



Communication device for Micro-trade Networks

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Guide : Prof. U A Athavankar

What is micro trade ?

... small businesses with small turnovers like the kirana store around the corner, the SHG that makes pickles, the milk vendor, the mobile repairman etc. Usually it is run by a single person or by a group not exceeding 10 members. However these individuals or groups can 'network' for mutual benefits...

These businesses operate in a very 'organic' manner and do not strictly adhere to any standard processes which makes them highly adaptable and nimble but also stops them from realizing maximum efficiency.

Micro enterprises in developing countries*

80% of all enterprises

50% of all urban enterprises

2% of GDP

Main provider of employment

500 million micro entrepreneurs worldwide

5% have access to financial services

Aim

To study and understand the nature of micro trades and map the trade paths... Material, Cash and Information flow and to conceptualize a device that would make these operations more efficient, accountable and pleasurable without compromising on the organic nature of operation.

Approach

To build a strong conceptual model that is scalable and that can be easily duplicated.

Perceived challenges

The vastness and the diversity

Time constraint to understand and map the system

Lack of understanding of local knowledge and the nuances

Secretive nature of people involved in business

Resistance to change/technology.

Encouraging factors

Newer technologies are becoming cheaper

Interest shown by corporate sector which would ensure development and proliferation of appropriate applications.

Initial Studies

Kirana Stores

Construction materials merchant

Fabricator

Oil merchant

Car rental operator

Final Studies

Farmers

Hundekaris

Adatyas

What surprised me...

... the business does not run on the main copy, duplicate, triplicates... Neither on emails and carbon copies but rather on verbal promise.

... They TRUST each other and at the same time observe extreme CAUTION in all their dealings...

...the organic nature of the business and the extreme nimbleness...

...ability to handle large amount of quantitative data without any technology intervention...

...Keen to use new technology. (*I expected resistance...*)

Why Rural Areas ?

Digital inclusion of the rural population and connectivity are the key to empowering rural India. One of the main hurdles is the lack of locally relevant, affordable content

