Blog Technology to Face Personalization and Collaboration Issues

Teodora Bakardjieva[1], Boyka Gradinarova[2]
[1]Director of· Institute of Technology
Varna Free University
Bulgaria
{bakardjieva@vfu.bg}

[2]The Department of Computer Sciences and Technology
Technical University of Varna
1 Studentska Str.Varna 9000
Bulgaria
{Bgradinarova@tuvarna.bg}

ABSTRACT: *In the last few years, the new technology in blogging has added new features such as semantic content. It is not easy to access blog content in an aggregated and seamless way. Considering user requirements, we have developed a new framework for organizing results. While doing it, we faced the issues of personalization and collaboration. We intend to provide control to the end-user to help learning.*

1. Introduction

Blog posts or blogs are primarily textual and can vary widely in their content. They can be devoted to politics, news and sharing opinions or dedicated to technical developments. Blog entries are usually maintained in chronological order, but are usually displayed in reverse chronological order. Nardi et al. (2004) identified five reasons why blogs are used:

• To update others on activities and whereabouts.

• To express opinions to influence others.

• To seek others' opinions and feedback.

• To "think by writing".

• To release emotional tension.

The learning specialists Fernette and Brock Eide cited by Will Richardson (2006) identified the Potential benefits of using blogs in educational process as following:

• Can promote critical and analytical thinking.

• Can promote creative, intuitive and associational thinking (creative and associational thinking in relation to blogs being used as brainstorming tool and also as a resource for interlinking, commenting on interlinked ideas).

• Can promote analogical thinking.

• Potential for increased access and exposure to quality information.

• Combination of solitary and social interaction.

Blogging is increasingly finding a home in education (both in school and university), as not only does the software remove the technical barriers to writing and publishing online - but the 'journal' format encourages students to keep a record of their thinking over time. Blogs also of course facilitate critical feedback, by letting readers add comments - which could be from teachers, peers or a wider audience.

Students use of blogs are far ranging. A single authored blog can be used to provide a personal space online, to pose questions, publish work in progress, and link to and comment on other web sources. However a blog needn't be limited to a single author - it can mix different kinds of voices, including fellow students, teachers and mentors, or subject specialists. Edu-blogging pioneer Will Richardson (author of the main books devoted to Blogs, Wikis and Podcasts) in 2001 used the blog software Manila (http://manila.userland.com) to enable his english literature students to publish a readers guide (http://weblogs.hcrhs.k12.nj.us/bees) to the book The Secret Life of Bees. Richardson asked the book's author, Sue Monk Kidd, if she would participate by answering questions and commenting on what the students had written - to which she agreed. The result was a truly democratic learning space.

Richardson marked 10 years since his first blog post, a full decade of writing and sharing online. He defines the education reform: "We don't need better, we need different" (Richardson, 2011)

Today's students are immersed in the digital age, but can our educational system keep up? Best-selling author Will Richardson's comprehensive collection of posts from his acclaimed blog (http://weblogg-ed.com) outlines the educational reform we must achieve to stay ahead of the curve:

• Project-based learning

• Student-created media that develops critical thinking

• Extending learning beyond the classroom and school hours

• Cooperative and collaborative learning

• Student empowerment and career readiness

The necessary shift will not magically happen, but experts agree that it must happen now. This compilation will inspire educators and parents to engage in the technology their children already embrace, and to take an active role in transforming education to meet the challenges of the digital revolution.

2. Observations and Discussions

Herring et al. (2004) defined three types of blogs: personal journals, "filters" (because they select and provide commentary on information from other websites) and "knowledge logs". The majority of blogs are the online diary type. Bloggers are

interested in reading new information, sharing knowledge and being connected with other users. While blog writers are more extroverted, blog readers are more consumerist.

The use of blogs and semantic blogs has recently been associated with a decentralised form of knowledge management (Cayzer, 2004, Breslin & Decker 2007). Semantic blogging is a technology that builds upon blogging and enriches blog items with metadata. For publishing information such as research publications, there is need of some structure and semantic blogging provides this. Items may be classified using ontologies. Semantic links may exist between items (Cayzer, 2004b). Semantic blogging uses desirable features of both blogging and the semantic web to deal with the challenges of traditional blogging. The semantic web is well suited for incrementally publishing structured and semantically rich information. On the other hand, the easy publishing nature of blogging can boost the semantic web by publishing enough data and resources (Cayzer 2004a; Cayzer, 2004b).

