



> Semantic Web Use Cases and Case Studies

Use Case: WEASEL, Vodafone R&D Corporate Semantic Web

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General Description

Vodafone is the largest mobile operator in the world, serving hundreds of millions of clients. In its rapidly changing and highly competitive environment, innovation is a key element for maintaining leadership. Vodafone R&D is a global organization responsible for providing the business with new technology, products, and services. All information about activities of the Vodafone R&D group is recorded by its employees in their corporate web site with the aim of stimulating i) the creation and maintenance of technological Know-How within the company and ii) the discovery of social networks emerging around the different domains of expertise.

The problem

Nevertheless, storing such information in a corporate web accessible for the whole R&D group does not guarantee that employees are aware of the information. Moreover, employees are free to upload anything they may consider interesting or worthy of future reference, without constraints on structure or formats e.g. PDF, DOC, MPEG videos, etc. Additionally, it is up to each employee to decide exactly where to store the information within the corporate web site. Thus, it becomes extremely cumbersome to retrieve useful information and also to relate individual pieces of information with one another.

The solution

This scenario comprises a number of heterogeneous web sites and databases containing unstructured and related, but physically decoupled, corporate information. Such information needs to be represented in a unified manner, and to be available for the Vodafone employees in an intuitive and natural way. The solution, implemented in WEASEL, is twofold:

- Automatic semantic annotation using ontologies facilitates the aggregation of data from different information sources, exposing aggregated and structured content in a meaningful way across the whole corporate web. The annotation technology exploits textual sources and annotates multimedia resources through their associated descriptions.
- The use of ontologies also supports sophisticated user interfaces for information retrieval. Two types of interfaces have been developed in WEASEL. The first interface allows the exploitation of the structure of the ontology as a guide to browsing information. The second is a natural language interface which allows users to make free text queries where the results are accompanied by an explanation.

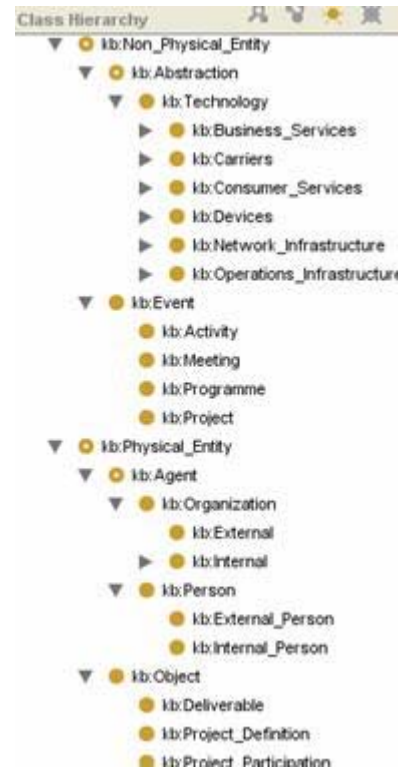


Figure 1: Image of the ontology



Figure 2: Snapshot of the application

Key Benefits of Using Semantic Web Technology

- Previously dispersed data has been transformed into globally consistent information
- Annotations are automatically updated
- Search interfaces produce concrete answers instead of lists of documents
- Semantics and structure of the ontology facilitates browsing information
- Natural Language interface (in English) allows employees to query the system using natural expressions
- Answers produced by the natural language interface are explained in simple, automatically generated natural language