

Mobile Application for Resolving Citizens Complaints

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Abstract— The idea of this system is to help citizens of a Mumbai to register complaints about daily problems in their ward using mobile application. The application will provide interface to a common man to deliver his complaint and problem to municipal authority and let the authorities of municipal to address the problem early as possible. This application provides interface to register or lodge complaints and follow it to the end. This interface providing a camera which help clicking a picture of any issue that people are watching and upload this photo along with the that complaint. The location of the complaint is tracked by using Global Positioning System (GPS). This module will provide exact location of that particular complaint. The complaint is once registered, will be send to specific department of BrihanMumbai Municipal Corporation(BMC) server site for e.g.; a complaint of damaged road will be send to PWD department of BMC. This application is art of complaint management system for organizations across a total spectrum of Government departments, Public sector and private establishments. It's a one point web and phone based complaint manage and resolve system linking all the departments in MC. One of the key features is the provision for citizens to lodge complaints using their mobile phones with a software android application mainly designed to lodge complaints.

Keywords— Android, Camera, Global Positioning System (GPS), Interface, Location, BMC server, One point web.

I. INTRODUCTION

There has been big research in e-services area for citizens in municipal corp. The main idea is that to understand the usability and the utility of many services that are provided by a Municipal corp. (BMC) using new and best technologies. There have also been researches which address of e-services for physically challenged peoples. There are several departments within the BMC to handle different problems of the city to upkeep. It is important for the Municipal corp. to know about these problems and when they happened, so that the problem areas can be resolved with quickly and efficiently. For efficient management, the city is divided into many wards. The Mumbai city has about 24 wards. Any complaint associated to a specific ward is

only handled and managed by an officer related with that ward. Complaint gets significantly delayed if the complaint associated with one ward is routed to different ward. Mumbai BMC allows the citizens to lodge their complaints using various mechanisms. And a perfectly routed complaint is handled by the associated departmental authority in that ward only. Once a complaint is register by the user, an associated departmental authorized person is notified about the complaint for further action. The person complaining is notified by status of the complaint till complaint being resolved.

The major ways of complaint registration mechanisms available to a citizen are (a) A personal visit to local ward office of BMC, where a authorized person in charge listens to your the complaints and asks for some details about complaint and put it into an electronic format which will store in a central database of MC (b) Through a contact center using telephone, where the complaint is registered using a call Centre agent by typing the detailed complaint into the computer system and more recent way (c) Through using a website portal interface where the user fills the necessary details about complaint by logging onto the web portal. All the complaints are saved in a central database of MC which is accessible to the associated ward officer to handle it. The ward officer will update the status of the complaint after resolving. The status of the lodged complaint is available to that particular person who has registered the complaint through the web portal.

II. LITERATURE SURVEY

Municipal Corporation of Mumbai is a local governing organization which takes control and care of the functioning of Mumbai city. Among many things one of the main responsibilities of BMC includes addressing complaints that residents of the city have. Maintenance of such a large city like Mumbai requires that BMC be aware of any shortcoming either through surveillance (cameras) or by allowing citizens to report it them. The second option is always preferred because there is sense of belonging. A mechanism to accept complaint from citizens would be the expectations from both the citizens and BMC. The BMC allows its citizens to lodge their complaints using several ways. Using GSM-GPS based system one can register their vehicular related complaint to the government. It uses the android application for lodging the complaint [1]. There is one mobile interface for lodging the citizens complaint it contains the pothole tracking system [3].It only solves the issue related to roads only. The updated web portal is use for to lodge complaints of citizens in more simple way [6]. For criminal investigation and identification a application is

developed which stores all the data about criminals with GPS system [5]. The web portal interface to help citizens lodge their complaints is a recent initiative activity of the BMC [4]. This interface having two types of information (a) a group of drop down boxes where the user can need to choose from a select list of already defined options and (b) a text box where the user has to type the complaint or the message[4]. Pothole Tracking System investigate an application of mobile use to detect and report the surface conditions of the roads [3]. Billing is a complicated function of both Electricity and Water departments towards getting a meter reading.

The advantages of this new system are:

- (a) It does not require changes in the existing website portal to lodge the complaints.
- (b) It doesn't require to citizen to remember specific information to lodge complaint.
- (c) Because of using mobile channel it makes active citizen participation to lodge day to day complaints.

III. EXISTING SYSTEM

There is existing web portal interface for peoples to lodge complaints is a recent activity of the Municipal Corp [6]. The working of existing system is shown in Fig.1. This interface having two types of information (a) a group of drop down boxes where the user can need to choose from a select list of already defined options and (b) and a text box where the user has to type the complaint or the message. The interface also having six mandatory fields. The mandatory fields are as follows:

- 1) Departments (drop down menu; e.g., Drainage, Traffic and Road etc)
- 2) Type of Complaint (drop down menu which is connected with department selected. Usually there is 9-14 type of complaints for each department)
- 3) Detail of Complaint (a text-box for the user to write the complaint in detail)
- 4) Location of complaint (name of the location where the issue is Applicable)
- 5) Landmark (a nearby description of location, for e.g., near church or Hotel)
- 6) Ward Number (drop down menu for user to choose from 24 wards list).

