Social Media for Agriculture

Guided by : Prof. Pooviah, Dr.Ajanta Sen and Dr. Klarissa

Presented by Vidhya

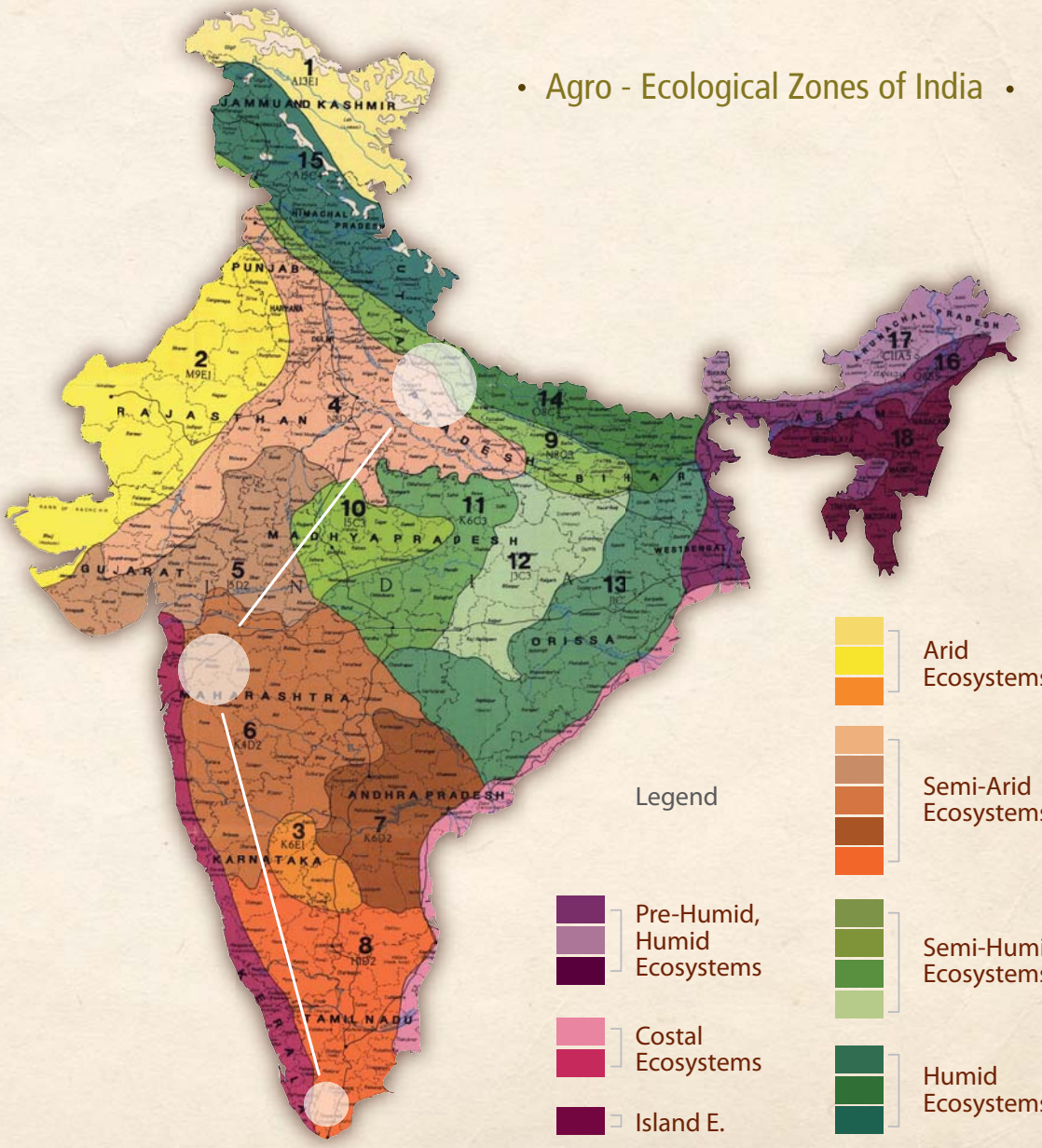
Research : India

Extreme Summary (Separate ppt)

(Combined Work by Deepak and Me)

- Pointers
- Demographics
- Geographical conditions
- Crops (harvest)
- Agricultural Technology
- Communication Technology
- Income
- Industrial Influence
- Threats
- Process Cycles
- Cultural Practices
- Interaction Modes, platforms and spaces

• Agro - Ecological Zones of India •



Research : India

Extreme Summary (Separate ppt)

User Study – Composite Picture

Occupation: Farmer, Secondary support (Women, Children) ,government employee small business, shop- keeper, Political Leader, labor ,semi-employed ,unemployed.