Semantic blogging can help users discover items of interest in blogs. Navigation through the blogosphere can be more flexible and meaningful due to interconnections among various items and topics. Aggregation of useful materials across multiple blogs and the semantic web is possible. Semantic blogging can extend blogging from simple diary browsing to informal knowledge management (Cayzer, 2004b). Publication is easy in semantic blogs too because only some additional metadata data have to be added compared to traditional blogs. The users do not need to put any effort to enjoy the additional features provided. Hence, there is not much effort added in using a semantic blog instead of a conventional one. The rich metadata and semantic structure work behind to give the user the added value experience of semantic blogging. However, the semantic capabilities currently implemented for semantic blogging are still limited. It is difficult to obtain blog entries relevant to a topic in an aggregated and organized form.

There is newly developed framework for semantic blogging capable of organizing results relevant to user requirement (Shakya, 2006). Attempts for implementation of that framework are made at Varna Free University (VFU) to provide more effective navigation and search by exploring semantic relations in blogs.
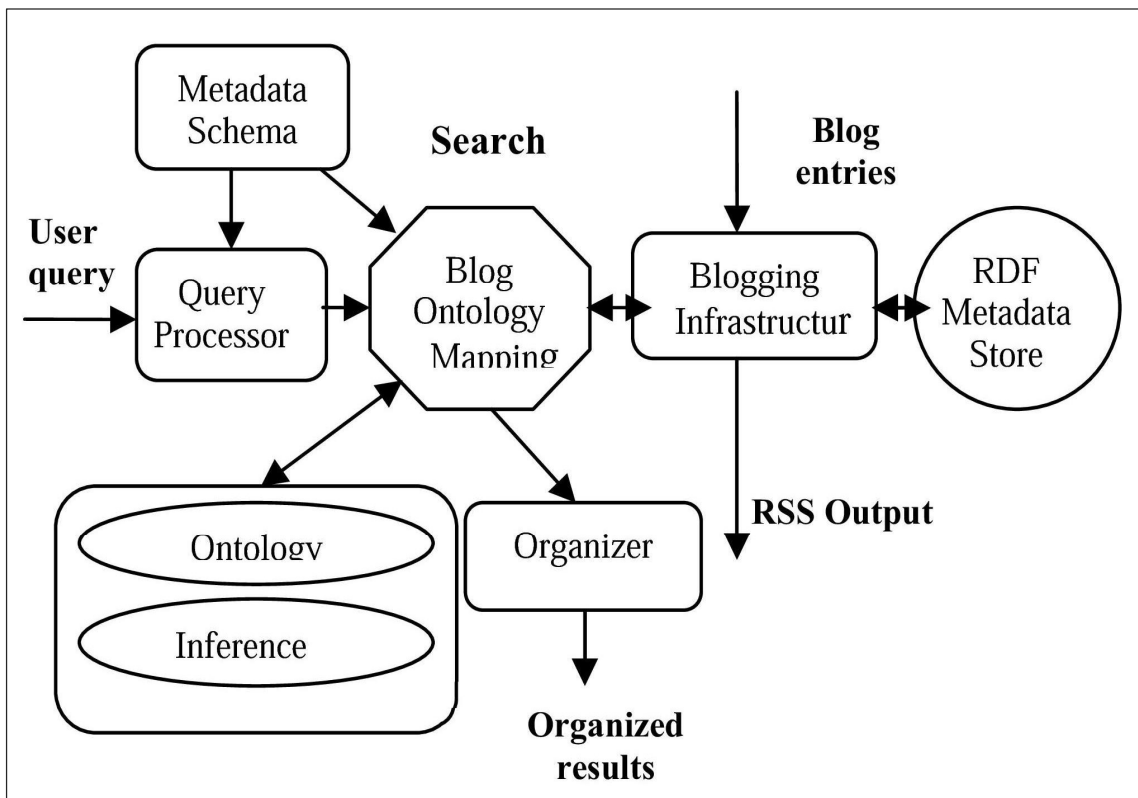

Figure 1. System architecture of the semantic blogging framework

The system is built upon a blogging infrastructure backed up by an RDF metadata store. The metadata schema enriches the blog entries input. The metadata schema also helps the query processor to search by metadata. Users input queries to the system according to their information requirement. The query processor searches for matching blog entries and instances in the ontology of the domain of application. Integrated with the ontology is the inference engine, which can deduce implicit relations from the ontology. All the blog entries related to the relevant ontology instances are obtained from the blogontology mapping. The total relevant blog entries obtained are finally organized into an aggregated and navigable collection by the organizer. The system also produces output in RSS format which computers can understand and aggregate.

