



1. Introduction

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Principales referencias

- Página Web de la asignatura
 - <http://delicias.dia.fi.upm.es/wiki/index.php/Master12-13>
- Guía de aprendizaje
 - http://www.fi.upm.es/docs/estudios/1329_Gestion_del_Conocimiento_12-13.pdf

- Introducción
- Web
- Web 2.0
- Web Semántica
- Web de datos
- Semántica Corporativa

Definición de Gestión de Conocimientos

- Necesidad de sacar provecho o “capitalizar” los conocimientos.
- La Capitalización de los Conocimientos es “el proceso que permite reutilizar los conocimientos de un dominio dado previamente almacenados y modelizados, con el objetivo de realizar nuevas tareas”
- El propósito de la Gestión de Conocimientos es:
 - Promover el crecimiento, comunicación y conservación de los conocimientos.
 - Localizar y hacer visibles los conocimientos de una institución

Motivaciones

- Presiones del Entorno:



- Tecnológico



- Inteligencia Colectiva



Tipos de Conocimientos

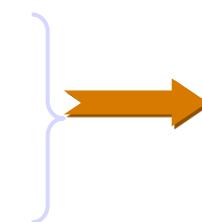
- En una Institución existen una gran heterogenidad de conocimientos:

- Tangibles

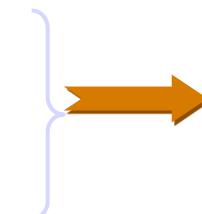
- datos
 - procedimientos
 - planes
 - documentos de análisis y síntesis

- Intangibles

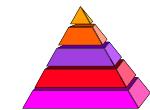
- habilidades
 - destrezas profesionales
 - conocimiento privado
 - conocimiento del historial



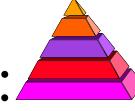
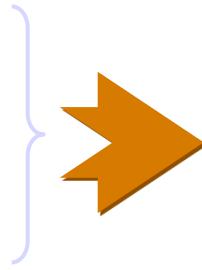
Gestión de Conocimientos
Gestión de documentos

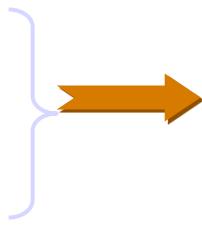


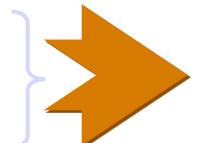
Formalización del *Know-How*



Tipos de Conocimientos

- En cuanto a los formatos se pueden distinguir:
- Elementos de Conocimientos Formales
 - Reglas de negocio
 - Guías de diseño
 - Datos almacenados en Base de Datos
 - Datawarehouse

Conocimientos que ayudan a la toma de decisiones
- Elementos de Conocimientos Semi-estructurados
 - palabras claves
 - memos
 - notas
 - correos electrónicos

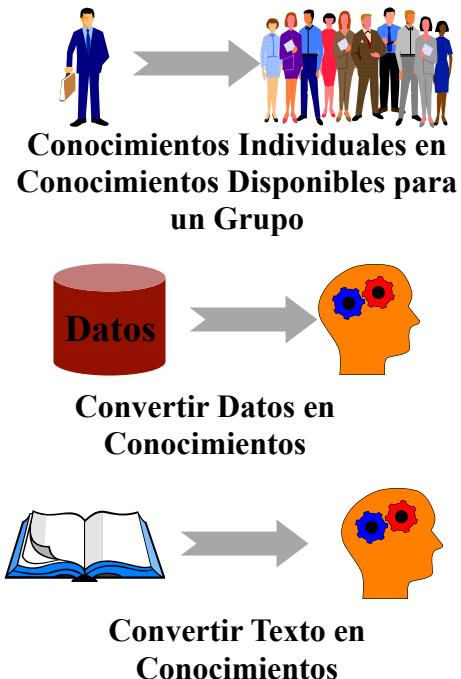
Capturar conocimientos individuales
- Elementos de Conocimientos no Formales
 - Manuales
 - Documentación técnica
 - Tesauros
 - esquemas de clasificación

Tratamiento similar a elementos Semi-estructurados

Ciclo de Gestión de Conocimientos O'Leary

- Gestión de Conocimientos es un proceso de conversión y conexión de los conocimientos procedentes de las fuentes accesibles para una institución y que permite conectar a los usuarios de conocimientos con estos conocimientos.

Procesos de Conversión

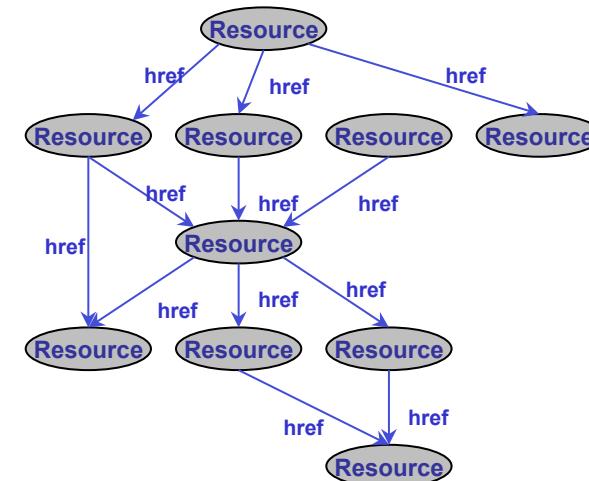
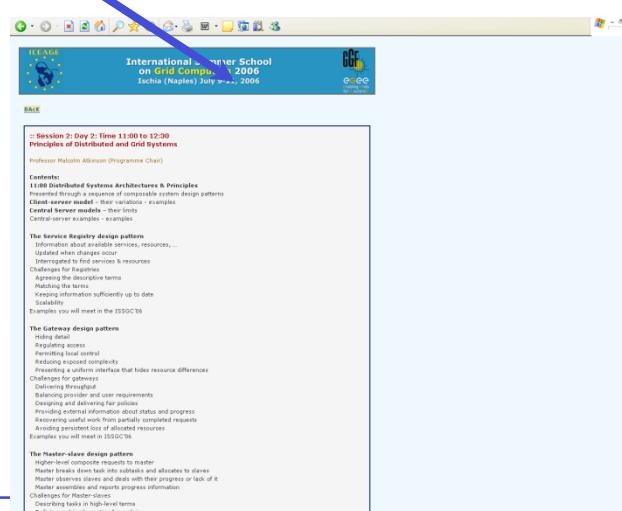
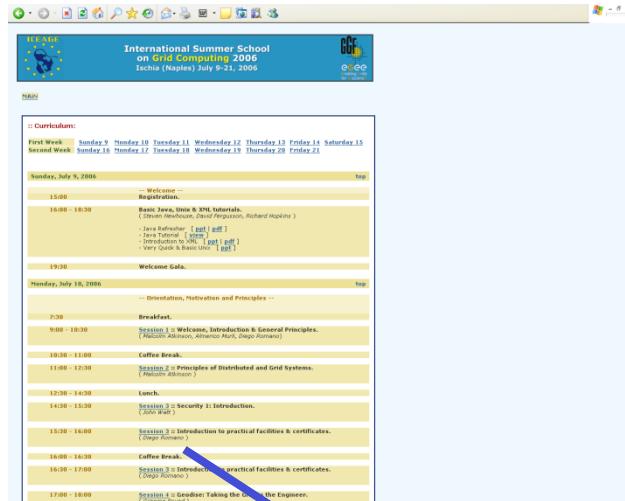


Procesos de Conexión



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- Web Semántica
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Where we are Today: the *Syntactic* Web



- A place where computers do the presentation (easy) and people do the linking and interpreting (hard).
- Why not get computers to do more of the hard work?

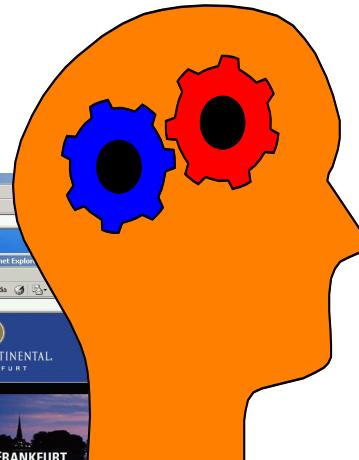
The problem of choosing information



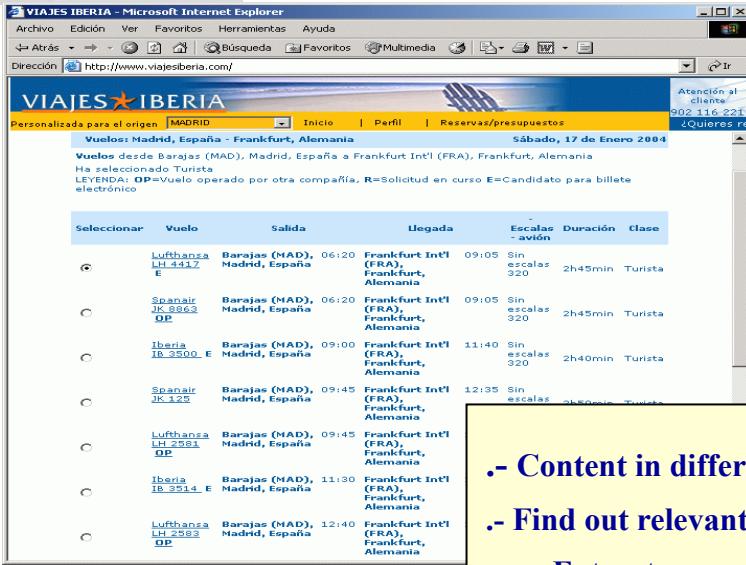
- Find the information
- Extract relevant information
- Interpretation by human users
- Synthesis



The problem of content aggregation: From Madrid to Tokyo



- .- Content in different languages (Spanish, English, Japanese,...)
 - .- Find out relevant information from heterogeneous sources
 - .- Extract
 - .- Interpretation
 - .- Aggregation
 - .- Consistency of the information



What was the Web intended to be?

