

# A Collaborative Semantic Space for Enterprise

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**Abstract.** This abstract introduces a new kind of corporate knowledge management system, using a Semantic Web layer on the top of existing Web 2.0 tools in order to provide value-added services to end-users.

## 1 Motivations and research problem

EDF R&D<sup>1</sup> is a research center dedicated to energy domain. Due to its corporate culture and the fields it deals with, there is a real difficulty to make people share their knowledge within the company. In order to solve these problems and incite people to better exchange information, a corporate Web 2.0 platform - including blogs, RSS feeds and wikis - was recently introduced. Yet, these tools quickly showed some limitations regarding information integration, capitalization and retrieval. Indeed, if they provide efficient ways to publish information, they raised various issues as informations heterogeneity, re-usability of created data, ways of consuming information depending the user point of view...

This Ph.D. work focuses on how existing Web 2.0 tools can be part of the Semantic Web to (1) populate domain ontologies and immediately get benefits from these ontologies, their instances and relations among them to produce value-added tools and mash-up interfaces and (2) share a common model to describe information and index content in order to let users efficiently retrieve and exchange information; creating what we call a Collaborative Semantic Space. Among others, some questions to be answered in this Ph.D. work are: how can folksonomies be integrated with the Semantic Web and what such an approach can offer to tag-based search interfaces ? What about knowledge extraction from blogs and wikis and ontology population, in both editing and querying ? What kind of interfaces and services can prove the usefulness of the Semantic Web and domain ontologies in an industrial context ?

## 2 Proposed Approach and Contract with Existing Ones

In order to solve the issues mentioned before, our approach is similar to the RDF bus[1] architecture, since we have (1) a set of ontologies designed to represent both the documents and their content, (2) add-ons to existing and already

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<sup>1</sup> Électricité de France Recherche et Développement, see <http://rd.edf.fr>.

used tools to provide RDF export of their data and (3) a triple-store to centralize triples and provide exports thanks to services plugged to its SPARQL endpoint. This, we did not create a new Semantic Web integration framework as CoMMA[4] or SCORE[6] but focused on adding a Semantic Web layer on the top of existing services. These add-ons (1) automatically translate data to a common format using the SIOC ontology and (2) provide semi-automatic ways to populate or link to domain ontologies, keeping user interfaces as simple as possible.

Regarding semantic blogging[3], we proposed a way to create a bridge between folksonomies and ontologies in order to solve problems they raised and offer a better search experience, as topics suggestion[5]. About wikis, we are currently working on a templated semantic wiki engine to let anyone create ontology instances and relations between them, without learning a specific syntax, what we think is a key feature for the adoption of the Semantic Web by end-users.

Regarding ontologies, we distinguish ontologies that represent the internal architecture of the system and the ones that represent content. Rather than defining a specific internal ontology as in CoMMA, we decided to use SIOC - an ontology for online communities, in which we have been involved - as a core of our system. In order to describe business data, we decided to use various ontologies as FOAF, DOAP or the geonames.org one, mapped with DOLCE[2] to have a stronger formalism behind. Thus, our system can import external resources without data integration issues, creating a link between open RDF data and enterprise information systems.

Finally, regarding data storage and exports, we decided to use a system providing a SPARQL endpoint so that new services could be easily plugged over HTTP, providing different ways to query, visualize or combine data for users.

### 3 Conclusion and Future Works

Right now, we have provided the basis for this Collaborative Semantic Space, that let us see how existing services can be integrated thanks to Semantic Web technologies, and what it can offer to end-users.

Among our future works, we will use the ontology to automatically index RSS feeds that users are subscribed to, and see how it can help to create virtual feeds depending on users interests, that can help to solve the problem of evolving annotations on the Semantic Web. Another part of the work will be to see how ontologies can help to find social networks within this Collaborative Semantic Space. For example, we would like to be able to find all engineers interested in european companies working on tidal energies. Finally, since we can add services to our system thanks to the use of its SPARQL endpoint, another goal will be to provide new and unforeseen services and query interfaces for RDF data.

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