# NGO Information Management Suite

## PROJECT PROPOSAL

## TEAM 16

January 15, 2012
Version 1

## Index

## 1. Introduction

### 1.1. Origin of Problem

One of the biggest operational challenges faced by organizations today is information management. No matter what your organization does, you can't operate without collecting, storing, sharing, and archiving information. While it is an obvious choice for corporate organisations to employ high-tech equipment and software for their information management, due to lack of an educated and uniform workforce in most of the NGOs of our country, easily accessible and most handy (primitive) ways data collection and storage are preferred. The problem with pen/ pencil - paper type of data recording is its archiving, sharing and swift analysis. Each NGO tends to maintain a social map of their various centres and their progress in terms of the on-going projects, which they make on a paper. Thus there is a strong need of reliable, long lasting, software based, centralized data recording and management software for any NGO along with a functionality which would generate similar social maps for them, according to its special needs. Most of the NGOs don't even have a website to assert their identity in today's virtual world, so there is a need for an easily boot able and customizable website which would require the least effort to start-up as well as maintain.

### 1.2. Technical Relevance

If certain assumptions are made (realistically) we can justify the technological relevance of the proposed 3 part system. The fact of the telecom boom in India and that each day more and more feature phones, which have already reached almost every corner of India, are being replaced by more advanced and GPS enabled phones, enables us to think of a design which would be easily accessible through them. Thus an android application seemed to be an obvious choice for cost-effectiveness and user friendliness with the advent of the AAKASH TABLET and android phones. A computer which would work as a centralised server becomes essential for a non-profit as the amount of data they have to deal with is huge and it only makes sense to have at least one PC (which most of them do have.) Another thing which is important here is that most of the NGOs do not work independently, there is a man-made network that they are a part of which consists of other NGOs (with similar or related interests); thus in order to keep up with each other's activities and help activate exchange and access to each other's information they should have a database with a friendly GUI front end, which would update itself at real time.

**1.3. National Status**

A lot of productive work is being done by the NGOs but not archived in a manner that can be later used or referred to. Furthermore even the NGOs themselves face difficulty in self-evaluating themselves, the volunteers and the community they work with. Social Maps chalked out are inaccurate and and don't serve any major purpose beyond letting the volunteer get acquainted with his/her area; people statistics, collection of data and mapping it at real time (rather than periodically) for easy view-ability has not been done so far. From what we have discovered is that most of the NGOs, especially those which work for the denotified and notified tribes of the remote parts of the country (which we are going to serve as our prospective client), record their work and information on paper and pass it on from person to person; the social maps are drawn roughly on paper with an estimation and volunteers feed in the information centrally every month after going personally to the centre. This primitive way of working has been accepted as a norm and since none of the NGOs expect or ask for better (because of a lot of constraints like money or absence of required skills) hardly any work has been done on it by the government or any other software developers. Most of the existent software helps them either manage their finances and donations or the data that a server receives at the end of each month, there is no real time updation and mapping onto some real maps; and most importantly all these software are very generic and hence each NGO has to interpret inbuilt generic fields as one of their own. There is thus a need of a more personalised and specified structure which they themselves could create onto a platform that we will provide.

## 2. <u>Objectives</u>

We aim to develop a web based information management system that takes care of the basic needs of cataloguing their work, evaluating the ngo's and its employee(and community) volunteer's performance and  aid in creating social maps of the population and the area in which the volunteer is working. The IMS will be equipped with several relevant statistical analysis capabilities. The IMS is going to consist of 3 parts (both software and hardware wise):

**1. Client application** (which will be with the volunteers) for easy data collection and updation.

**2. Server application** (at main centre of the NGO) for database management and analysis of the collected data.

**3. Generic public website** (which will be test-implemented for the client NGO) to let public view their activities and their progress via social maps; the generic format of the website gives options to customise the settings and information displayed on the website according to an organisation's specific needs. The following graphic will help to understand the target groups whose information will be taken care of.



## 3. Product Benefits

- Properly and automatically maintained database of various activities and statistics of a project under the NGO.
- Due to proper archiving, any new volunteer can begin from where the work on a project was left by a previous volunteer by a mere login and pointing at the location he/she wishes to work in, on the social map. There is no wastage of time and resources for doing the things that have been already done by someone else before because there is proper follow up mechanism, which is not the case with pen and paper filled info. (which may get lost).

- The social map will provide a detailed information through visual pop up techniques on the social map, which can then be abstracted and put up on the public website with limited information as per the client's wish.
- Real-time updation of data on the server part of the software through easy to use android application by the volunteer.
- Faster and accurate analytics and statistics as well as ease of access of the available data due to usage of a database management system, querying mechanisms and visual representation of data.
- Accurate mapping of project locations with the help of integrated maps used for the formation of social maps.
- Database management system employable for incoming and utilization of funds and information regarding donors.
- Attraction of more donors and volunteers for the cause by proper data visibility (awareness) and public access as well as networking through an easy to manage, hassle free website which would fetch data from the server database and ask the site manager to merely choose what is to be shown and to what extent.
- Due to real-time integrated social mapping, any local information of the interior parts can be customized to be fed into a larger used maps (either google, bing or any other) and help a wider range of population(along with the new volunteers) know the remote locations and amenities available there. (for eg: a medical centre, or a local school plotted by a symbol and a name on the NGO social map which can go global.)

