Rethinking Grocery Shopping for Supermarkets

List and locate system

Under the Guidance of:
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Declaration

The research work embodied in the written submission titled "Rethinking Grocery Shopping for Supermarkets" has been carried out as Project 2 by the undersigned as part of the post graduate program in the Industrial Design Centre, IIT Bombay, India under the supervision of Prof. Ravi Poovaiah.

The undersigned hereby declares that this is an original work and has not been plagiarized in part or full from any source. Appropriate reference information or links have been provided wherever due. Furthermore, this work has not been submitted for any degree in this or any other university.

I understand that any violation of the above will be cause for disciplinary action by the institute and can also evoke penal action if need arises.

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Approval Sheet

This Interaction Design project entitled "Rethinking Grocery Shopping for Supermarkets" by Debasish Biswas, 136330010, is approves in partial fulfillment of the requirement for Master of Design Degree in Interaction Design.

Project Guide

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Date

Acknowledgement

I would like to express my sincere gratitude to Professor Ravi Poovaiah for his support and guidance. Without his constant efforts of trying to push me to find a purpose, this would not have been the same.

Furthermore, I would like to thank Prof. Anirudha Joshi, Venkatesh Rajamanickam, Pramod Khambate and Girish Dalvi for their valuable ideas and insights during the various stages of presentation of the project.

I am obliged to many of my friends who supported me, at various stages during the process of making this happen. The project wouldn't have been the same without them. Thank you Sanket for the frequent discussion and motivation, Riken for homemade snacks, Maharaj for his tablet, Prem for giving load and Debakshi for her presence.

I would also like to thank Industrial Design Centre, IIT Bombay for providing me with all the facilities and necessary materials and an environment that encourage me to work on such a challenging project.

"I was standing in a slow checkout line at the grocery store, and a woman
with a daughter in front of me struck up a conversation.
About two minutes in, she mentioned that her daughter just turned eighteen.
'Oh my God! Have you been waiting in this line her whole life?' "

- Jarod Kintz

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Abstract

Grocery shopping has always been a part of our Indian lifestyle, be it local kirana stores or the recently popular supermarkets. But, shopping in general has undergone drastic changes over past decade and so has the shopping behavior along with it. Today while online shopping sites provide an array of tools that help customers gain insight during the purchase decision process, retailers provide few such tools in stores for the consumers.

All medium of grocery shopping like kirana shop, supermarket or more recent online grocery shopping, has its own importance and need for existence. But there is been a change. Today users have evolved shopping practices and use multiple channels to search, compare and purchase products and services. Now that customers are entering supermarkets with technology in-hand, the focus must expand to providing product insight to the customer as well. By providing customers with product insight, retailers can provide a differentiated experience that increases loyalty, which can in turn increase revenue. This will in turn increase choices for the consumers.

The project aims at giving user a decision aid system that works outside as well as at the physical grocery store. The design solution will allow user to search, compare and list items they need for their grocery and then share this list with the retailers so they can use this list information to provide better services to the user. The project will contribute to understanding the current market trends and development of a detailed prototype.

Though the solutions is intended to serve independent youths in urban areas, it can equally benefit middle class families of both nuclear and joint.

Need for the Project

Grocery shopping is one of the most fundamental components of our life. We depend on local kirana stores and supermarkets for our grocery and household needs. The supermarkets appeals consumers for less regular purchases: packaged foods; soaps, detergents and other groceries; and staples, such as rice and grains.

Supermarkets provide variety but, shopping in air-conditioned comfort has less appeal after a long uncomfortable journey from product aisles to checkout counter. India's shoppers now go for convenience over variety. Online shopping and local kirana store seems to provide better convenience prospects. This forces us to rethink physical retailing.

Why Supermarket?

Most shoppers in India buy dairy products, vegetables and fruit either daily or every two to three days, and the traditional trade has a strong hold on these frequent purchases.

Similarly, online medium is preferred for electronic items, apparels and books with features such as search, compare and filter. So, they cater to a specific need.

A supermarket can offer a greater variety of groceries including less regular purchases under one roof. It provides an independent shopping experience based on touch and feel.