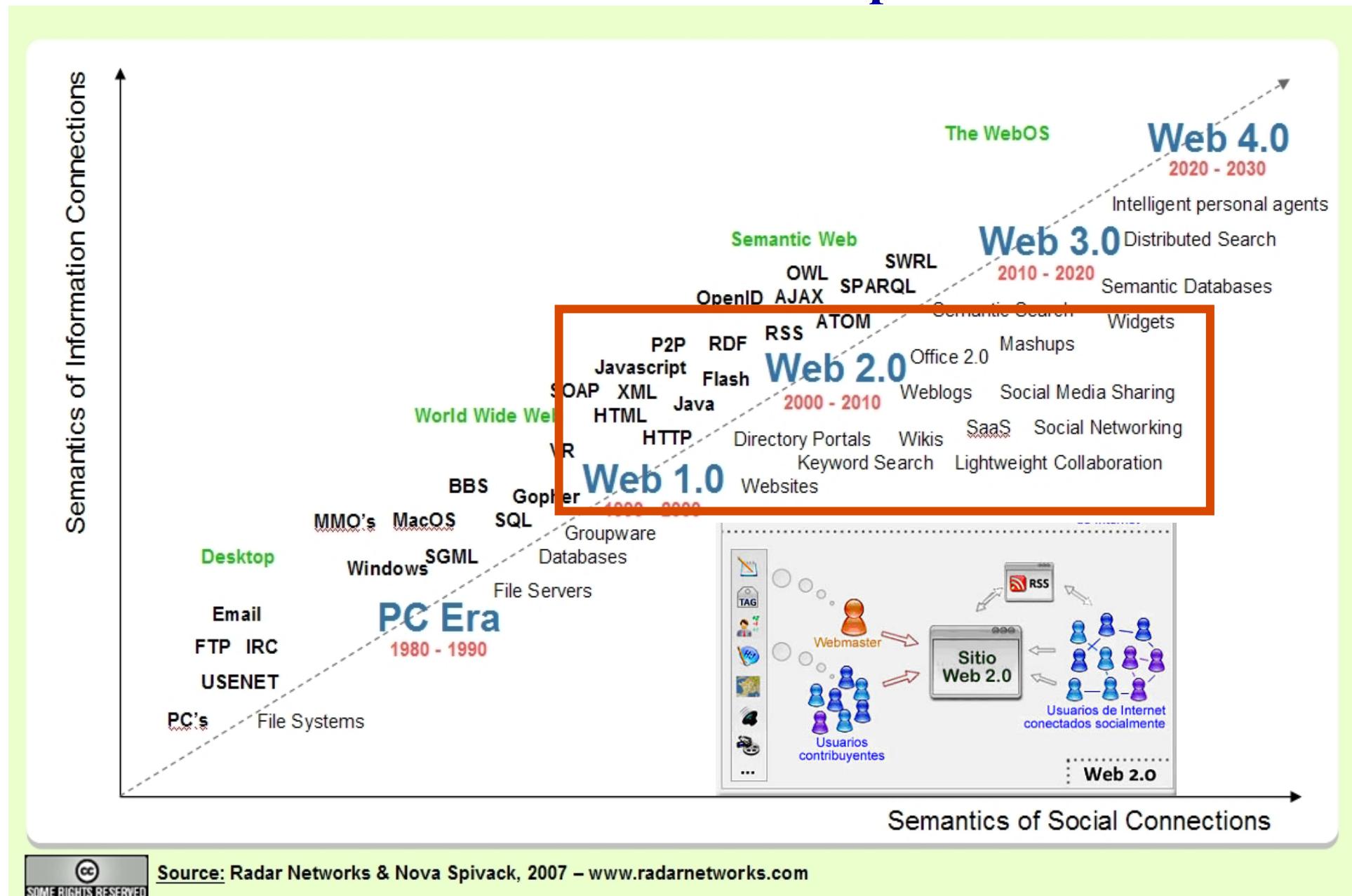


“... a goal of the Web was that, if the interaction between person and hypertext could be so intuitive that the machine-readable information space gave an accurate representation of the state of people's thoughts, interactions, and work patterns, then machine analysis could become a very powerful management tool, seeing patterns in our work and facilitating our working together through the typical problems which beset the management of large organizations.”

[Berners-Lee 1996]

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Web n+1: Roadmap



Source: Radar Networks & Nova Spivack, 2007 – www.radarnetworks.com

Tags
A tag is simply a word you use to describe a bookmark. Unlike folders, you make up tags when you need them and you can use as many as you like. The result is a better way to organize your bookmarks and a great way to discover interesting things on the Web.

Tags to watch

toread

media

hotlist what's hot right now on del.icio.us

HOT NOW

- Gumption: Do YouJustGetMe? Do I Even Get Myself? 103 people
- Ask The Readers: What Books Have Changed Your Life? 104 people
- 9 Steps to Achieving Flow (and Happiness) in Your Work | Zen Habits 121 people

flickr GAMING

Signed in as Sentence Help Sign Out

cardboxes

Uploaded on September 2, 2006 by Nils K. Windisch (netomer)

Nils K. Windisch (netomer)'s photostream

1,218 photos View as slideshow

Tags

- netomer
- 50mm
- 50mm f/1.8 AF
- D70
- Nikkor
- Nikon
- black and white
- August
- 2006
- 0.4s
- f/8
- landscape format
- ISO200
- Göttingen
- Germany
- Europe
- Library
- State and University Library Göttingen
- on tour with Ralf Stockmann
- indoor
- historical Building
- geo:lat=51.534003
- geo:lon=9.932199

YouTube Broadcast Yourself™

Director Videos

- Teenie Weenie Raw Flesh
- Ryan Leslie's MySpace Blog #2
- Midget Binge Drinking
- Ronaldinho

Featured Videos

See More Features

drawing youtube
02:04
This is a short version of the videos i did. I'm drawing people on you want me to draw a picture of you? Just ask me. ([more](#))

From: [marcoseiii](#) Views: 6,080 ★★★★☆ More in Arts

Web 2.0 is a term often applied to a perceived ongoing transition of the [World Wide Web](#) from a collection of websites to a distributed computing platform serving web applications to end users. Ultimately Web 2.0 services are expected to replace desktop computing applications for many purposes.

Contents [hide]

- 1 Overview
 - 1.1 Comparison with Semantic Web
- 2 Technology
 - 2.1 Content syndication
 - 2.2 Web services
 - 2.3 Server software
- 3 Social impact
- 4 Business impact
- 5 External links
 - 5.1 Examples

Overview

The original conception of the web (in this context, labeled *Web 1.0*) comprised static [HTML](#) pages that were updated rarely, if at all. The success of the [dot-com](#) era depended on a more dynamic web (sometimes labeled *Web 1.5*) where [content management systems](#) served dynamic [HTML](#) web pages created on the fly from an ever-changing [content database](#). In both senses, so-called [eyeballing](#) was considered intrinsic to the web experience, thus making [page hits](#) and visual aesthetics important factors.

Proponents of the *Web 2.0* approach believe that web usage is increasingly oriented toward interaction and rudimentary [social networks](#), which can serve content that exploits [network effects](#) with or without creating a visual, interactive web page. In one view, *Web 2.0* sites act more as [points of presence](#), or [user-dependent web portals](#), than as traditional [websites](#).

