BSCW/LiveMarks:
Collaborative Information Acquisition within Shared Workspaces

Volker Paulsen, Wolfgang Appelt, Thomas Kreifelts

GMD - German National Research Center for Information Technology
Schloß Birlinghofen, D-53754 Sankt Augustin, Germany
{paulsen/appelt/kreifelts}@gmd.de

Abstract

The BSCW system is an award winning cooperation support system which is conceptually based on the metaphor of shared workspaces [Bentley et al. 1997]. BSCW provides basic facilities to support information sharing and activity awareness in a working group across the Internet. Additionally working groups solve problems better, when they collaboratively structure the information. LiveMarks enhances BSCW to improve the results of search engines by collecting and evaluating the ratings and assessments that earlier readers of the documents have volunteered [Voss et. al. 1997].

BSCW

The BSCW system is a Web-based groupware system around the shared workspace metaphor. Shared workspaces are established by groups of people to organize and coordinate their work. A BSCW server manages a number of shared workspaces - repositories for shared information, accessible to the members of a group via any normal Web browser using the user name/password authentication scheme. In general, a BSCW server manages workspaces for different groups, and users may be members of several workspaces (e.g., one workspace corresponding to each project a user is involved in).

A workspace may contain different kinds of information, represented as information objects arranged in a hierarchical order. The objects may be of various types such as folders, URL links to Web pages, documents, graphics, spreadsheets, discussion forums or user specific waste baskets, address books and calendars. The system allows numerous operations - usually depending on the object type - that can be applied to objects, e.g., objects may be renamed, deleted and undeleted, documents may be put under version control, or users may add a comment to a discussion forum. Operations that have been carried out result in events, which are reported to the users by means of event icons so that they are aware of each other's activities in a workspace.

BSCW has already a large user community and is an ideal platform for the evaluation of results from collaborative information acquisition applications in real world settings.

LiveMarks

Collaborative structuring of information enables members of a group to get profits from the accumulated results of other people's work. LiveMarks provides the members of a workspace with the notion of "living bookmarks", continuously updated results of queries. LiveMarks realizes its services as agents that work transparently in the background.

Whenever a user creates a query for Web documents, this query is propagated to the software agents. The agents forward the query to search engines, collect the results, and enrich them with their own recommendations. The recommendations are derived from an internal database that stores references and descriptions of Web documents along with user ratings and annotations. The best-ranked results are transmitted back to BSCW where they are presented within the query to which they belong. As long as a query is active, new results will continue to flow in.

For its members, a BSCW shared workspace serves as the context for an information collection task. The workspace contains all queries and all relevant results. Within this context, the agents will minimize redundant information: same or similar URLs are suppressed, material that has been judged irrelevant within a workspace, or has been removed from the workspace will not be produced again as response to a new query.

References

Bentley, R., Appelt, W., Busbach, U., Hinrichs, E., Kerr, D., Sikkel, K., Trevor, J., Woetzel, G. "Basic support for cooperative work on the World Wide Web", Int. J. Human-Computer Studies 46 (1997), 827-846.

Voss, A., Kreifelts, Th. "SOaP: Providing people with useful information", in S. C. Hayne, W. Prinz (eds.) Proc. GROUP'97, Int. ACM SIGGROUP Conf. on Supporting Group Work - The Integration Challenge (Nov. 16 - 19, 1997, Phoenix AZ), ACM, New York NY, 1997, pp. 291-298.