## 4. Methodology

The project will be implemented both on the client side (NGO volunteer) as well as on the server side (NGO office). The NGO volunteer (client side) will be provided with an application running on an android platform which will enable him/her to provide information of the area in real time to the NGO. The application will also provide the exact location of the volunteer to the NGO which would help in social mapping.

At the server side, in order to create an efficient information management system for a NGO, a robust CMS will be required. As described in the CMS blueprint, it will be divided into two parts: - a public area and a staff area which will be managed by an administrator at the NGO. The Staff area will allow the administrator to manage content, navigation of the website as well as cataloguing the work. The administrator will be able to select the content which he/she wants to make available on the public area which can be viewed by anyone.

**CMS Blueprint**
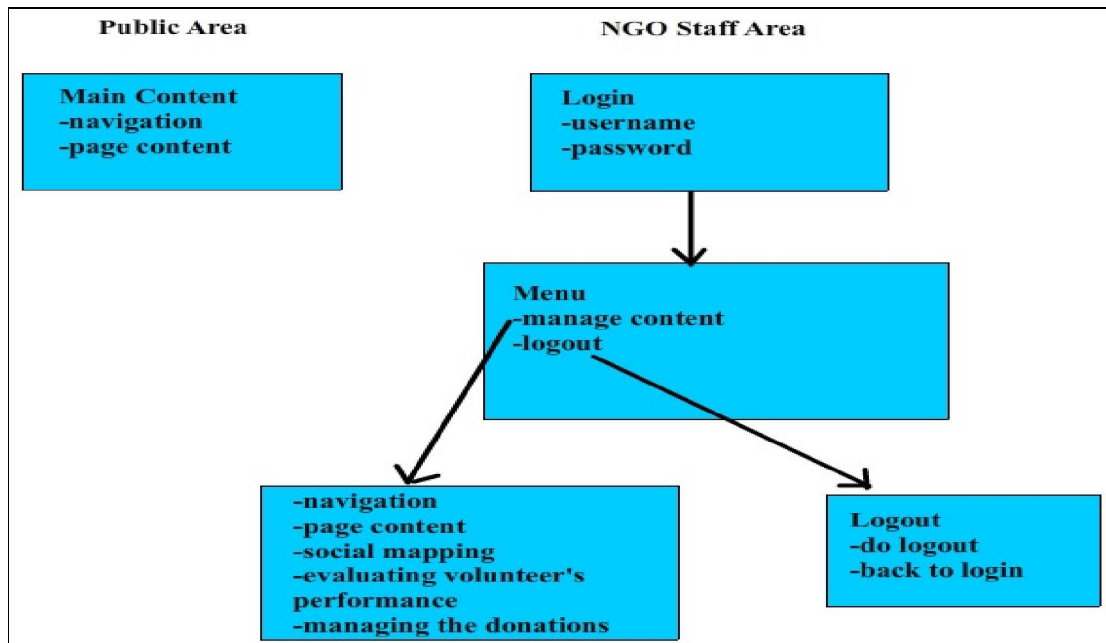


## 5. Project Scope

### 5.1. Present Scope
- Develop an android based application to facilitate a NGO volunteer to transmit local area information to the NGO office in real time, without sending personally any location details (auto detect by GPS).
- Develop an information management system for a NGO to help it in cataloguing its work in an efficient manner.
- Develop a public website for a NGO which can be customized and managed by an administrator of the NGO.

### 5.2. Future Scope

- The NGO information suite will cater to a NGO working for a particular cause (tribal NGO's for now).  With time and the client's feedback we intend to make a general product which can provide an information management system for NGOs working for different causes. We can then integrate and connect various NGO's of the nation for better results and more beneficial social activity.

- Integrating the android application and website to have various regional languages to facilitate rural volunteers and NGO's.
- Connect the current website with payment facilities like PayPal, etc. to directly make payments and applications for ration cards online.
- Connecting the current website to PayPal for money transfer to NGO by donors across the nation.

## 6. Assumptions

- The NGO volunteer will be provided with an android phone.
- Volunteer knows Basic English and proficient enough to use a mobile phone.
- The NGO office has an administrator who can customize the website as per the needs of the NGO.
- The area where the NGO's office is located has internet connectivity.
- The website will be in English.
- In some later point in time, more NGOs will deploy this system to make the information reception fast and data maintenance easy and it will be a more useful product.

## 7. Dependencies and Expectations

### 7.1. Dependencies

The NGO (our client) is dependent on our NGO Management Suite for the following reasons and needs:

1) To get data fast and in real time for remote locations where volunteers collect information, so that long written reports by volunteers can be done away with.
2) To easily manage data and have proper storage without maintaining large manual registers.
3) To be able to do analysis from received data automatically and visualize it easily on social maps.
4) To have a user friendly website to give access to information of NGO to people around on the web.
5) To have a customizable website that caters to NGO needs (like type of information needed by specifically tribal NGO's).

