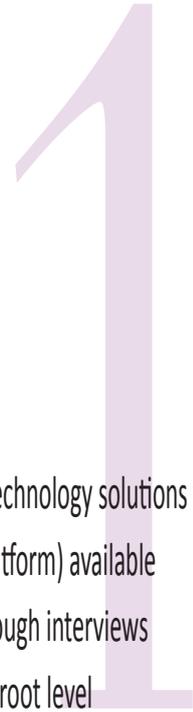# Introduction

The project aims on developing applications for bottom of the pyramid. The idea is to provide technology solutions for efficiency in daily activities. With low cost tablets such as akash tablets (provided on android platform) available in developing market creates ample scope in application development. The issue identified through interviews with students, entrepreneurs, small scale business personnel's and others emphasised on grass root level development.

Background

Aakash is a project sponsored by the Indian Government, to design, manufacture, and distribute low cost Android-based tablet computers to Schools and Universities in India. The Ubislate is produced by British company DataWind. It is manufactured by the India-based company Quad, at a new production centre in Hyderabad, under a trial run of 100,000 units. The tablet was officially launched as the Aakash in New Delhi on 5 October 2011.

Seeing these developments on such a wonderful and cheap platform Mrs Jhumkee Sengupta Iyenger who is a visiting faculty at IIT Kanpur Design programme suggested that we build some application for the Aakash tablet which will cater to the bottom of the pyramid. She suggested that we research on the daily lives of the fruitwalas and learn about their lives and how they conduct business and how they manage and maintain cutomer relationships. The Fruitwala app has thus evolved from this design research endevour initiated by Mrs Iyenger and conducted by students of the design programme of IIT Kanpur.

Rational & Significance

3

The Fruitwala app for the Aakash tablet is an endevour to build useful applications for people in the bottom of the Pyramid keeping there sensibilities in mind. The Fruitwala app as the name of the app suggest is an application for the fruitwala who conducts most of his business now without the use of any technology and maintains his record manually. The app which will be running on the Aakash tablet will be for the first time empower the fruitwala to maintain his credit record on an electronic device and also provide nutritional information about fruits to his customers.It will also become his leisure time companion.

The Aakash tablet is a game changing or paradimn shifting platform as it will be available at very low prices and thus will be be available to very low income group people. This fact has tremendous significance in the context of India which has a huge population and 40% lies in the bottom of the pyramid. Prem Kalra of the Indian Institute of Technology Rajasthan who designed the Aakash tablet says that within 5-10yrs everybody will be having an Aakash tablet. There will be children learning, farmers checking on irrigation or crop prices, pregnant women getting medical assistance, all through the Aakash. It will empowerment on a global scale.