Education

- Non literate
  - Semiliterate
  - Illiterate
- Functionally Literate
  - Rapid Counting
  - Memory
  - Vocational Knowledge

Methods:

- Unstructured Interview
- Contextual Inquiry
- Questionnaires (wherever applicable)

States : Uttar Pradesh (North India)

- Maharashtra (West India)
- Tamil Nadu (South India)

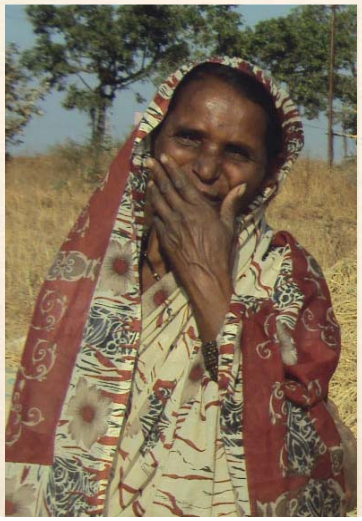
Project Brief

The project is to design a low-cost , location-based **Diagnostic tool** for symptoms of malfunction (pests, diseases and deficiencies) that is relevant to the farming communities.

Cost-effective and scalable design.

Accurate and sustainable application designs for a predictive and preventive system.

Easily accessible and timely solution



Problem Areas

Vendor Monopoly in a particular area.

Vendors and Farmers not up to date on information.

Slow access to Information.

Circulation of Banned pesticides.

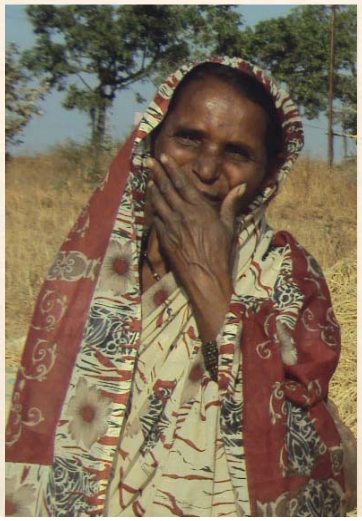
Vendors are Trusted but often ignorant or misleading.

Shops located far from villages.

Incorrect Diagnosis.

Inflated price.

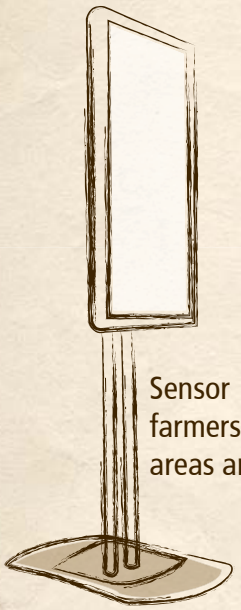
Lack on co-operation due to heterogeneity (caste differences).



Initial Ideation : Singapore

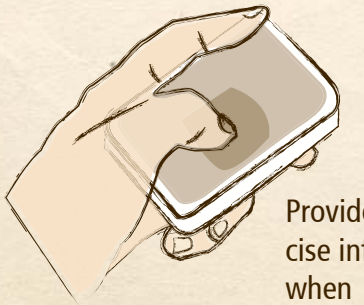
Summary (Separate ppt)

1 Community Hubs



Sensor Based Screen that helps farmers know about surrounding areas and crop information

2 Mobile for Crisis



Provides customized and precise information to farmers only when they spot a problem in their crop.

3 Crop Timer

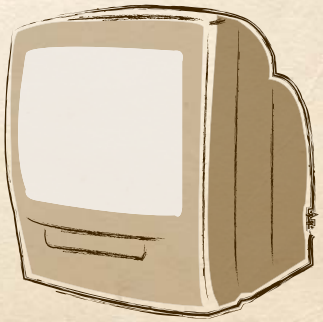
Keep track of the growth of the crop and provide intermittent but regular advice on crop health

4 Part-by-part diagnosis

Farmer can choose the part of the crop that he feels is infected and get information regarding the same.

5 Watch, Play and Practice

Interactive game with which kids in the family can enjoy along with getting to know about agriculture.



Sarv-Samridhi

Empowering one another...

Farmer

Maintained by chai-stall or
or Post office in the village

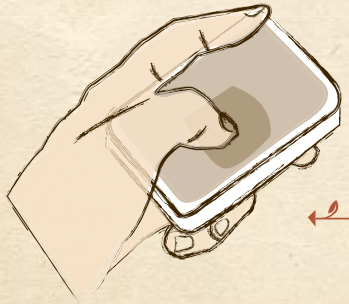
Best practice video on demand
Declaration of Best Vendor
Crop stats in surrounding area

Future:
Could be multi- purpose
rail-way ticket booking
screen.

