SWACHH SWADESH: A CITIZEN AND ENGINEER PARTICIPATION IN CLEANLINESS OF NATION

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ABSTRACT: The Swachhata/Citizen application will capture the picture from that location, then type the landmark of the complaint location and post the complaint. The complaint will then be assigned to the concerned Inspector/Engineer using Swachhata Website/Portal. Engineer look into the assigned complaint using SBM Engineer mobile application, through that Engineer can change the status like Open, Resolved or Rejected. User/Citizen can also vote up on any others complaint relevant complaints of the users. Citizen will get regular updates on status of the complaint in the form of a push notification with the 'Resolved' image uploaded by the assigned Inspector/Engineer. Citizen can also reopen the complaint if they are not satisfied with the resolution of the complaint.
Keywords: ULB User, Service Level Agreement (SLA), Dashboard ranking, Swachhata Application, SBM Engineer application(Swachh Bharat Mission)

1. INTRODUCTION

The Swachhata and application is a fourth generation complaint redressal mobile and web platform . The Swachhata application enables a citizen to post a civic-related issue (eg; a garbage dump) which is then forwarded to the city corporation concerned and there after assigned to the Engineer of there respective wards. SBM Engineer mobile application use it to view the allotted complaints in there wards from there respective municipal nodal officers to there the Engineer. A mobile application on Android and iOS for citizens to upload Swachhata complaints. A mobile application in Android for the ULBs to see the complaints uploaded by the citizen and take action. A website for Municipal Commissioners and their digital teams to monitor the complaints received in their cities and towns. However, there will be certain functions that only commissioners will have access. e.g. adding engineers ,transfer engineer.This website open to all citizens, it will provide the ratings and rankings for there cities and towns on the Swachhata platform based on the resolution rate of each ward in the city. It will provide a break down of the performance of each ward in the city. Citizens cannot log into the site to lodge complaints - complaints will only be lodged through the mobile application. Swachhata Site is developed in eight languages. e.g English,Hindi,Kannada,Gujarati,Marathi etc.This paper describes about Swachhata application will help the citizen make there cities clean, by informing to there respective cities municipal corporation engineers.4000 plus cities are included in swachh city

2. HOW DOES APPLICATION WORKS

FOR CITIZEN: Simplicity and ease of reporting a grievance - citizens only need to take a picture of the complaint they see and post it through their Swachhata application. The application can pinpoint the location of the complaint with accuracy using the geo-location of the picture, which will lead to faster resolution of the complaint. Citizens will get regular updates on the status of the complaint in the form of a push notifications. Citizens will get a push notification with the 'Resolved' image uploaded by the Engineer when they change the status to Resolved. Citizens can re-open the complaint if they are not satisfied with the resolution. As complaints get resolved, citizens can provide feedback on the quality of the resolution. Citizens can also view complaints and post the complaints of other localities.

MOBILE APP – ENGINEER (SBM – ENGINEER): The Engineer application should be downloaded only by engineers. If it is downloaded by a citizen it will not work. Even for engineers it needs to be authenticated by the concerned Municipal nodal officer. Initially, the SBM - Engineer application will be available for download for Municipal Commissioners and their digital teams. It will be made available for engineers as and when required by their Municipal Commissioner/ Corporation. The application will show recent complaints in the area of the engineer, for which action needs to be taken. The assignment of the work can take place either automatically, or manually by the Municipal Corporation officer. If the Municipal Corporation officer has uploaded the list of the engineers with their names, email IDs, and phone numbers in the Swachhata web admin portal, the work will automatically be assigned to the Engineer.
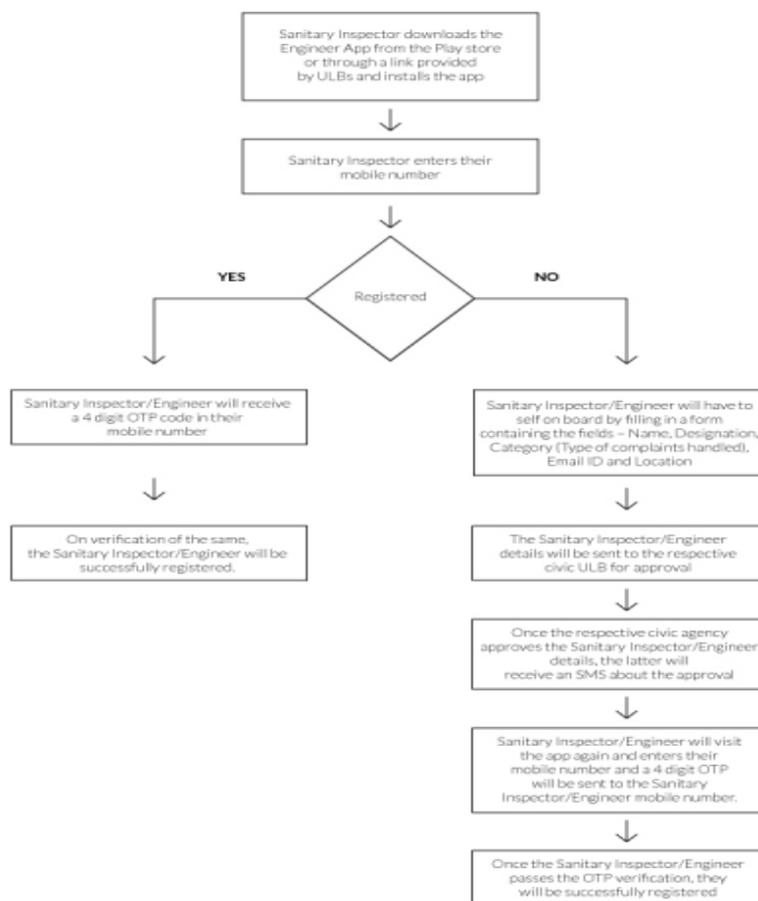

