

FARMERS : Small & Marginal

How to address their needs ? How Broad
Band Infrastructure will Help ?

By

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Agenda

- **Farmers Needs and Challenges**
- **TCS Experience**
- **Business Model**
- **Field Trial Results**
- **Acceleration of Broad Band usage**
- **Research Issues**



FARMER'S PROBLEM



Farmers Need Personalized Advice

My Soil

Which crop I should grow ?

Which fertilizer I should apply ?
In what quantity ? When ?

Can I grow grapes ?

I plan to dig a well. Will it hit water?



My Crop

Which seeds I should buy ?

Should I spray pesticide ?
Which one ? When ?

Leaves look Yellowish ? What should I do?

Can I get Rs 25000 loan in a week for sowing operation ?

My Produce

What is the rate for cotton in nearby market ?

How can I get better rates ?

Is there a space in nearby warehouse for storage for a month?

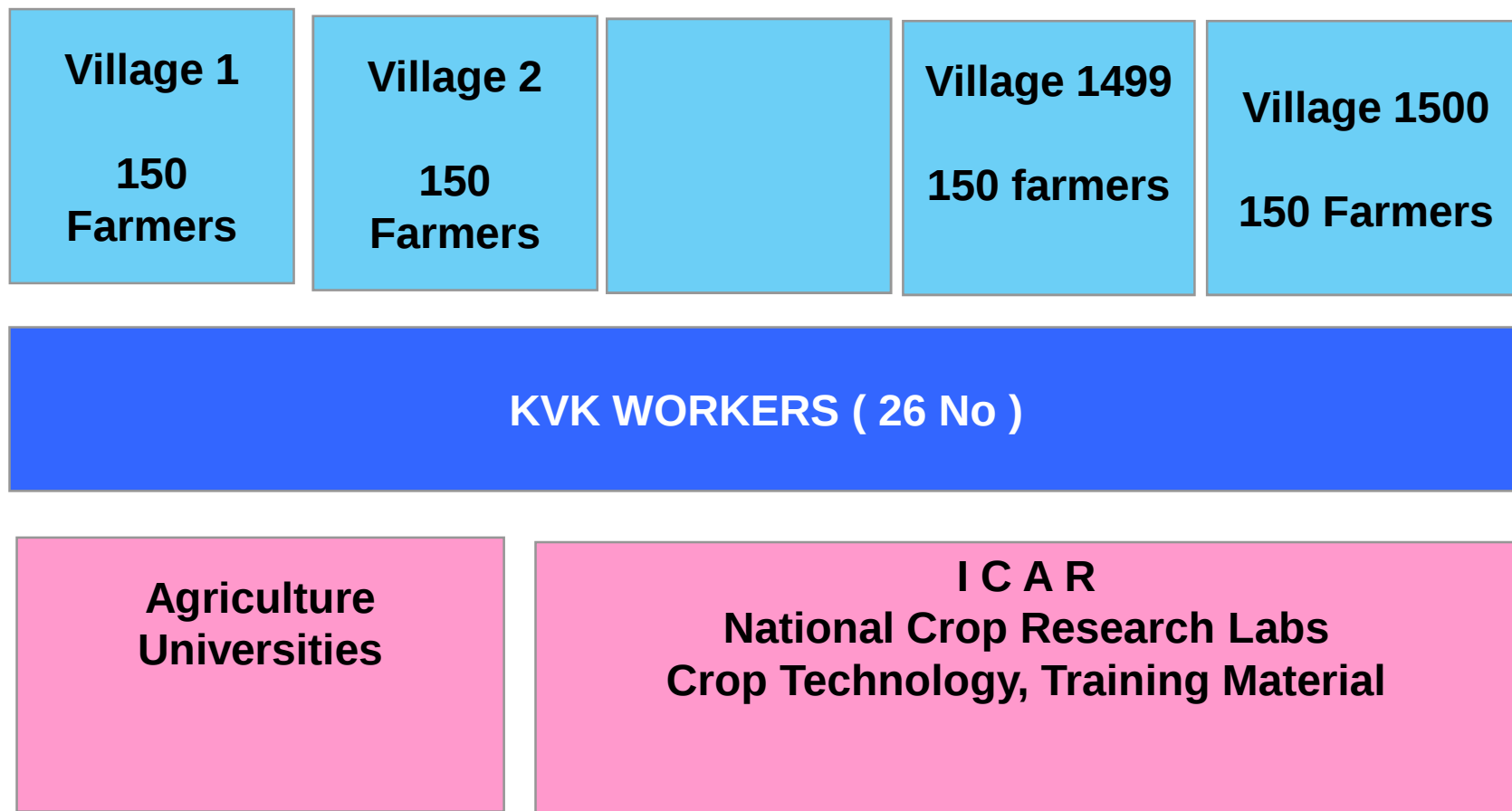
My Family

Where can I find doctor nearby?

My son will complete high school this year? Should he do computer courses?