- Details about Problem spotted
- Solutions available with him
  (Contributor to Data Base)

Agricultural
Experts

Data Base

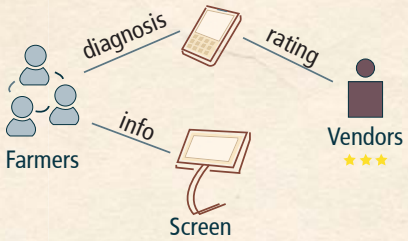
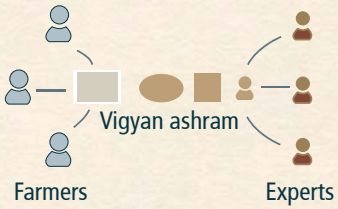
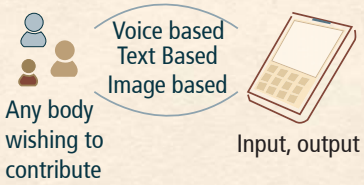
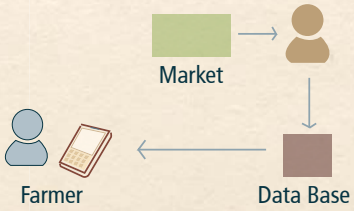


- Diagnosis and finding solutions
- Rating solutions by data base
  (Validator of solutions)

Visits the vendor with Affected crop in hand

Vendor

Solutions - An Overview

Name	Media Used by Farmer	How it Works	Source of Solution	USP	Short Comings
Sarv-Samridhi (Proposal)	App - Mid range phone Community Screen		Vendors solution Agricultural Experts	Social Networking among Farmers Self correcting DataBase	Mid range phone Yet to be tested
aAqua	Web-Based ,Portal		Agricultural experts Fellow Farmers.	Open forum, more possibilities.	Travel till Vigyan Aashram to get info.
Sagu	Human Coordinator		Agricultural experts	End solution provided face to face.	Tim lag to receive information.
mKRISHI	Mobile		Agricultural Experts Fellow Farmers	Voice input and Output.	Validation and listing of solutions.
Idea Reuters Market Light	Mobile - SMS based		Network of Data Collectors (agents)	Quick, Real time, accurate data + News.	Only market data. No model for diagnosis.

Personas : Farmer

Middle of the pyramid Farmer

Ramlal Patil

RaghuNath is a **55 year old farmer.**

Quit school post 11th standard to take care of farm.

Owns 12 acres of farm land and is the **key decision maker** on what to grow.

Enormous tacit knowledge but lacks knowledge about new developments.

Uses phone to make-receive calls and reads sms but does not send any.

Functionally literate and can read words in Mother tongue.

Aspires for his children to go to college and city but also worried about future of his farm and values.

Prasad Vitthal

Prasad Vitthal is a **29 year old farmer.**

Studied B.Sc in nearby college.

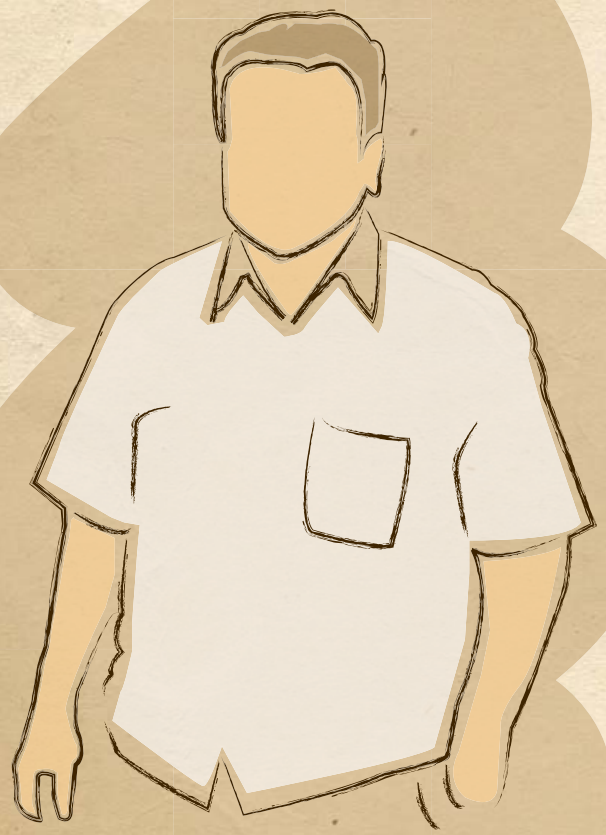
Works on the farm with father, uncle or an elder.

