

Adaptive Support for Collaborative Knowledge Sharing

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Besides standard search engines, current possibilities of the Web allow us to employ many supplementary sources of information. These nontraditional sources of knowledge are often based on collective intelligence. Concept of collective intelligence refers to shared knowledge which emerges from common collaboration of community of users that share common practice, interests or goals. Collective intelligence is present in many popular web systems, such as forums, social networking sites or wikis. In recent years, the new forms of systems based on collective intelligence has appeared. One of them is Community Question Answering.

Community Question Answering (CQA) is a service where people can seek information by asking a question and share knowledge by providing an answer on the particular questions. One kind of CQA systems is providing users with a possibility to ask any general question without any topic restriction (e.g. Yahoo! Answers or Wiki Answers). On the other hand, there are also topic-focused CQA systems dedicated to specific domains (e.g. Stack Overflow where users concern with questions related to the programming).

A process of question answering in CQA systems consists of several steps. At first, an asker posts a question by formulating a title and a description of a problem which is the subject of the particular question. In addition, it is usually necessary to select an appropriate question's topic (a category or a set of related tags). Afterwards, other users can collaborate and provide their answer-candidates on the posted question. Answerers can vote for the most appropriate answer-candidate and thus help the asker, the CQA system and all users, who are involved in question answering process, to identify answers with the highest quality. The asker can finish the answering process by selecting the best answer, which satisfies his/her information needs best, and consequently the question is marked as answered and moved to the archive of solved questions.

The main goal of CQA systems is to harness the knowledge potential of the whole community to provide the most suitable answers on the recently posted questions in the

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shortest possible time. We assume that searching for the answer to the question is actually also a specific way of learning. Moreover, providing an answer provides also a possibility to answerers to acquire a new knowledge. Therefore in our project, we present a novel perspective on CQA systems as collaborative learning environments.

In recent years, we witness increasing amount of research studies which concern with different aspects of CQA systems. The significant part of them focuses on providing adaptive support (e.g. [1]). We focus on *question routing* which is probably the most important part of each CQA system. It refers to a recommendation of potential answerers who are most likely to provide an appropriate answer on the newly posted question [2]. In our project, we propose a novel method for question routing on the basis of existing methods for question routing while promoting diversity of routed questions to maximize the learning potential of CQA process.

In addition, when we consider CQA systems as an innovative learning environments, we suppose that their potential for supporting of *organizational knowledge sharing and collaborative learning* is only to be discovered. In educational organizations, concept of CQA systems can be employed as a complement to formal learning in particular courses or even as an immediate component of learning process where community of students together with teachers can participate on solving questions related to students' learning. In business environment, CQA systems can be utilized to workplace learning while solving the questions about different problems employees run into during their work. And finally, in a research context, different research groups would be able to take advantage of asking questions about their research activities and receive knowledge from researchers who are experts in the particular domain.

We plan to evaluate the proposed method by employing a dataset from Stack Overflow which is considered as one of the most successful CQA system on the current Web. Alongside, we develop a CQA system named Askalot which is designed for organizations and more specifically for universities where students can take advantage of learning aspect in question answering process. Askalot will provide us also a possibility to study concepts of CQA in organization environment and consequently to apply the proposed method also in a live experiment.

The main contribution of our project is innovative perspective on CQA systems as environments which can support knowledge acquisition. We reflect this perspective in the proposal of question routing method as well as in organizational CQA system Askalot which is already in use at our faculty.

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References

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