The Social Semantic Desktop

NEPOMUK

Digital Enterprise Research Institute

www.deri.org

Semantic Blogging with semiBlog

Abstract

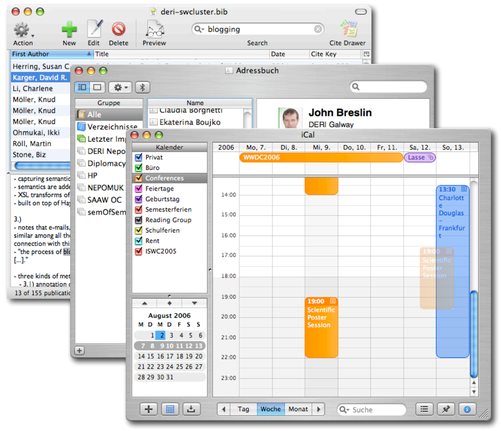
The emerging Semantic Web as envisioned by Tim Berners-Lee and others will elevate the current eye-ball web from being merely machine-readable to something that might be called machine-understandable. Central to the realization of this machine-understandable web is the description of web resources with formal, semantic metadata. Such metadata will allow automated agents to autonomously perform tasks on the web and improve search and browsing for human users.

Adding semantic metadata to the blogosphere - a small but significant subset of the web - leads to what has been called Semantic Blogging, and will make finding of relevant content easier for readers, as well as improve a blog's visibility and hits for blog authors. Moreover, Semantic Blogging will allow new ways of convenient data exchange between the actors within the blogosphere - blog authors and blog readers alike.

The semiBlog application presented in this poster allows users to author a Semantic Blog from their own desktop, making use of well-known UI metaphors such as drag&drop, technologies such as Mac OS X Spotlight and integration with applications such as the Address Book or iCal. The basic assumption behind semiBlog is that a user often wishes to blog about topics or things (e.g. people, events like conferences or meetings, or publications) for which they already have formal data available in some form - metadata will often already exist in a user's electronic addressbook, calendaring application or bibliographic database. Through familiar techniques such as autocomplete (using Spotlight queries) or drag&drop from different desktop applications, a user can annotate a blog post with metadata about the post's topic. Hiding the burden of metada creation from the user, semiBlog provides an example of how the Semantic Web - which is still largely confined to academic circles - can enter the mainstream.

Creating Metadata

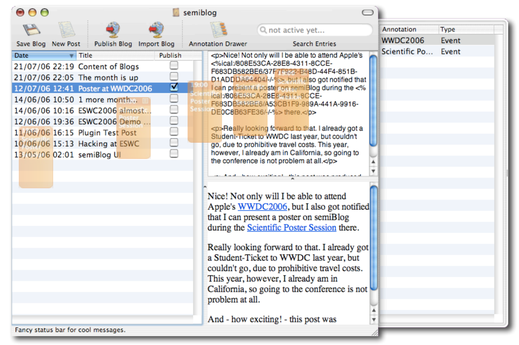
The philosophy behind semiBlog is inspired by the idea expressed in Jim Hendler's article "Agents and the Semantic Web", that "*...semantic markup should be a by-product of normal computer use*". In other words, users should not have to perform any additional work - e.g. filling in a form - in order to generate metadata for the Semantic Web (SW), let alone hand-code such data. Instead, various kinds of data like addresses, events or bibliographic references are created and maintained in applications that are specialized to deal with just that kind of data and are well-known to the user. Thus, metadata creation becomes part of the normal workflow of a user (or rather, the normal workflow of a user now results in metadata creation as well). Instead of having users generate data for the purpose of publishing it on the SW, existing data is harvested and translated into the Resource Description Framework (RDF), the fundamental data model of the SW.
This is what semiBlog does.



"... semantic markup should be a by-product of normal computer use."
Jim Hendler, "Agents and the Semantic Web"

Users **create**, **manage** and **maintain** data in a **familiar environment**, using specialized desktop applications, such as iCal, Address Book, etc.