**7.2. Expectations**

There are certain information we as developers will need for developing a website and a volunteer application. The following are the same:

1) They provide all information about the kind of data they collect from tribal people.
2) The kind of analysis and processing they do on the collected data.
3) The kind of social mapping they do for various regions, which can help them easily visualize the currently hand written data.
4) The features they need on website should be clearly told during interviews and volunteer interaction.
5) The amount of data they have to handle should be told so as to maintain the server hardware.

## 8. Requirements

**8.1. Hardware**

The project would require a basic android device(due to inbuilt GPS) and a personal computer with Windows operating system. The android device would be required for NGO volunteers and personal computer for the NGO to run a server.

**8.2. Software**

The project would require an Eclipse IDE to build the Android app later tested on the Android Emulator plugin within Eclipse, PHP for server side programming, MySQL to maintain and manage database at server side, WAMP server to provide a local server for running and testing PHP scripts at sever side and Google Map API or Jquery plugins like craftman to implement the social mapping feature on the public website of the NGO.

## 9. Timeline and Planning

Planning is a very crucial component of any project work. Here is the need for it and how we plan to proceed on work throughout the coming months for the same.

The project requires a huge effort during the requirement analysis phase. It is necessary to understand the present system prevailing. We have to understand how the present system works and why is there a need for a system that our team is proposing. Different requirements of various NGOs have to be keenly studied and understood after which a proper project based on the requirements can be made. The designing and implementation phase requires an equal or rather greater effort.

We as a team propose to devote: Each member gives 3 hours/week.

Hence our team will give around 27hours/ week to complete this project.

| S.no | Tasks | Proposed Deadline |
|------|-------|-------------------|
| 1. | Finalizing a project idea | 12 Jan 2012 |
| 2. | Need of the project, feasibility analysis, Proposal | 15 Jan 2012 |
| 3. | Planning for the work to be done in course of project - Project Plan | 18 Jan 2012 |
| 4. | Collecting user requirements in detail - Requirement documents | 27 Jan 2012 |
| 5. | Revising feasibility as per requirements | 29 Jan 2012 |
| 6. | SRS, Test Plan (for future) | 12 Feb 2012 |
| 7. | User Manual v1 | 15 Feb 2012 |
| 8. | System and Database design | 20 Feb 2012 |
| 9. | Coding of individual modules | 12 March 2012 |
| 10. | Integrating the modules | 26 March 2012 |
| 11. | Testing and final changes (User manual v2) | 4 April 2012 |
| 12. | Alpha and Beta Testing | 8 April 2012 |

**Table 1: - Tasks and their Proposed Deadlines**

## 10. Deliverables

- An android application for data entry and location tracking for all volunteers of the NGO
- A public website of the NGO (with features of customizing as per the need and showing information collected by volunteers in form of automated social maps)
- Separate login facility and rights for administrator and volunteers.
- A server with backend database to store information sent by volunteers from the mobile phone to other mobile on NGO centre.

## 11. Budgeting

The project requires: -
- The volunteers to be equipped with an android based mobile or low price Aakash tablets for sending information to the NGO.
- A basic computer in the NGO Centre will also be needed.
- An initial investment to host the public website.

Some amount for project testing in real field.

| Product | Approximate budget |
|---|---|
| Aakash Tablet (Ubislate) | Rs. 3000 |
| Desktop/Laptop (Windows OS, Net facility-1 year) | Rs. 30,000 |
| Hosting Website | Rs. 200 /month |
| Testing and Verification | Rs. 3000 |
| TOTAL PROJECT COST | Rs. 3000 x No.of volunteers + Rs. 200 x No.of months the project is deployed + Rs. 33,000 |

**Table 2: - Expected Budget**

## 12. <u>Potential Challenges</u>

### 12.1. Technical Challenges:

- The kind of input data volunteers take (data formats- numbers, text) and how they analyse it.
- To be able to integrate the mobile technology with the computer server.
- Trying to integrate Google translate (for language change) with Android API.

### 12.2. Social Challenges:

- Understanding the needs of the people.
- As per NGO interaction, we found that most of the volunteers have not even cleared 10th grade. So the android based application must be available in a language understood by the volunteer as well which may be Hindi, Gujarati or any other local language.

## 13. <u>Coordinating Team</u>

| S.no | Team Member | Team Role |
|------|-------------|-----------|
| 1. | Prof. Asim Banerjee | Project Mentor |
| 2. | Aakash Solanki | Team Leader |
| 3. | Anshul Agrawal | Software development |
| 4. | Megha Tak | Software development/ Documentation |
| 5. | Lalit Agarwal | Software development |
| 6. | Palashi Vaghela | Software development/ Documentation |
| 7. | Surbhi Agrawal | Software development/ Documentation |
| 8. | Jesal Janani | Software development/ Documentation |
| 9. | Parth Manvar | Software development |
| 10. | Jatan Patel | Software development |

**Table 3: - Coordinating Team and Individual Roles**

**14. <u>Intended Readers</u>**

- Project Reviewer (Prof.Asim Banerjee)
- Project Designer
- Project Developer
- Project Tester
- Client