Advances in collaborative annotation in semantic management environment

Providing solutions to problems associated with methodical creation, management and information search in an annotation archive is the core of this study. Information archives grow at a relatively slow space but annotations associated with archives grow geometrically because of the diversity of reflections on documents emanating from different authors and with time. Information annotation by users of document is generally connected to a definite document, specific individuals or a precise time. Annotation can be seen as an informal way for individuals who do not freely have initial rights for a document to "publish" their thoughts on a subject of interest. Publishing one's thoughts using annotations does not involve publication protocols such as copyright issues. Where there is freedom of expression through annotation, the flexibility and frequencies of "publishing" one's views on a subject are bound to increase. This flexibility and simplicity in expression entails a systematic management of an annotation archive. The creation of an annotation database is often seen as the human activity that can embed the function of its creator (who is also a document user), the original document and time. It means that a database of annotations based on three parameters (creator, document and time) may include divergent annotations as a result of multiple documents and human factors. With participation of diverse users, there can be divergent interpretations of subjects of interest based on varying thoughts of users. With change of time, a user's opinion on a subject can change. The question that quickly comes to mind is how can a database growing geometrically, with divergent reflections (annotations), by divergent users with considerable length of time be created and searched effectively in a collaborative environment? We consider creation and the exploration of an annotation database by combining the concept of semantic technology with the topic maps data model. Each word - - used by users in annotation creation benefits from the potential of semantic technology based on topic maps to resolve the difficulty in management. More precisely, our attention in this study is the creation and exploitation of annotation databases to improve information research. Our TMSUMS platform benefits of combining the SUMS-based semantic logical model with the topic maps-based semantic physical data model. As one of the key issues, we brought to light, the problem related to annotation creation in a collaborative environment.
Thereafter, we introduce scenarios of information search in an annotation database constructed on specific parameters. We demonstrate how difficult it to search for meaningful information from such an annotation archive/database in a normal situation. Our proposal is a search through such a database with the concepts of semantic technology and topic maps data model to demonstrate how such a search can be improved. Our conception on how various elements of such annotation system illustrates how to build semantic management based on topic maps data model. We point out how annotation management can be improved following this approach.