Comparison with Semantic Web

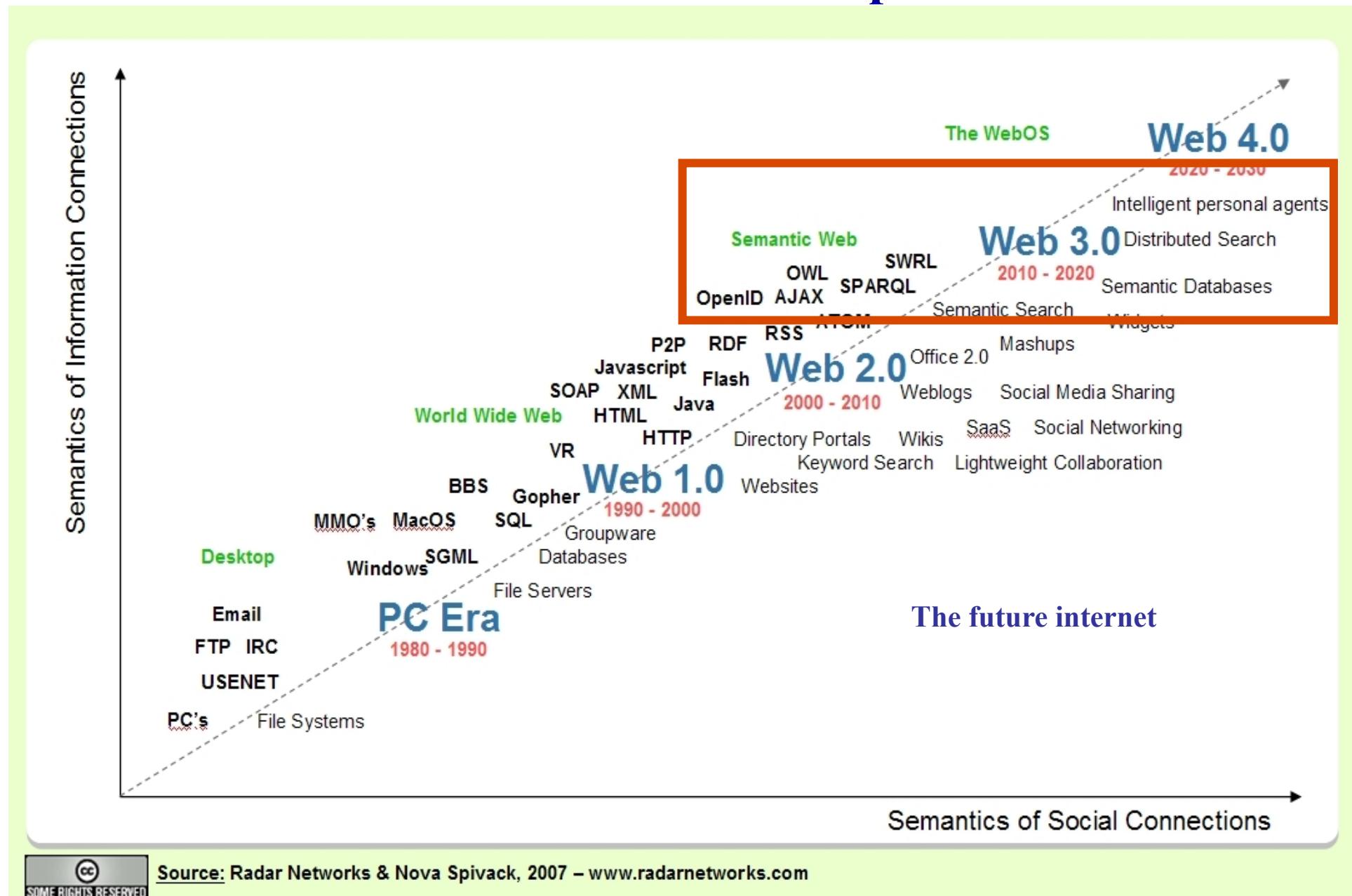
and Tim Berneres-Lee [1996] sentence
is still valid for the Web 2.0



“... the machine-readable information space ...
... machine analysis could become a very
powerful management tool, ...
... facilitating our working together”

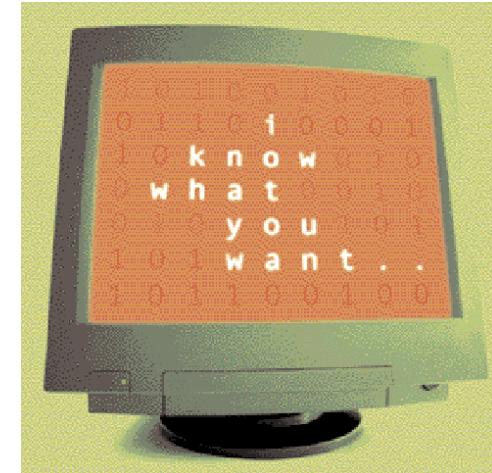
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Web n+1: Roadmap



Web 3.0

- **Web Inteligente**
 - Semantic Web technologies
 - The Data Web – a global database
 - Intelligent applications (NLP, machine learning, machine reasoning, autonomous agents)
- **Conexión Ubicua**
 - Broadband adoption
 - Mobile Internet access
 - Mobile devices
- **Computación en red**
 - Software-as-a-service business models
 - Web services interoperability
 - Distributed computing (P2P, grid computing, hosted "cloud computing" server farms)
- **Tecnologías abiertas**
 - Open APIs and protocols
 - Open data formats
 - Open-source software platforms
 - Open data (Creative Commons, Open Data License, etc.)
- **Open Identity**
 - Open identity (OpenID)
 - Open reputation
 - Portable identity and personal data



<http://lifeboat.com/ex/web.3.0>

What is the Semantic Web?

“The Semantic Web is an **extension** of the current Web in which information is given **well-defined meaning**, better enabling computers and people to work in **cooperation**. It is based on the idea of having data on the Web defined and linked such that it can be used for more **effective discovery, automation, integration, and reuse across various applications.**”



Ontologies

Anotation

Hendler, J., Berners-Lee, T., and Miller, E.
Integrating Applications on the Semantic Web, 2002,
<http://www.w3.org/2002/07/swint.html>

Ontology

VIAJES IBERIA - Microsoft Internet Explorer

Archivo Edición Ver Favoritos Herramientas Ayuda

Atrás → Búsqueda Favoritos Multimedia Ir

Dirección http://www.viajesiberia.com/

VIAJES IBERIA

Personalizada para el origen MADRID

Inicio | Perfil | Reservas/presupuestos

Vuelos: Madrid, España - Frankfurt, Alemania

Sábado, 17 de

Vuelos desde Barajas (MAD), Madrid, España a Frankfurt Int'l (FRA), Frankfurt, Alemania

Ha seleccionado Turista

LEYENDA: OP=Vuelo operado por otra compañía, R=Solicitud en curso E=Candidato para electrónico

Seleccionar	Vuelo	Salida	Llegada	-	Escalas	Dura - avión
RDFS	Lufthansa LH 4417	Barajas (MAD), Madrid, España	06:20	Frankfurt Int'l (FRA), Frankfurt, Alemania	09:05 Sin escalas	2h45
	Spanair JK 8585	Barajas (MAD), Madrid, España	06:20	Frankfurt Int'l (FRA), Frankfurt, Alemania	09:05 Sin escalas	2h45
	Iberia IB 3501	Barajas (MAD), Madrid, España	09:00	Frankfurt Int'l (FRA), Frankfurt, Alemania	11:40 Sin escalas	2h40
	Spanair JK 125	Barajas (MAD), Madrid, España	09:45	Frankfurt Int'l (FRA), Frankfurt, Alemania	12:35 Sin escalas	2h50
	Lufthansa LH 2581	Barajas (MAD), Madrid, España	09:45	Frankfurt Int'l (FRA), Frankfurt, Alemania	12:35 Sin escalas	2h50min
	Iberia IB 3514	Barajas (MAD), Madrid, España	11:30	Frankfurt Int'l (FRA), Frankfurt, Alemania	14:10 Sin escalas	2h40min
	Lufthansa LH 2583	Barajas (MAD), Madrid, España	11:30	Frankfurt Int'l (FRA), Frankfurt, Alemania	15:25 Sin escalas	2h45min

```

<rdfs:Class rdf:id="Travel">
<rdfs:comment>A journey from place to
place</rdfs:comment>
</rdfs:Class>

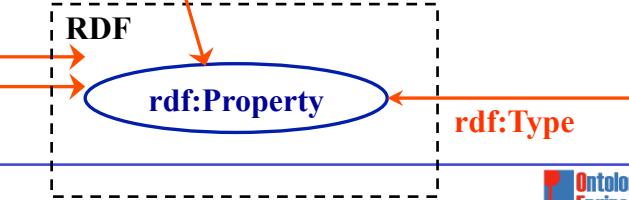
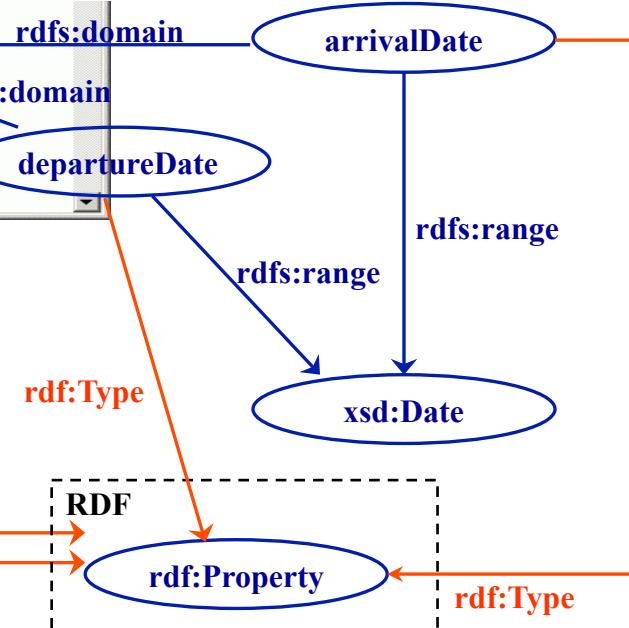
```

```

<rdf:Property rdf:id="arrivalDate">
<rdfs:domain rdf:resource="#Travel"/>
<rdfs:range rdf:resource="&xsd;date"/>
</rdf:Property>

<rdf:Property rdf:id="departureDate">
<rdfs:domain rdf:resource="#Travel"/>
<rdfs:range rdf:resource="&xsd;date"/>
</rdf:Property>

