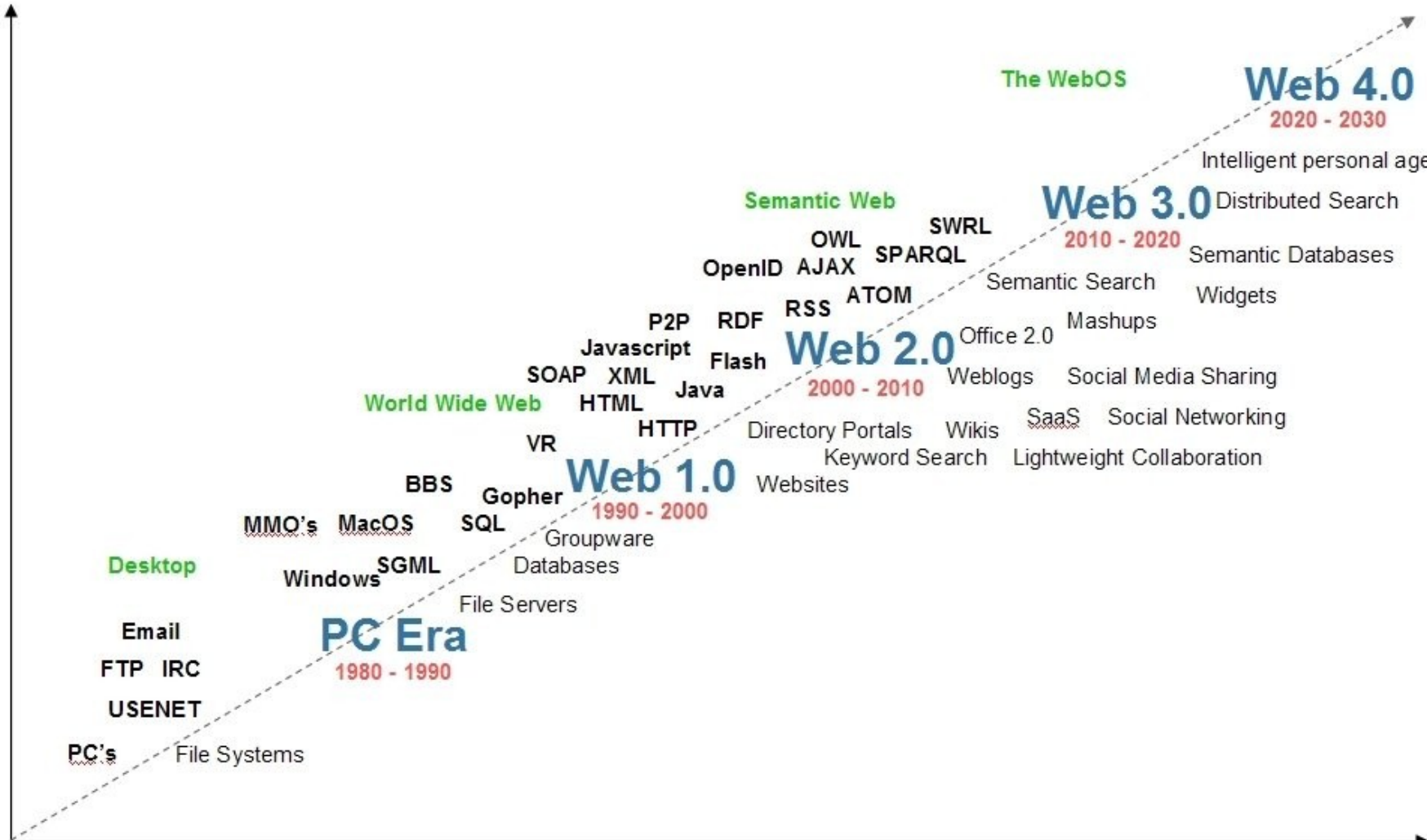
Software



People



Semantics of Information Connections



Semantics of Social Connections



Source: Radar Networks & Nova Spivack, 2007 – [www.radarnetworks.com](http://www.radarnetworks.com)

# Open Linked Data

- Network of RDF repositories:
  - W3C knowledge representation format
  - 25,200,042,407 triples
- Factual data
- Conceptual data
- Lexical data
- <http://richard.cyganiak.de/2007/10/lod/imagemap.html>