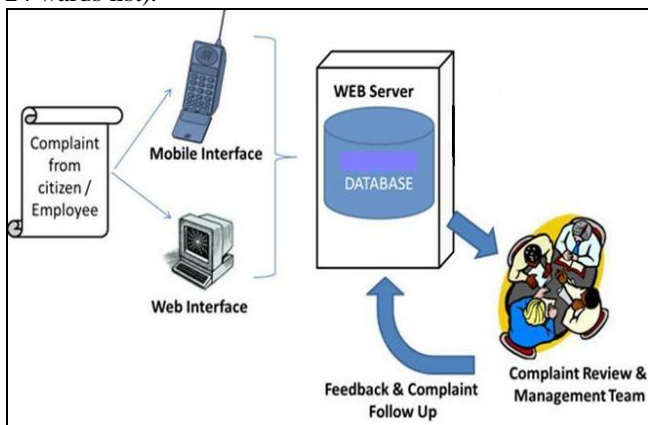


Fig.1 Existing System

In this the user needs to be aware of ward number and name before registering the complaint. Usually people don't know

the ward number and only know the location names. The other optional inputs required to the system are as follows (a) Name of the citizen lodging the complaint (b) Address of the citizen lodging the complaint. Once all the required fields are filled the system generates a unique complaint number and displays on the website page. This complaint number is used to request the status of the complaint. The portal while allowing the citizen to lodge their complaints has some important constraints. It is restricted to choose from the list of pre-defined drop down menu list. This creates the problem to the user tries to fit complaint into one of the predefined drop down menu list. This result in to wrong fit and the complaint being send to wrong department which affects the time taken to solve the complaint. The second major thing is to be aware of the ward number and name, additionally the citizen needs to have access to an internet working computer. The new mobile application interface system mentioned in this paper tries to overcome these problems to provide a easy way to lodge complaints. The need for a networked computer is overcome by lodging the complaint using a mobile phone. There is need to select the perfect Complaint type and Department name is removed by enabling the citizen to lodge a complaint in natural English language; there is need to know the ward no. is removed by this new system by determining the ward no. based on the location and a landmark details entered by the citizen. Recently, we have provided a service for the user to send the photograph captured using their phone camera module. This requires a mobile phone with camera facility with an ability to download this small application in to the phone.

IV. PROPOSED SYSTEM MODEL

The proposed mobile based system minimizes the time of the website portal based complaint management system.

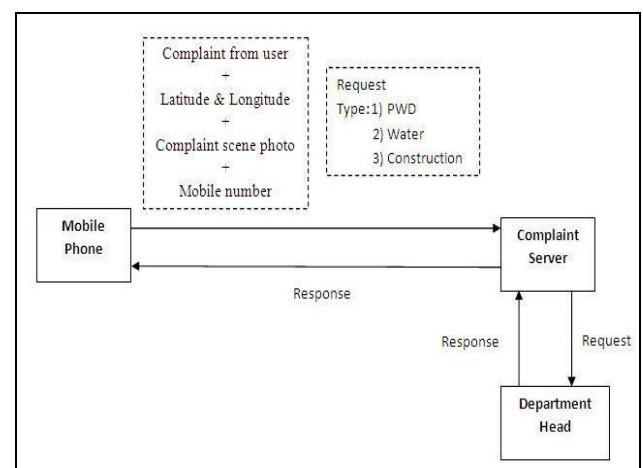


Fig.2 Proposed system model

The new proposed system model is shown in Fig.2. The users have to just download this application onto his mobile phone. Then user has to run the application on his mobile phone to start with a welcome screen. Then he has to lodge complaint. The complaint is routed to Complaint processing system block. Then the complaint processing system interpret the citizens complaint to determine the exact nature of the complaint means the Department name and a Complaint Type and other details like land mark, ward no

and location which are mandatory required to lodge complaint. Once this information is collected by the system, it sends the related information to MC complaint handling and managing system in a compatible or simple format. The response of the managing portal is fetched as well as parsed to determine the number of the complaint. This complaint number further received on user's phone. All the information that is mandatorily required for generate a complaint number on the MC portal. Once the system has got all the required information about complaint, it sends to the complaint management authority to solve and update the complaint status to the citizens.