The consumer landscape is experiencing evolutionary undercurrents which is significantly impacting the way they shop. The physical retailing will need to cater to this evolution. The retailers are feeling this impact. Since supermarket format is the most common form of organized grocery retailing in India. Therefore, this study would focus at only supermarkets.

Nature of users

The major chunk of the current population who use e-commerce services are the independent youth. They are digital-savvy and have high exposure to the media and brands. They will be the immediate users as they use smartphone.

Scope & Objective

Scope of the project

The project will be within the scope of supermarkets. The aim is to provide usable product insight to the customer, independent of them being physically present at the store. The study will be done to identify the current trends of organized retailing in India. International trends and technologies will also be studied. The user group has been limited to only independent youth. As they are digital-savvy and have high exposure to the media and brands. They will be the immediate users as they use smartphone. Due to the duration of the project the study will only be conducted over two supermarket chains namely Big-bazzar and D-mart.

Objective

The general objective of this project is to design a convenience based shopping aid for grocery shoppers. Providing customers with usable product insights, retailers can provide a differentiated experience that will increases loyalty. The project aims

- To understand the problems areas in the current supermarket scenario from the point of view of customer.

- To design a system level solution for providing shopping aid to users.

- To figure out the product insights can be provided to users.

Project Timeline

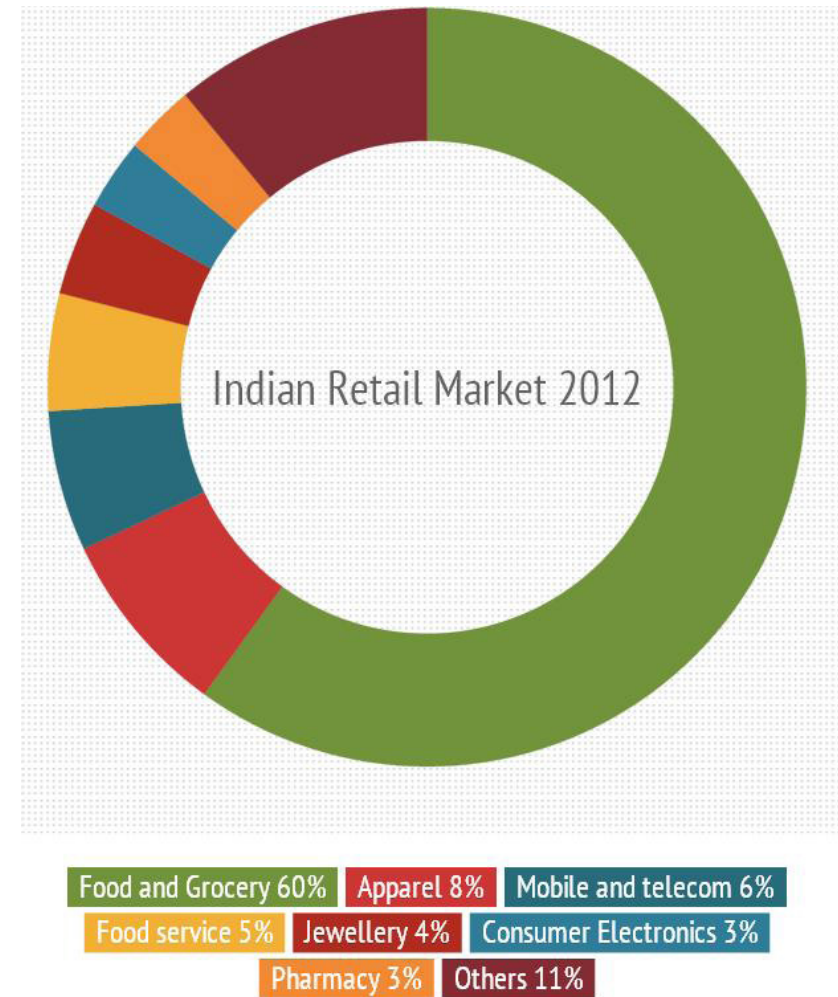| JULY	AUG	SEPT	OCT	NOV
• Finalizing the topic	• User studies with User group	• Analysis and personas	• Analysis	• Report writing
• Defining the need of the problem	• Understanding the current process	• Redefine the brief	• Concepts and ideation	• User feedback
• Secondary research	• Analysis	• Concepts	• Prototyping	• Finalizing the design
				• Evaluation

