

Technology Bucket : Agricultural and Rural Development

Company Name: MindTree

Team Leader Name: Pradeep Kumar

Category: Software

Problem Code: LB2

College Code: U-0946

Describe your idea / Solution / Prototype here :

1. Creating an **easy to use ecosystem** that can sustain farmers, farm tool sellers, farm tools lenders, truck owners and mandi(+ big market places like BigBazaar and Walmart).
2. Making a **voice based** chat bot to ease the interaction between farmers and the ecosystem (sellers/buyers). The chat bot will **support vernaculars** supported by Google Speech and Translation APIs. i.e Bengali, urdu, hindi, telugu, tamil etc.
3. Allowing farmers to order seeds and fertilizers using the proposed chatbot and suggesting them **best farming practices with the help of universities and research labs.**
4. Outsourcing transportation by building an **uber/trucksuvidha like platform for truck drivers** and truck fleet owners.
5. All transportation **logistics will be planned taking care of the shelf life** of the produce and requirement for refrigeration.
6. Agri credits can be integrated as spendable money in the system to ensures that farmer uses the money offered by the government for farming activities for the said purpose only and with ease.
7. All listing on the web portal will **ensure profit for the farmers** after deducting transportation costs.

Describe your technology stack here: Next page

Describe your use cases here:

S.No	Role	Scenarios	Benefits
1	Farmer	<ul style="list-style-type: none">• Sell Produce• Buy Farm equipments / fertilizers/ seeds• Borrow instruments• Get queries answered from research centres and universities• Weather and information updates(in vernacular)	<ul style="list-style-type: none">• No waiting in queue• No under payment• Option to get the best price.• More informed
2	Mandis	<ul style="list-style-type: none">• Buy farm produce• Manage transactions (With ease)	<ul style="list-style-type: none">• Ease of buying• Ease in maintaining records• Proper distribution
3	Farm equipment / seeds / fertilizer etc. seller	<ul style="list-style-type: none">• Sell goods• Lease goods• Manage transactions	<ul style="list-style-type: none">• Larger audience
4	Truck drivers and fleet owners	<ul style="list-style-type: none">• Can select a consignment they prefer.• (e.g. Deliver 100 kg Carrots from A to B , pay = x)• Manage their earnings.	<ul style="list-style-type: none">• Ability to choose trips• Achievable time limits• Taking care of driver's health
5	Retailers	<ul style="list-style-type: none">• Buy goods from farmers• Order exotic products from far off place by paying a premium.	<ul style="list-style-type: none">• Get products straight from farm• Better price• Larger variety of goods available at finger tips

Describe your technology stack here:

1. A django server to host the database and web application (Can be ported to Android and IOS).
2. HTML5 application for cheap phones with 4G LTE /3G capabilities.
3. Google Speech and Translation Api integration to support the large number of vernacular.
4. Bot Press integration(open source chat bot engine).

Describe your dependencies here / show stopper here

1. Quality and weight check is an area where we intend to set up manual quality check centres where the consignments are checked thoroughly before embarking on further journey to its destination mainly due to lack of datasets available to train a machine learning model for the same purpose.(Once the farmer is in our ecosystem we will be able to predict the quality of his/her produce and will be more confident about the quality of it.)
2. Minimum Selling Price data for agricultural products (If already set otherwise we expect self regulation due to competition). Government supports to encourage the listed stakeholders in previous section.



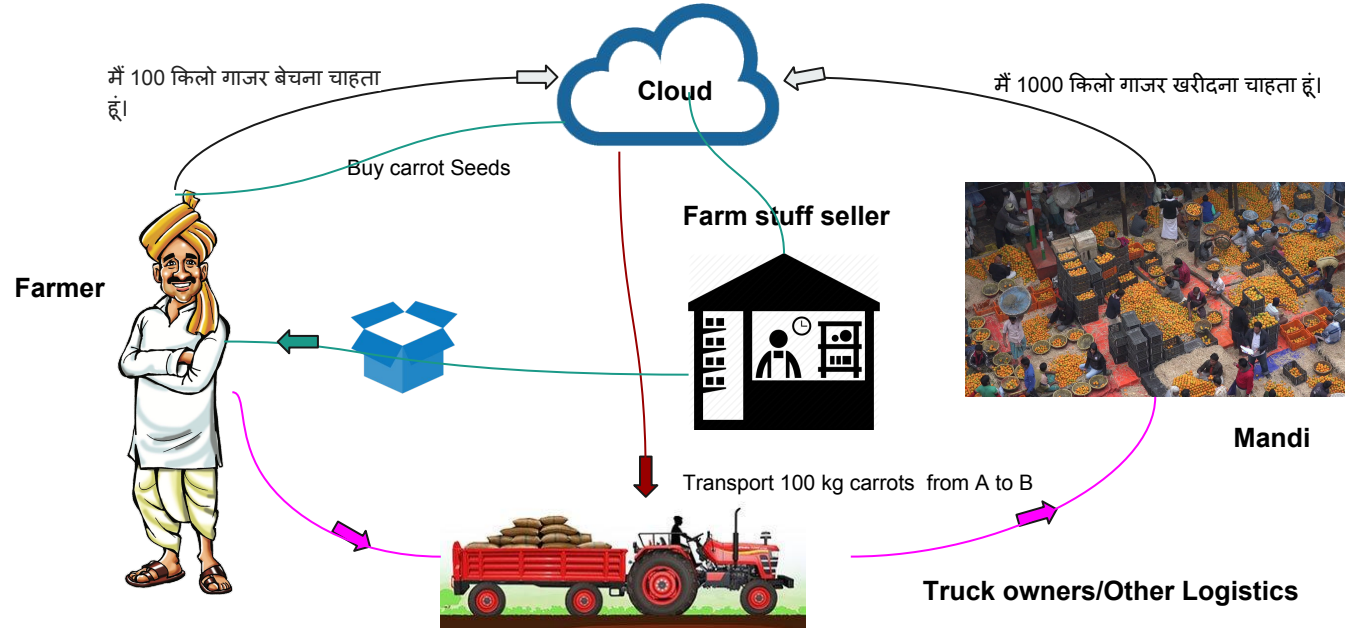
Example of voice based interface for the farmer for cheap phones that can run a HTML page, like Jio Phones.

Example of truck consignment system from a driver's perspective.

Posting Id	Source city	Destination city	Distance	Weight (MT)	Sched. Date	Truck type	Posted by	Detail	Price(₹)
TSPL15208	Jaipur	Delhi Central	265km	Upto 15T	13-01-2019	Truck 15MT	Customer	View	14175
TSPL15206	Gurgaon	Muzaffarpur	1087km	Upto 28T	13-01-2019	Truck 25MT	Customer	View	26460

A simplified schematic diagram of the proposed echo system color coded for different aspect of ecosystem

- Farmer buying seeds
- Farmer selling produce and mandi posting a requirement.
- Truck driver selecting a consignment.
- Driver transporting the consignment.



UML of part of the proposed ecosystem.

- Different color represent different part of the ecosystem.
- Blue : Farmer buying farm tools / equipments / fertilizers / seeds
- Red : Farmer selling his/her produce.

