SOS: A Distributed Mobile Q&A System Based on Social Networks

ABSTRACT:

Recently, emerging research efforts have been focused on question and answer (Q&A) systems based on social networks. The social-based Q&A systems can answer non-factual questions, which cannot be easily resolved by web search engines. These systems either rely on a centralized server for identifying friends based on social information or broadcast a user’s questions to all of its friends. Mobile Q&A systems, where mobile nodes access the Q&A systems through Internet, are very promising considering the rapid increase of mobile users and the convenience of practical use. However, such systems cannot directly use the previous centralized methods or broadcasting methods, which generate high cost of mobile Internet access, node overload, and high server bandwidth cost with the tremendous number of mobile users. We propose a distributed Social-based mObile Q&A System (SOS) with low overhead and system cost as well as quick response to question askers. SOS enables mobile users to forward questions to
potential answerers in their friend lists in a decentralized manner for a number of hops before resorting to the server. It leverages lightweight knowledge engineering techniques to accurately identify friends who are able to and willing to answer questions, thus reducing the search and computation costs of mobile nodes. The trace-driven simulation results show that SOS can achieve a high query precision and recall rate, a short response latency and low overhead. We have also deployed a pilot version of SOS for use in a small group in Clemson University. The feedback from the users shows that SOS can provide high-quality answers.

**EXISTING SYSTEM:**

The search engines perform well in answering factual queries for information already in a database, they are not suitable for non-factual queries that are more subjective, relative and multi-dimensional, especially when the information is not in the database. One method to solve this problem is to forward the non-factual queries to humans, which are the most “intelligent machines” that are capable of parsing, interpreting and answering the queries, provided they are familiar with the queries. Accordingly, a number of expertise location systems have been proposed to search experts in social networks or Internet aided by a centralized search
To enhance the asker satisfaction on the Q&A sites, recently, emerging research efforts have been focused on social network-based Q&A systems in which users post and answer questions through social network maintained in a centralized server. As the answerers in the social network know the backgrounds and preference of the askers, they are willing and able to provide more tailored and personalized answers to the askers. The social-based Q&A systems can be classified into two categories: broadcasting-based and centralized. The broadcasting-based systems broadcast the questions of a user to all of the user’s friends. In the centralized systems, since the centralized server constructs and maintains the social network of each user, it searches the potential answerers for a given question from the asker’s friends, friends of friends, and so on.

**DISADVANTAGES OF EXISTING SYSTEM:**

1. Broadcasting and centralized methods are not suitable to the mobile environment, where each mobile node has limited resource.

2. Broadcasting to a large number of friends cannot guarantee the quality of the answers.
PROPOSED SYSTEM:

In this paper, we propose a distributed Social-based mobile Q&A System (SOS) with low node overhead and system cost as well as quick response to question askers. SOS is novel in that it achieves lightweight distributed answerer search, while still enabling a node to accurately identify its friends that can answer a question.

We have also deployed a pilot version of SOS for use in a small group in Clemson University. The analytical results of the data from the real application show the highly satisfying Q&A service and high performance of SOS. SOS leverages the lightweight knowledge engineering techniques to transform users’ social information and closeness, as well as questions to IDs, respectively, so that a node can locally and accurately identify its friends capable of answering a given question by mapping the question’s ID with the social IDs. The node then forwards the question to the identified friends in a decentralized manner. After receiving a question, the users answer the questions if they can or forward the question to their friends. The
question is forwarded along friend social links for a number of hops, and then to the server. The cornerstone of SOS is that a person usually issues a question that is closely related to his/her social life. As people sharing similar interests are likely to be clustered in the social network the social network can be regarded as social interest clusters intersecting with each other.

By locally choosing the most potential answerers in a node’s friend list, the queries can be finally forwarded to the social clusters that have answers for the question. As the answerers are socially close to the askers, they are more willing to answer the questions compared to strangers in the Q&A websites.

ADVANTAGES OF PROPOSED SYSTEM:

1. This avoiding the query congestion and high server bandwidth and maintenance cost problem.

2. Reducing the node overhead, traffic and mobile Internet access.
3. An asker identifies potential answerers from his/her friends based on their past answer quality and answering activeness to his/her questions.

**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 15 VGA Colour.
- Mouse : Logitech.
- Ram : 512 Mb.

**SOFTWARE REQUIREMENTS:**
Operating system: Windows XP/7.
Coding Language: JAVA/J2EE
IDE: Netbeans 7.4
Database: MYSQL

REFERENCE:
Haiying Shen, Ze Li, Guoxin Liu, and Jin Li, “SOS: A Distributed Mobile Q&A System Based on Social Networks” IEEE TRANSACTIONS ON PARALLEL AND DISTRIBUTED SYSTEMS, VOL. 25, NO. 4, APRIL 2014.