Secondary Research

Retail Industry in India

The concept and idea of shopping has undergone a vast changes in terms of format and consumer buying behavior. Modern retailing has entered into India as is observed in the form of sprawling shopping centers, multi-storied malls and the huge complexes that offer shopping, entertainment and food all under one roof. The Indian retail industry has experienced growth of 10.6% between 2010 and 2012 and is expected to increase to USD 750-850 billion by 2015. [1]

Food and Grocery is the largest category within the retail sector with 60 % followed by Apparel and Mobile segment.

Figure 1. Retail market distribution in india

Indian Retail Market 2012

Food and Grocery 60%   Apparel 8%   Mobile and telecom 6%
Food service 5%   Jewellery 4%   Consumer Electronics 3%
Pharmacy 3%   Others 11%

Organized Retailing in India

Currently organized retailing constitutes only 8% of the total retail industry and remaining 92% is unorganized retailing. Unorganized retail include local traditional stores. Within the organized retail sector, Apparel is the largest segment. "Food and Grocery" and "Mobile and telecom" are the other major contributors to this segment. [2]

I will focus on food and grocery for my study because I would also like to see its possible application in unorganized retail.
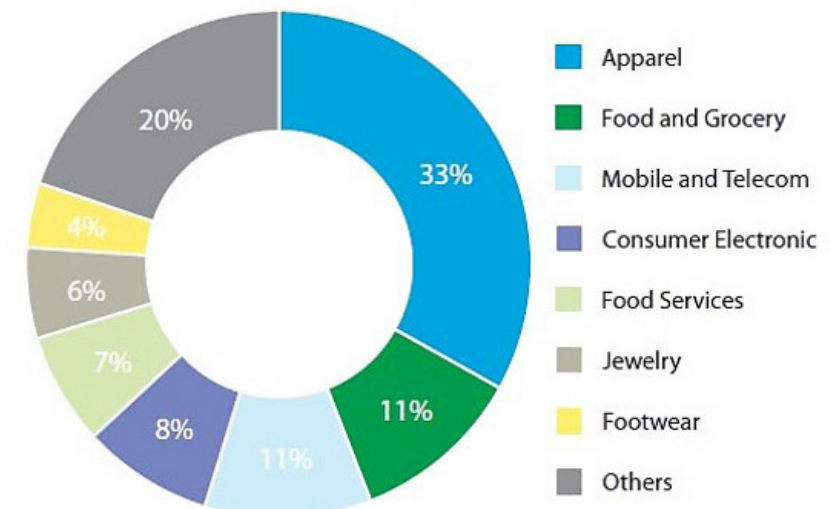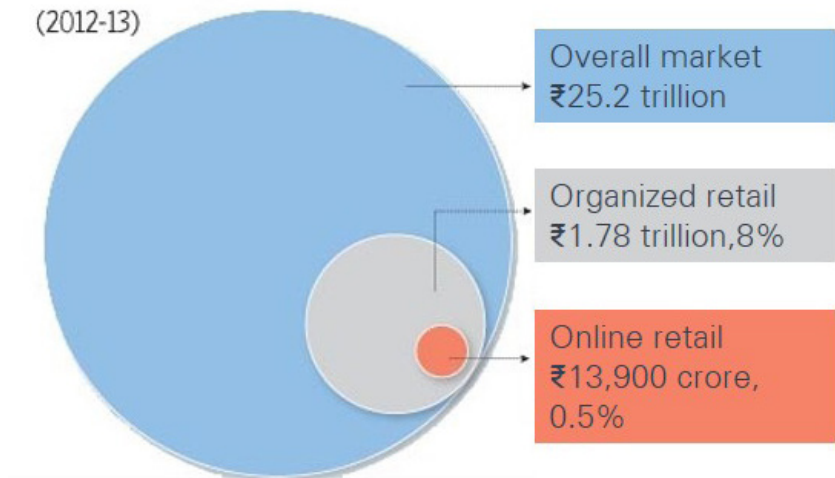

