

TerraTech (Hackathon) for GIS Based Data Visualization Platform to Promote Digital Finance in Rural India



About GIS and Objectives of GIS

“Data-based decision tool for new geography identification and agent penetration through quantifiable parameters.”

A Geographic Information System (GIS) is a computer-based tool for mapping and analyzing feature events on Earth. GIS manages location-based information and provides tools for display and analysis of various statistics. GIS allows to link databases and maps to create dynamic displays. It analyzes spatial location and organizes layers of information into visualizations using maps and 3D scenes. With this unique capability, GIS reveals deeper insights into data – such as patterns, relationships and situations – which helps in decision making..

Need for a GIS based Platform for BC Industry

**Mapping the
existing data from
BC Register**



GIS for BCNMS

This will help in mapping the existing BC agents and also help in identifying the potential agents in the underserved areas.

**Identifying the
potential BC
agents in the
Region**

The Concept of the Data Visualization Platform

The GIS based tool will be used by the

- **BCNM leadership**
- **Policymakers**
- **Researchers**
- **Banks and fintech**
- **Other corporates for rural expansion**

Features of the platform

- **Web based platform but compatible with mobile**
- **GIS compatible**
- **Easy to integrate through API, XML or CSV**
- **Customizable**
- **Zoom-in till the basic unit of Pin code**
- **Report download in excel and PDF**
- **Analytics features**

“GIS Data-based decision tool for strategic decision making through quantifiable parameters for expansion to rural areas for BC, fintech and other corporates.”

The Approach and Activities of the GIS Platform

- BCNM leadership
- Policymakers
- Researchers
- Banks and fintech
- Other corporates

Users



Web based dashboard



Mobile responsive dashboard

Delivery and Interface

- Data sourcing
- Integration of the data sources using the API, XML and CSV files
- Data Visualization
- GIS based filters
- Report generation
- User Management
- Analytics

Activities

- Jointly launching the dashboard with the BCFI
- Knowledge products on the data platform
- Reference and usage among the researchers
- Handing over the admin access to BCFI or regulator. Alternate options are IIM or ISB

Adoption

The Data to be Integrated in the Dashboard with Pincode as Unit Level

The following data will be integrated in the dashboard

Data type	Data points	Data sources and integration	Comments
BC industry	<ul style="list-style-type: none">• Name• Gender• Pin code• Bank• BCNM	https://www.bcregistry.org.in/iba/home/HomeAction.do?doBCPortal=yes the data will be integrated through API	Project team to work with BCFI and try for API integration. The data is available pin code wise.
Demographics	<ul style="list-style-type: none">• Area• Population• Population density• Average income• Literacy• Male and female ratio• HDI indicators	https://censusindia.gov.in/census.website/data/ API integration. The data is available village wise.	The data is available on the census site. However, the data will be updated every decade. Do we want to explore the population estimates from sources?