Design Methodology

4

User Research

↓

Design Concept

↓

User Testing

↓

Final Design
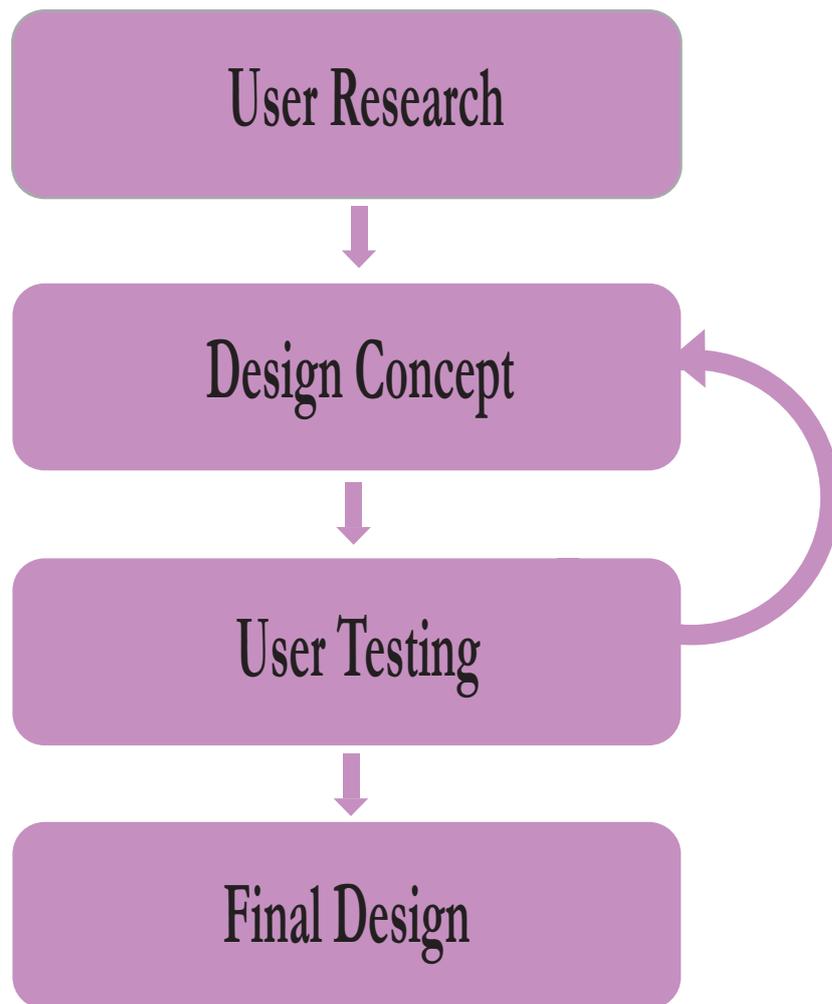
User Research & Analysis
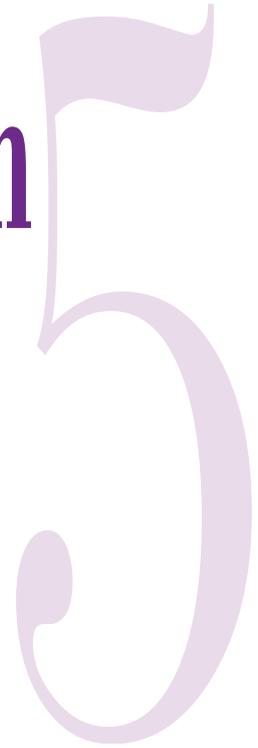
USER RESEARCH

Interview Findings

Money Related Issues:

1. They maintain Khatas to give credit to well-known customers. (Problem: Some customers take fruits on credit and never come back. Fruitwalas have to follow up with them for payment.)

2. They do not maintain any balance sheet for their business. They calculate profit/loss as follows:

Profit = (total amount left after all expenditure) – (cost of fruits bought)

3. Fixed minumum profit for each fruit. Will not sell it for lesser even if the adjacent fruitwala sells it for a lesser rate.

Important People in Fruitwalas business:

1. Mandiwala

2. Customer

Problems in Fruitwala Business:

1. No door to door delivery.

2. Summer vs Winter sales. Sales are more during the summer season.

Other Findings about the Fruitwala :

1. Some of the fruitwalas have attractive visual display in the shops.

2. Spends leisure time by reading newspaper or listening to songs on his mobile phone which he downloaded from an internet café for 50 rupees for 1 GB

ANALYSIS -> PERSONAS

Persona 1
Name: Raju
Age: 30

Raju belonged to a very poor family. After completing his primary education when he was 12 years old he started working in a fruit shop to support his family. He started his own business on a thela when he was 20. He has a family of four members and he is the only earning member. He has a fixed street side area for his business. This area is a market place where other fruitwalas are also there.

When there is no customer on his shop he reads NEWS paper and chats with other fruitwalas. He uses a mobile phone to maintain contact with customers and mandiwalas. His business largely depends upon the credit system. He trusts his customers for payment in time so that he can also keep his promise to mandiwala. He carries a light and a battery on his thela so that when there is demand he can sell at night.

Persona 2
Name: Ramesh
Age: 42

Ramesh has a family of six members and he is the only earning member. So it is very difficult for him to be dependent on one business. So he changes his business in different seasons. He is very upset on the municipality and government policies. He believes that latest price hike made it very difficult for them to maintain this business. Municipality doesn't care about the bad street lights which makes the business very difficult at nights. Sometimes the police constables asks money from them for doing street side business. That's why he doesn't have any fixed area for business and he roams around with his thela. He does not have a mobile phone and when some known customer asks him for delivery he carries his thela to their houses and delivers fruits to them.

