Idea creation systems flexibly adapting to user's situations

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This paper is devoted to investigate information and network technologies to support an early stage or upper stream of human intellectual activities such as essay writing, conceptual design of software, problem solving and so on. In such the stage the following steps are generally common: encountering a problem, generating segments of ideas and collecting piece-wise information relating to the problem, and organizing them into a structured form to understand or solve the problem. The process consisting of these steps is called an idea creation process where idea means an understanding, insight, or solutions of a problem.

Main concerns in idea creation support systems developed so far have been how to develop the following fundamental facilities which have been considered to be effective or indispensable for idea creation support:

(a) text-based supporting facilities which include human thinking stimulation by keyword association techniques, clustering of idea cards etc.

(b) diagram-based support facilities which include highly inter-active interface for idea organization, automatic drawing of diagrams etc.

In this paper another aspect for idea creation support is investigated. Recently user's situation in computing is changing rapidly. Many users tend to use several types of computers (desktop, notebook, mobile, handy phone etc.) with several kinds of platforms (Windows, Mac, Unix etc.) for personal work and collaborative work on a network environment. This means that if above-mentioned idea creation support facilities are integrated on both platform-free and equipment-free environment, the usability of the systems can be improved significantly. We become free in places, time, collaborative members etc.

We have developed a prototype system called I0S (Instant Open Session) of which features are as follows.

(a) Since IOS can be accessed from standard e-mail client software and Web browsers, the user can access IOS using any kind of computer.

(b) The user can select equipment according his/her situation and taste.

(c) any group can open an idea creation session instantly.

IOS can be accessed from handy phones, PDAs, notebooks and any other computers. In developing IOS, IOS have been improved repeatedly by testing user s usability. Students in JAIST joined the tests in two Situations. In one situaition, IOS was composed of a PDA and a Personal Computer for single user where the user's task was to organize the structure of section in his/her Master thesis. In the other Situation, IOS was composed of many types of computers for several users at a same places or separate places where the uses discussed on some subject freely. After the tests, we collect questionnaires about impressions of the usability of IOS. Results are summarized as follows:

(a) The user can easily open an IOS session with simple operations for setting URL.

(b) The user does not need time to learn IOS operation.

(c) Most user have the impression such that it is so easy to operate IOS in over all.

(d) Most user feels that it is intuitive and easy to operate the interface for editing diagram on CRT.

(e) Most user feels that IOS is effective for tasks such as brain storming and debate among several members.

As the results of this research we can conclude that our approach utilizing Internet technologies such as e-Mail and Web browser is very effective to support the idea creation processes in the aspect of user s situation and computer environment.