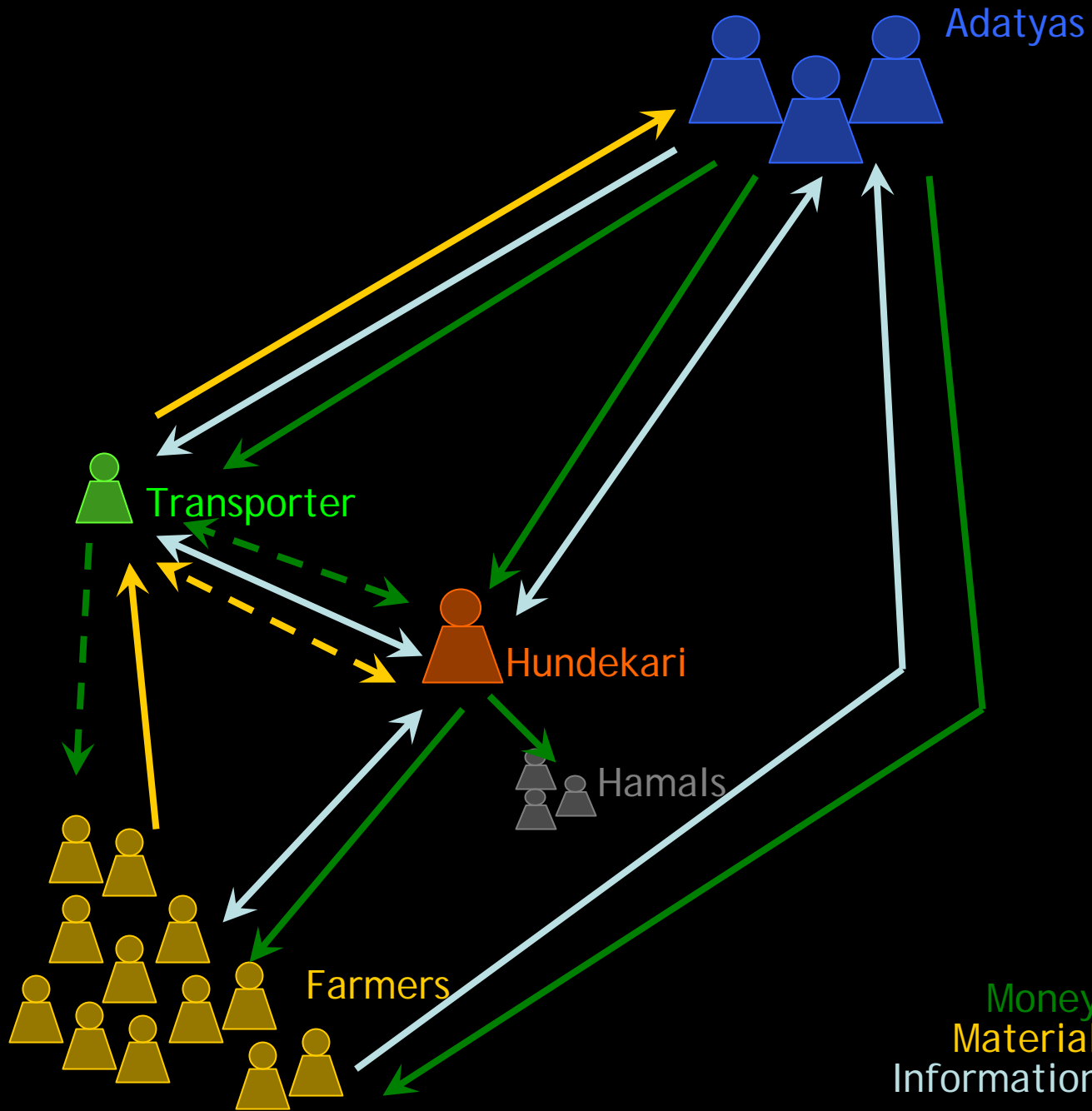
With wireless and mobile technology growing exponentially it wont be long before clever applications are would connect entire rural India both horizontally and vertically.

Thousands of similar projects, small and big, are transforming the rural landscape and empowering the rural population.

Scenario

Sekhar Hande, a Hundekari has to plan the transport of agricultural produce from his village to the market yard in Pune.

He needs to collect information on the produce to be sent by various farmers, plan and decide on the mode of transport, aggregate the materials, communicate to the dalal at market yard and make bills for transporter and the dalal.



Chopadi

वार - शुक्रवार 11 20/11/20

सुधाशिव साठगाका वनाड	वनाड	9 ग	23	✓
रंगन सुधाराव चौधरी	शिवार	9 ग	28	✓
साठगाव वनाड वनाड	वनाड	9 ग	94	✓
वनाड वनाड	—	9 ग	98	✓
मनाड वनाड	वनाड	9 ग	81	✓
वनाड वनाड	शिवार	2 क	10	✓
—	वनाड	9 क	20	✓
पुनगाव वनाड	शिवार	9 ग	33	✓
वनाड वनाड	वनाड	9 ग	24	✓
पुनगाव वनाड	—	9 ग	94	✓
वनाड वनाड	शिवार	9 क	28	✓
वनाड वनाड	वनाड	9 ग	33	✓

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पुनगाव वनाड	वनाड	9 ग	23	✓
वनाड वनाड	शिवार	9 ग	24	✓
वनाड वनाड	—	2 ग	92	✓
वनाड वनाड	वनाड	2 ग	—	✓
वनाड वनाड	वनाड	9 ग	—	✓
वनाड वनाड	वनाड	9 ग	—	✓
वनाड वनाड	वनाड	9 ग	—	✓

