A Semantic Wiki on Cooperation in Public Administration

Bernhard Krabina
KDZ – Centre for Public Administration Research
Guglgasse 13
1110 Vienna, Austria
+43 1 8923492 - 27

krabina@kdz.or.at

ABSTRACT
Authorities cooperate in various ways. The Web portal www.verwaltungskooperation.at aims to share knowledge on collaboration projects. A semantic wiki approach was used to facilitate best practice documentation with Semantic Web and Web 2.0 technology.

Categories and Subject Descriptors
H.3.5 [**Online Information Services**]: Data sharing

General Terms
Documentation

Keywords
Semantic Wiki, intercommunal cooperation, public administration

1. INTRODUCTION
Intercommunal cooperation has a long tradition among Austrian towns, cities, and municipalities. Much like in its German-speaking neighbour countries, this issue has become a subject of increased interest to Austria and has been intensely discussed in the last years. Apart from basic analyses of intercommunal cooperation in various scientific journals or the arrangement of expert meetings; the number of practical examples of cross-municipal cooperation is growing [1]. In 2006, the KDZ published a book on intercommunal cooperation including a description of some 50 best-practice examples [2]. In late 2007, the decision was made to publish these examples on a Web platform in order to make them available to a broader public and to enable the static information contained in the book to become dynamic Web content, editable by interested users. The use of the latest semantic wiki technologies for the new platform www.verwaltungskooperation.at is an example of the emergence of Web 2.0 applications with semantic technologies, sometimes referred to as "Web 3.0" or "Social Semantic Web" [3].

2. BEST PRACTISE EXAMPLES
The platform aims to provide knowledge on public administration cooperation in the German language (currently no other languages are planned). As the initial content documents Austrian best-practice examples on a communal level, the geographic region of Austria is a first starting point, but projects from other EU countries are certainly welcome. New countries and regions can easily be added. Regarding the level of cooperation, most projects can be found at the communal level, but the platform aims to expand its scope to all levels of cooperation in public administration.

The wiki focuses mainly on documenting projects, people related to these projects, topics related to these projects, institutions, literature and further resources. To prevent spamming, a captcha mechanism [4] has been included to identify whether or not real persons are manipulating pages at certain crucial moments (e. g. inserting hyperlinks or creating user accounts). Furthermore, the Google Maps service has been included to identify the location of projects on a map [5].

An example is shown in Figure 1. The content structure makes it easy for users to grasp the essential project information at a glance. Links to pages for topics, project partners, and contact persons encourage further exploration of the wiki, the external link to a project Web site invites users to go into further detail. A free text input defines the rest of the page with suggested content sections "project description", "financing", "current status", "effects achieved" and further information on the project.

In addition to the project description, separate pages for contact persons and project partners (institutions) can be added. Furthermore, pages about countries and regions list projects in their geographical area as well as further information. Information about literature as well as tools and methods of cooperation further enhance the content of this platform.

The platform is free and open to all users. To make changes to content or to add new pages, users are required to create a user account in order to prevent spamming. The content of the platform is released under the creative commons "Attribution-Noncommercial-Share Alike 2.0 Austria" license, meaning that everyone is free to share and remix the work under certain restrictions (e. g. non commercial use) [6].

3. THE SEMANTIC WIKI APPROACH
The popularity of Wikipedia [7] has led to usage of wikis for various purposes including special-interest wikis, company-knowledge bases and even small Intranet solutions. However, regular wiki engines have major shortcomings: they only store text information without making knowledge usable for computers and they are searchable only by full text search. Information in wikis therefore can only be read (by humans), not processed. Semantic wikis try to add semantics (i.e. aspects of meaning) to wiki articles.

From a number of freely available semantic wiki engines [8] we chose Semantic MediaWiki (SMW) [9]. The reasons for choosing MediaWiki [10] - the wiki engine used by Wikipedia - were its maturity, stability and security of investment. MediaWiki can be used in a variety of platforms. The Wikimedia Foundation [11] is a strong backbone for the further development of this wiki engine. Furthermore, the popularity of MediaWiki-based wikis adds a

Figure 1. Project description with semantic data

usability advantage with the common look and feel it shares with Wikipedia. SMW is an extension for MediaWiki. It seamlessly integrates into MediaWiki, leaving everything there untouched and adding the possibility to enhance the wiki markup by semantic annotations.

As the authors of SMW point out, SMW addresses the following core problems of today's wikis: consistency of content (same information on many pages), accessing knowledge (finding and comparing knowledge from different pages) and reusing knowledge (beyond reading the wiki in a browser) [12].

4. FURTHER EXTENDING FUNCTIONALITY

In addition to Semantic MediaWiki, further extensions of MediaWiki enhance the features of the platform. Data input is facilitated by the use of the "Semantic Forms" extension that makes it possible to generate semantically annotated wiki pages based on simple online forms. [13] Input in the form fields (e. g. contact person) results in the correct annotations for the semantic information without requiring the user to learn the correct markup. The extension "Semantic Drilldown" allows the user to browse through the data of the platform. The use of filters (e. g. countries, topics, year of project start etc.) reduces the amount of data displayed to the relevant elements without the need to formulate complex search queries. [14].

Newly added pages as well as the latest changes can be displayed as RSS feeds for further use [15]. From a special page in the wiki [16], data can be retrieved in OWL/RDF [17] encoding to be shared in external applications, thus contributing to the Semantic Web

5. CONCLUSION

The platform Verwaltungskooperation.at facilitates the sharing of knowledge on cooperation in public administration by using the possibilities of Web 2.0. The use of a semantic wiki combines the power of semantic technologies with the ease of using wikis. The used software components, though mainly in a beta stadium, provide sufficient stability for the tasks at hand. The platform aims to become the leading source of information on cooperation in public administration in Austria and other German-speaking countries and is an example of the use of wikis for public administrations

6. REFERENCES

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Online-Demonstration

The online demonstration will feature a live demonstration of http://www.verwaltungskooperation.at (if Internet connection is available,if not, the presentation can be simulated in PowerPoint):

o Main page of the Platform including the Google Map showing all cooperation projects

o Showing a cooperation project with it's semantic data

o Clicking on a semantic property to show an semantic query (e. g. all pages where the property "country" equals to "Austria")

o Showing the RDF and XML output of a project description

o Showing the "edit with form" functionality to add semantic data using a simple online-form

o Showing die projects overview and semantic drilldown function using a tag cloud to display occurrences of specific semantic properties

o Demonstrating other content (countries, contact persons, organizations, literature…)

o Showing the reuse of external ontologies (FOAF) at the contact person details