(2012-13)

Overall market
₹25.2 trillion

Organized retail
₹1.78 trillion, 8%

Online retail
₹13,900 crore,
0.5%

- Apparel — 33%
- Food and Grocery — 11%
- Mobile and Telecom — 11%
- Consumer Electronic — 8%
- Food Services — 7%
- Jewelry — 6%
- Footwear — 4%
- Others — 20%

Figure 2. Distribution of organized retail

Retailing Formats in India [3]

Malls

This is the largest form of organized retailing. Malls are located mainly in metro cities. It provides service and entertainment, all under a common roof. It covers an area of 60,000 sq ft to 7,00,000 sq ft and above.

Department Stores

These include large stores ranging from 20000-50000 sqft. These are categorized further into localized departments such as clothing,toys, home, groceries, etc.

Speciality Stores

They focus on specific market segments.
Example- Crossword.

Discount Stores

Discount stores or factory outlets, offer discounts on the MRP through selling in bulk.
Example- Brand factory

Convenience Store

These are small stores usually 400-2,000 sq. feet. It stocks high-turnover convenience products. And opens for extended periods during the day, seven days a week.

Supermarkets

These are large self service outlets, catering to varied shopper needs. They offer variety at high discount rates. They span over an area of 3,500 sq ft to 5,000 sq ft. Having a strong focus on food & grocery and personal sales.

For this project we will study Big Bazzar and D-mart

Figure 3. Retailers in India

The Rise of the Connected Consumer [4]

Today's consumer has vastly different and more sophisticated expectations of product, service, value and environment than five or even three years ago.

They are more informed and use multiple channels to search, compare and purchase products. This is due to emergence of e-commerce. Thus, consumers have evolved their shopping practices. For example people visit the physical stores to touch and feel the product, before going online to compare prices. They are socially connected and feel empowered. Today's hectic and fast-paced lifestyle has made them time starved.

This development has big implications for the retailers. There are other factors such as the escalating business business cost, tougher competition and evolving technology.

Time starved

More informed

Value conscious

Socially connected

Connected and empowered

Connected consumer

Business cost are escalating

Retailer

Technology is evolving

Competition is getting tougher

Source: Author

Identified User Group [5]

Time-starved
With growing income and hectic lifestyle, the deciding factor of purchase for them is convenience. They reside in urban area, where both the members earn and are tech-savvy.

We can see the emergence of online grocery stores such as AaramShop.com, EkStop.com, BigBasket.com. Online apparel retailers are offering on the spot trial & return and customized delivery time for such consumers.

Emerging affluent
These are typically young consumers with high exposure to the media and brands. Their needs are different from mass market and include value convenience and better services.

Value conscious consumer
They are typically less brand conscious, but they purchase in bulk and actively look for deals. They are used to discount culture and actively seek discounts in their day-to-day shopping sessions as well.

Online consumer
Youth is the major proportion of the online users in India. Convenience is a key determinant of online shopping and therefore we see the increased use of mobile phone for shopping.

This is also the segment with young earners who are more open to experimenting. There is a growing penetration of media & digital technology due to internet 3G. Hence, increased buyer power due to more information and newer channels of purchase at disposal.

Case Study: Online Grocery Website

Localbanya

Localbanya is based in only Mumbai. Its an online convenience store. The selection has everyday essentials like salt, rice, flour, sugar & pulses to not so easily available specialty products like frozen waffles, pepper spray, etc.

Salient Features

- Easy product selection, finding items requires very few steps.
- Delivery is done based on delivery slots.
- The information architecture is very simple.