# DBPedia

- 3.64 million things, out of which 1.83 million are classified in a consistent Ontology, including 416,000 persons, 526,000 places, 106,000 music albums, 60,000 films, 17,500 video games, 169,000 organisations, 183,000 species and 5,400 diseases.
- The DBpedia data set features labels and abstracts for these 3.64 million things in up to 97 different languages; 2,724,000 links to images and 6,300,000 links to external web pages; 6,200,000 external links into other RDF datasets, 740,000 Wikipedia categories, and 2,900,000 YAGO categories. The dataset consists of 1 billion pieces of information (RDF triples) out of which 385 million were extracted from the English edition of Wikipedia and roughly 665 million were extracted from other language editions and links to external datasets.
- The DBpedia knowledge base allows you to ask quite surprising queries against Wikipedia, for instance “Give me all cities in New Jersey with more than 10,000 inhabitants” or “Give me all Italian musicians from the 18th century”.

# About: Bled

An Entity of Type : [Municipalities of Slovenia](#), from Named Graph : <http://dbpedia.org>, within Data Space : [dbpedia.org](http://dbpedia.org)



dbpedia-owl:areaTotal	▪ 188500000.000000 (xsd:double)	dbpprop:mapCaption	▪ Location of the Municipality of Bled in Slovenia
dbpedia-owl:country	▪ dbpedia:Slovenia	dbpprop:name	▪ Bled
dbpedia-owl:leaderName	▪ dbpedia:Slovenian_National_Party	dbpprop:nativeNameLang	▪ sl
dbpedia-owl:leaderTitle	▪ Mayor	dbpprop:populationAsOf	▪ 2002 (xsd:integer)
dbpedia-owl:populationTotal	▪ 10899 (xsd:integer)	dbpprop:populationDensityKm	▪ auto
dbpedia-owl:thumbnail	▪ <a href="http://upload.wikimedia.org/wikipedia/commons/thu">http://upload.wikimedia.org/wikipedia/commons/thu</a>	dbpprop:populationTotal	▪ 10899 (xsd:integer)
dbpedia-owl:timeZone	▪ dbpedia:Central_European_Time ▪ dbpedia:Central_European_Summer_Time	dbpprop:pushpinLabelPosition	▪ left
dbpedia-owl:type	▪ dbpedia:Municipalities_of_Slovenia	dbpprop:pushpinMap	▪ Slovenia
dbpedia-owl:utcOffset	▪ +01 ▪ +02	dbpprop:pushpinMapCaption	▪ Location of the Town of Bled in Slovenia
dbpedia-owl:wikiPageExternalLink	▪ <a href="http://www.geopedia.si/Geopedia_en.html#L5567_">http://www.geopedia.si/Geopedia_en.html#L5567_</a> ▪ <a href="http://www.blejskiotok.si">http://www.blejskiotok.si</a> ▪ <a href="http://www.bled.si">http://www.bled.si</a> ▪ <a href="http://wikitravel.org/en/Bled">http://wikitravel.org/en/Bled</a> ▪ <a href="http://www.bled-castle.si">http://www.bled-castle.si</a>	dbpprop:settlementType	▪ Town and Municipality
dbpprop:areaTotalKm	▪ 189 (xsd:integer)	dbpprop:subdivisionType	▪ dbpedia:List_of_sovereign_states
dbpprop:coordinatesDisplay	▪ title	dbpprop:timezone	▪ dbpedia:Central_European_Time
dbpprop:coordinatesRegion	▪ SI	dbpprop:timezone1Dst	▪ dbpedia:Central_European_Summer_Time
dbpprop:coordinatesType	▪ 1.0	dbpprop:unitPref	▪ Metric
dbpprop:imageCaption	▪ Bled: lake, castle and parish church	dbpprop:utcOffset	▪ +01
dbpprop:imageFlag	▪ BledMuniFlag.gif	dbpprop:utcOffset1Dst	▪ +02
dbpprop:imageMap	▪ Obcine Slovenija 2007 Bled.svg	dbpprop:wikiPageUsesTemplate	▪ dbpedia:Template:Infobox_settlement
dbpprop:imageShield	▪ Bled Coat of Arms.png	dcterms:subject	▪ category:Municipalities_of_Slovenia ▪ category:Bled ▪ category:Populated_places_in_the_Municipality_of_Bled
dbpprop:imageSkyline	▪ Bledi-tó.jpg	grs:point	▪ 46.36666666666667 14.11666666666667
dbpprop:latd	▪ 46 (xsd:integer)	rdf:type	▪ owl:Thing ▪ yago:Municipality108626283 ▪ dbpedia-owl:PopulatedPlace ▪ dbpedia-owl:Settlement ▪ dbpedia-owl:Place ▪ dbpedia-owl:Town ▪ <a href="http://schema.org/Place">http://schema.org/Place</a> ▪ gml:_Feature ▪ yago:MunicipalitiesOfSlovenia ▪ yago:GeoclassPopulatedPlace
dbpprop:latm	▪ 22 (xsd:integer)		
dbpprop:latns	▪ N		
dbpprop:leaderName	▪ Janez Fajfar		
dbpprop:leaderTitle	▪ Mayor		