```



VIAJES IBERIA - Microsoft Internet Explorer

Archivo Edición Ver Favoritos Herramientas Ayuda

Dirección http://www.viajesiberia.com/

VIAJES IBERIA

Personalizada para el origen MADRID

Inicio | Perfil | Reservas/presupuestos

Sábado, 17 de Enero 2004

Vuelos: Madrid, España - Frankfurt, Alemania

Vuelos desde Barajas (MAD), Madrid, España a Frankfurt Int'l (FRA), Frankfurt, Alemania

Ha seleccionado Turista

LEYENDA: OP=Vuelo operado por otra compañía, R=Solicitud en curso E=Candidato para billete electrónico

Seleccionar	Vuelo	Salida	Llegada	Escalas	Duración	Clase
<input checked="" type="radio"/>	Lufthansa LH 4417 E	Barajas (MAD), Madrid, España	06:20	Frankfurt Int'l (FRA), Frankfurt, Alemania	09:05	Sin escalas 320 2h45min Turista
<input type="radio"/>	Spanair JK 8863 OP	Barajas (MAD), Madrid, España	06:20	Frankfurt Int'l (FRA), Frankfurt, Alemania	09:06	Sin escalas 320 2h45min Turista
<input type="radio"/>	Iberia IB 3500 E	Barajas (MAD), Madrid, España	09:00	Frankfurt Int'l (FRA), Frankfurt, Alemania	11:40	Sin escalas 320 2h40min Turista
<input type="radio"/>	Spanair JK 125	Barajas (MAD), Madrid, España	09:45	Frankfurt Int'l (FRA), Frankfurt, Alemania	12:35	Sin escalas 320 2h50min Turista
<input type="radio"/>	Lufthansa LH 2581 OP	Barajas (MAD), Madrid, España	09:45	Frankfurt Int'l (FRA), Frankfurt, Alemania	12:35	Sin escalas 320 2h50min Turista
<input type="radio"/>	Iberia IB 3514 E	Barajas (MAD), Madrid, España	11:30	Frankfurt Int'l (FRA), Frankfurt, Alemania	14:10	Sin escalas M87 2h40min Turista
<input type="radio"/>	Lufthansa LH 2583 OP	Barajas (MAD), Madrid, España	12:40	Frankfurt Int'l (FRA), Frankfurt, Alemania	15:25	Sin escalas 320 2h45min Turista