29/11/20

वनाड वनाड	शिवार	9 ग	—	✓
वनाड वनाड	वनाड	9 क	30	✓
वनाड वनाड	वनाड	9 ग	32	✓
वनाड वनाड	वनाड	9 ग	29	✓
वनाड वनाड	वनाड	9 ग	94	✓
वनाड वनाड	वनाड	9 क	30	✓
वनाड वनाड	वनाड	9 ग	20	✓
वनाड वनाड	वनाड	9 ग	—	✓

वार शुक्रवार 11 29/11/20

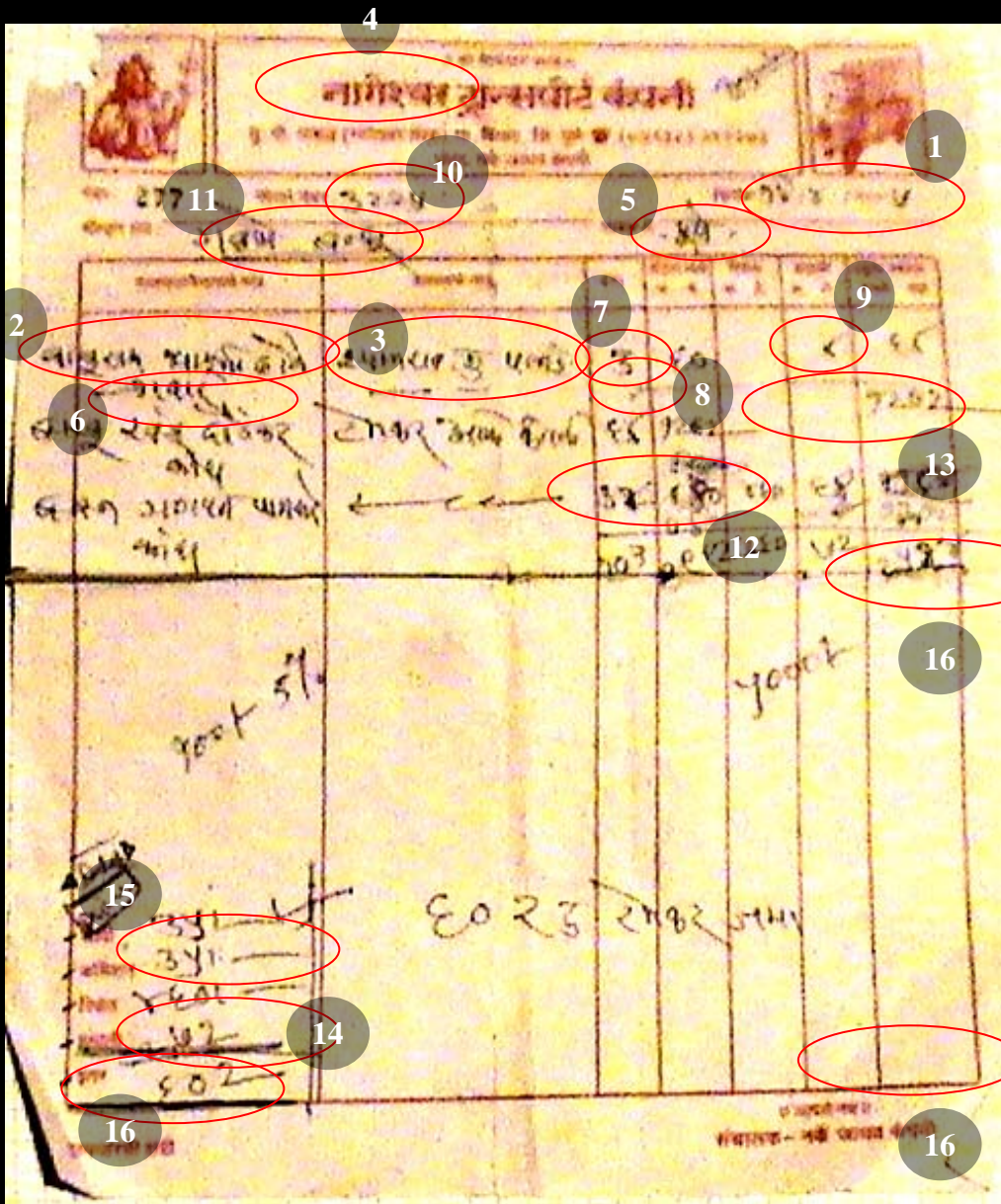
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वनाड वनाड	—	9 ग	91	✓
वनाड वनाड	—	9 ग	92	✓

