ADVANCE MARKETING AND ADVERTISING IMPLEMENTING CROWDSENSING

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Abstract: - In recent years, crowdsensing is not only evolved as a new technique but also its growth affect research fields as well as in day to day life. Crowdsensing is a technique which enables to assemble a huge quantity of data by permitting an extensive variety of devices from the crowd to contribute data. These devices assist with rich sensing and advance computational facility. Sometimes crowdsensing referred as mobile crowdsensing (MCS). In MCS user provide data generated from sensors, which are integrated with smart devices. Acelometer, gyroscope, magnetometer, GPS and camera are the representative of set of sensors. The opulent sensing capability of mobile devices allow user to modernise the existing system with pioneering advance technique. This paper presents the prominent impact of crowdsensing in marketing and advertisement field. For the advancement of marketing field, I use the concept of citizen collaboration and social network. Mobile crowdsensing technique implements the mechanism like mobility trace or context-aware surveys in Marketing and advertisement field.

Key words: - Mobile crowdsensing (MCS); sensing as a service; sensors; advance marketing

1. Introduction

Mobile crowdsensing is the technique which enables to collect huge amount of data from the crowd [1]. Crowdsensing provides pervasive and ubiquitous computing facility to the user. Mobile crowdsensing act as a medium between user and internet of things applications. Sometimes this medium has the acknowledgement of the user and sometimes without user acknowledgement. According to the user involvement in the crowdsensing process, crowdsensing is of 2 types: -   participatory crowdsensing and opportunistic crowdsensing. The crowdsensing process consists of 3 phase: data collection, storage and upload. In participatory crowdsensing, users voluntarily participate in the crowdsensing process, but in case of opportunistic users participate in the crowdsensing process without user

acknowledgement.

Fig. 1 The different types of mobile crowdsensing
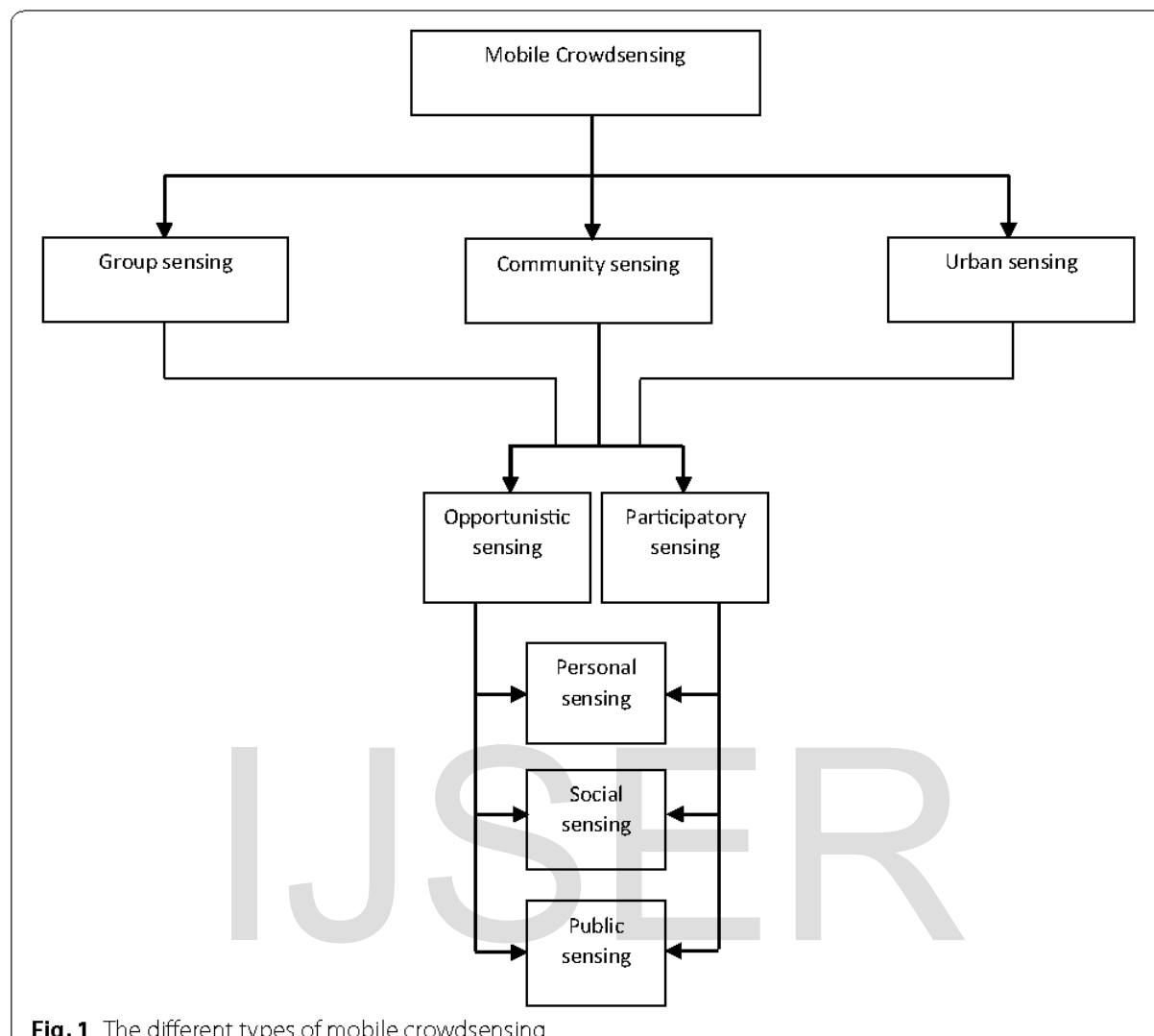
Crowdsourcing, Crowdsensing and Crowdmapping are interrelated to each other. Crowdsourcing is channelling the experts desire to solve a problem and then freely sharing the solution with everyone. Crowdmapping is a subtype of crowdsourcing by which aggregation of crowd generated inputs such as captured communications and social media feeds are combined with geographic data to create digital map that is as up to date as possible. For example: google exploits crowdsourced information about smart phone location to offer real time view of congested traffic on road. In mobile Crowdsensing [2], user contributes data generated from sensor embedded in mobile devices and IOT devices. Accelerometer, gyroscope, magnetometer, GPS and camera are just representative of set of sensor which is nowadays employed to operate a number of applications in many domains. The information acquired through mobile Crowdsensing platforms is aggregated and