Metadata

Company-name

IB-4321

singleFare

departureDate

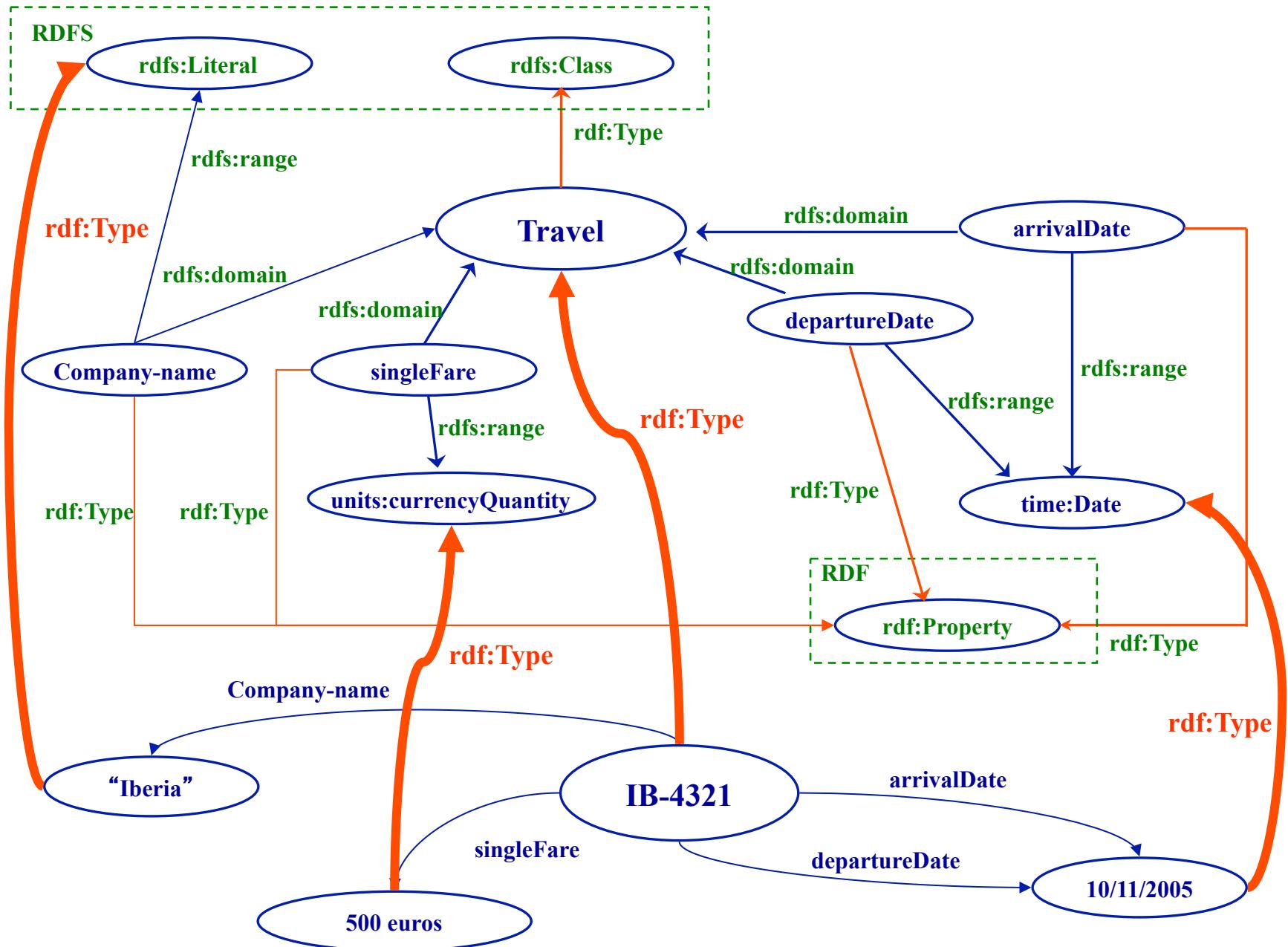
arrivalDate

10/11/2005

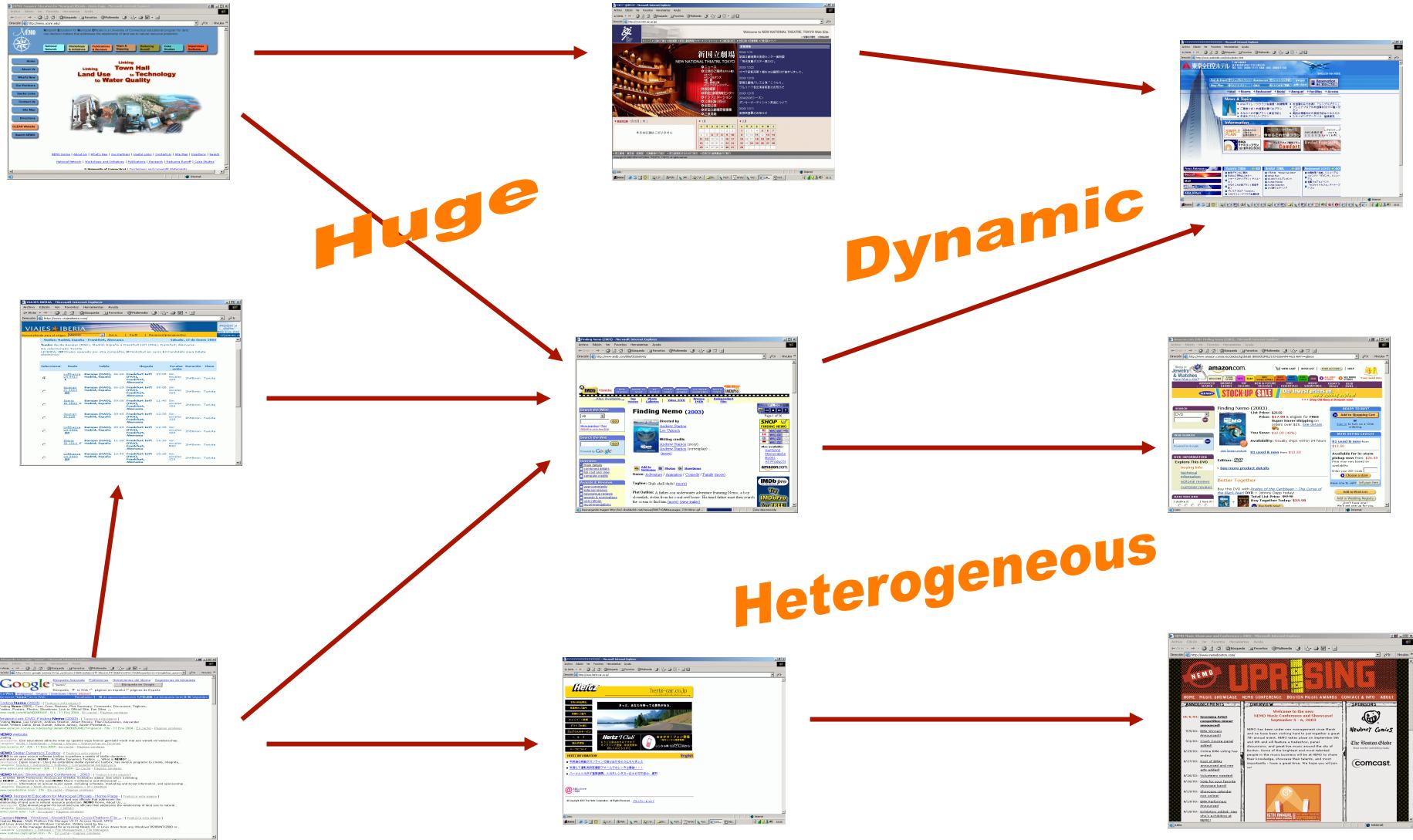
500 euros

```

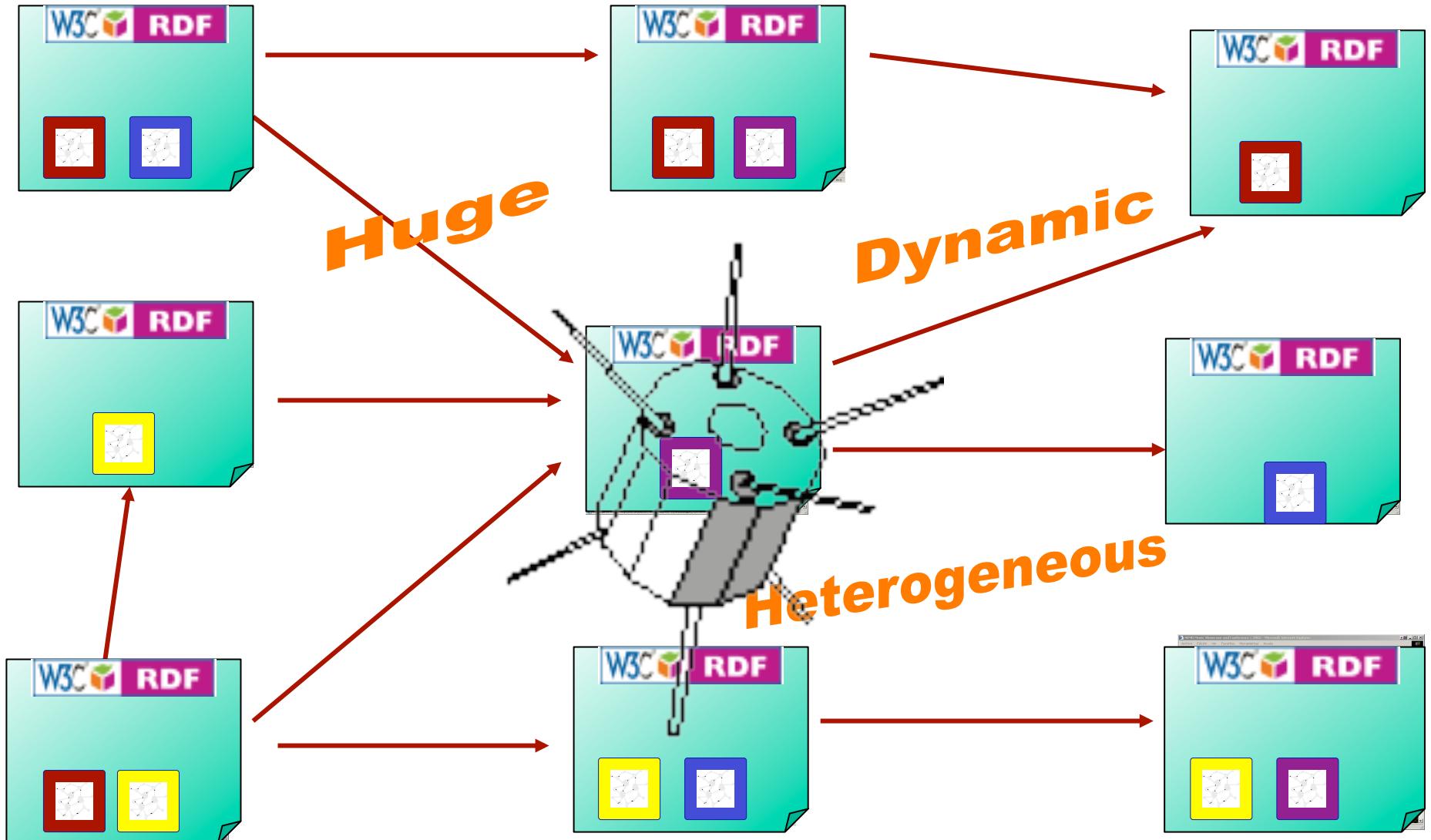
<Travel rdf:ID="IB-4321">
  <Company-name>Iberia</Company-name>
  <singleFare>500 Euros</singleFare>
  <departureDate rdf:datatype="&xsd;date">
    2005-11-10
  </departureDate>
  <arrivalDate rdf:datatype="&xsd;date">
    2005-11-10
  </arrivalDate>
  <arrivalPlace rdf:resource="#Paris"/>
</Travel>
```