How I can earn additional income?

Technology does not reach farmers.



Farmers Need Integrated Services



The Gap exists between farmer and his stakeholders



Central Government



State Government



Block
Development
Office



Universities



Research Labs

expert advice



information



Market



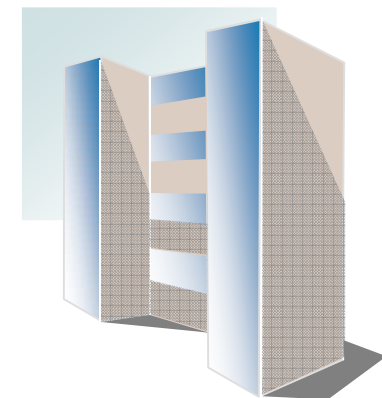
Certified Seeds

healthcare



Hospitals

credit



Banks

Farmer's Problems & Associated Challenges

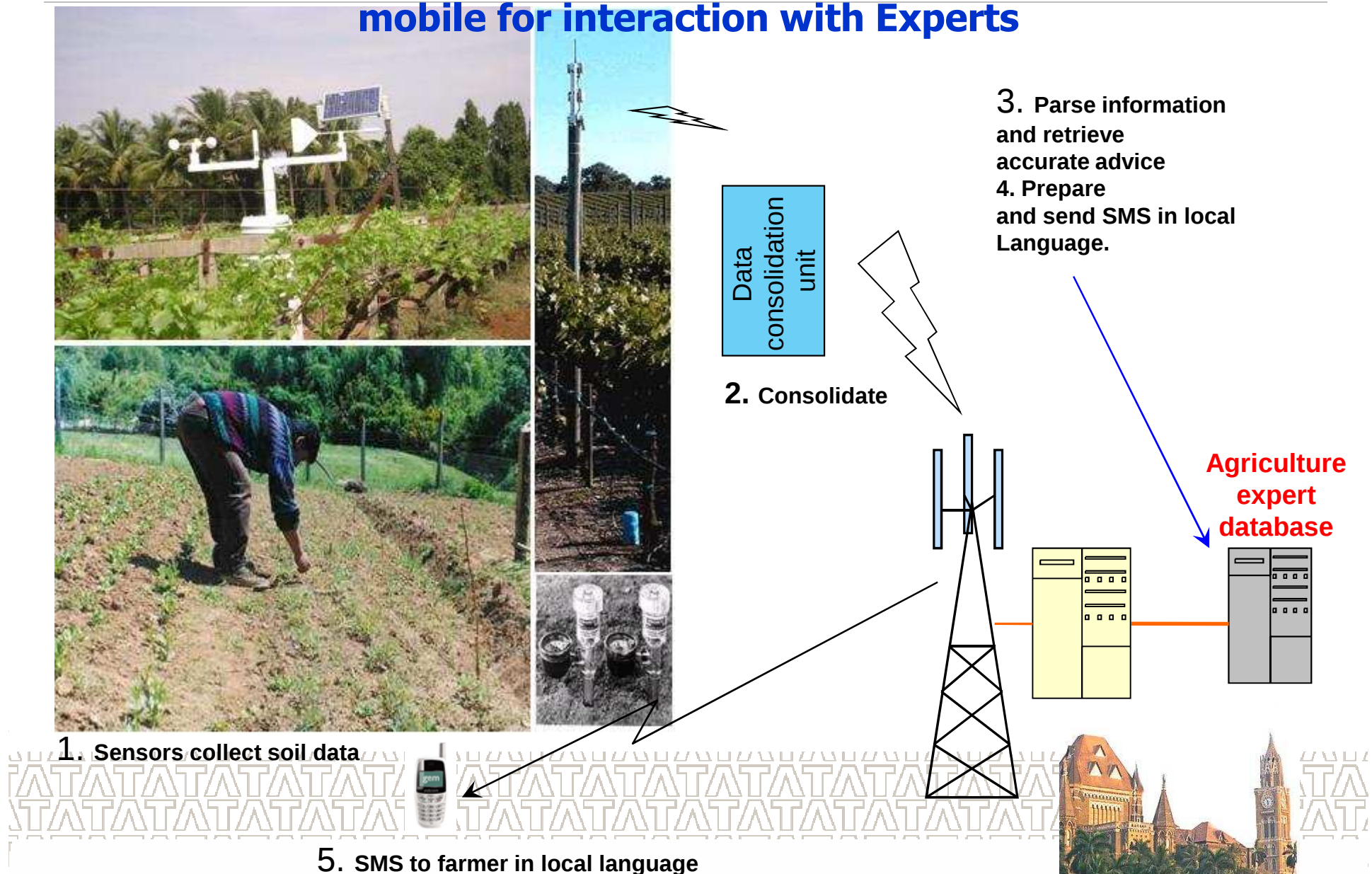
PROBLEMS	SOLUTION CHALLENGES
Which crop ?	Crop which will give maximum ROI
Which Seeds ?	Seed which are certified and good for farmer's soil
Agri Inputs – When, How, How much ?	Personalized extension service.
Rains in my village– When ? How much ?	Micro – region (5 km x 5 km) weather forecast
Emergency money requirement for farming	Micro finance within 48 hours
Shall I harvest?	Decision based on weather prediction, storage availability, Commodity prices
Shall I get good price ?	Quality certification. Commodity price behaviour