The Data to be Integrated in the Dashboard

The following data will be integrated in the dashboard

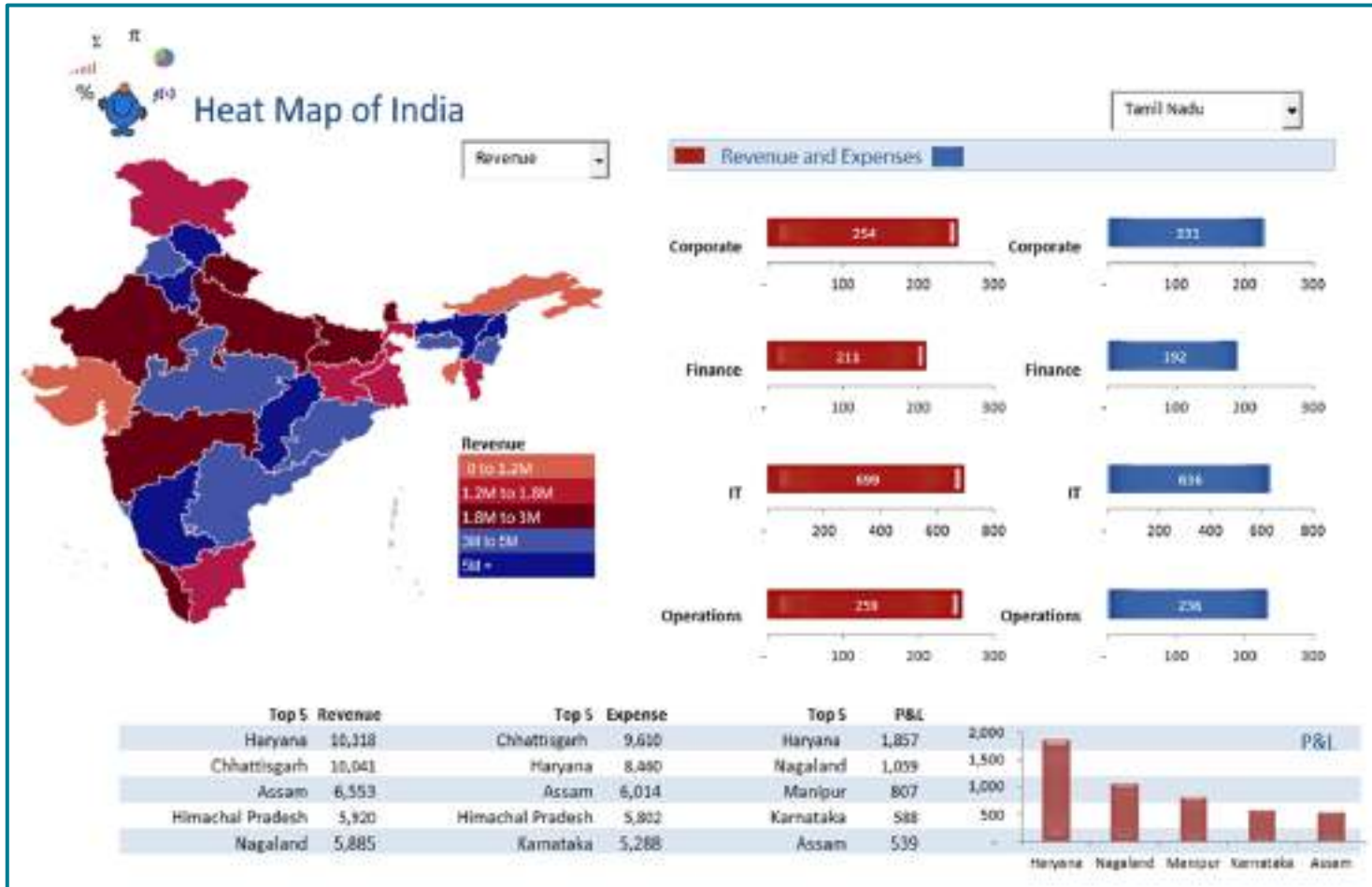
Data type	Data points	Data sources and integration	Comments
Financial landscape	<ul style="list-style-type: none"> • Number of banks • Number of ATMs • Total deposits • Volume of government benefit transfer • Outstanding loan • CD ratio • Default rates • Number of SHG and MFIs • Insurance penetration • AEPS data • Tele density 	<p>RBI and SLBC</p> <p>MFIN IRDAI NPCI TRAI</p>	The data has to be compiled in the Excel format to be integrated using XML or CSV
Agriculture	<ul style="list-style-type: none"> • Number of farmers • Average land size • Main crops • Weather forecast 	<p>The data is available state district wise and integrated using the API from data.gov.in</p> <p>Weather company or Skymet</p>	<p>The data will have to be updated every year</p> <p>Additional cost of paid API</p>

The Data to be Integrated in the Dashboard

The following data will be integrated in the dashboard

Data type	Data points	Data sources and integration	Comments
Others	<ul style="list-style-type: none">• Market Potential Values of Towns• Market Intensity Index of Towns• Socio-Economic classification %age (Urban)• Annual Market Size (Food/ FMCG/ Durable etc.)• Per Capita Annual Income (categorized as HH with <75K, 75- 1.5L, 1.5L- 3L, >3L)	The Sources of data will be model based by calculating the parameters collected before	

Data Visualization & Imaging



Data Imaging

- The data will be in the map with zoom in till the pin code
- Colour Coding
- The data will be displayed with the indicators selected on the map
- Option to download the report in excel or PDF

Data Visualization

cohort	first_period	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Apr 28, 2014	79	22%	19%	13%	19%	16%	23%	19%	20%	11%	14%	16%	10%	10%	10%	9%	8%	6%
May 5, 2014	168	23%	21%	21%	24%	24%	29%	24%	18%	22%	14%	14%	12%	13%	10%	10%	7%	
May 12, 2014	188	19%	19%	13%	21%	19%	20%	24%	21%	16%	14%	13%	10%	9%	9%	7%		
May 19, 2014	191	23%	21%	22%	22%	26%	27%	29%	26%	21%	21%	17%	15%	10%	8%			
May 26, 2014	191	21%	16%	20%	24%	27%	23%	20%	19%	15%	15%	12%	12%	6%				
Jun 2, 2014	184	24%	24%	24%	24%	21%	21%	18%	20%	16%	15%	18%	7%					
Jun 9, 2014	182	19%	16%	25%	19%	23%	28%	22%	18%	13%	10%	5%						
Jun 16, 2014	209	24%	20%	24%	22%	23%	17%	18%	15%	13%	7%							
Jun 23, 2014	217	22%	19%	19%	20%	20%	17%	19%	18%	12%								
Jun 30, 2014	221	18%	18%	24%	24%	23%	19%	20%	8%									
Jul 7, 2014	203	24%	23%	18%	16%	24%	22%	16%										
Jul 14, 2014	188	24%	18%	20%	18%	21%	10%											