A. Proposed System Working

The working of the proposed system is shown in Fig.3. The users have to first download this application onto his mobile phone. Then user has to run the application on his mobile phone to start with a welcome screen. Then he has to lodge complaint with the details like complaint type, name, contact number and photo of that complaint scenario. And click send button to lodge the complaint on the server. After lodging the complaint the user will get the complaint ID to track the status of the complaint. At the MC server side the complaint is routed to that particular department as per the complaint type and with the location of the complaint. Then the respect authorized person of that department further handle that complaint with his workers and also notify the user about the status of the complaint. Using GPS the authorized person will get to that location and solve the issue. After solving it he updates the status of the complaint to that user who had registered the complaint. The system can also send daily notifications about day to day activities of the MC in particular locations in the city in the form of alert. So citizens can perform any preventive actions related to the alert. It is very helpful for the citizens to getting alert about MC activities. And at the server side there is a part of report generation about the complaints which are lodged into the server. These reports are created as per department wise or complaint type wise. So it will get very helpful to the department authorities get to know history about the complaints solved or being solved.

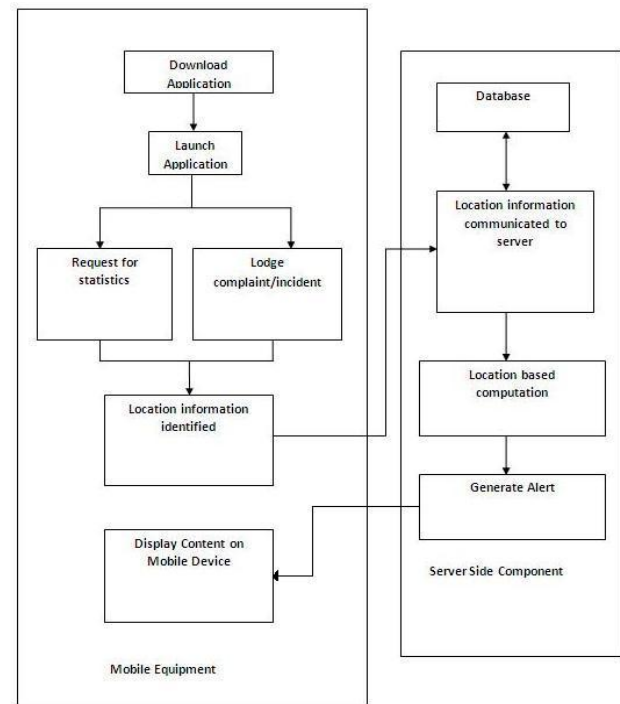


Fig.3 Block diagram of Proposed System

There are many more benefits of this system are as follows:

- User can very easily register as a new member using an android application.
- By using this application, a user can complaint from any area they wish in an easy way.
- Using smart complaint resolver, user can complaint at a click by reducing their valuable time.
- The complaint is redirected to the specific department for further processing of complaint.
- Once the user has registered a complaint, after they can view the status of their complaint; whether it is processed perfectly or not.
- When the user's complaint is resolved the admin closes the complaint and updating complaint status and the user is get notified at the time of next login.
- Finally, there is process of feedback from the users which is being taken into account for further improvement.

V. CONCLUSION

This system will give very efficient and time saving way to lodge the complaint about daily problems in the city. It is also reliable for the BMC authorities to get the exact details of the problem occurred because of photograph. So they can handle the problem in simple way with needed man power and tools or machineries. Because of the mobile application citizens will not get any problems to lodge their complaints, they do not personally go to the MC office and lodge the complaint or on the web portal with many detailed inputs.

REFERENCES

- [1] P. Kulkarni, A. Mhapsekar, D. R. Kalbande, U. Nagarsekar "Voice enabled Android application for vehicular complaint system: Using GSM-SMS and GPS technology" Information and Communication Technologies (WICT), 2012, pp. 520-524.
- [2] Sunil Kopparapu and NormalJanardhan. "A mobile interface to register complaint" HCIIADIS International Conference Interfaces

and Human Computer Interaction Amsterdam, Netherlands (25-27 July, 2008), 2008.

[3] PavanGorade, DigambarKarde, PoonamKhilare, AbhishekSontakke, Prof.Ranjana M. Kedar “Real Time Pothole Tracking System Using Android Phone” Department of Computer Engg, K.J. College of Engineering & Management Research, Pune, India 5,May 2014.

[4] Saurabh Zadikar, jaan Momin, Datta Mule, Avinash Chavan “Criminal Investigation & Identification System (CI2S)” BECOM S.V.I.T. Nashik, Pune University, India, A monthly Journal of Computer Science and information Technology, ISSN 2320-088X, IJCSMC, Vol. 4, Issue. 2, February 2015, pg.402-407.

[5] M.R.M.S.B. Rathnayaka, I.D.S. Jaysinghe, EnitJyanth, S.I. Swarnajith, M.A.S.C. Manamendra, G.Wimalaratne “Mobile Based Electric Billing System” ISSN 2250-3153, International Journal of Science and Research Publications, Volume 3, Issue 4, April 2013.

[6] The Municipal Corporation of Greater Mumbai <http://portal.mcgm.gov.in/irj/portal/anonymous/qlcomplaintreg>, accessed, Oct 2015.