Problem areas

- Delivery slots comes at the end of transaction. There is a waiting of 3-4 days as slots are full.
- No option to use order list for future use.
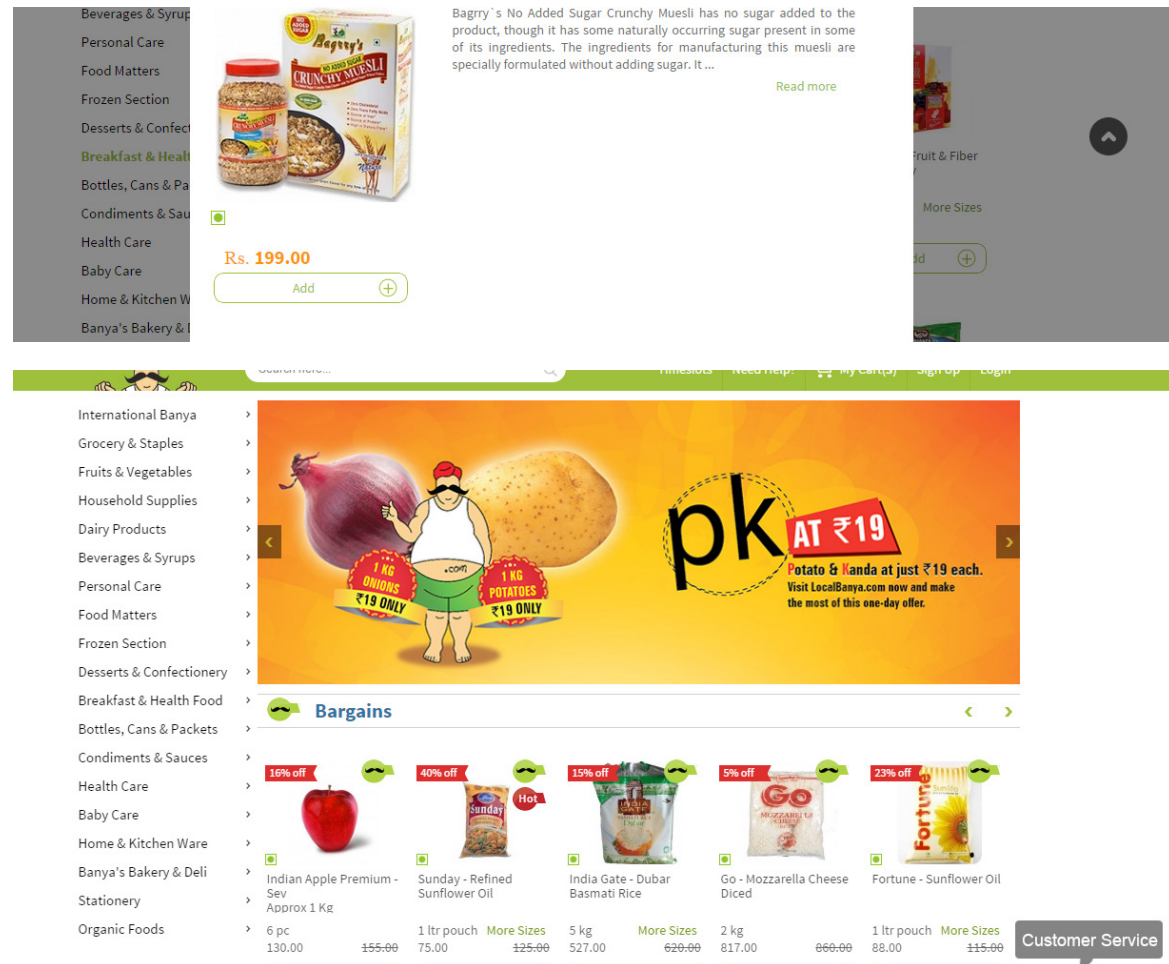
Figure 4. Screenshots Localbanya.com

Case Study: Online Grocery Application

Bigbasket

Bigbasket is an online groceries application that caters to time starved and online consumers. It has more than 10000 products on app and delivers the order at doorsteps.

It removes the need to visit physical stores for groceries. The aim is to reduce shopping time and money. .

Salient Features

- The information architecture (IA) is similar to that of e-commerce websites for searching products.
- Option to create a shopping list.
- Delivery slots are predefined and their is freedom to choose a suitable time slot.

Problem areas

- Only two item's information is visible at one time due to visual layout.
- The list feature lies deeper in the IA.