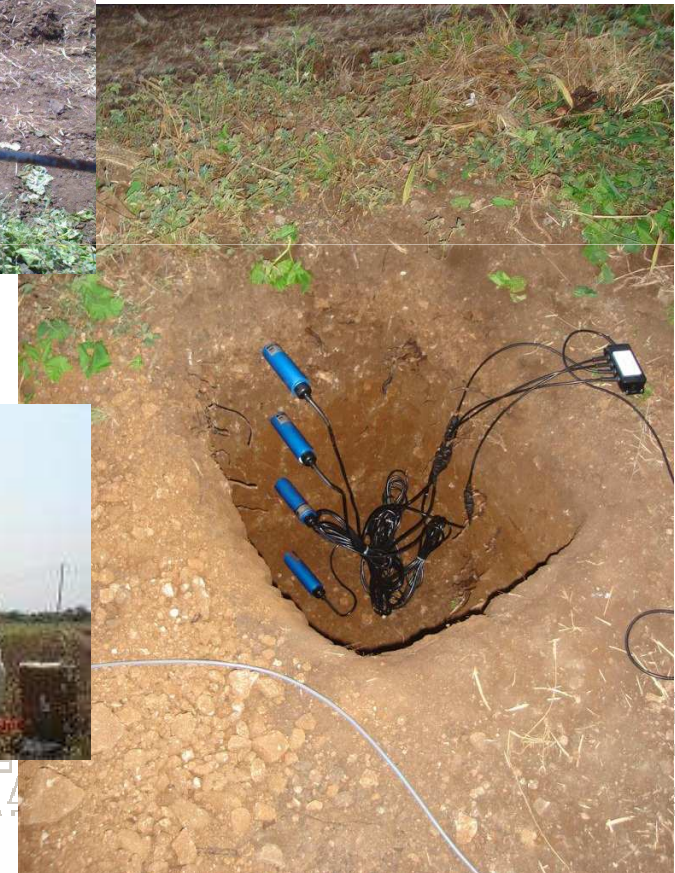
TCS EXPERIENCE



Let environment "travel" to the Expert. Enable farmer to use mobile for interaction with Experts