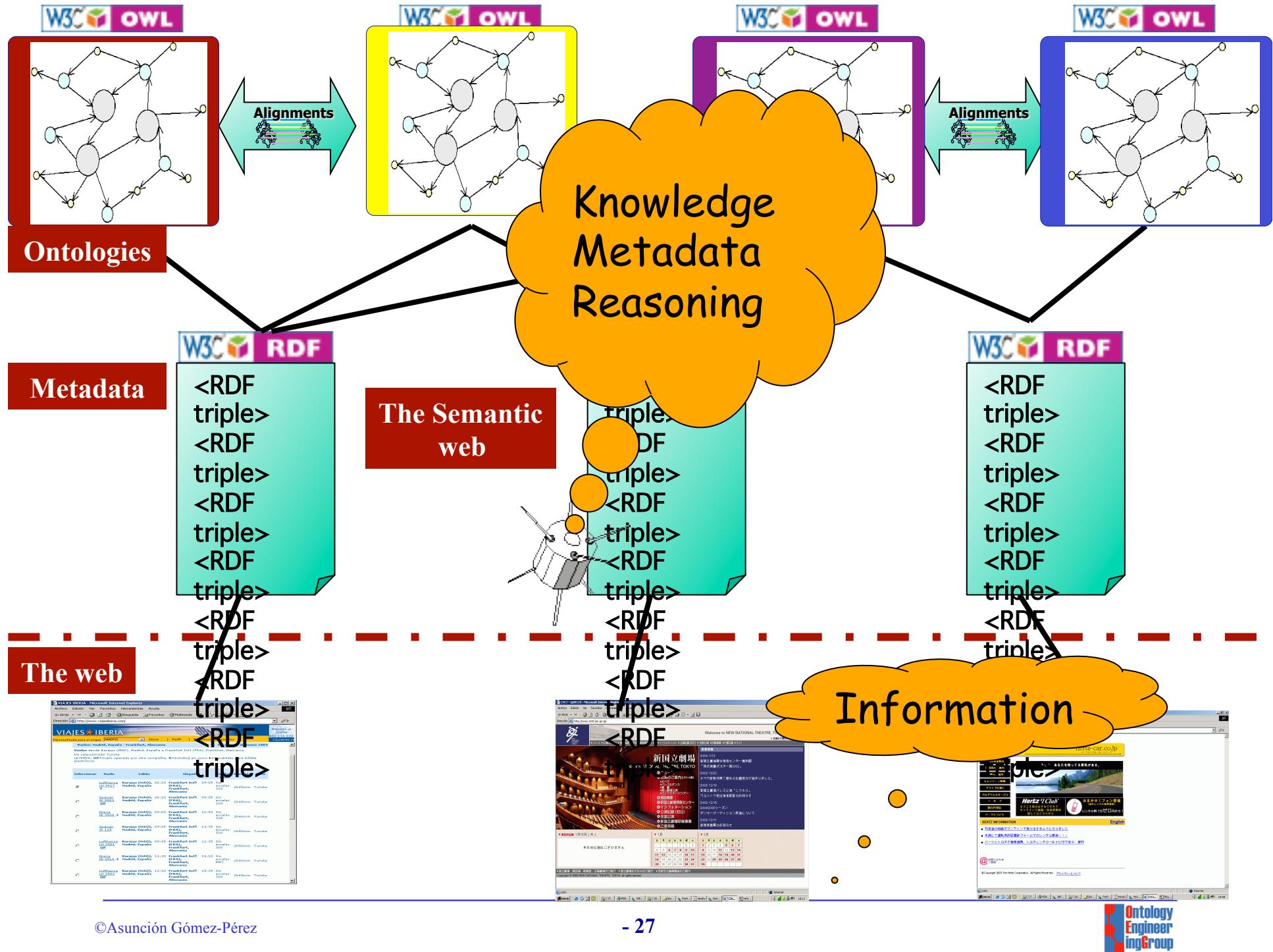


The Web



Semantic Webs

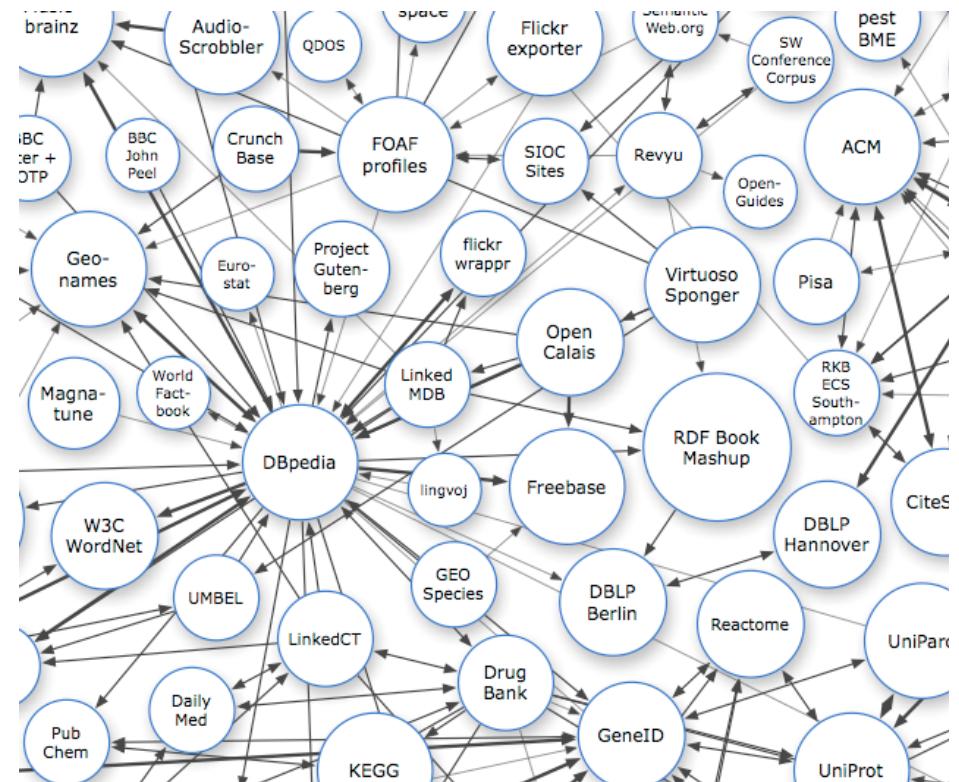




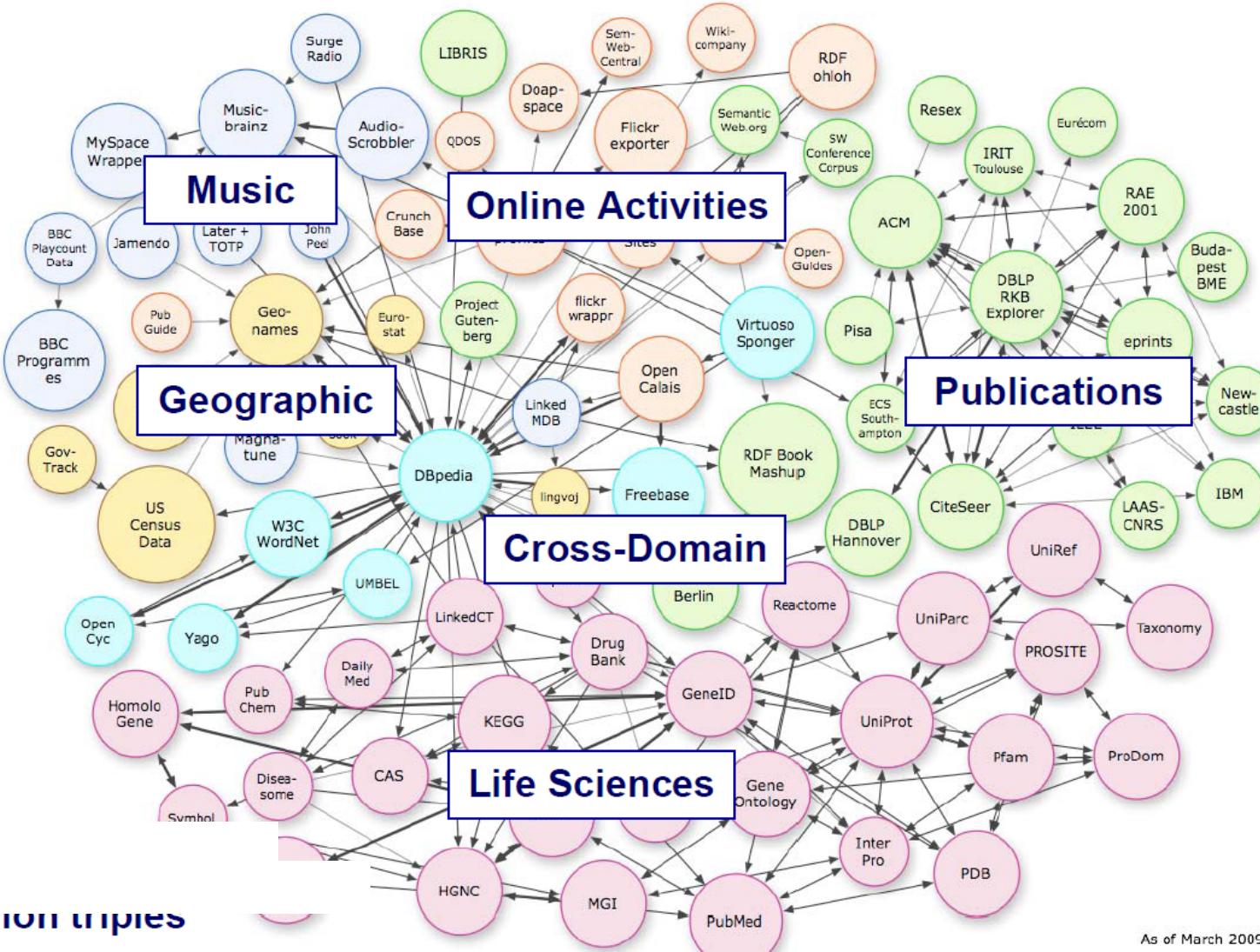
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What is the Web of Linked Data?

- An extension of the current Web...
 - ... where **information** given **well-defined** and **explicitly represented meaning**, ...
 - ... so that it can be **shared** and used by **humans and machines**, ...
 - ... better enabling them to work in cooperation
- How?
 - Promoting information exchange by **tagging web content** with machine processable descriptions of its meaning.
 - And **technologies** and **infrastructure** to do this
 - And **clear principles** on how to publish data



LOD clouds



4.5 billion triples

180 million data links

As of March 2009

Open Government. USA and UK

The image shows two screenshots of government data portals. The left screenshot is for data.gov.uk, which is the UK's open government data portal. It features a large green banner at the bottom with the word "TOP-DOWN" in white. The right screenshot is for data.gov, which is the US's open government data portal. It features a large green banner at the bottom with the word "BOTTOM-UP" in white. Both sites have similar top-level navigation and search functions.

©Asunción Gómez-Pérez

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Ontology Engineering Group

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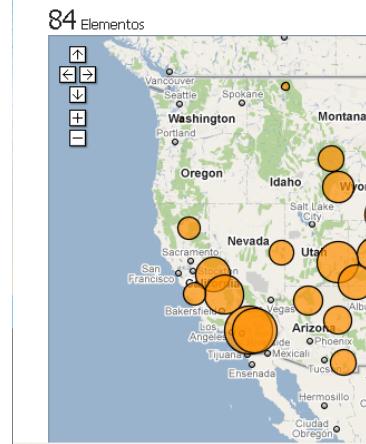
Linked Data Mashup (data.gov)

Clean Air Status and Trends (CASTNET)

Clean Air Status and Trends Network (CASTNET)

Land Use	27 Agric
1 Coastal/Marsh	
3 Desert	
40 Forest	
Terrain	37 Rolling
4 Mountaintop	
1 Flat/Water	
14 Flat	
Agency	59 EPA
25 NPS	

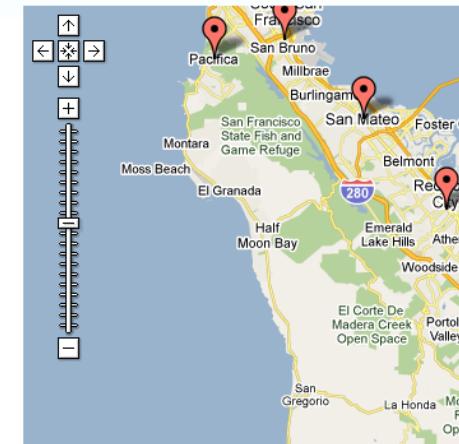
o-8-castnet.php



employment market explorer

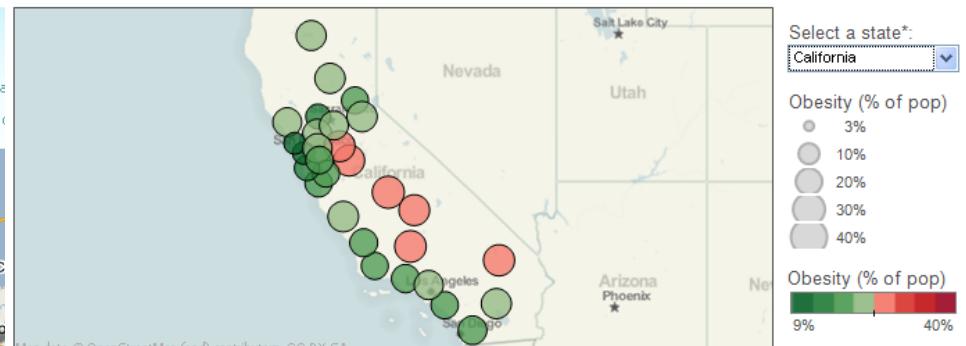
home

Employment Market explorer is tool designed to help people understand regional and state unemployment rates and analyze the labor market.



