COHSE: Semantic Web gives a Better Deal for the Whole Web?

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http://cohse.semanticweb.org

1 Annotation as Anchor

The Semantic Web is often described as the enhancement of the web with semantic metadata which describes resources. This metadata will then enable agents to perform better retrieval of information. In this way the Web is being treated as a large data/document/information-base with enhanced semantic search. Although this is true, it is also the case that the Semantic Web is still a Web, and navigation through link-following and the use of a hypertext structure is still a useful and important aspect.

The COHSE project [Carr *et al.*, 2001] exploits this through the integration of an Open Hypermedia System (embodied by a Distributed Links Service [Carr *et al.*, 1995]) with an Ontological Service. The basic philosophy of the COHSE approach is that metadata can provide a mechanism not only for the support of resource discovery, but also for the provision of source anchors. Annotation allows linking both *into* and *out of* a resource.

2 COHSE

The COHSE system consists of three components: 1) a software agent that generates and presents links on behalf of both an author and a reader. When used at browsing time, this provides the creation of "just-in-time" hypertexts. When used at authoring time, this can support the authoring task; 2) an Ontology Service (OS) that provides access to an ontology describing a particular domain of interest. The OS is based on DAML+OIL ontologies, allowing the use of third-party ontologies within COHSE; 3) an Annotation Service that provides information about descriptions of resources. The AS uses XPointer expressions to refer to sections of documents, again allowing the inclusion of third-party documents within the system.

Two implementations of the software agent (as browser or proxy) are available and can be downloaded from:

http://cohse.semanticweb.org

The browser-based implementation uses a Mozilla plugin which directly manipulates the DOM object built within the web browser. In the proxy implementation, a client browser accesses web documents via the proxy, which performs the necessary manipulations on the document before passing it on to the client. The proxy implementation removes the necessity for specialist browsers and opens up the use of the COHSE architecture to support platforms such as WAP and mobile devices. Both implementations enhance a web document through the addition of links according to information provided by the Ontology and Annotation services. In addition, the browser plugin also provides an Annotation Component that allows the construction of semantic annotations for web resources.

3 Editorial Knowledge and Behaviours

The DLS can apply both standard *generic links*, using terms and words in the documents as source anchors, and *annotation links*, using the information from the annotation service to determine the potential anchors. In combination with the Ontology Service, interactions between the generic and annotation links can be controlled, for example by hiding or promoting links based on the classification of the concepts within the domain ontology. This provides us with a rich and flexible mechanism to control linking based on the semantics of resources.

4 A Better Deal for the Whole Web?

An evaluation of the software has been conducted using Sun's Java Tutorial web site as a testbed. Metrics [Botafogo *et al.*, 1992] applied to the site when browsed both with and without the COHSE agent suggest that using the agent dramatically increases the *connectedness* and *navigational freedom* of the site. Further user evaluations are necessary to judge the perceived effect on the user experience.

References

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