delivered to a collector located in the cloud. This enables so called sensing as a service model [3]. This makes collected public data from crowdsensing available for the developer and end user.

In MCS system two policies are used for proper recruitment of user: Distance Based Recruitment Mode (DBRM), Sociability Driven Recruitment Mode (SDRM) [4]. Context-aware data are collected through proper recruitment policy. Mobile crowdsensing refers to the wide variety of sensing model in which the individual can share data and extract information to measure, map and analyse the development of common interest. Mobile crowdsensing is a new prototype, which provides a new way of seeing the world to significantly extend the services of IOT by implementing concept like interconnecting things-things, things-people and people-people [5]. Mobile crowdsensing has various kind of application, which is enlightening the daily life.

2. Background

In mobile crowdsensing (MCS) [1][2], a group of people called crowd can collect, share and extract information through their devices. Those devices integrate with rich sensing [6] and advance computing facility. For proper functioning of MCS system, a large number of participants are required for the crowdsensing process. The crowdsensing process comprises of three phase: data collection, storage and upload [5]. Data collection is the basic building block of the crowdsensing process. All the data collected from the user through their smart devices (i.e. devices with sensing capability) with specific application. Sometimes, data collected by opportunistically i.e. without user acknowledgement. Data which are collected from the user are stored by a collector which is located in the cloud. This phase partially operated by the user and accomplished at a regular interval. The context aware data is evoked and uploaded for the developer and for the end user. This phase allows user to make the crowdsensing task as the practical one.

Crowdsensing simulation aims to simulate the crowd behaviour, estimate the sensing patterns and help researchers and also provide solution for the developer to choose what to sense as well as to identify the minimum user threshold necessary for an application to collect sufficient big data. Big data means data which is large in term of volume, velocity and variety. Crowdsensing simulator [7] is a discrete event simulator. By allowing large scale crowdsensing activities in social scenarios, it can estimate an innovative solution for data collection, task assignment, monitoring and resource management. The main features of