Use latest sensor network technology for agriculture



Weather Station

Tower



Farmers

Internet

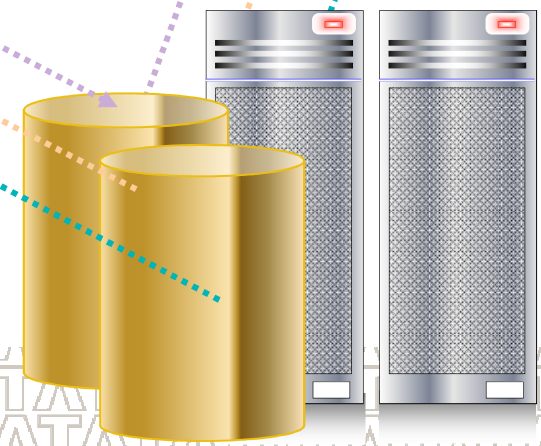
The expert provides advice



Sensors

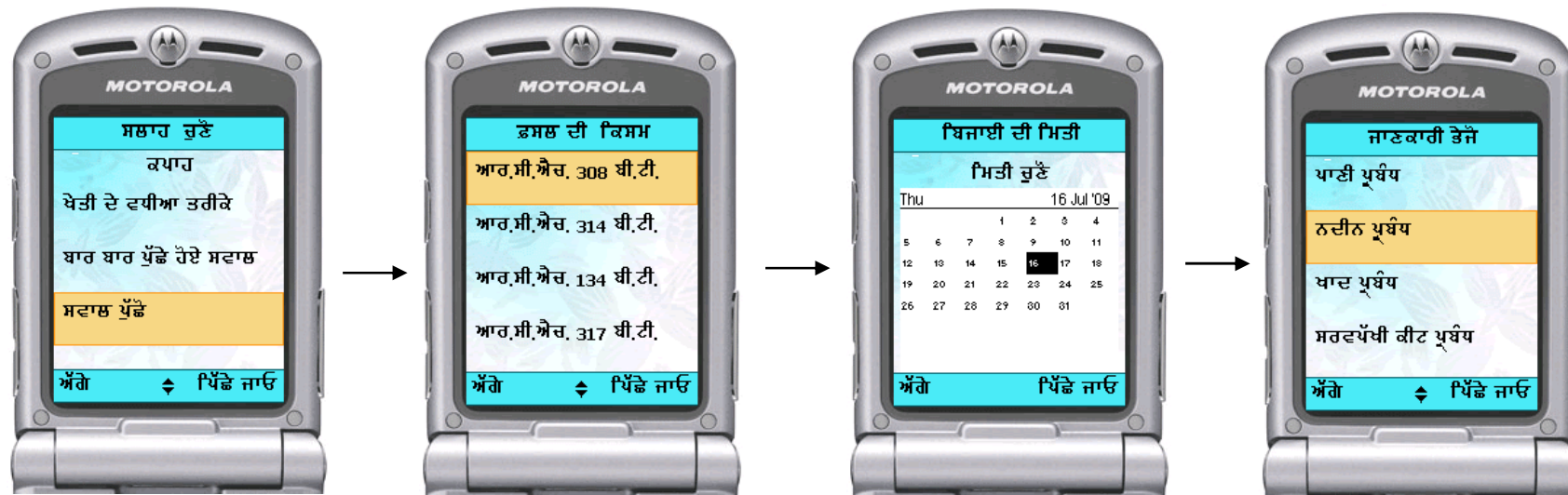


Agriculture Expert



IT Infrastructure

Enable farmer to use a mobile phone to interact with the expert

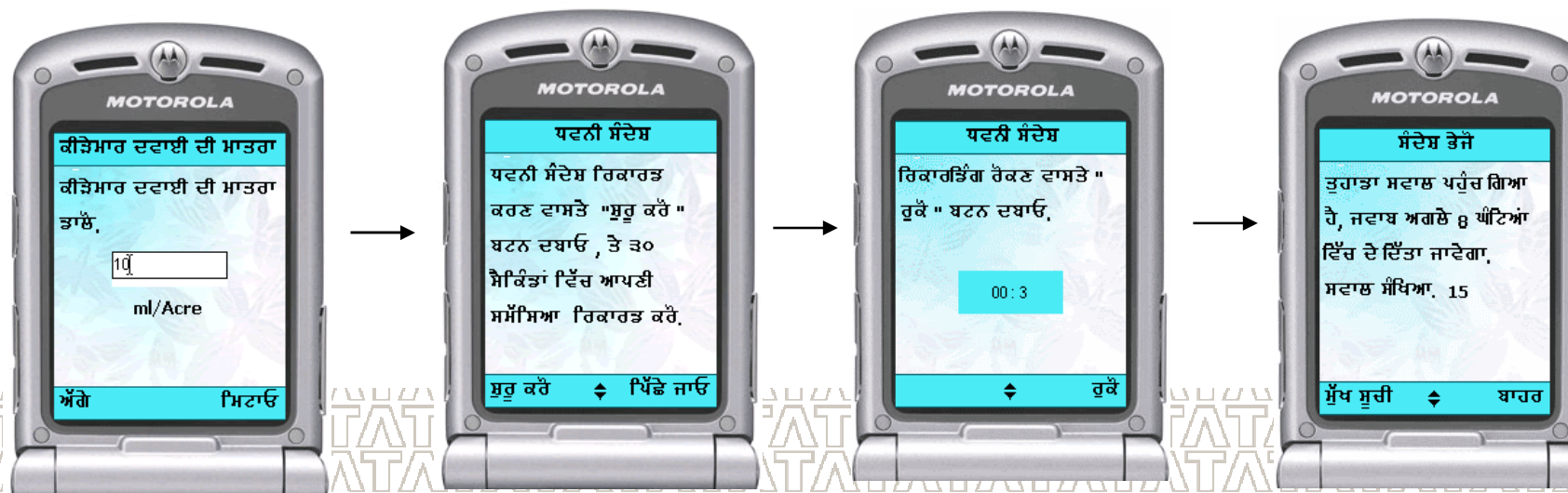


Select **Question**,
District and Village

Select **Crop Variety**

Select **Sowing Date**

Weed Information
and **History**



Enter **Quantity**

Start **Voice Message**

Recording...

Message Send and
Query ID number

Enable farmer view photo of pests / disease



Select **Photo Gallery**

- ☐ Select Best Practices
- ☐ Select Photo Gallery
- ☐ See the pictures of various Insects, Pests and diseases.
- ☐ The pictures represents different lifecycle stages of these.
- ☐ It enables farmers' to identify the bug on their crop and then either check in the Best practice or report to the expert for the solution.
- ☐ Scroll up-down to see the various stages