Open to knowing about new developments.

Fairly tech savvy, aspires to up grade phone with internet and touch capabilities

Literate and comfortable with mother tongue.

Personas : Vendor



Vendor - Pesticide, Fertilizer, Seeds

BabuRao Jadhav

Village Vendor, owns a retail store.

Education B.Sc and has been selling seeds,fertilizer,pesticides for 15 years

Strong network with agents from companies and govt. officials to find out about effective solutions

Is the **sole advisor** for many farmers.

Often visits farms and meets farmers and stays updated about crop conditions.

On the look out for improving business and often sells goods at the behest of the company to increase profits.

Role in Concept

Provide the solutions

Accountability of solutions provided. (farmer can visit him)

Existing network with knowledge sources.

Personas : Social Media Mapping

Vendor - Pesticide, Fertilizer, Seeds

Social Media

Middle of the pyramid Farmer

Spaces : Mandi (Market Place), shops in city , vendor visits farm

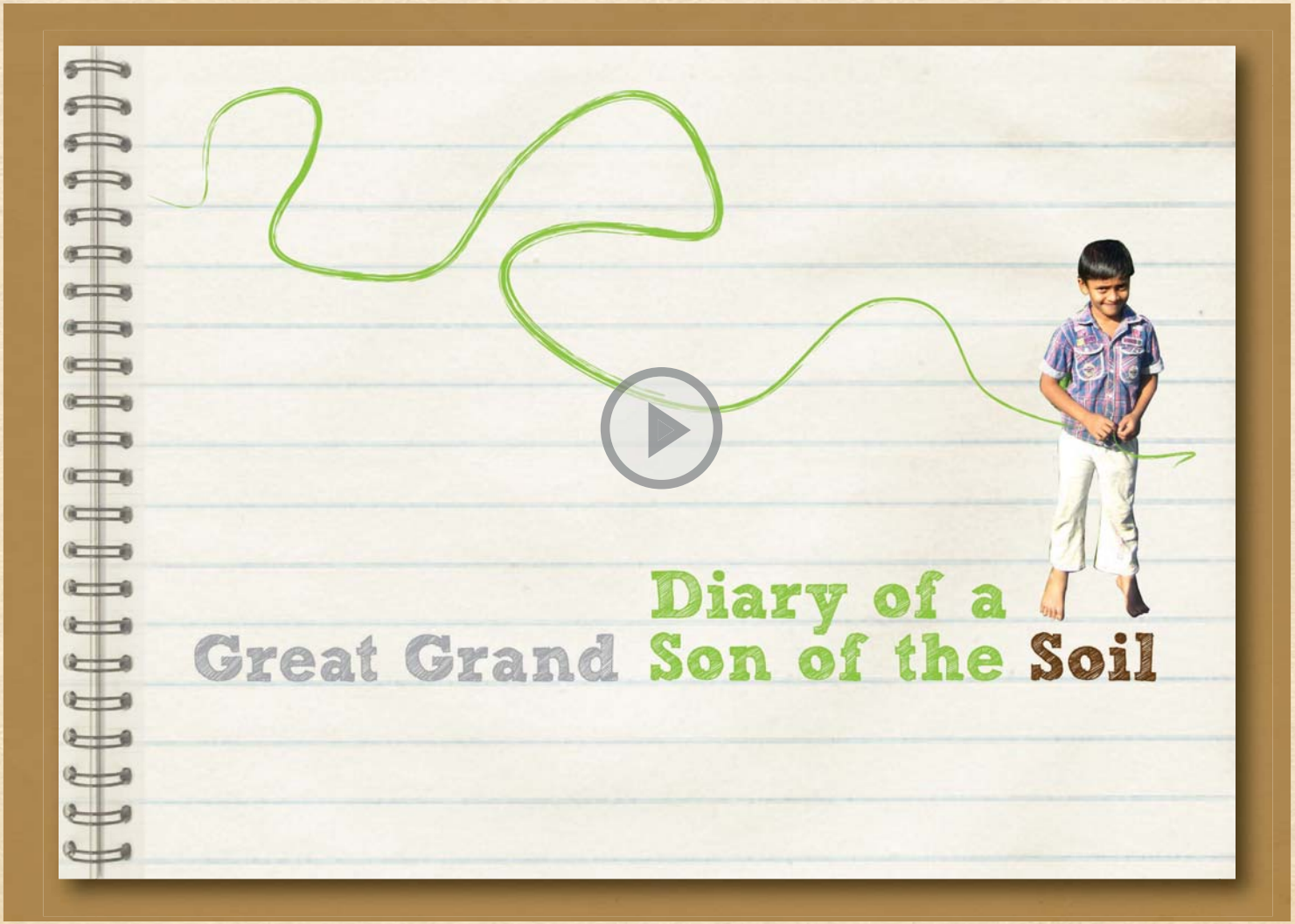
Media : Face to Face (Maximum)
Mobile phone : Calls, missed calls ,
No SMS.
Record Books : Document dealings.