crowdsensing simulator are: scalability, realistic environment, user mobility and communication technologies. The simulation tools for crowdsensing based on two points; (1) characterize and modelling communication aspects; (2) spatial environment. There are three tools in MCS: NS-3; simulation environment; CupCarbon.
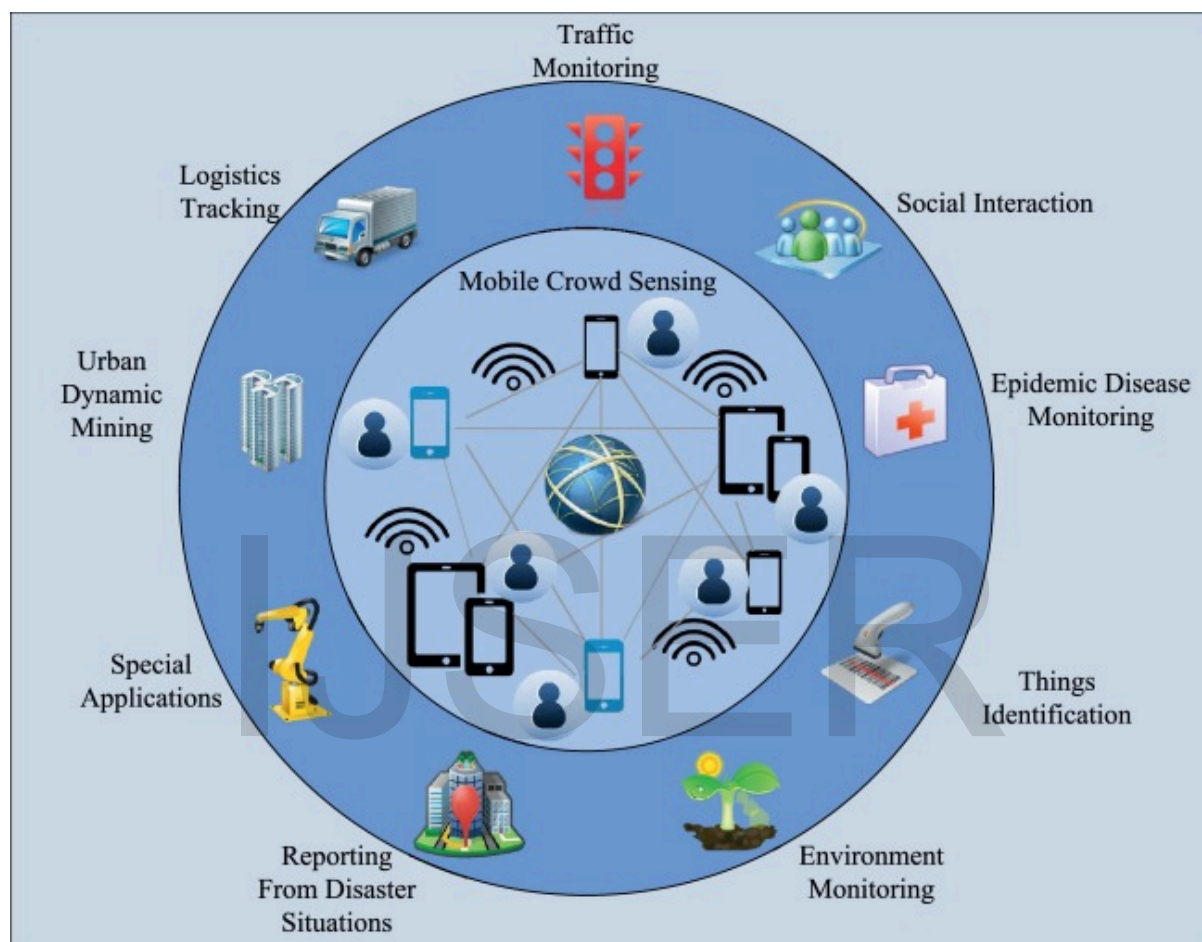

Fig 2: Crowdsensing application

MCS have different application areas such as: environment, infrastructure and social application [6]. Environmental application include: noise monitoring, air quality monitoring, pollution monitoring. Infrastructure application include: locating potholes, building structure and traffic management. Social application include: tracking exercise data, health and fitness, marketing field, citizen collaboration and social networking. I consider the advancement of marketing field by executing crowdsesning paradigm. The improvement not only impresses social life but also impact the economic growth.