Jassid Bug – Egg stage



Jassid Bug – Adult

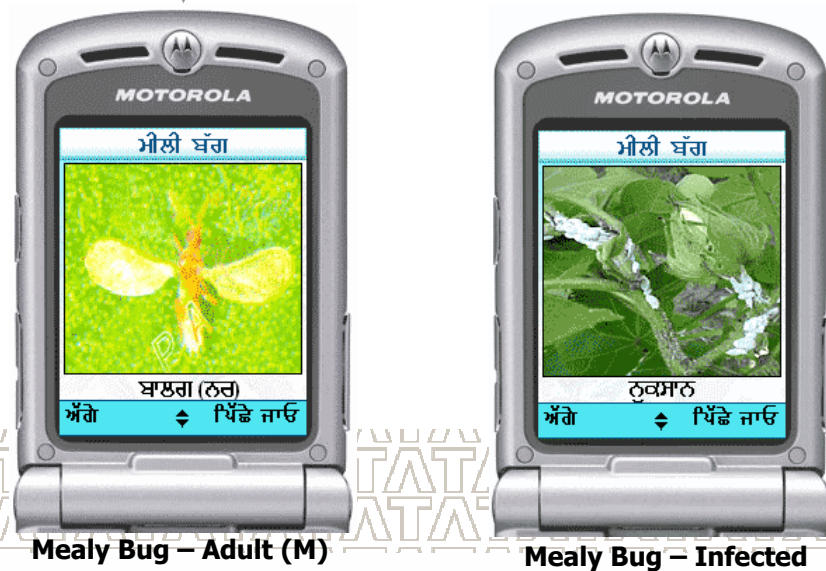
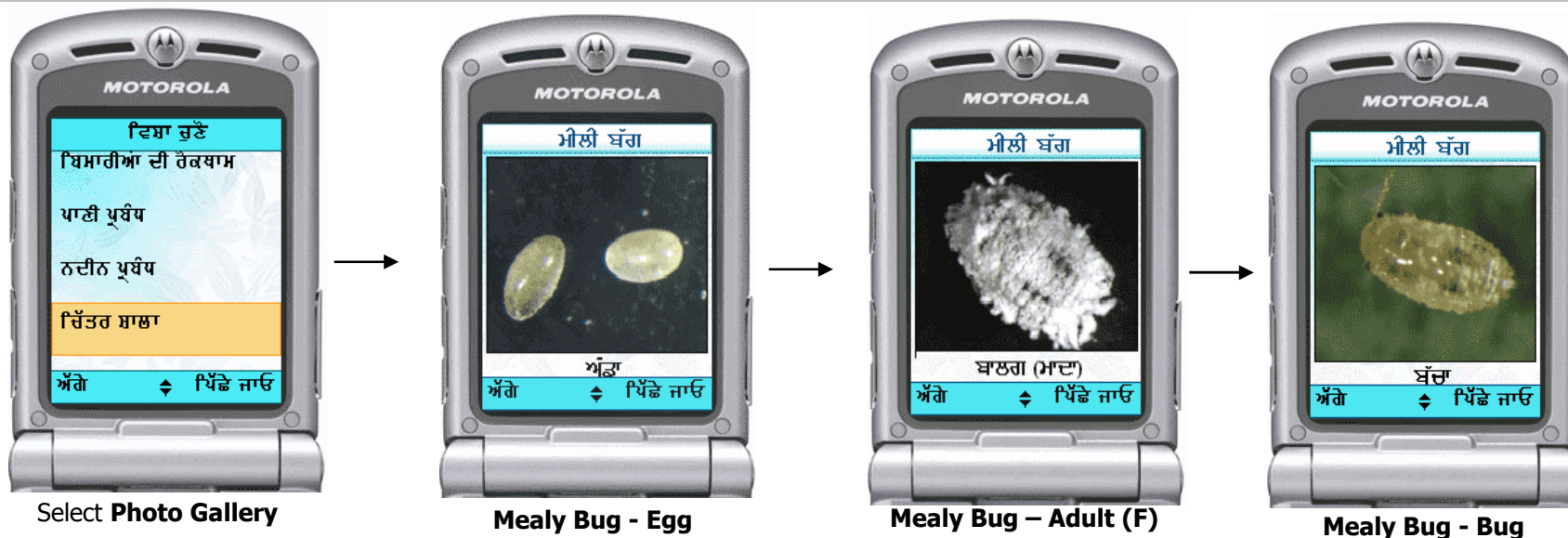


White Fly – Egg stage



White Fly – Adult

Enable farmer view photo of pests / disease



Transfer the environment to the expert.

https://121.241.6.211:8443/mkrishi_expert/expertConsole.do?queryID=314 - Microsoft Internet Explorer provided by TATA CONSULTAN

File Edit View Favorites Tools Help

Address https://121.241.6.211:8443/mkrishi_expert/expertConsole.do?queryID=314 Go Links

mKRISHI™

Welcome: Vinay

Farmer's Information

Cell No: 9223597029

Name: Mahadev Chauhan
Education: Under 10 th
Family Size: 5
Village: Borgaon
Landmark: Sangli
Taluka: Tasgaon
District: Sangli
State: Maharashtra

Soil Map Detail

Soil Maps

Query

Voice query

Images

Picture

Soil Information

Info specific to crop

From public website

Soil Information

Sampling Date: 2009-03-15 Analysis Date: 2009-03-15 Soil Type

Total Survey Area	CaCO ₃ (ppm)	pH (ppm)	Soil Conductivity (ppm)	Org Carbon (ppm)	Org Matter (ppm)	N (ppm)	Ph (ppm)	K (ppm)	S (ppm)	Ca (ppm)	Mn (ppm)	Fe (ppm)	Mo (ppm)	B (ppm)	Zn (ppm)	Mg (ppm)	Na (ppm)	Cu (ppm)	Mangal (ppm)
25.0	154/1	23.0	8.0	2.5	45.0	203.0	43.0	67.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Land Information