Figure 5. Screenshots Bigbasket
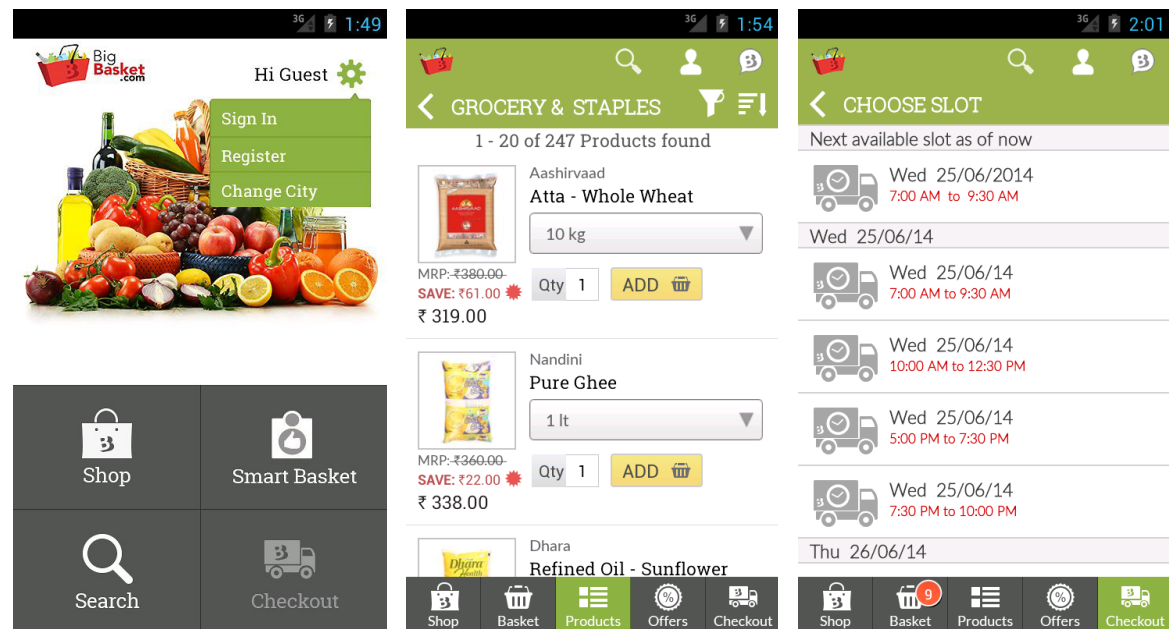
Case Study: Online Grocery Application

Kada

Kada is another online groceries application that is similar to Bigbasket. Items are home delivered.

Salient Features
- The information architecture (IA) is better than bigbasket.
- Less clutter of item information which makes easier to browse items.
- Visual layout allows to show more items on screen at a time.

Problem areas
- Products that needs to be touched and felt are difficult to decide for buying. For example fruits, rice, pulses, etc.
- For every order a new shopping list is created, which is not saved for next use.