3. Proposed work

In this paper I consider the impact of crowdsensing in the advancement of the marketing field. The goal of every marketer is to perceive the personal preferences and real time need of their customer for the enhancement of their marketing domain. The best way of understanding the customer requirement, is done by extracting the data from different sources. This type of integrated data will be helpful for the advancement of the marketing domain, which based on the user preferences. The combination of sensed data from the user with the crowdsensing technique is the crucial factor for enhancement of the marketing domain.
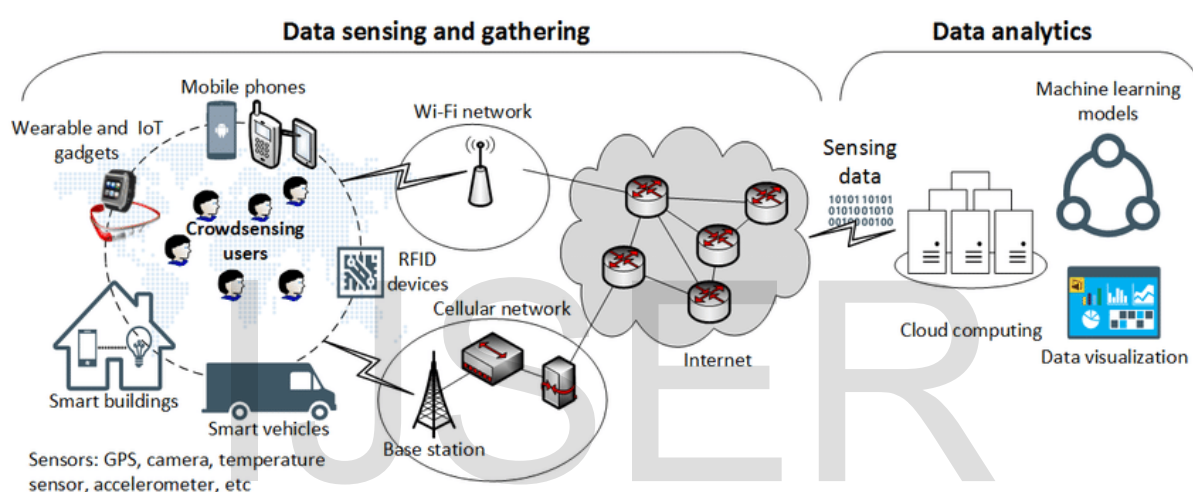
Fig 3: Crowdsensing system for enhancing the marketing domain

Due to the rise in number of smart phones in people's daily life, nowadays smart phones are enriched with smart sensing and advance computing facility. It is assessed that the smart phone users worldwide will overall 2.5 billion in 2015. If all the smartphones in the world embedded with a single sensing network, then it would form the largest sensing network ever. As we know earlier that in MCS system, a group of people called crowd having smart devices (i.e. devices with smart sensing and advance computing facility) can collect, share, extract, analyse and upload the data. After collecting data from the customer (user), the data is stored in collector which is located in the cloud. The switching of data from the collection phase to the storage phase is done by information communication technology (ICT). Sometimes the data which are collected are not context-aware. In that case after the data is stored, the analysis phase undergoes. In the analysis step, the required information for the marketing

domain is uploaded in the internet. So, the developer extracts the data from the internet for better marketing environment.
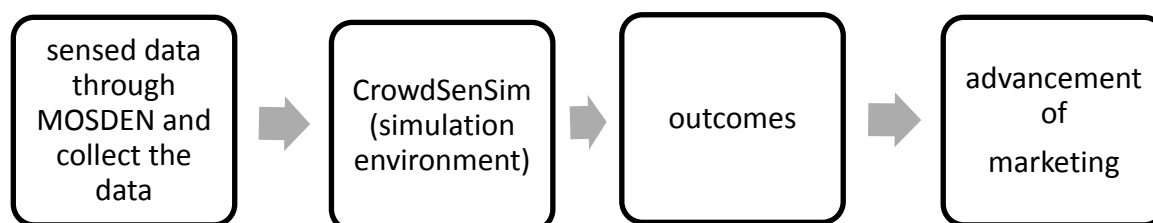

Fig 4: block diagram of showing the outcomes by MOSDEN and CrowdSenSim

Another way of improving the marketing domain is done by crowdsensing paradigm with the help of MOSDEN and CrowdSenSim. MOSDEN is a sensing application through which we can sense the data and collect the context-aware data for the marketing field. CrowdSenSim is a simulator, which uses the context-aware data in its simulation environment and produces the result; the result uploaded via internet and that will be available for the developer. The result will be practicable for advancement of the marketing arena.

4. Conclusion

This paper presents the concept of mobile crowdsensing centric system and its application in advance marketing domain. It also describes another way of advancement of marketing domain through MOSDEN and CrowdSenSim, which is a new sensing pattern allowing marketing developer to collect and analyse the sensed data for advancement of marketing. By collecting the data from the subjected customer, will be helpful for the developer for enhancing their product. The crowdsensing paradigm plays the pivot role for advancing the marketing field, which is far beyond from its traditional technique which was previously used.

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