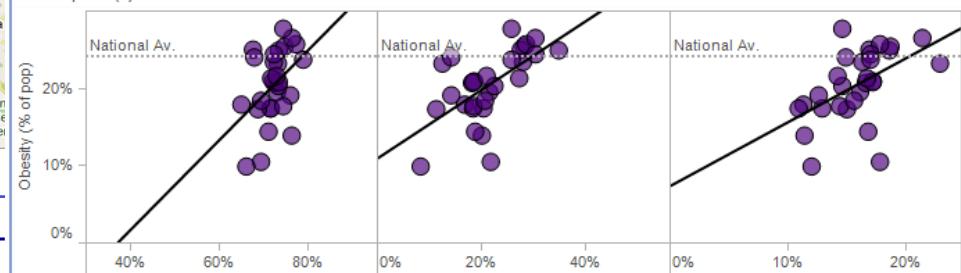
National obesity comparison tool

Obesity by county



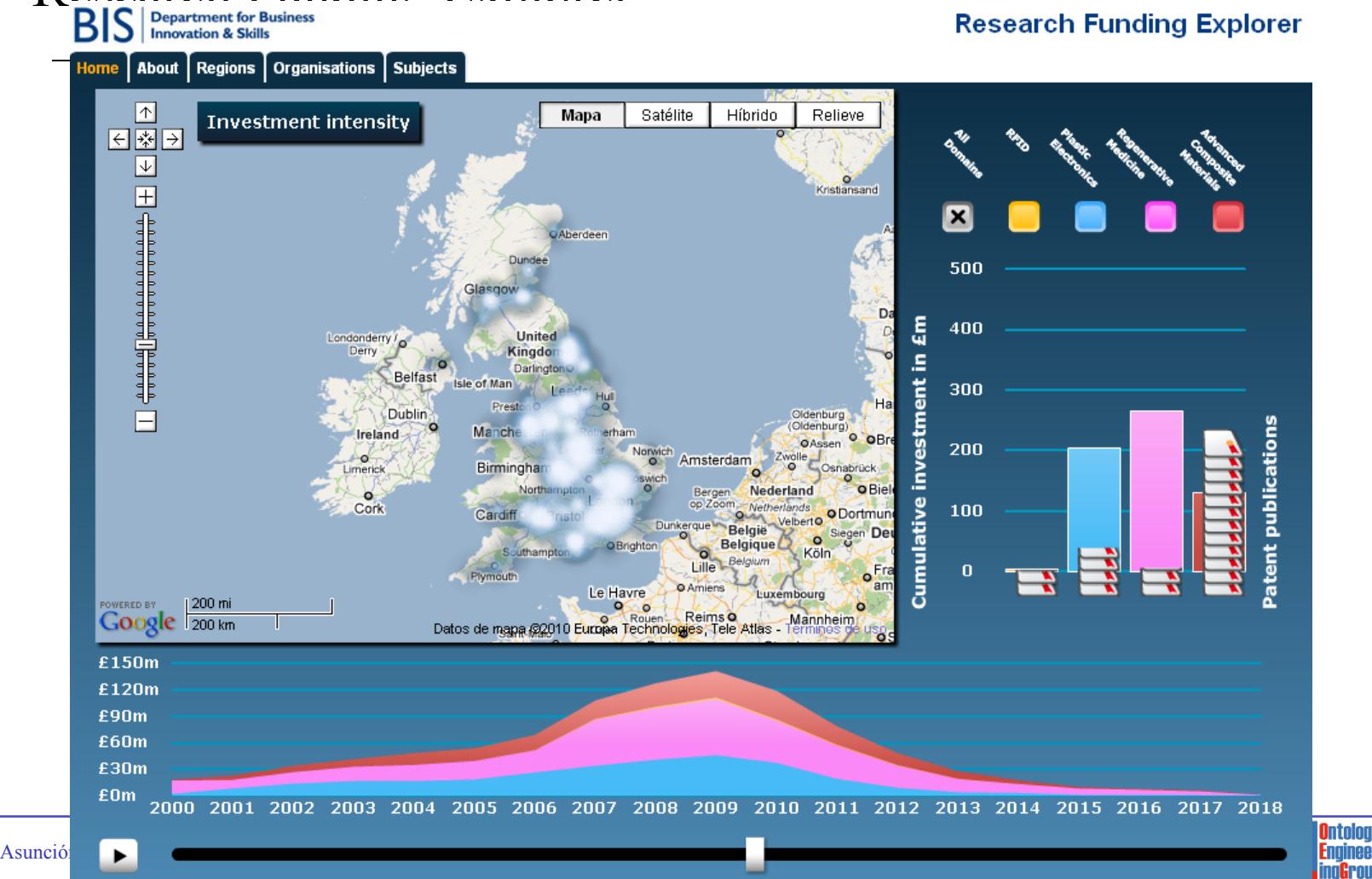
*Alaska and DC have no values for obesity and are thus excluded. Certain counties are also excluded for the same reason.

Select point(s) to view details in chart below:



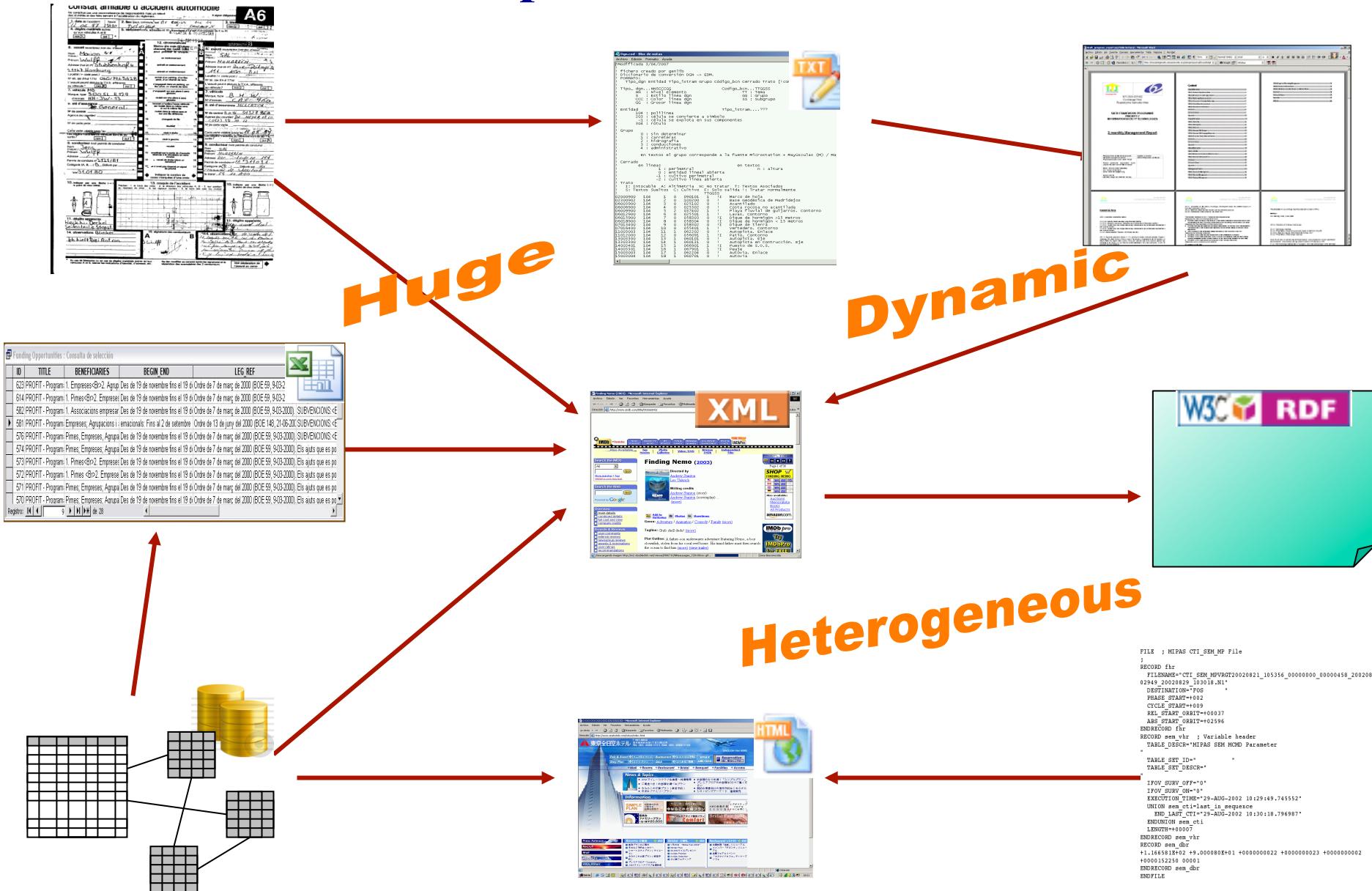
Linked Data Mashup (data.gov.uk)