Interaction : In- Formal , Semi-formal.

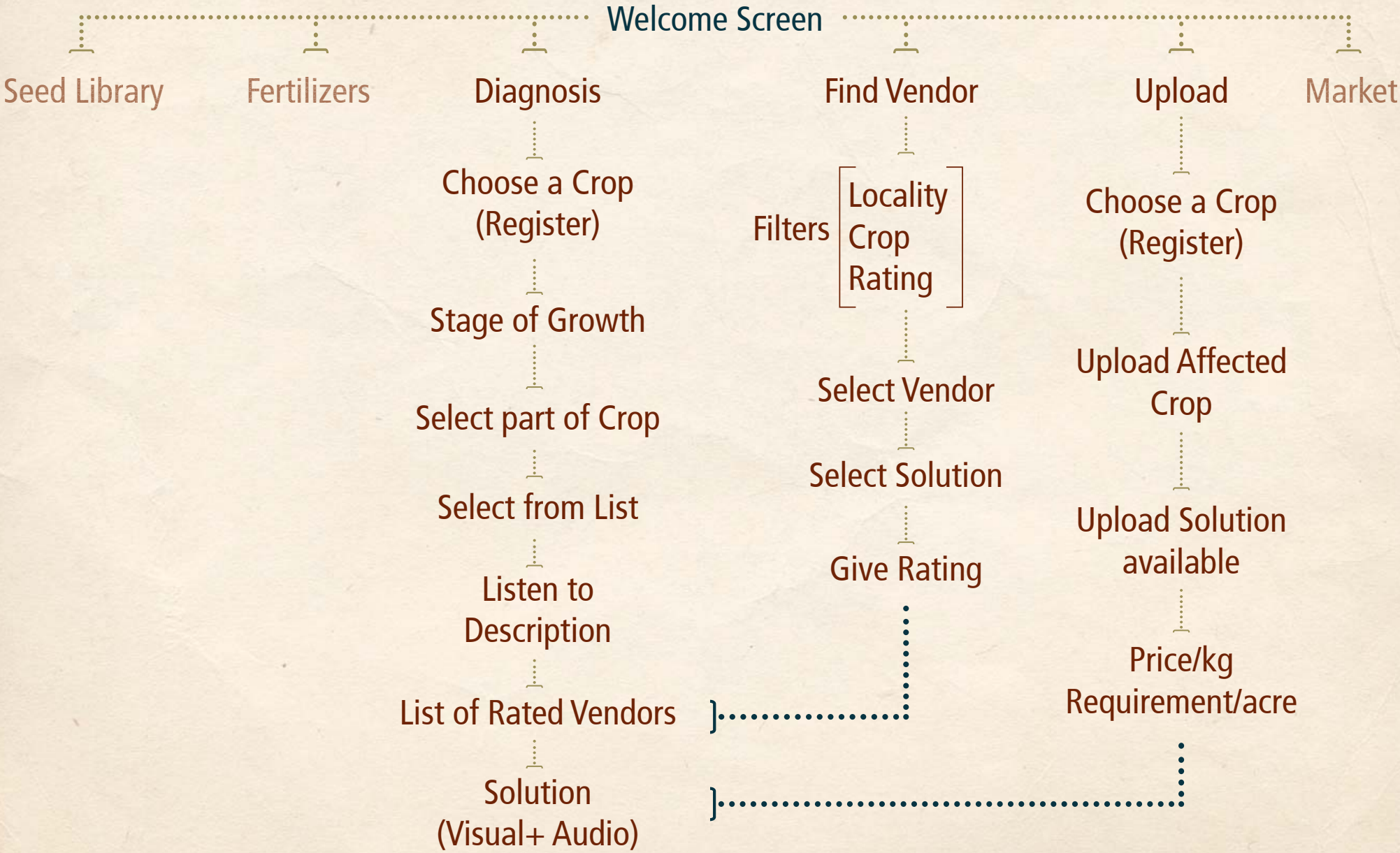
Bottle Necks: Lack of transparency dependence and hierarchy.

