Using Contextual Queries

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ABSTRACT

Search engines generally treat search requests in isolation. The results for a given query are identical, independent of the user, or the context in which the user made the request.

An approach is demonstrated that explores implicit contexts as obtained from a document the user is reading. The approach inserts into an original (web) document functionality to directly activate context driven queries that yield related articles obtained from various information sources.

METHODS

The context of a search can be used to improve the precision of the information retrieval[1]. An application has been developed that can use a paragraph or the full-text a user is reading as a context for a query. The queries are inserted into the document as a hyperlink. Clicking the hyperlink will bring up a menu that allows the user to select the type of information one seeks for (document, experts), the width of the context (paragraph or full-text), and the source of information (local databases, external databases), and some additional functionality.

The application – called e-Vamp – has been implemented as a proxy server that mediates between the information provider and the user's browser (see Figure 1). A web page retrieved by the user via the proxy server will handled in the following way. URLs indicated with paths relative to the current page are changed to absolute paths. Next, the URLs will be changed so that they will be retrieved via the proxy server. The proxy server will activate an analyzer that will extract from a HTML page those text parts that are meaningful. The extracted text is fed to the Collexis concept indexer[2]. This indexer will use a thesaurus to find phrases in the document that indicate a particular concept and it will compute for each concept a relevance score. This score indicates how important the concept is in representing the meaning of the document. The analyzer will insert hyperlinks for the phrases that have been found. Each hyperlink will contain a context. The hyperlink will show a popup menu that allows the user to apply a search to find either documents or experts using either the paragraph or the full text as context. The search will call a Collexis matching engine to search concept indexed content such as full-text literature, project proposals, patents, abstracts, and web content. References to the best matching information are shown in a new web page.
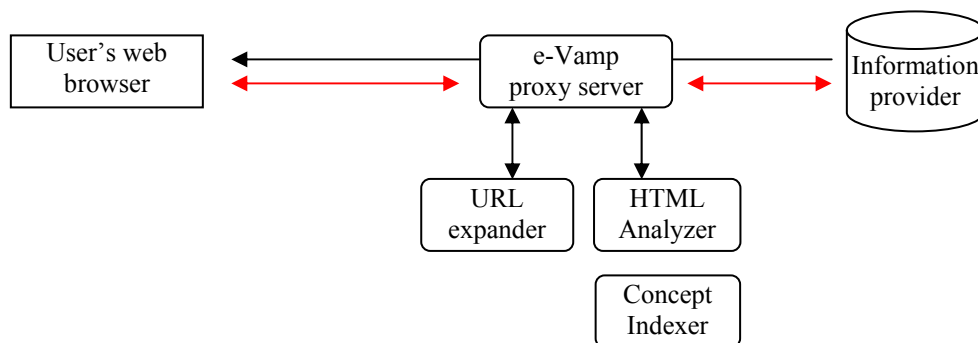

Figure 1. Overview of the e-Vamp architecture

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