Some edu-blogs that are used at Varna Free University (Figure 2, Figure 3, Figure 4):
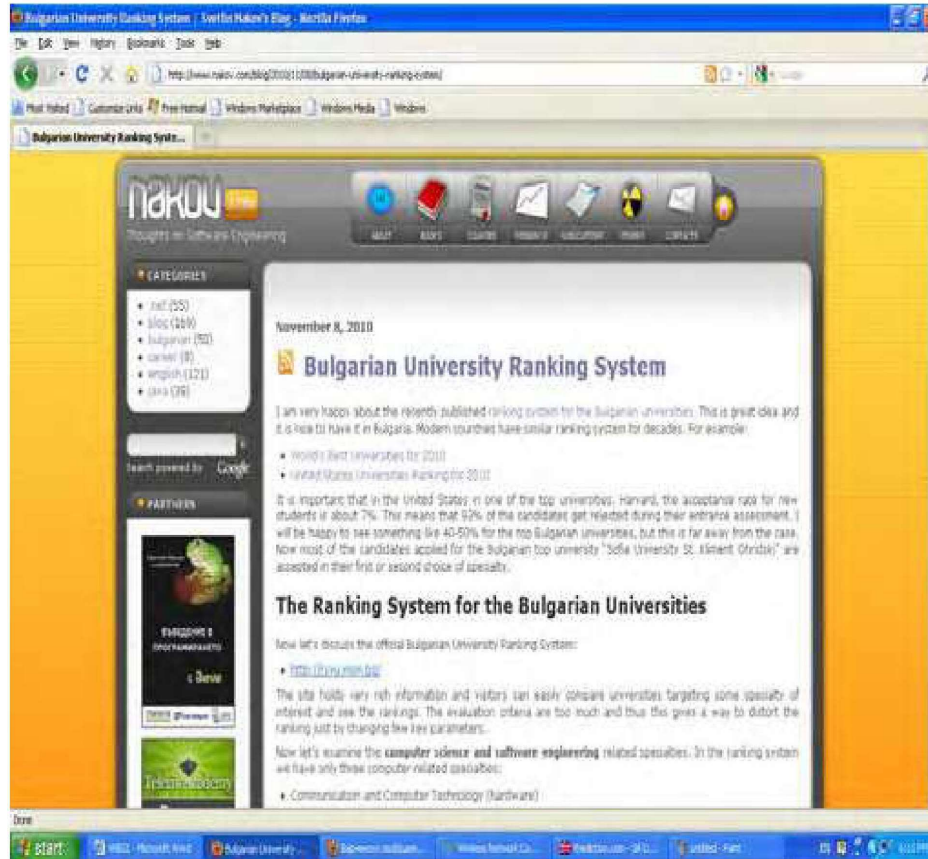

Figure 2. Edu-blog for the Ranking System for the Bulgarian Universities

3. Conclusion to Blogs

Teachers are using blogs to provide up-to-date information and commentary on their subject areas, as well as posting questions and assignments and linking to relevant news stories and websites.

They are preferred tools because they have advantage to provide reliable and safe information protected from spam.