- Research Funding Explorer

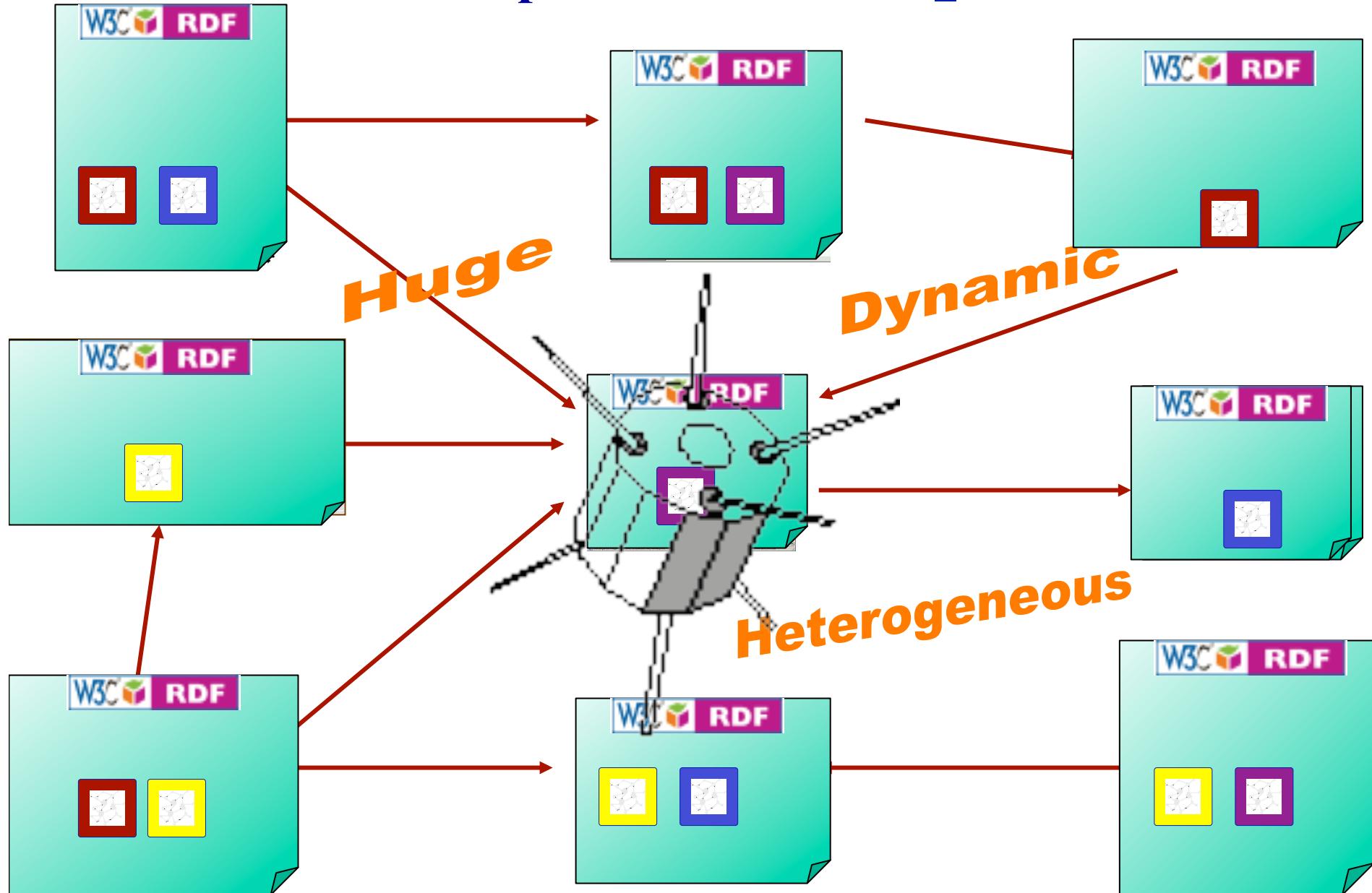


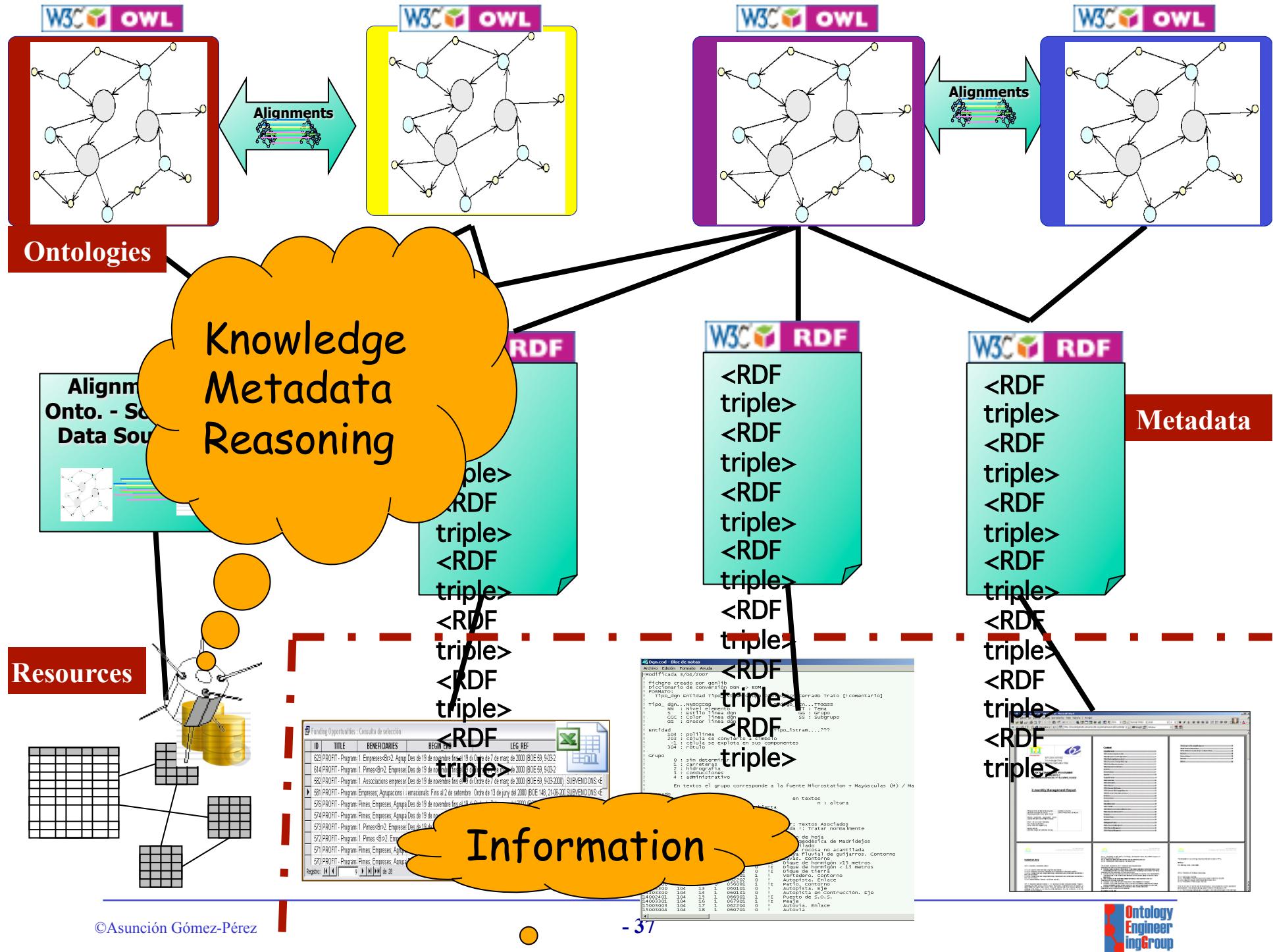
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Corporative Semantics



Corporative Semantics





Contenidos específicos

- Adquisición de conocimientos
- Ontologías
- Lenguajes de construcción de ontologías
- Memorias institucionales
- Anotación de recursos
- Datos Enlazados
- Web Semántica
- Aplicaciones basadas en conocimiento
- Metodologías para la GC
- Metodologías para la gestión de la innovación