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An Efficient Approach for Data Transmission Using Access Point in MSN

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Abstract- Data transferred between mobiles with the help of mobile network under the hybrid communication system and WIFI network. A communication framework containing the hybrid underlying network with access point(AP) support for data forwarding and the base stations for managing most of control traffic. However, if data transmitting totally relies on the base stations in cellular networks, there will be some disadvantages, such as the issues related to overload and privacy. We are using WIFI-HOTSPOT network to transfer data from one mobile to another mobile and increasing the range by using Access Point (AP). Access point to transfer data for a long distance communication. Data transmission is the physical transfer of data over point to point or point to multi-point communication. We also can adopt other short-distance communication. WIFI real time data transmission system can provide higher data rate than existing system. We design a novel data forwarding algorithm Social Attraction and Infrastructure Support (SAIS), which applies similarity attraction to route to neighbor more similar to destination, and infrastructure support phase to route the message to other APs within common connected components. SAIS achieves a better performance than existing popular data forwarding algorithms in practice, including Simbet, Bubble Rap and Nguyen's Routing algorithms.

Index Terms— Mobile Social Networks, Access Point, Infrastructure Support, Space-Crossing Community, Data Forwarding.

I. INTRODUCTION

Data transmission is the physical transfer of data over point to point or point to multi-point communication. We transfer data with the help of Wi-Fi Hotspot network from mobile to access point and from access point to mobiles. To increase the transmission range we are using the access point. Wi-Fi allows networking of computers and digital devices without the need for wires. Data is transferred over radio frequencies, allowing Wi-Fi capable devices to receive and transmit data when they are in a range of Wi-Fi network. The widespread use of the technology and its availability in both residential homes and public places – have made it one of the most popular data transmission technologies available today. Data may loss during the period of transmission. To overcome this, the access points are grouped together to increase the performance. In a wireless local area network, an access point is a station that transmits and receives data. An access point connects users to other users within the network and also can serve as the point of interconnection between the WLAN and a fixed wire network. Each access point can serve multiple users within a defined network area.

In this system, we are using Wi-Fi Hotspot network to transfer data between mobiles. Share everything with other devices – pictures, videos, music files and documents without the need for Bluetooth and phone network. So you don't want to pay a cent for network charges. This communication framework has certain advantages. First, as a popular wireless broadband access technology, WIFI is recognized as one of the primary offloading technologies. The hybrid underlying network can be seen as an offloading network for base stations. Under the hybrid communication architecture, when studying the data forwarding in mobile social networks, we need to pay attention to two importance aspects. One is the infrastructure support and the other is the social attributes of nodes.

II. SYSTEM MODEL

Cellular networks can be assumed to be 3G or LTE networks. We adopt the WIFI networks for the ad hoc networks. Specially, in the practical framework stated above, we take a full consideration for the role of access points (APs) in WIFI networks for data transmission, and model the WIFI network to a hybrid communication paradigm consisting of both direct ad hoc communications among users and AP-user communications.We also can adopt other short-distance communication standards for the ad hoc networks, such as Bluetooth, with the hybrid communication network consisting of direct ad hoc communications among users using Bluetooth and AP-user communications using WIFI.

The sender will select the file from the device and waiting for the access point to connect to it. Then Access Point will redirect the files to the Receiver.The Receiver will get the files via Access Point(AP) & ACK will return to the corresponding one and receiver will receive the files in the device. By this process the transmission of data from sender to receiver is accomplished.