Ontology has been introduced to utilize semantic relations, enhanced by inference. Blog entries are mapped to the ontology using language processing. Search results are organized by introducing semantic aggregation. Blog entries are enriched by metadata and an annotation mechanism has also been developed. The framework has been tested and evaluated by implementing a system for the Institute of Technology domain ontology at *VFU*. Experiments have shown quite good results. Single sample ontology is created for demonstration.
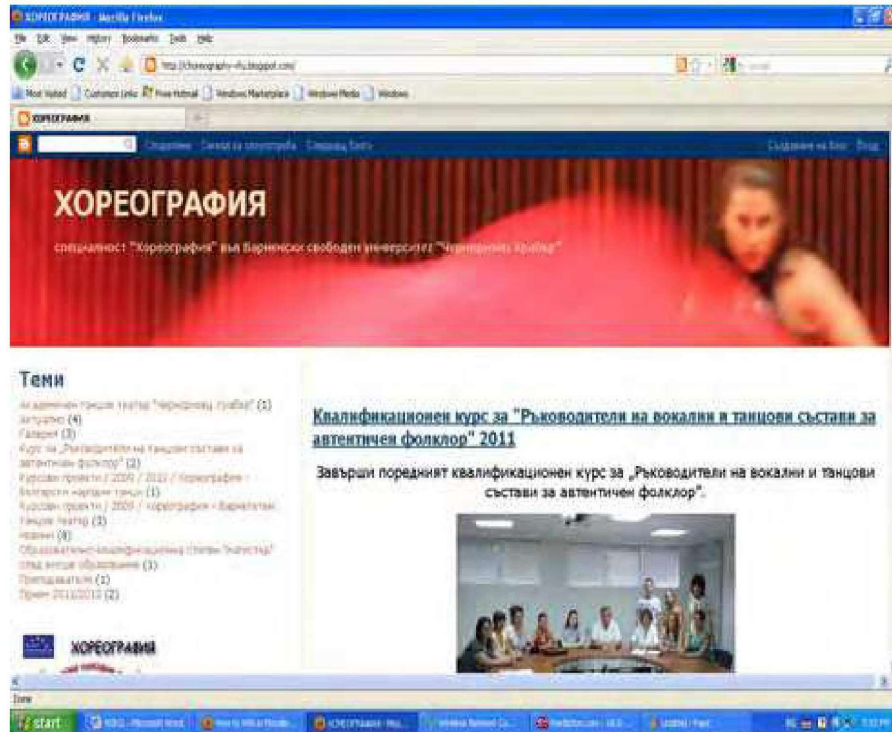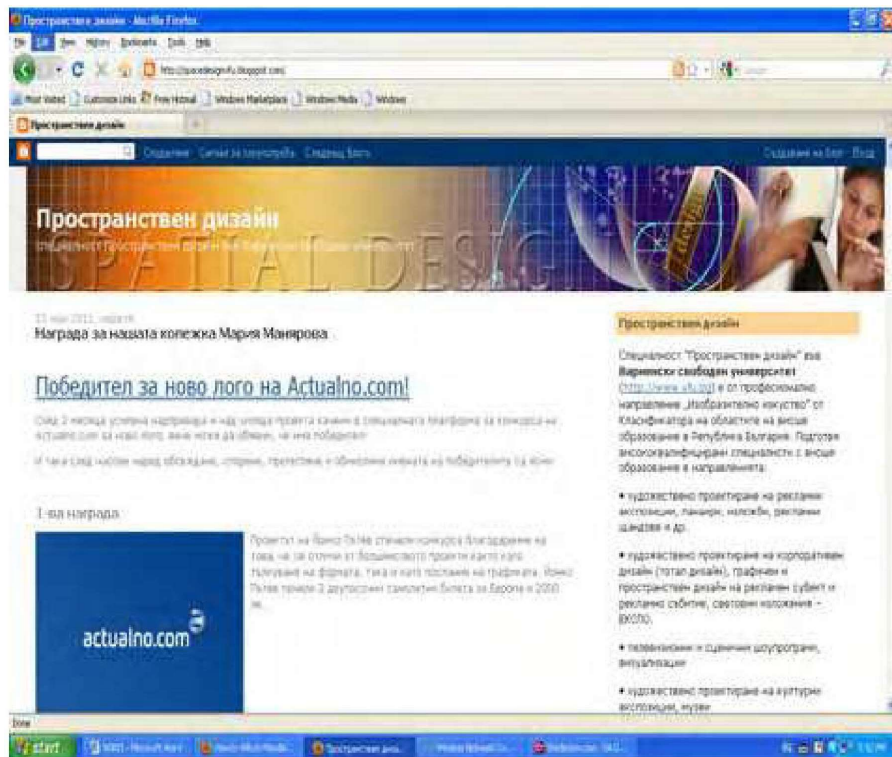
Figure 3. Edu-blog for Choreography

Figure 4. Edu-blog for Spatial Design

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