# About: Bled

An Entity of Type : [Municipalities of Slovenia](#), from Named Graph : <http://dbpedia.org>, within Data Space : [dbpedia.org](http://dbpedia.org)



geo:geometry	▪ POINT(14.1167 46.3667)
geo:lat	▪ 46.366665 (xsd:float)
geo:long	▪ 14.116667 (xsd:float)
foaf:depiction	▪ <a href="http://upload.wikimedia.org/wikipedia/commons/f/f9/Bledi-t%C3%B">http://upload.wikimedia.org/wikipedia/commons/f/f9/Bledi-t%C3%B</a>
foaf:homepage	▪ <a href="http://www.bled.si">http://www.bled.si</a>
foaf:name	▪ Bled
foaf:page	▪ <a href="http://en.wikipedia.org/wiki/Bled">http://en.wikipedia.org/wiki/Bled</a>
is dbpedia-owl:birthPlace of	▪ dbpedia:Prince_Andrew_of_Yugoslavia ▪ dbpedia:Klemen_Pretnar ▪ dbpedia:Sara_Isakovič ▪ dbpedia:Peter_Florjančič ▪ dbpedia:Aleksandar_Obradović ▪ dbpedia:Špela_Pretnar ▪ dbpedia:Klemen_Mohorič
is dbpedia-owl:city of	▪ dbpedia:IEDC-Bled_School_of_Management ▪ dbpedia:Lake_Bled
is dbpedia-owl:deathPlace of	▪ dbpedia:Julius_von_Payer ▪ dbpedia:Duchess_Marie_Antoinette_of_Mecklenburg
is dbpedia-owl:isPartOf of	▪ dbpedia:Bodešče ▪ dbpedia:Koritno,_Bled ▪ dbpedia:Selo_pri_Bledu ▪ dbpedia:Kupljenik ▪ dbpedia:Ribno ▪ dbpedia:Zasip ▪ dbpedia:Obrne ▪ dbpedia:Bohinjska_Bela ▪ dbpedia:Slamniki
is dbpedia-owl:location of	▪ dbpedia:Bled_Castle
is dbpedia-owl:nearestCity of	▪ dbpedia:Vogel_Ski_Resort ▪ dbpedia:Kobla_Ski_Resort
is dbpedia-owl:wikiPageRedirects of	▪ dbpedia:Bled,_Slovenia ▪ dbpedia:Veldeš
is dbpprop:basedIn of	▪ dbpedia:HK_MK_Bled

# What about lexical knowledge?

- Textual information will become referential knowledge:
  - Planning software for emails & calendars:
    - Dates, places, people
    - Events such as meetings, conferences, etc.
  - Biographies and bibliographical references
- Unstructured text is converted to structured knowledge through text-mining and text-understanding
- Who will be the owner of the meaning of words, representing the de-facto-standard?

# Summary

- RDF repositories of knowledge → understandable by machines
- Created manually by experts, automatically and ***socially***
- Lexical knowledge is also knowledge
- Persistent identifiers (PID, URI) to make reference to knowledge objects
- Unstructured text converted to structured knowledge
- Every word becomes a hyperlink to formally structured knowledge by adding the lemma or concept PID to each word
- Either you establish the PID or, if the PID turns out to point to Wikipedia, you link your PID to theirs
- Applications (Apps) will be developed on top of structured knowledge, so you make sure you provide lexical knowledge with added value that is useful for computers