Figure 1.Flow Chart of Engineer

Engineer has to download the application from playstore or link provide by the ULB's and install the app,Engineer has to enter the mobile number

FOR MUNICIPAL ADMINISTRATORS: With the touch of a button they can see a dashboard with all the complaints in their city, the status of the complaints and their resolutions. Every Municipal Corporation will be provided with a special login for them to view the status and details of all the complaints in a single dashboard, assign complaints, and resolve any other issues that might arise.

Portal features include
A) Number of complaints received.
B) Location of the complaints received.
C) Assignment of work to supervisors
D) Status of the work by engineers.
E) Complaints resolved versus pending,
F) Add Engineer
G) Transfer Engineer
F) Rank of there City and Town.

All these would be available in a visually appealing format and represented graphically.

Citizens can go to the website www.swachh.city and click on 'View Dashboard' on the top right corner of the homepage. Citizens and stakeholders can view rating and ranking of various city municipal corporations across India on how they have resolved the citizen complaints that have come in through the Swachhata mobile application. These resolved complaints along with the Service Level benchmarks for the complaints would form the basis of the rating and ranking system. There is also a search option for citizens to search the rankings of the city of their choice.

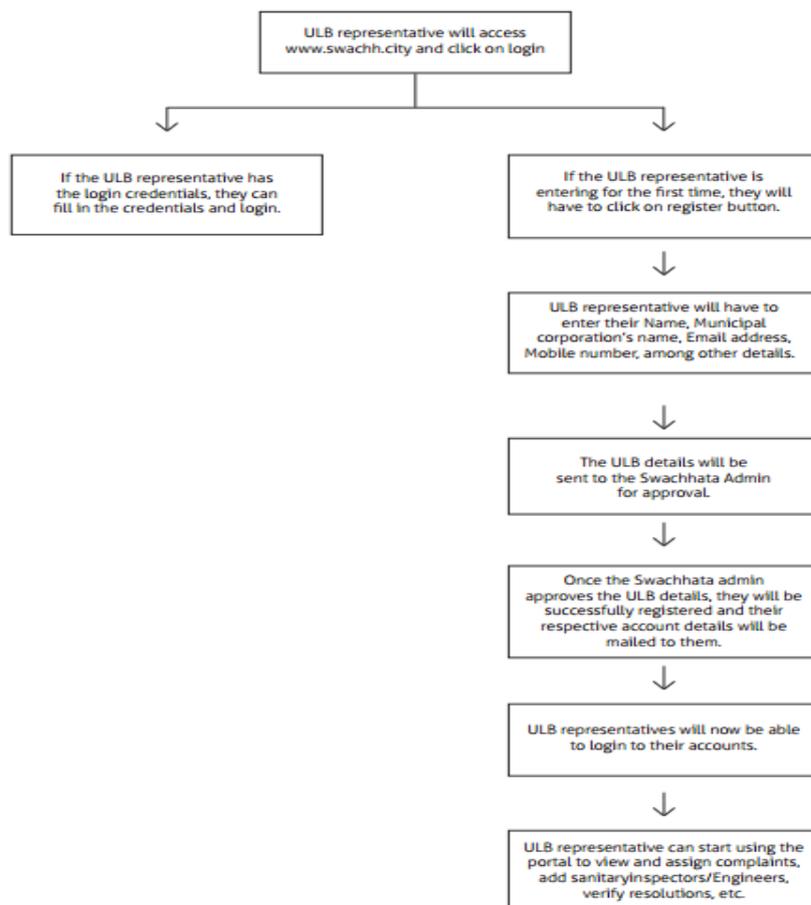## Process flow - Administrator Web Portal

Figure 1. Administrator Web Portal

3. SERVICE LEVEL AGREEMENTS

The Swachhata city rating system works on the number of complaints resolved by the corporation - with adherence to Service Level Agreements and to the satisfaction of the complaint. Action on the complaints may vary depending on the categories. Action for most complaints will be initiated from 6 hours of registration. There is a detailed escalation process built in the mobile application so that complaints that are not resolved at the lower level are moved to higher levels for action and resolution.