वार शुक्रवार 11 29/11/20

वनाड वनाड	शिवार	2 क	91	✓
वनाड वनाड	—	2 क	92	✓
वनाड वनाड	—	9 ग	91	✓
वनाड वनाड	—	9 ग	91	✓

Label





Bill

- Date
- Name of the farmer
- Name of the *Adatya*
- Name of the *Hundekari*
- Destination
- Produce
- Quantity
- Weight
- Refund (For gunny bags)
- Vehicle Number
- Name of the driver
- Transportation charge
- *Hamali* (Labour- loading)
- *Thapi* (Labour- arranging on the truck)
- Commission for *Hundekari*
- Total

Product Brief

To design a communication device to assist the 'Hundekari' in trading of agricultural produce as well as act a device that will permit synchronous/asynchronous communication for personal needs.

The device must enable making/receiving calls, sending/receiving messages. It must have the ability to support local languages for navigation and messaging.

The device must be able to assist in the following functions

1. Taking down orders
2. Selecting suitable transport
3. Arranging the collection of produce
4. Preparing bills for Transporter and *Adatya*.
5. Sending the bills electronically or printing hard copies.
6. Maintain archives for reference
7. Maintenance of accounts

The communication device must be able to simplify the process and make it more efficient, transparent and aim at a zero error process which can be easily applied to other similar micro trade processes as well.

Initial Concepts

Audio Search

SEARCH

7. GANPAT 28/09/2007

Aalu	10.50	80	31/09/2007
	11.50		
Kanda	15.70	22	31/09/2007
	17.00		
Tur	133.45	670	31/09/2007
	140.70		
	MP		
	SP		

Mandi price updated automatically

Edit mode

Writing is converted to alphanumeric

Tip becomes red for delete

28/09/2007

Onion not looking very good.

Low quantity of tur

Audio notes

Video notes

Photographs

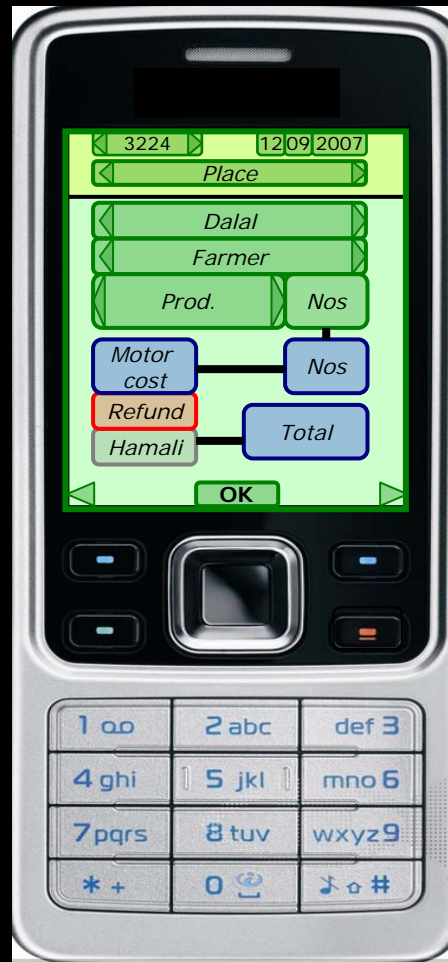
Flips like notebook

Photographs

Concepts with mobile phones



Iterations...



Iterations...

Destination

Day/Date

Vehicle No.