①

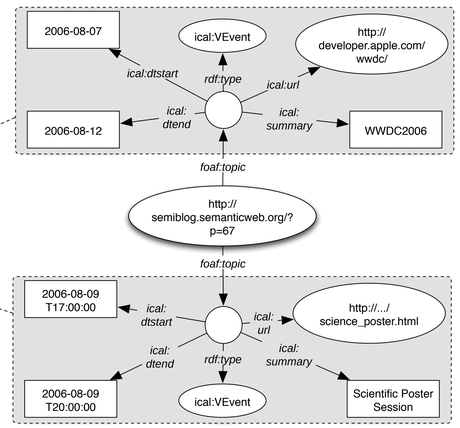


In **semiBlog**, blog authors write and organize their blog posts. **Annotations** - metadata about the posts - are added by linking the post to data from other applications. This is done by simple **dragging and dropping** or **auto-completion** using a system-wide query such Spotlight™, and handled by various **DesktopConnector** plugins.

②

When the blog is published to the web - using the various **WebConnector plugins** - the annotations are resolved and added as **RDF metadata**. Links at the bottom of the post indicate the availability of semantic metadata to both human agents for **import to their own desktop** and automatic agents for **crawling and indexing**.

③



Example of an RDF graph showing the **content metadata** of a blog post (two events described in the ical vocabulary).

④

Plugin Architecture

The core of semiBlog provides a blog author with the functionality to create and maintain ordinary blogs. For each blog, the user can create, author and preview posts, set their title and date, etc.
What sets semiBlog apart from other blog authoring software is its plugin architecture. semiBlog handles two kinds of plugins: *DesktopConnectors* and *WebConnectors*.
DesktopConnectors provide the functionality to communicate and exchange data with various other desktop applications. E.g., the iCal-Connector plugin can talk to and exchange data with iCal. Each such plugin defines:
- What kind of drop events will be handled by this plugin,
- a spotlight query to get the subset of the Spotlight index that this plugin can deal with,
- functionality to translate the data that this plugin deals with into RDF, preferably into a widely known and used ontology or vocabulary.

WebConnectors provide the functionality to communicate and exchange data with various kinds of web-based data repositories. They are again divided into three kinds of connectors:
- *BlogConnectors* allow publishing and importing of the blog posts themselves. Examples are the MetaWeblogConnector or the BloggerConnector.
- *MediaConnectors* allow uploading pictures or other media files. An example is a FlickrConnector.
- *MetadataConnectors* allow uploading the RDF metadata produced by the DesktopConnectors. Examples are a YARS [1] or a SPARQL [2] connector.

[1] http://sw.deri.org/2004/06/yars/
[2] http://www.w3.org/TR/rdf-sparql-query/

References

semiBlog:
- http://semiblog.semanticweb.org
- K. Möller, J. G. Breslin, and S. Decker. semiBlog - Semantic Publishing of Desktop Data. In *14th Conference on Information Systems Development (ISD2005)*, Karlstad, Sweden, August 2005.
- K. Möller, U. Bojars and J. G. Breslin. Using Semantics to Enhance the Blogging Experience. In *3rd European Semantic Web Conference (ESWC2006)*, Budva, Montenegro, June 2006.

Semantic Blogging:
- S. Cayzer. Semantic Blogging: Spreading the Semantic Web Meme. In *XML Europe 2004*, Amsterdam, Netherlands, April 2004.
- D. R. Karger and D. Quan. What Would It Mean to Blog on the Semantic Web? In *3rd International Semantic Web Conference (ISWC2004)*, Hiroshima, Japan, November 2004.
- H. Takeda and I. Ohmukai. Semblog Project. In *Activities on Semantic Web Technologies in Japan, a WWW2005 Workshop*, Chiba, Japan, 2005.

Semantic Web:
- J. Hendler. Agents and the Semantic Web. In *IEEE Intelligent Systems*, 16(2):30–37, March/April 2001.

*This material is based upon works supported by the **European Commission** under the **Nepomuk project FP6-027705***

DERI Galway

Knud Möller

P + 353 91 495086
knud.moeller@deri.org
http://semiblog.semanticweb.org

Making Semantic Web **real.**