1. Dead animals-48hours
2. Garbage Dump-12Hours
3. Dustbin Not Cleaned-12Hours
4. Garbage Vehicle Not Arrived-12Hours
5. Sweeping Not Done-12hours
6. No Electricity in Public Toilet-12Hours
7. No Water in Public Toilet-12hours
8. Public Toilet Blockage-12hours
9. Public Toilet Cleaning-12hours

Figure 2:Service level agreement

Citizen will post the complaint based on there category, the ULB admin assign the work to the Engineer, action on the complaint should be taken within 6hours and assigned engineer has to resolve the complaint with the SLA time. If the complaint is not resolved within the SLA time, the complaint is Escalated to Higher officials. Higher official look into the complaint and it is resolved as early as possible.

4. CITY RANKING CALCULATION

4.1 USER ENGAGEMENT FACTOR
(2*Number of Active Users)+(1*Number of Inactive Users)*30%   (1)

4.2 USER HAPPINESS FACTOR
(2*Positive feedback) + (1*feedbacks)*30%   (2)

4.3 AGENCY RESPONSIVENESS FACTOR
(2*Complaints resolved within SLA)+ (1*Complaints resolved but not in SLA)*40%   (3)

Total of these 3 formula city ranks has been estimated. Display the points of a city complaint resolved within a SLA time. User is able to view the city ranking, by enter the city name in the search tab, where citizen can able to view the city rankings as per formula mentioned above.

Citizen Dashboard:Citizen is able to view no of resolved complaints, On the job complaints and no. of open complaint in dashboard and how it is better than yesterday Citizen can check the there city ranking using filter of city column.

5. DASHBOARD

Citizen can able view in graphical representation the Total number of registration (By android phone and IOS phones), Total no of complaint (Open, Resolved, On the job and Rejected) total number of citizen app users(Active users and non active users),Total number of citizen happiness factors(Satisfied, Neutral and dissatisfied), Total number of complaints resolved(Resolved within SLA and Resolved out of SLA) and Ranking history of there city can also able view in graphical format and also last 30days ranks of there city can be viewed. Population and State of the user can able view.

5.1 ADMIN DASHBOARD: In Administrative dashboard, admin is able to view no of resolved complaints, On the job complaints and no. of open complaints in dashboard and how it is better than yesterday. Posted complaint are going to their respective ULB.

Admin can able view in complaints of Today, This week, This Month, This Year and with a Date range versus Resolved, On the Job, and Open in a graphical form. Based on category also admin able to view Today, This week, This Month, This Year on there trends. Admin can view citizen dashboard without logout from there credentials.

Admin can able to check the no. of complaints are posted in the city. Today, This Week, This month and All with that Date range between that posted complaints in there city.

Admin can change the status of the complaint. Admin can view the complaint based on there category. Admin can search the complaint by giving complaint id, landmark and category. Admin can assigned the complaints to there ULB engineer within 6hours. Engineer look into the complaints and involve into the complaint, Engineer has to resolve the complaint within the SLA time or they has to reject the complaint, if it is not a valid complaint. If Engineer is not able to resolve the complaint within the SLA time,then the complaint is Escalated to the higher officers. In Complaint table list of complaint posted with complaint Id,City, ULB, Location, Date, Category, Status and Action.

Admin can check the Agency Approvals in approval where Name, Email, Mobile, Municipality, Location, Date and Status.

Admin can add the Engineers, Search the Engineers with there name, and able to view the details of the engineer like phone number, designation, list of wards are coming under that engineer and which category the engineer is associated. Admin can Delete the Engineer and Transfer the Engineer to other location/city of other city. After transferring the Engineer to other city, Other city admin will receive a mail, mentioning the engineer from this city to your city, then admin will add the Engineer in there respective ULB and assign the wards & category they has to looking into that, the posted complaints are allocated to that engineer on category and ward Admin can able download the reports of the All Complaint, List of registered citizen User from there ULB.

6. CONCLUSION

The larger vision for the Swachhata application is to increase citizen engagement and civic participation in a key Government initiative, like Swachh Bharat Mission. It also helps the Mission understand citizen requirements and their potential to monitor the programme. Active participation of citizen will help the nation to be clean. Engineers has to contribute there help to clean the cities.

A Citizen & Engineer participation for the cleaning the nation, a citizen role in cleanliness is major responsibility of every citizen in the society for their nations. Actively involvement in the cleanliness of the nation by citizen & Engineer is really major step to make the nation clean.

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Praveen Kumar Born & Bought up from North Karnataka, completed B.E(IS) from AIET, Gulbarga & M-tech in Computer Science from BVB, Hubli. Interested in NGO participation & Video and Image Processing, Teaching. Worked as Test Engineer for Stag Software Pvt Ltd, Bangalore.

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