Total Load

Vehicle load status

Farmer name

Load status

Produce

Quantity

Quantity loaded

Search

Thursday	12	09	2007
Pune	105	5334, JBT	
		11/150	
Suresh Jadhav		11/23	
Cbg	11	11	
Weight	590		
Refund	55		

Iterations...



Iterations...



A concept with a printer attachment to which the phone can be docked.

RFID Phone



Final Concept

Zoom Wheel

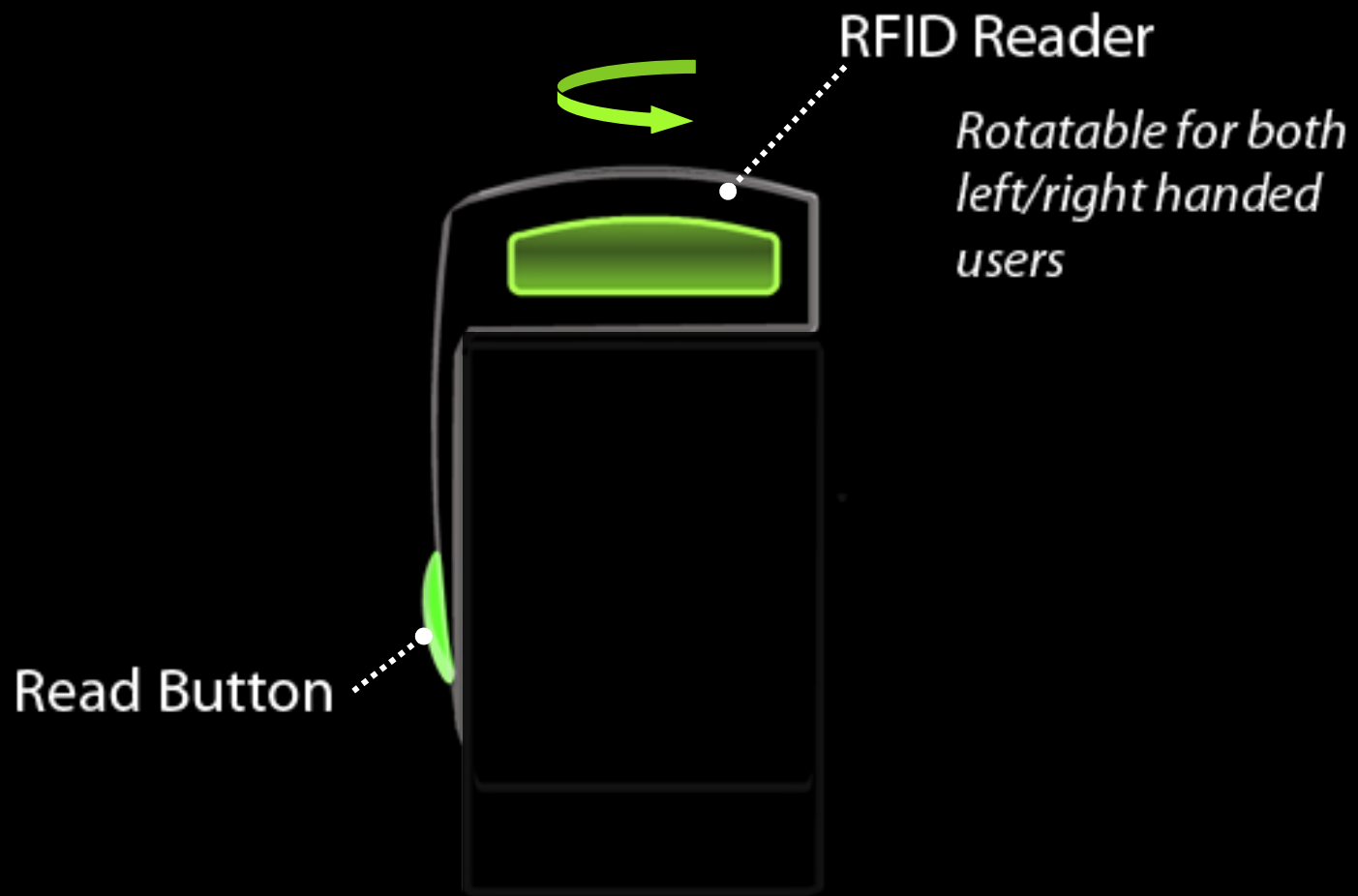
Toggle Button

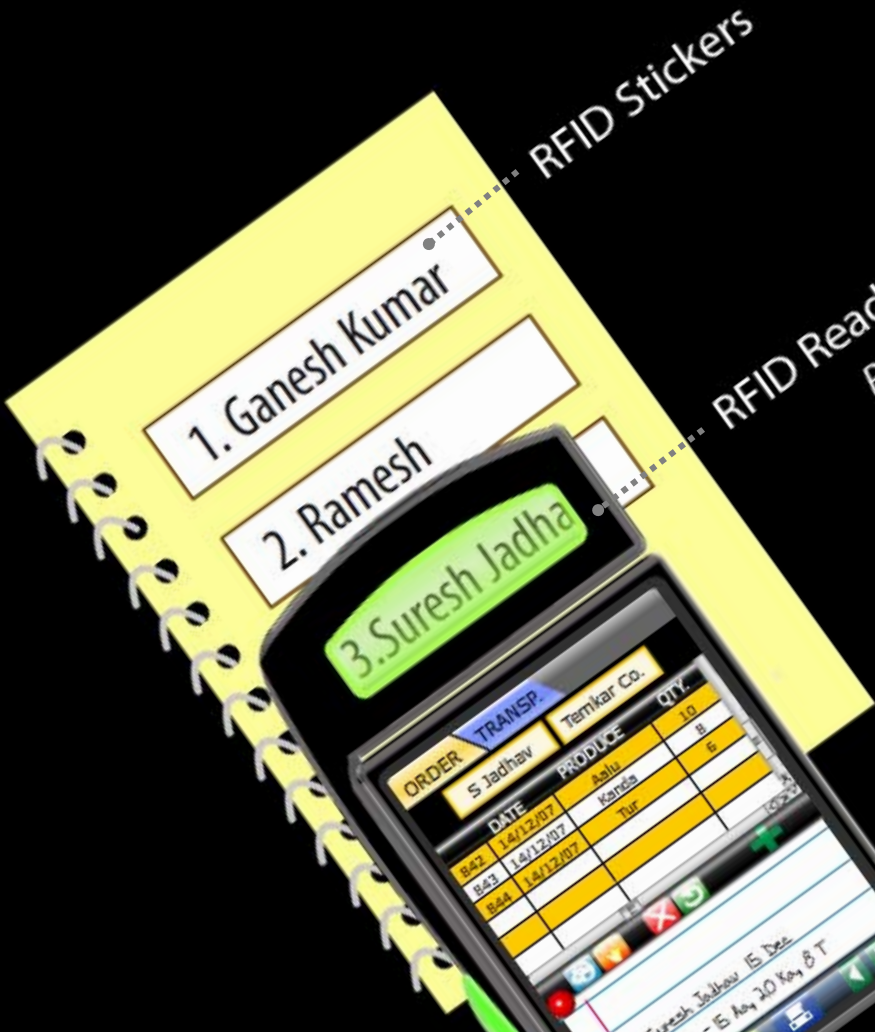
Connect/Disconnect

Loudspeaker On/Off



FarmCom V01





RFID Stickers

RFID Reader
Rotatable for both
left/right handed
users

Read Button

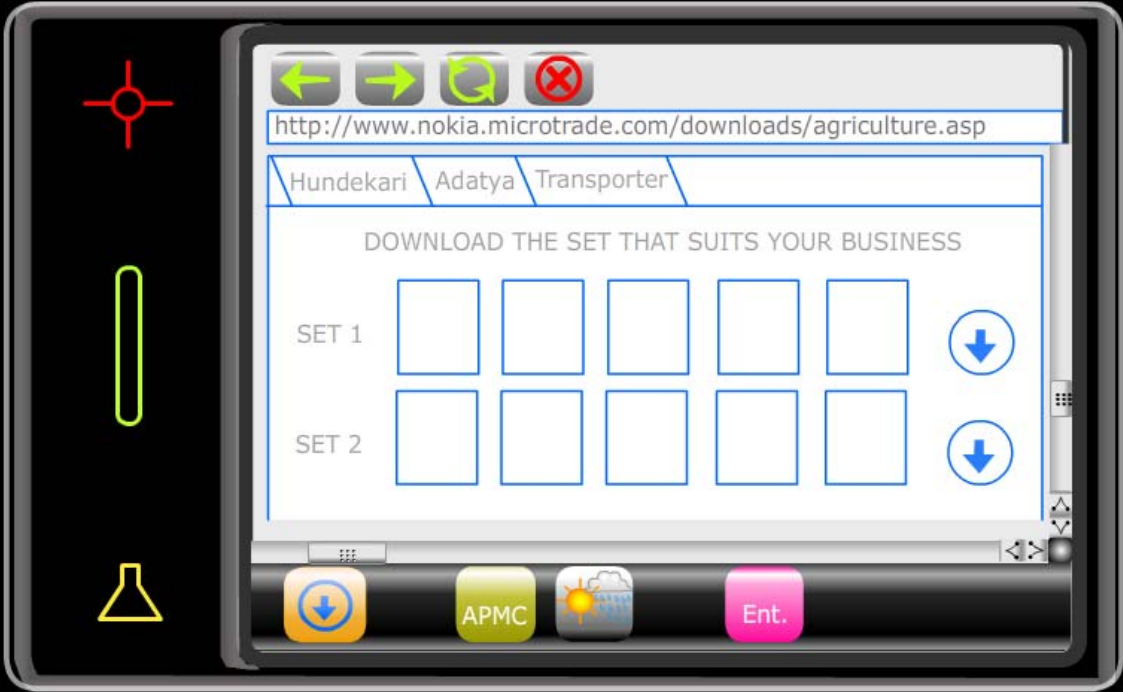
ORDER	TRANSP	Temkar Co.	QTY.
S Jadhav			
DATE	PRODUCE	ID	
14/12/07	Ashu	B	
14/12/07	Kanda	E	
	Tur		
B42			
B43			
B44			

3. Suresh Jadhav 15 Dec
Shewale - E, Aq, 20 Kay & T

RFID Tag



Download *Chopadis*



Contact Settings

1. Ganpat Kumkar
2. Babu Rao
3. Suresh Jadhav
4. Vijay
5. Ganesh Kamble
6. Ramesh Gawle
7. Chandrakant
8. Arun Raj
9. Prabhakar
10. Jairam