Assumptions

- **Data Base**
  System will require a robust database set-up which .
- **Penetration of 2G and Mid-level phones**
  Users will have to possess low -level smart phones or tablets.
- **Validation of Data-Base**
  Agricultural experts present to validate dynamic database.
- **Community Screen care-taker**
  Looked after by person who helps farmers navigate.
- **Knowledge of Farmers**
  Tacit knowledge and through knowledge of their art.


Diary of a
Great Grand Son of the Soil

Information Flow : Personal Device



Information Flow : Community Screen

Welcome Screen

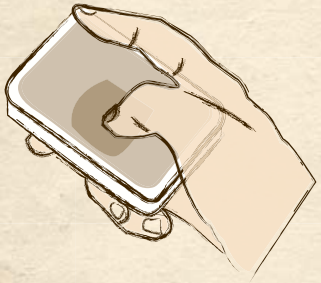
- **Information**
  - Search Information
  - Info on pest attack
  - Info on Market price
- **Diagnosis**
- **Registration**
  - Name
  - Locality
  - Crops
    (Can edited via-phone)
  - Receive registration number
  - Activate on phone
- **Videos**
  - Select Crop
  - Top rated Videos
  - Filter Search
  - Watch Video
  - Rate (Optional)
- **Vendor Listing**
  - Filter
  - Select Vendor
  - List of solutions
- **Weather**

Information Bar

- **Search**
- **Profile**
- **Rating**
- **Voice support**

Device for Prototyping

Prior to creating prototype devices for development of mock up was decided

	For Final Prototyping	Rational
 Phone Interface	Samsung Galaxy Y Or Aakash Tab	- Price range - Portable size - Smart phones - Decent Picture Quality - Flash proto
Community Screen	Aakash Tab	- Availability to access - Testing would be possible

Device for Prototyping

Prior to creating prototype devices for development of mock up was decided

Phone Interface

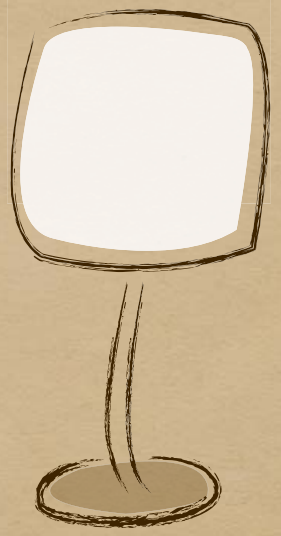
✓ Privacy
Portable
₹3000 approx.

✗ No one owns an Aakash yet.

Aakash Tab

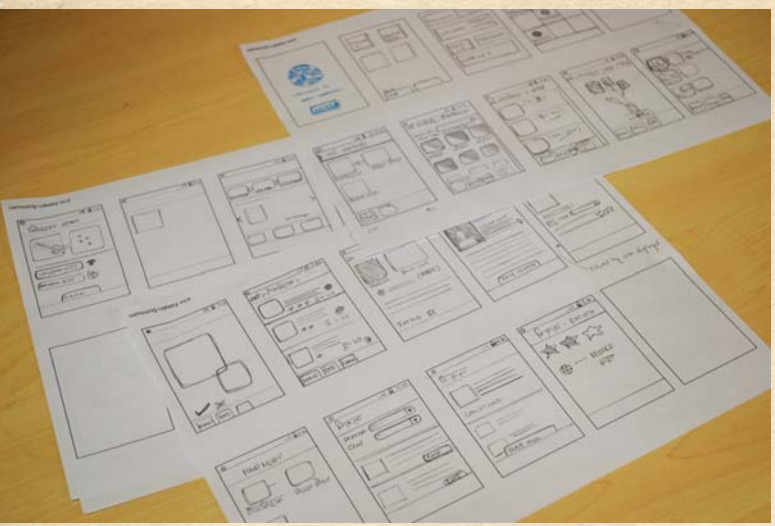
✗ Is a public device
Aakash is personal.