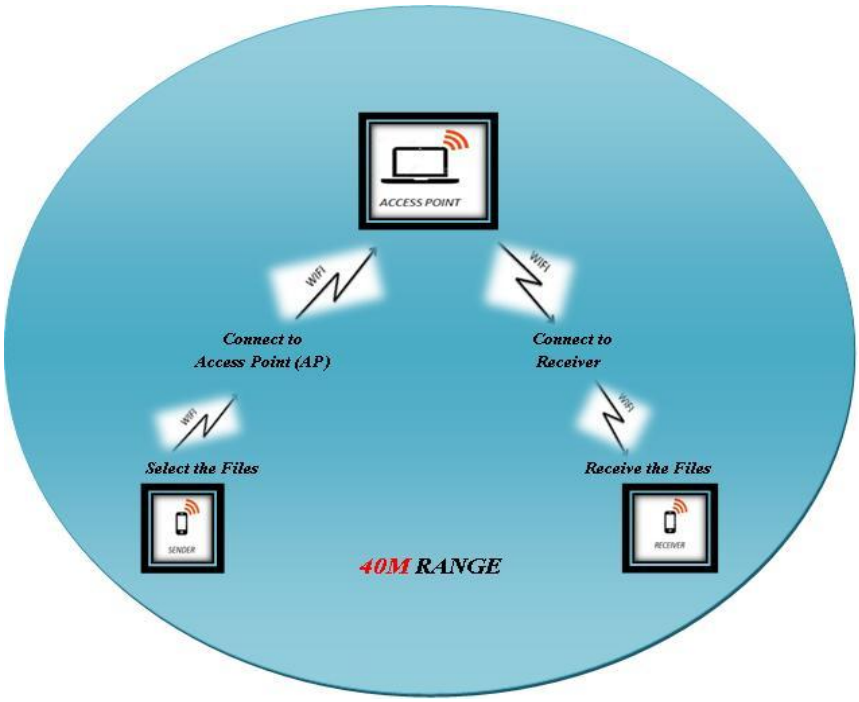

Fig.1 proposed model

This communication framework has certain advantages. First, as a popular wireless broadband access technology, WIFI is recognized as one of the primary offloading technologies. The hybrid underlying network can be seen as an offloading network for base stations (delivering data originally targeted for cellular networks by WIFI). Next, as a self- organized mode, the ad hoc communication can still be used as an extension of centralized base stations and prevent users from exposing much privacy information to public. Finally, the base station is only used to send some periodic beacon information to do some simple and auxiliary global work. The global and high efficient control capability is kept in the network.Under the hybrid communication architecture, when studying the data forwarding in mobile social networks, we need to pay attention to two importance aspects. One is the infrastructure support; the other is the social attributes of nodes. So, we propose a space-crossing community method to solve the high efficiency data forwarding problem in such MSNs. We also can adopt other short-distance communication. WIFI real time data transmission system can provide higher data rate than existing system. We can use the WIFI hotspot, so there is no data usage so we won't pay for it. In this proposed system we can use the three modules. They are

(i) Sender (or) source
(ii) Access Point (AP)
(iii) Receiver (or) destination

Sender (or) source : Sender will send the date to the receiver through the AP. The sender will first select the file, which we can send to the receiver. If the send choose the one file or the multiple file will be select. If the file in the source then we send any type of file to the receiver.The send will select the file then file will ready to send, the user will choose the receiver where we have send. The receiver also will be the same network, and then only we can send the file to the receiver.

*Access Point (AP):*The selected file will send to the Receiver though the Access point. The access point will allow the user will connect the device to their network so the sender and the receiver will connect the user to the network. The file will be in the access point.Now the receiver will receive the file to the AP.

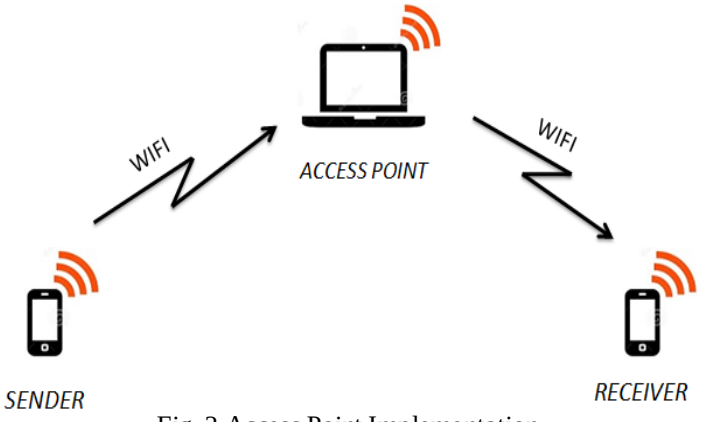

Fig. 2 Access Point Implementation

Receiver (or) destination: Receiver will connect the network and get the file and the acknowledgement will send to the access point the acknowledgement will send to the sender. The file will store in the corresponding folder in the storage.The file will send to the folder in there type and stored in different folder. We use the SQL Lite to store the file and retrieve the file from the storage . the distance between to the two device is calculated using the Space Crossing Algorithm and the file is send to the source and destination is using Social Attraction and Infrastructure Support.

III. SAIS ALGORITHM

In this section, we provide the details of SAIS (Similarity At- traction and Infrastructure Support) algorithm. It includes two phases: *Similarity Attraction Phase* and *Infrastructure Support Phase*.