The TerraTech Challenge Map & Plan

ZONAL ROUNDS (4)

- Four zonal hackathon will be conducted at zonal level
- Two day event
- Online call for the concept of the solution
- Every zone for the onsite with the teams with 3 zonal winners
- East- IIT Kharagpur
- West -SP Jain
- North – To be decided
- South -To be decided
- Dates (Tentative)

January – 11-12, 22-23

February – 8-9, 15-16

02

01

HACKATHON PLANNING

- The collaboration between the Protean and Grameen
- Concept finalization and process
- Joint plan for the Hackathon
- Outreach and marketing
- Jury selection
- Sandbox and Tech infrastructure

03

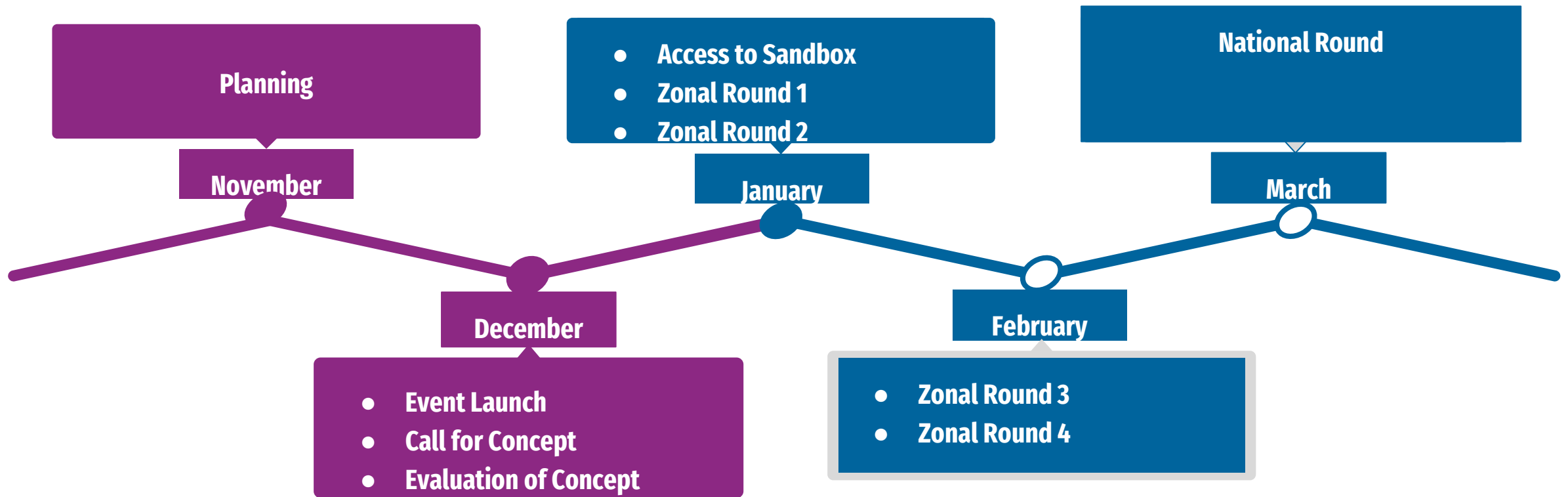
NATIONAL ROUND

- The final round with all 12 zonal winners
- Provision of 3 to 4 wild card entries
- Will be held in Mumbai or Kolkata on March 21-22
- The jury will discuss the winner and the contract will be awarded

TerraTech Planning

Activity	About the Activity	Responsibility
Finalization of the Problem statement	The partners will come together to add more details to the “GIS based data visualization platform for the rural India”	Grameen Foundation
IT Infrastructure	<p>The sandbox and the API for the participants will be provided by the Protean team and will be made available to the top 20 team zone wise</p> <p>Wifi during the zonal round</p>	<p>The Protean Team</p> <p>Regional anchor institution</p>
Marketing & Outreach	Protean and the Grameen Foundation will design marketing and outreach material for the event. However, there will be outreach activities with the anchor institution for the zonal event in respective zones	<p>Protean and Grameen for the event level</p> <p>Grameen and the anchor institution for the zonal</p>
Administrative	<p>Stay during the regional round</p> <p>Lunch and refreshments during the event</p>	<p>By participating team</p> <p>Grameen team</p>