✓ Allows Text input
Visibility



Community Screen

Paper Prototyping

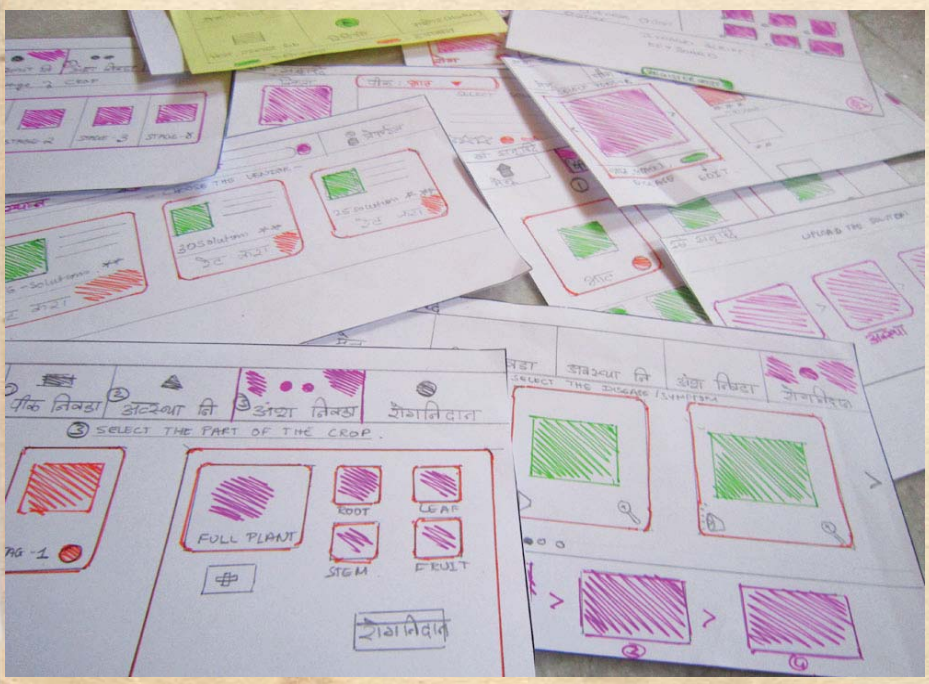


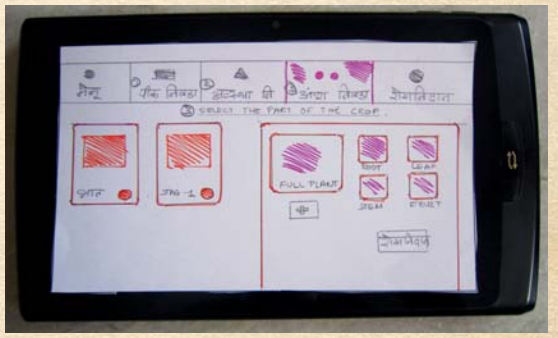
Creating Paper Prototypes to visualize step by step usage

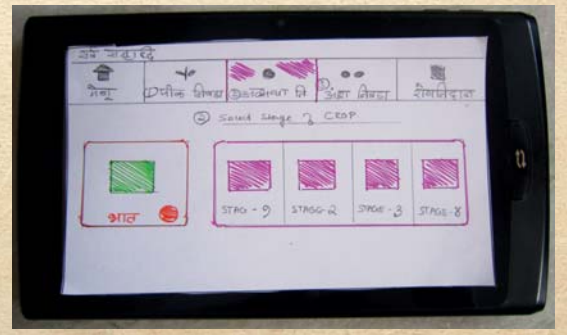
Protocol

- Explain the concept and interface.
- Give a small task : eg How to find a vendor only with his name.
- Ask what the user feels about the system.
- Take Feed Back

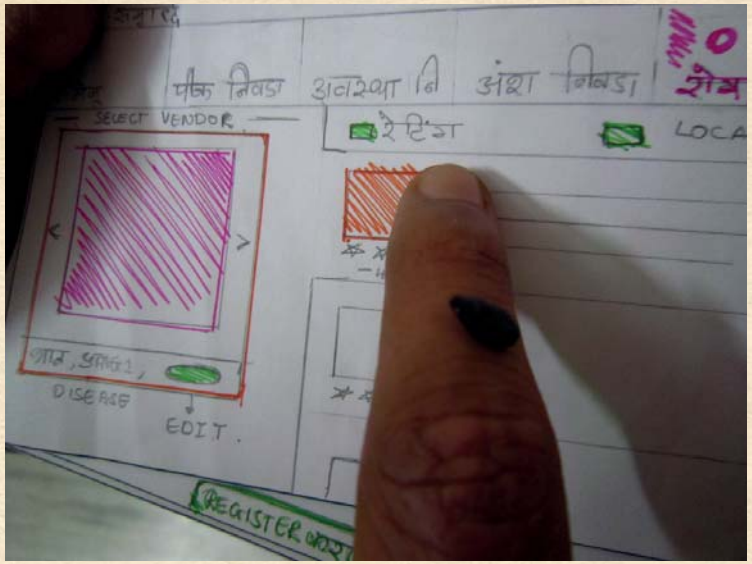
Mobile Phone Interface | Community Screen Interface