Crop	Rainfed	Irrigated	Source	Crop Rotation	Variety	Sowing Time	Crop Pa
					Tach - B -		1 2 3

Nutrient History for Grape

Name	Season	Application Date	Quantity
Compost	January	19-01-2009	555
S.O.P.	January	26-01-2009	123

[Know More](#)

Weather Forecast

Sensor Data

Weather Forecast

Contentment (Your Advice)

Ready references for expert

(Note: Upload only .png image upto 100KB)

Browse...

Expert Information

Save Submit

Soft Keyboard

Multilanguage Editor

Done

Local intranet

Start

1:05 PM

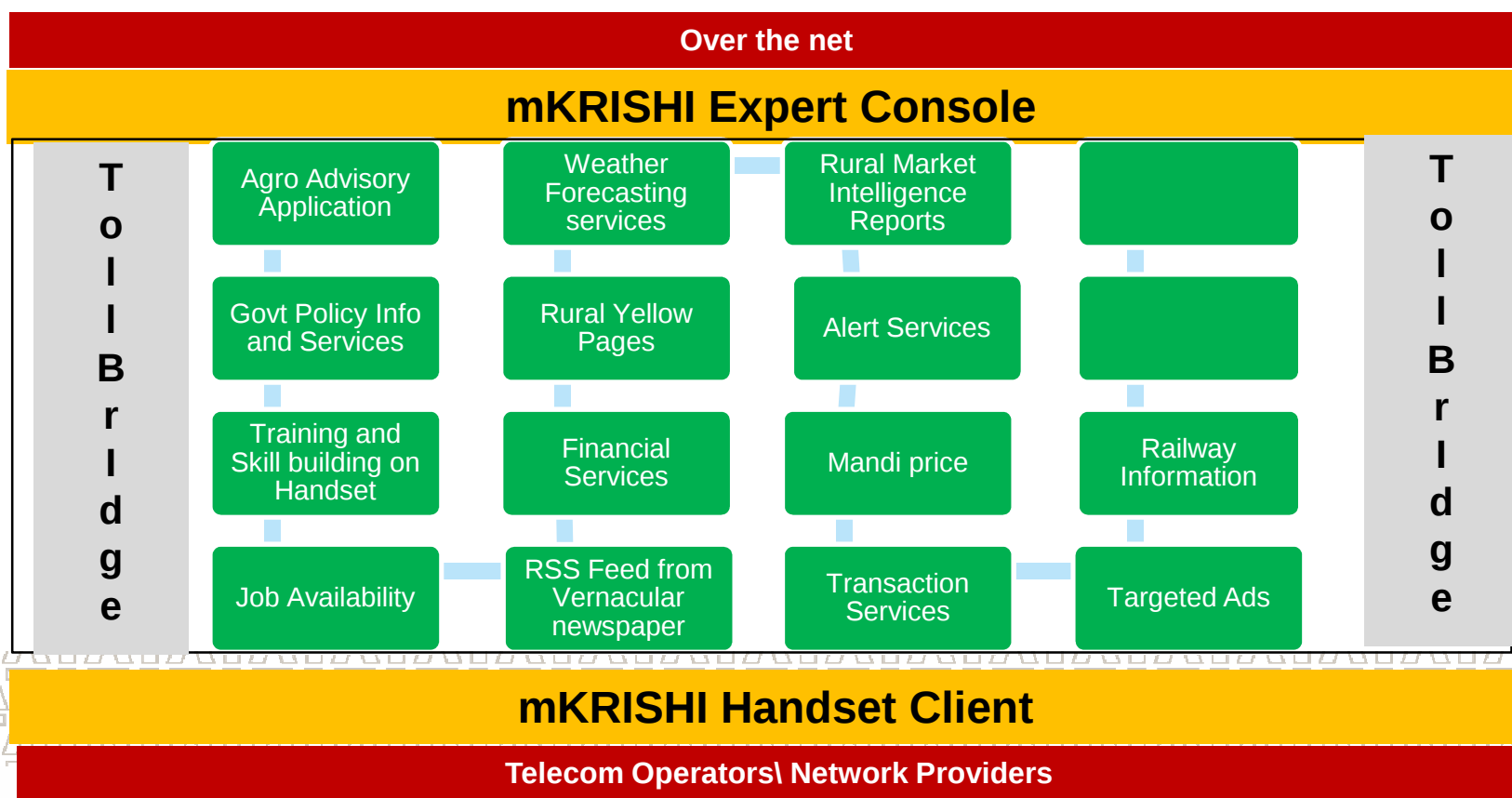
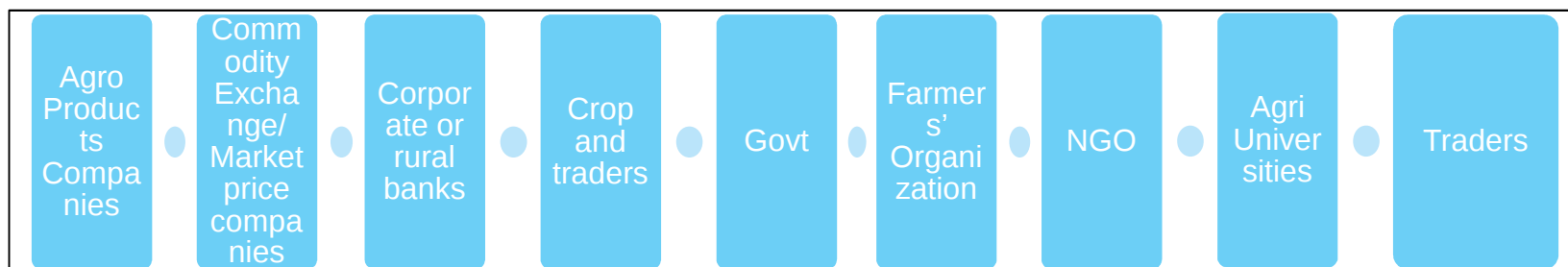
BUSINESS MODELS



