Abstract of Doctoral Thesis

Title: User’s Activity Support Methods based on Information Access History

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Development of information technology enables us to access a vast amount of information, and we often have difficulty making use of it. An example of making plans for a trip shows three issues. Firstly, it is difficult to find useful web-pages for the travel plan from many web-pages regarding stores or noted places at the destination (issue of information gathering). Secondly, in addition to the travel plan, since users have various tasks, files/web-pages are required to be classified into groups of tasks (issue of information classification). Finally, stress builds up when users can not access files/web-pages adapted for the current task (issue of information access).

The purpose of this paper is to support users' activities based on information access history, which is generated by services on information space. To solve each issue, this paper presents three methods. First method is information recommendation using data given when users make comments on contents such as stores or noted places. Second method is information grouping using relationship based on co-occurrences between information. Third method is information prediction using importance of information calculated from information access.

Results of the evaluation by subjects show that the first method improved coverage in unfamiliar areas while preserving comparable precision. Moreover, accuracy of the second method is as accurate as traditional method. Furthermore, the third method predicts possible future access without access patterns. On the other hand the prediction accuracy is lower than the traditional method based on the access pattern.

In conclusion, this paper provides three contributions to support users' activities. First one makes it easier to gather information by recommendation. Second one is that the workload of information classification is reduced by information grouping. Third one is that users can access information easily by information prediction.