The Timeline and Flow for the TerraTech Challenge



The Eligibility and Guidelines for TerraTech

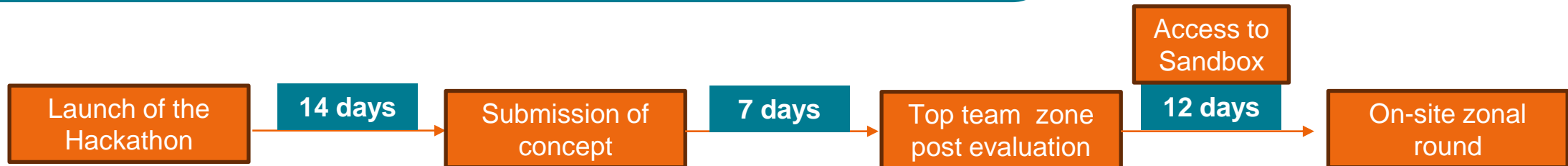
The eligibility for participants for the Hackathon

- **The participants should a legal entity or undertaking that the team will not only develop the platform but will also manage it for next two years**
- **The team can have any number of participants but only 3 members from every team will be allowed onsite during zonal rounds (other team members can join virtually)**
- **The travel and the boarding for the team to be borne by the participants**
- **The proposed solution must be open source**
- **The link to the hackathon will be opened and every team should submit a three pager concept note containing following items**
 - **Understanding about the platform and the solution**
 - **The technical architecture (API integration will be preferred mode)**
 - **Implementation plan**
 - **Maintenance plan**
 - **Budget**
- **After evaluation of the concept note teams will be selected for every zone and will be given access to IT sandbox for 14 days. The team will work on one module at the zonal level**

Event flow for zonal level and Anchor institution

The zonal round will be of two days at the anchor institution

- The number of team selected for the Zonal on site event – 30 maximum team in zonal round (3 member in each team)
- The number of Grameen team members – 5
- The number of Protean team members – 5
- The number of Judges for zone wise round- 5
- Every zonal round will have three winners
- Total participants for the on site event is estimated at 105



Responsibilities of the anchor institution

- Zonal wise outreach among students, startups and companies
- Venue or hall for the event (preferably with breakout rooms)
- Wi-fi and technology infrastructure

Steps to Register



Step 1

Visit the site and select to sign up for the registration



Step 2

Click on Sign up and fill in the details. Verify the email link



Step 3

Verify the email link

Steps to Register

The image displays three sequential screenshots of a web registration form. The first screenshot shows the 'Personal Information' section with fields for Name, Date of Birth, Gender, Phone Number, Address, and Emergency Contact. The second screenshot shows the 'Academic Information' section with fields for Name of Degree, University Name, Year, Marks/Percentage, and Subject. The third screenshot shows the 'Experience Details' section with a 'Document Upload' area and a 'Document Type' dropdown menu.

Step 4

After Email verification, some basic details needs to be filled as above

Step 5

Save and continue, it takes you to the academic details page

Step 6

Below the academic details page, there are two options for document type to upload: Academic & Experience
Select the Experience document tab and upload the detailed Concept note

Steps to Register

The screenshot shows a registration form with two main sections: 'Course Details' and 'Photo and Signature'. Under 'Course Details', there are fields for 'Course Title' (filled with 'TernaTech Habilitation'), 'Course Duration' (filled with 'January 11, 2024 to January 12, 2024'), and 'Course Fee' (filled with '₹ 100000 Student (MRSS)'). Under 'Photo and Signature', there are fields for 'Photo' and 'Signature', each with a 'Choose File' button.

Step 9

Please select next and fill in the desired information required as mentioned below, after that please confirm and you'll be registered for the programme

The screenshot shows the 'Your Account' page of the system. The 'Enrolled Programs' tab is selected, displaying a list of programs. The first program listed is 'TernaTech Habilitation' with a duration of 'January 11, 2024 to January 12, 2024' and a fee of '₹ 100000 Student (MRSS)'. The page also shows a sidebar with navigation options like 'Home', 'My Profile', 'Change Password', and 'Logout'.

Step 10

To check for the courses enrolled for your courses, select the tab “Your Account” in the top right corner, it gives you further options, click on the option of “Enrolled Programs”, which gives you the details of the programs enrolled by you, the two screenshots are as below.

The screenshot shows the 'Your All Programs' page. It displays a list of enrolled programs. The first program is 'TernaTech Habilitation' with a duration of 'January 11, 2024 to January 12, 2024' and a fee of '₹ 100000 Student (MRSS)'. The page also shows a sidebar with navigation options like 'Home', 'My Profile', 'Change Password', and 'Logout'.

Step 11

On Clicking of Enrolled Programs, it shows the courses you are enrolled in as below

Thank you!