Persona 3
Name: Suresh
Age: 33

As he stays near to IITK campus he only sells on a fixed place on campus which is a popular place for fruitwalas.
He has family of six members with two earning members. As almost all customers are known customers it is very
profitable business for him. He maintains khata for credit customers. He completed his high school education and very
good with new technologies like mobile phones. He has a mobile phone and he largely uses it to listen music in
relaxation time. He is very happy about his business or the facilities which are provided to him by IITK campus.
He trusts his customers for payment in time and he buys fruit from mandiwala on cash.

ANALYSIS -> SCENARIOS

Scenario 1
When a known customer comes to raju's shop and wishes to take fruits in credit Raju writes the amount in the khata.
If the customer is taking fruits in credits for first time he writes his name in a new page .

Scenario 2
Sometimes customers forget to pay for the credit for a long time. Fruitwwala Raju wishes to remind them about the
money. Some time he keeps the phone no. of his customers.

Scenario 3
**Some customers pay Raju in advance for the fruits. Raju writes their names in a different section of the khata.
These customers keep taking fruits until Raju reminds them about paying again.**

Scenario 4
Raju maintains his everyday balance sheet. That helps him maintaining business. He calculates his every day profit & loss which
helps him calculate his monthly profit. Total profit calculation helps him paying mandi's dues as well as taking credits again.

Scenario 5
One of Raju's customers becomes lazy and wants him to pack fruit for him. They call Raju and Raju packs and sometime
even delivers the fruit to them.

ANALYSIS -> TASK LIST

1. Enter Credit details of customers(New and old customer).

2. Enter Cash –in-advance details of customers(New and old customer).

3. Able to send the customers notifications of payment due.

4. Enter daily sales and get and estimate of the profits/losses everyday.

5. Gets notification of customer orders.

6. Should be able to enter daily expenses.

7. Should be able to see tips on how to store fruits etc.

8. Know about latest fruits in the market and their details like cost, durability etc.
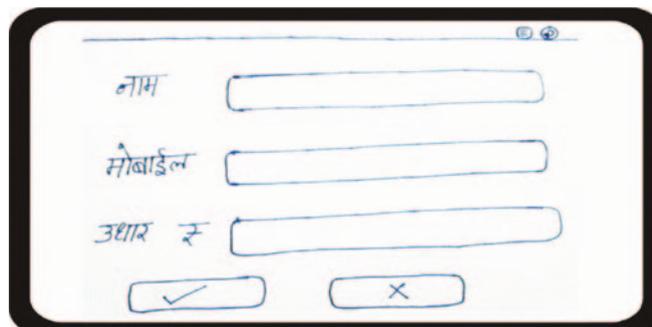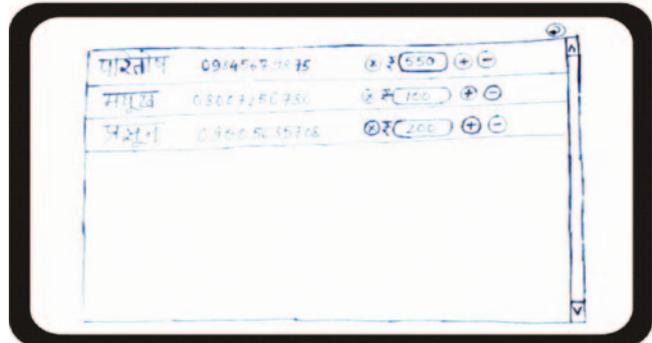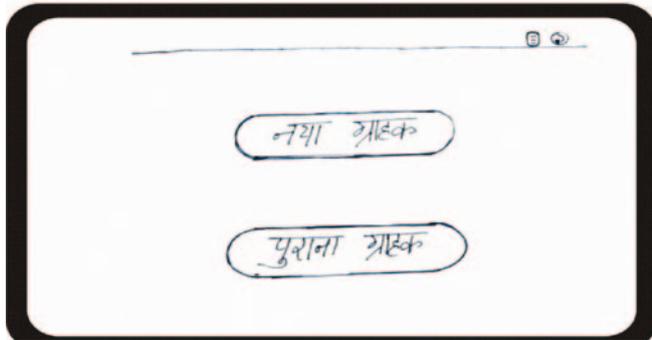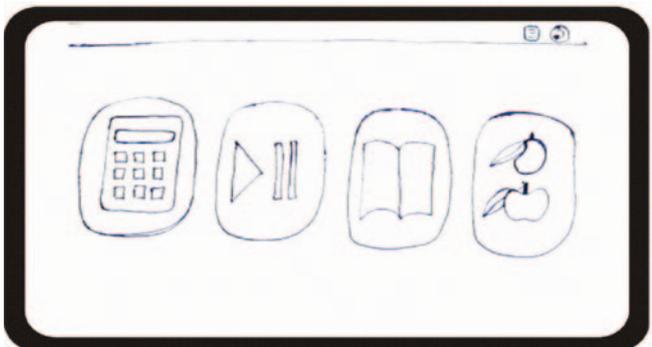
Design Strategy
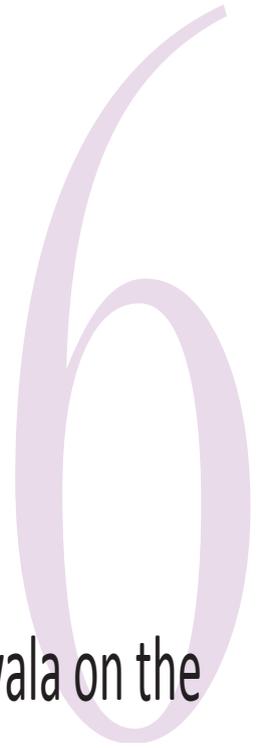
We are designing an application for the fruitwala on the Aakash which does:

For the fruitwala:
(a) Enables him to make calculations
(b) Helps him to organize his khata
(c) Provide more information about the fruit itself.
(d) Which entertains him during his leisure time.

Design
Evolution

7

CONCEPT 1

User Testing Results

1. The first icon of the calculator was identified by the user as a phone. (pic1)
2. The user guessed the third option as a notebook or phonebook. The identification was similar to what we were expecting.(pic2)
3. The media player icon was identified by the user.
4. User was confused with the cross button. To him it signified the multiplication sign(pic 3).
5. He was also unable to find the back button.
6. User was not clear how to assign Advance and Due sign to the money amounts.

CONCEPT 2

Khata | 01

Old Customer
New Customer

Pic (Small)

Name:
Phone:
Address:
Date:
Ref:

History | Total | Upload Pic

Option 01

Message

History

Option 02

Album / Photos

Name:
Phone:
Address:
Date:
Ref:

Click to write

25+ (If advance write advance)

A	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	@	R
1	2	3	4		

Write according to wish

On clicking the notepad area the keypad arises. Other area hides: The function features A to Z, 0 to 9, +/-/x/÷

25+ 300x112 ✓ ✗ =

| ✓ | ✗ |

10
| 0 | 1 | ... | 9 |

= : + = x ÷ :
Adv. due

Green → ✓   Red → ✗

A	B	C	D	E	F	G
H	I	J	K	L	M	N
O	P	Q	R	S	T	U
V	W	X	Y	Z	(	)
0	1	2	3	4	5	6
7	8	9	+	-	X	÷

Name : PARITOSH SINGH
Phone: 9847829104
Address: Hall 10, A-401, IITK Campus
Date: 20.04.2012
Ref: Mayukh

Name : PARITOSH SINGH
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Address: Hall 10, A-401, IITK Campus
Date: 20.04.2012
Ref: Mayukh

250 + 300 + 112 + 50 : 500 212 Due

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| Adv | = | + | — | x | / | Del | ⌫ | Due |

User Testing Results

The User related to design concept2
as it resembled a physical khata in many
ways. He was able to keep track of his
money very easily. He was able to mark
any amount as Advance or Due which
satisfied him very much.