IkeWiki
A Semantic Wiki for Collaborative Knowledge Management

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Outline

1. KiWi Vision
2. IkeWiki Interface
   1. Wiki Interface
   2. What to do with Semantic Annotations
   3. How to do Semantic Annotations
3. IkeWiki Architecture
   1. Storing Pages and Metadata
   2. Rendering Pipeline
   3. Transformation
4. Applications and Perspectives
KiWi Vision
Knowledge Management

- many different kinds of rich content (text, images, audio, video, software, processes, ...)
- user and domain specific workflows and processes
- sharing of content and collaboration of users
Knowledge Management (traditional)

- „knowledge acquisition systems“
- form-based, predefined processes, part of quality management, „make people replaceable“
- people are aligned with technology and organisation
Knowledge Management (KiWi Way)

- instead: technology and organisation should be aligned with people!
- KiWi: Semantic CMS the Wiki-Way
Knowledge Management (Wikis)

| Wikis are… |
| simple to use (low technological barrier) |
| flexible: from a short notice over documentation to collaborative authoring of documents |
| do not impose a predefined workflow (no dictate of the system) |
| adjust to the necessities of users |

| like a piece of paper! |
| you can write on it, draw on it, connect things, … |
| workflows only by “social convention”: there are rules, but it is possible to deviate from them if necessary (new situations, better solutions, …) |
Knowledge Management (Wikis)

**but:** Wikis are rather like an empty piece of paper
- well suited for creative and/or well-known tasks
- no support whatsoever for users
- nobody would fill his tax return on an empty piece of paper!
- forms and workflows have (originally) been developed as support!

- with growing amount of content it becomes also increasingly difficult to find the necessary information
Semantic Web

- adds formal, machine readable semantics to the Web
- on a first glance:
  - rigid structures, predefined processes
- but on second glance:
  - “open world”
  - semi structured
  - no pre-defined structures; evolving structures!
  - structure is never really imposed, it is just used to support the user when it is there!
Knowledge Management
+ Wiki-Philosophy
+ Semantic Web
= KiWi

- machine readable linking of content
- adaption of presentation and input
  - to personal preferences
  - to user and content context
  - to different kinds of content
- examples:
  - kinds of content: meeting minutes, resource plans, persons, tasks, reports, ideas, ...
  - presentation/input: meeting minute editor, gantt diagram, user profile, report template, ...
KiWi and IkeWiki

- IkeWiki is the currently existing and running prototype on which KiWi is based
- IkeWiki already allows to demonstrate some (but not all) of the envisioned properties of KiWi
- first versions of KiWi use cases will use this prototype, so it is developed in parallel to the „new“ KiWi system
IkeWiki Interface
IkeWiki Interface

| „normal“ wiki interface for viewing/editing „normal“ content
| somewhat resembling Wikipedia/MediaWiki
IkeWiki Interface –
What to do with Semantic Annotations?

- people will only use metadata when they see a benefit in it!
- possible uses of metadata (for authors):
  - support in editing (e.g. avoiding redundancy of data)
  - interoperability and exchange between systems
- possible uses of metadata (for users):
  - improved search and navigation
  - improved page presentation
IkeWiki Interface – What to do with Semantic Annotations?

- categories/types
- context-dependent presentation
- navigation
IkeWiki Interface – How to do Semantic Annotations?

- people will only use metadata if it is easy!
- lower the technical barrier for metadata creation
  - provide an easy to use interface for adding annotations (AJAX-based adding of link and page types)
  - support the user by reasonable suggestions where possible (link and page type suggestions based on reasoning)
  - support different levels of experience and hide unnecessary complexity (showing advanced features only to advanced users)
- allow domain experts and knowledge engineers to collaborate
- immediate exploitation of semantic annotations (instant reward)
- supporting different levels of formalisation (evolving knowledge models)
IkeWiki Interface – How to do Semantic Annotations?

- Page types
- Advanced features
- Link types
IkeWiki Architecture

- **Page Store**: XML content
- **RDF Store**: RDF metadata
- **Rendering Pipeline**: combination of content and metadata
- transformation into HTML and other formats
- **AJAX editing and viewing in Mozilla/Firefox**
**IkeWiki Architecture**

**Storing Content and Metadata**

- Page content and metadata stored separately
  - *Page content*: PostgreSQL database
  - *Metadata*: Jena RDF memory model with OWL-DL reasoning, backed by a database model for persistent storage

- Rendering pipeline combines page content with metadata
  - "wiklets" enrich page content with information from the knowledge model

- XSLT transformation transforms "enriched" page content to different formats
  - HTML for presentation
  - HTML for tooltip
  - XML/WIF for exchange
What KiWi will add ...

KIWI - Knowledge in a Wiki
knowledge management supported by Semantic Wikis
research on enabling technologies to be integrated:
  - rule-based reasoning
  - reason maintenance
  - information extraction
  - personalisation

two use cases:
  - software knowledge management
  - project knowledge management

EU FP7 research project
started in March 2008
duration 36 months

Partners: Salzburg Research, University of Aalborg, University of Munich, Technical University of Brno, Sun Microsystems, Semantic Web School, WM-data
Some running applications of IkeWiki …

- internal knowledge base at Salzburg Research KIS group
- tutorials of the EU Leonardo da Vinci project MOSEP ("more self esteem through my e-portfolio")
- conference wiki „Social Skills durch Social Software“
- prototype for representing mathematical knowledge at International University Bremen
- prototype of the QVIZ EU project
  [http://www.qviz.eu](http://www.qviz.eu)
Envisioned Applications of KiWi: tagIT 2

- tagIT: youth atlas of Salzburg
- youths can „tag“ locations on a map, add descriptions, photos, comments, etc.
- search by various different „navigation paths“: map, full-text, topic, user, rating, ...
Envisioned Applications of KiWi:
Citizen Journalism meets Professional News

- Newspapers are nowadays investing much in building up „community platforms“
- user generated content and professional content are converging
- search & navigation
- personalisation & recommendations
- content integration
Contact

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