ADD NEW

CONTACT Farmer

NAME Ganesh Kamble

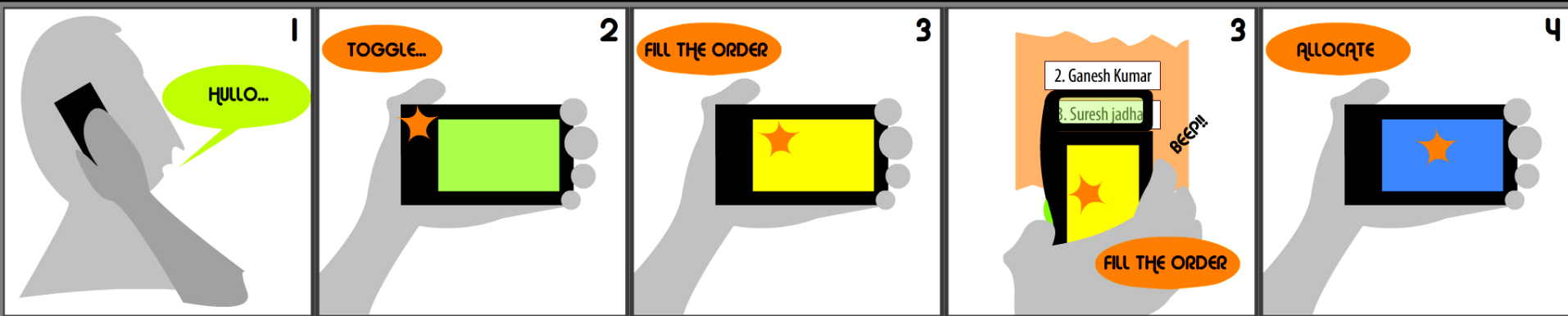
NUMBER +919822367907

PLACE Pabal

SKU Aalu, Kanda, Tur, BabyC

REF NO. 5

DELETE



Continuous...



With stops...



12/09/2007

Pabal to Pune *** T S Shevale and Co .*** JB Trasport *** 3224

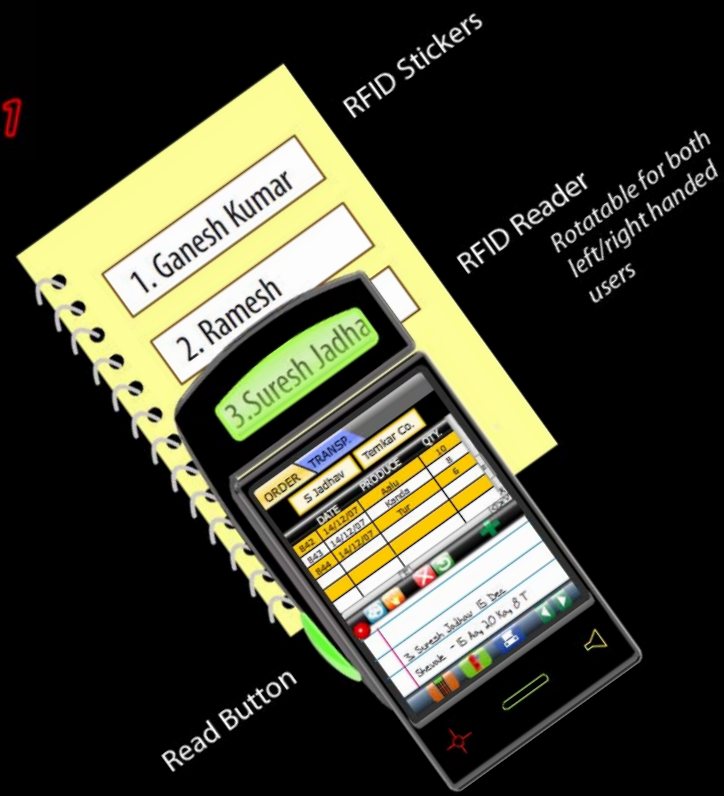
Farmer	Nos.	Produce	Weight	Motor	Refund	Hamali	Total
Nageshwar	35	Aalu	1000	750	---	---	
Nageshwar	22	Kanda	700	440	---	---	
Nageshwar	16	Cabbage	216	216	---	---	
Nageshwar	22	Tur	980	440	---	---	
Rajesh	12	Cabbage	270	270	12	50	
Rajesh	16	Tur	650	320	32	---	
Rajesh	7	Kanda	150	140	7	---	
Suresh Jad	10	Aalu	330	200	10	110	
Suresh Jad	14	Kanda	300	240	14	---	
Suresh Jad	22	Tur	1000	440	44	---	

Thapi 350 Commission 3000 Refund 133 Hamali 160 TOTAL 11643.00

Zoom Wheel
Toggle Button
Connect/Disconnect
Loudspeaker On/Off



FarmCom V01





That's all Folks !!!