1) Similarity Attraction Phase: In this phase, each node has its activity vector. When the message holder (including the mo- bile user and the stationary AP) meets another node, they will calculate their inner product social similarities to the destination respectively. The calculation is enabled by beacon messages sent by base stations periodically, so that the source node can learn the activity vector of the destination. The message holder tries to send the message to a node which has larger social similarity than itself and let the node send the message to the destination consecutively.

2) Infrastructure Support Phase: In this phase, a message holder AP delivers the message to other APs in its common connected components.

- Mobile user holding the message chooses its next relay from the APs and mobile users according to the requirment of *Similarity Attraction Phase*.
- An AP holding the message first delivers the message to other APs according to the requirement of *Infrastructure Support Phase*; and then all these AP message holders choose their next relays from mobile users according to the requirement of *Similarity Attraction Phase*.

IV. PEFORMANCE ANALYSIS

Comparisons With Other Forwarding Schemes

We compare SAIS algorithm with Simbet , BUBBLE RAP and Nguyen's Routing (i.e., three popular social community-based routing algorithms). In *F*igs. 3 show the delivery ratio, overhead ratio and average latency of SAIS, Simbet, BUBBLE RAP and Nguyen's Routing algorithms , respectively. We can see, the delivery ratio of SAIS achieves best among those algorithms while the overhead ratio and the average latency are lowest.

In terms of delivery ratio, Fig. 3(a) show that SAIS performs best among those algorithms. The delivery ratio is higher than Nguyen's Rout- ing with 56.21 percent, BUBBLE RAP with 70.32 percent and Simbet with 127.6 on average. The peak value of SAIS arises later that the other three comparison algorithms. After that, due to the increasing TTL and the copies of messages, it is normal that the delivery ratios of all algorithms decrease slightly. However, the degree of the decline in SAIS is smaller than the comparison algorithms

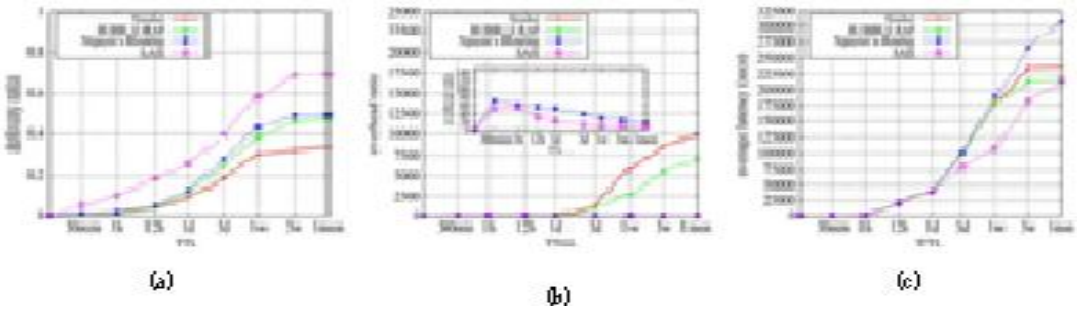

Fig.3 Comparision Results Subfigure (a), Subfigure (b) and Subfigure (c) show the delivery ratio, overhead ratio and average latency respectively.

In Fig. 3(b) , on average, SAIS keeps a low overhead ratio compared to the other algorithms. The overhead ratios of Simbet and BUBBLE RAP are much higher than SAIS and Nguyen's Routing. The reason is SAIS prefer to choose the similar interests nodes as relays, which can control the number of copies in sessions. In the enlarged legend, the overhead ration of SAIS.

In Fig. 3(c) show that the delays of those algorithms all increase with TTL increasing. SAIS performs better than the three comparison algorithms. Due to the help of space-crossing com- munities, some long-distance nodes can communicate through short paths across the geographical space, which lead to the low delay of SAIS.

V. CONCLUSION

In this project, the Mobile Social Network (MSN) is a mobile communication system involving social relationships of the users and has been widely used by the peoples around the world. Data can be send efficiently and long distance to the network. SAIS & SPACE-CROSSING COMMUNITY algorithm is used for data forwarding and finding the distance between nodes respectively, by this improving the range of sharing the data and to reduce the conflicts in distance sharing. As a proof of concept, we implemented a prototype of our proposed concept in which the sharing of data is around 40m . In Future, the data sharing can be made extended via Access Points (AP) to achieve a long transmission of data. Through this, data can be shared in an efficient way from source to destination.

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