WeKnowIt : Emerging, Collective Intelligence for personal, organisational and social use

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The paper presents the work done in the ICT Integrated Project 'WeKnowIt: Emerging, Collective Intelligence for personal, organisational and social use', which is one of the first EC ICT projects dealing with analysis of social networking while referring to multimedia content, provided by larger or smaller audiovisual archives or content owners who want to share their content on the Web. The constantly increasing availability of mobile, networked information and communication technologies in the hands of ordinary people makes exchange of audiovisual content progressively more powerful and pervasive, permitting the evolution of web-based services supporting active participation of users, customers and citizens in multimedia information sharing in a number of fields, ranging from e-commerce to emergency response and consumer collective applications. In this framework, the importance of establishing user-friendly, 'socialized' digital audiovisual archives becomes critical. Current web technologies for information uploading and sharing, as embodied in services such as Flickr® provide exciting opportunities to create innovative services exploiting the content; however, a number of serious limitations have been reached, in terms of automatic content manipulation, leading to failure in making information available for further processing, at the social level. WeKnowIt has been developing intelligent, automated analysis techniques for extracting knowledge from audiovisual archives' content as well as from their users' and user communities' generated content. Information derived from different sources/modalities is analyzed and fused, in terms of spatiotemporal, personal and social contextual information. In order to achieve this goal, semantic analysis is applied, taking into account the audiovisual content itself (text, images and video), as well as existing personal, social and contextual information (semantic and machine-processable metadata and tags). The latter constitutes the main extension of traditional information sharing methods, since semantic multimedia analysis has to fuse information from both the content itself and the social context, while taking into account the social dynamics. Such an approach can provide added-value to audiovisual, providing cues for content enrichment based on user creativity and social tagging. Analysing human annotation or tagging used in social networks is the way to represent and handle the underlying knowledge in this framework. Audiovisual content is, however, highly unstructured; it is, therefore, quite difficult to extract semantics from it and further correlate it to additional sources of information, i.e., social tagging. The referenced work includes fusing information from different sources/modalities, i.e., contextual information (time, location and acquisition metadata), personal context (user profiles or preferences) and social context (tagging, ratings, group profiles, relevant content collections). Applications of the above techniques in WeKnowIt include an Emergency Response and a Consumers Social Group application. More specifically, real world scenarios are used for testing and real world exercises that are regularly organised by the Emergency Services are also utilized to test collective social intelligence wrt emergency events. The Consumer application on the other hand provides a user community with easy and personalised mechanisms to share content and experiences within and outside of their community, whereas it explores also business opportunities of these experiences and content sharing by targeted advertising.