

# Social Semantic Web Web 3.0

Philip Dobler, Manuel Gogl

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# Agenda

- ▶ Motivation
- ▶ Introduction
- ▶ Semantic Wikis
  - Semantic MediaWiki
  - Example
- ▶ Semantic Blogs
- ▶ Semantic Desktop
  - Live Example
- ▶ Conclusions
- ▶ References

# Motivation

- ▶ **Tim Berners-Lee** (1st World Wide Web Conference, Geneva, May 1994)
  - To a computer, the Web is a flat, boring world, devoid of meaning. This is a pity, as in fact documents on the Web describe real objects and imaginary concepts, and give particular relationships between them.

Adding semantics to the Web involves two things: allowing documents which have information in **machine-readable forms**, and allowing links to be created with **relationship values**. Only when we have this extra level of semantics, we will be able to use computer power to help us exploit the information to a greater extent than our own reading.

# Introduction

- ▶ The semantic Web is an extension of the World Wide Web and not a replacement!
- ▶ Objectives:
  - Adding machine-readable Meta data to content for parsing, querying and reusing
  - Enabling machine-readable knowledge
  - Making information more easy to find
  - Creating interoperability between applications

# Introduction cont'd

- ▶ From Web 1.0 (WWW) to Web 3.0 (Semantic Web)

Web 1.0	Web 2.0	Web 3.0
CMS	Wikipedia	Semantic Wikis
Personal Website	Blogs	Semantic Blogs
Google	Google Scholar	Semantic Search
Message Boards	Community Portals	Semantic Forums
Address Books	Online Social Networks	Semantic Social Networks

# Introduction cont'd

## ▶ Goals

- One global data space (Semantic Web is a Web of data)
  - Integration of structured and semi-structured documents in the WWW
  - Use RDF to publish data
  - Use ontologies to explain the semantics
- Extension of the WWW
  - Automation of processes that generate semantic Meta data
  - Easement for humans (complex queries)
  - Generating new views

# Introduction cont'd

- ▶ Fields of application
  - Semantic Wikis
  - Semantic Blogs
  - Semantic Desktops
  - Semantic Mashups
  - Semantic Games
  - Semantic Publishing
  - SIOC (Semantically-Interlinked Online Communities)
  - ...

# Semantic Wikis

- ▶ Traditional Wiki
  - online encyclopedias
  - book repositories
  - software development
  - project proposals
- ▶ Limitation: Lack of information reuse
- ▶ **“A semantic wiki is a wiki that has an underlying model of the knowledge described in its pages. Semantic Wikis provide the ability to capture or identify information about the data within pages, and the relationships between pages.” (Ziesche, 2006)**



# Semantic Wikis cont'd

- ▶ Primary idea of semantic wikis in 2000
- ▶ First serious implementation started in 2005.
  
- ▶ Some active semantic wikis (engines) are:
  - **Semantic MediaWiki**
  - OntoWiki
  - KiWi
  - Tiki Wiki
  
- ▶ Higher number of inactive wikis

# Semantic MediaWiki

- ▶ additional markup into the wiki-text
- ▶ users can add semantic tags to the wiki
  
- ▶ Some benefits of SMW
  - Automatically generated lists
  - Visual display of information
  - Improved data structure
  - Searching information
  - External reuse
  
- ▶ Currently the most widely-deployed semantic wiki

# Semantic MediaWiki cont'd



Navigation

Main Page

Tools

Ontologies

People

Events

services

Editing help

Browse wiki

OWL/RDF feeds

Recent changes

Toolbox

What links here

Related changes

Upload file

Special pages

Page Discussion

## Editing Austria

**Warning:** You are not logged in.

Your IP address will be recorded in this page's edit history.



The Republic of '''Austria''' is a landlocked country in `[[located in::Europe]]`. The capital of Austria is `[[borders::Slovakia]]`, `[[borders::Hungary]]`, `[[borders::Slovenia]]`, `[[borders::Italy]]`, `[[borders::Switzer` area of `[[area::83,872 km²]]` The official currency is the `[[uses currency::Euro]]`. Austria is a member of

The official language is German. Slovenian, Croatian and Hungarian as well as the Austrian Sign Language a

`{{Location data}}`

`[[Category:Country]]`

Relation ... `[[located in::.....]]`  
Instance ... Europe

# Semantic Blogging

- ▶ Traditional Blog
  - web application that contains periodic time-stamped posts on a common webpage
  - I.e.: individual diaries or other personal aims of communication
- ▶ Blogs are growing - stored data also growing.
- ▶ Limitation: Data is often tied to a specific application
  
- ▶ GOAL: lift this data into the Web.
- ▶ add additional Meta data to a blog entry
  - information about the entry itself
  - author
  - date of publication
  - information about the structure of the Blog
  - relations to other communication sites

# Semantic Desktop

- ▶ Traditional way of organizing documents on personal computers
  - Hierarchical file systems
    - /home/user/..., C:\Windows\..
    - Documents are stored and grouped in folders
    - User has to remember the relationships between documents

# Semantic Desktop Definiton

- ▶ Device
- ▶ Individual stores digital information
- ▶ Data is identified by URIs
- ▶ Queryable (RDF graphs)
- ▶ Resources can be shared
- ▶ Ontologies express mental models

# Nepomuk – Semantic Desktop Project

- ▶ DFKI
- ▶ Gnowsis Project (proof-of concept)
- ▶ Funded by European Union
  
- ▶ Objectives of the project
  - Adding semantics
  - Collaborative Environment – social facet
  - Machine processable
  - Implemented in K Desktop Environment

# Nepomuk in KDE

- ▶ KDE is a popular Window Manager (Unix Environment)
- ▶ Tagging of documents (Meta data) in file manager (Dolphin)
- ▶ Crawler searches documents and stores them in a database -> semantic information generation



kde4\_0\_0 - Dolphin

File Edit View Go Tools Settings Help

Back Forward Icons Details Columns Preview Split

Places Home Network Root Trash Volume (reiserfs) Volume (vfat) Volume (ext3) Volume (reiserfs) Volume (reiserfs)

Home > Dokumente > kde4\_0\_0

material amarok\_alpha.png


dashboard.png desktop\_empty.png

dolphin\_with\_previ... dragon1.png

dragon2.png dragon3.png

27 Items (One Folder, 26 Files)

Information



dashboard.png

Type: PNG image  
Size: 628.1 KiB  
Modified: 2008-01-06 12:27

Rating: ★★★★★

The KDE 4.0.0 Desktop with a few selected (and partially unreleased) widgets. Note the half-transparent background.

Tags: ▼

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Thank you for your attention!

Questions?