Paper Prototyping : Testing

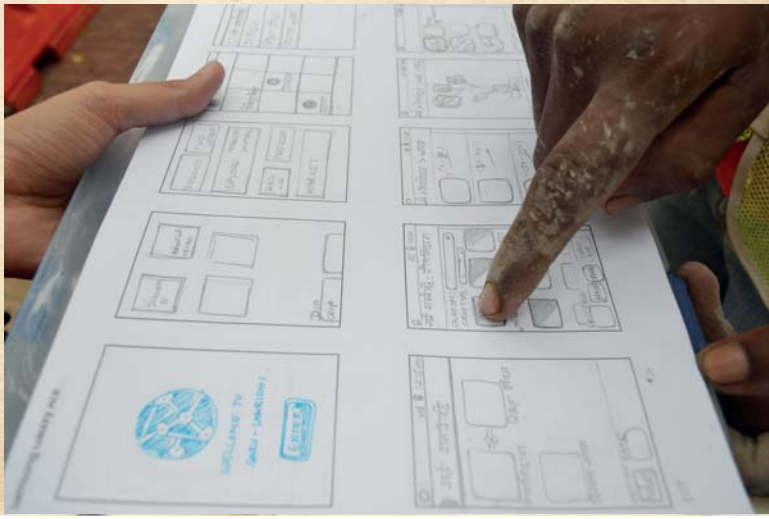


Tested on Farmers in India and Construction Workers in S'pore for Usability

Protocol : Usability
Testing : 6 Users
Result and Rectifications

Major Feed Back

- Easy to go forward but difficult to retrive steps
- Only one task at a time
- English is difficult to read. Will not help even if there is voice support in local language.
- One Cannot upload a problem and wait for 6 days for the solution! Will use what the vendor gives



Wire Frame : Samples

Mobile Phone Interface

Mid-fid Prototypes : Samples

Combining Community and Personal Device

Extra in Community Screen
-Text Input
- Video viewing

Extra in Personal Device
- Privacy
- Make phone calls
- Click pictures

Presenting!

सर्व समृध्दि

Mock Up : Testing

Tested with Farmers, family ,Vendors and govt. official

Sample Size : 5 Men Farmers , 3 Women farmer, 2 youth, 2 Vendors

Mock Up Testing : Protocol

Part 1

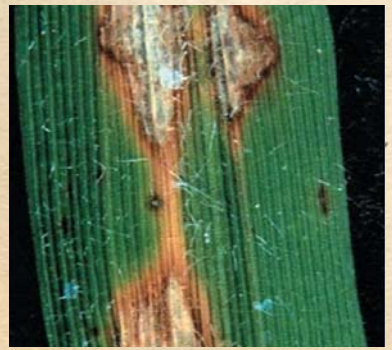
1) Have you seen/recognize this?

2) What stage of the crop growth does it occur?

3) Can you tell me the symptoms?

4) What is one supposed to do if it occurs?

5) Did your decision work?



Pic1 (Rice Blast Fungus)

Pic2 (Blight Disease in Rice)

Mock Up Testing : Protocol

Part 1

1) Have you seen/recognize this?

	✓	✗
Pic1 :	09	03
Pic2 :	12	0

2) What stage of the crop growth does it occur?

Pic1 :	08	04
Pic2 :	11	01

3) Can you tell me the symptoms?

3/12 got all symptoms correct. 9/12 pointed out main differences in symptoms.

4) What is one supposed to do if it occurs?

10/10 (Pic1 and Pic2) answered they would visit a vendor.

5) Did your decision work?

8/10 : Felt it wasn't always reliable but no choice.

2/10 : Full faith in Vendor

- Farmer Man
- Farmer Woman
- Youth
- Vendor

Mock Up Testing : Protocol

Part 2

1) Give a demo of the product and explain it usage

2) Task Giving : eg Can you choose rice crop that is 33 days old for diagnosis?
Can you tell me how you will search for a vendor drom the nearby Zila?
Can you then give him a rating?

3) What they would use most and least and why.

4) Feed Back

Mock Up : Feed Back

1) It will be helpful to contact other people with similar problems. We already do that but this is more connected.
2) Uploading feature is tedious, but the photos and solution are needed.

3) Govt. solutions will help us demand the right pesticide /fertilizer from the vendor.

4) I will call people and ask for opinion may not vote.

5) If this helps me get the right pesticides I don't mind travelling a distance but not too much.

Thank You!

सर्व समृध्दि

Acknowledgement

Mrs. Mani , Avhijeet da (Singapore)

Gauravi and Priya for Marathi support (IDC)

Farmers ,their family, Vendors and construction workers for their input