Business Model – Village Entrepreneur

Roles and Responsibilities • Marketing of services to farmers • Farmer's need assessment on ongoing basis. • Local data gathering. • Agro Advice at local level through agriculture graduate/post graduate	Investment • High end mobile phone (10K) • Weather station & sensors (.5L to 4L) Can start business with as low investment as Rs 10,000/-
Profile • Could be Agro product retailer, Mobile phone distributor, CSC operator or progressive farmer • Should have entrepreneur qualities. • knowledge of local problems, culture, farmers	Revenue Stream • Commission on each handset • Commission per month on RCV • Agent for Banks & Insurance co for financial services • Commission on sale of pesticide, fertilizer, seeds

Reach the farmer through the stakeholders



SAMPLE QUERIES



FAST



Spray triazophos @ 600 ml/acre
or ethion @ 800 ml/acre for the
control of white fly.

Query Image



आलू में दरार मिट्टी में बोरोन की कमी के कारन हो सकती है. इसके लिए बोवाई के समय
ग्रानुबोर २ किलो प्रति एकड़ की दर से डालना चाहिए।



Gappa Goshti – Chit Chat

Mobile based multimedia
micro blogging social network for farmers



Experience certainty.

IT Services
Business Solutions
Outsourcing

Voice Chat with Friends

We have designed all our interactions along the belief that voice is the most natural medium of communication for a rural person.



Listen to Voice Chats



For Acceleration of Broad Band Usage

APPLICATIONS	KEY STEPS
Agriculture services	Create infrastructure & policies to support Micro Enterprises
Primary Health Care	Create policies which would enable Public Private Partnership
Education	Wireless Lab in each engineering colleges Local Application Development – Private Infrastructure for distant education - Government



RESEARCH QUESTIONS

- What is the business model which will spur the growth of micro enterprises in large number in villages and service industry takes root in the rural sector ? How one can offer precision farming at affordable prices?
- How one can create IT and Rural BPO industry in semi urban and rural areas ?
- How innovative tools could be developed so that less experienced knowledge workers can give quality service ?



THANKS