Figure 6. Screenshots Kada
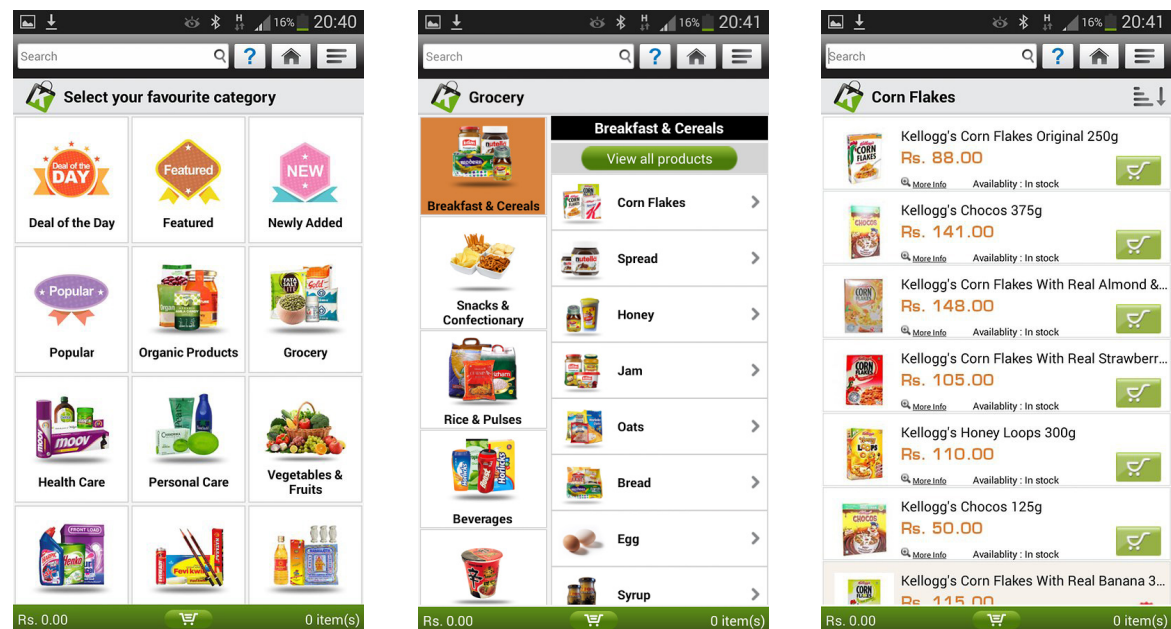
Click & Collect facility

TESCO

TESCO which is a multinational grocery retailer, introduced Click & Collect facility which offers the convenience of picking up groceries at a time that suits the user.

Click & Collect Groceries is a location specific service. It needs the user order online and select a delivery time-slot.

Salient Features
- Reduces the shopping time for picking basic and regular groceries.
- Consumer has the option to modify and get new items at the supermarket.

Problem areas
- If the order is placed online then, it should be delivered at home. The consumer has to put effort if he does not wants anything else from supermarket.

Step 1 | Step 2 | Step 3

Choose suitable time slot to collect your groceries

Place your grocery order online

Pick up from the dedicated collection point and go.
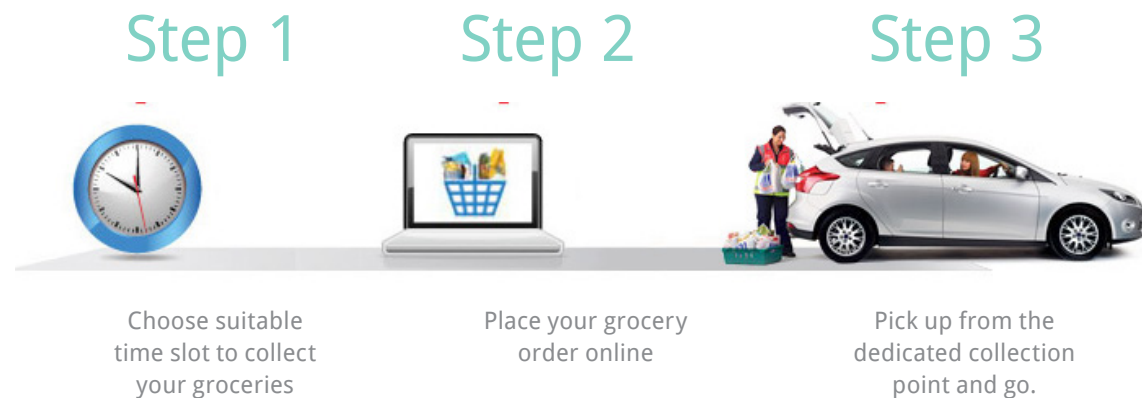
Figure 7. Quick & collect, Tecso

BLE devices in retail

iBeacon

BLE is blueooth low energy which is used in iBeacon devices by Apple. This does not need online data connection to work. This is being tested in stores outside India.

Salient Features

- Micro-location geofencing can provide indoor location which can tell the location of items and help in navigation within store.
- Contextual retailing can provide a more personnel level of granularity in services.

Problem areas

- Being a new technology it has a limited smartphone platform support.
- This depends on use of Big-data, therefore providing security of data and privacy will be an issue.
- Removing the corporate grip.
- India has abundant labour force making adoption of such a system difficult.
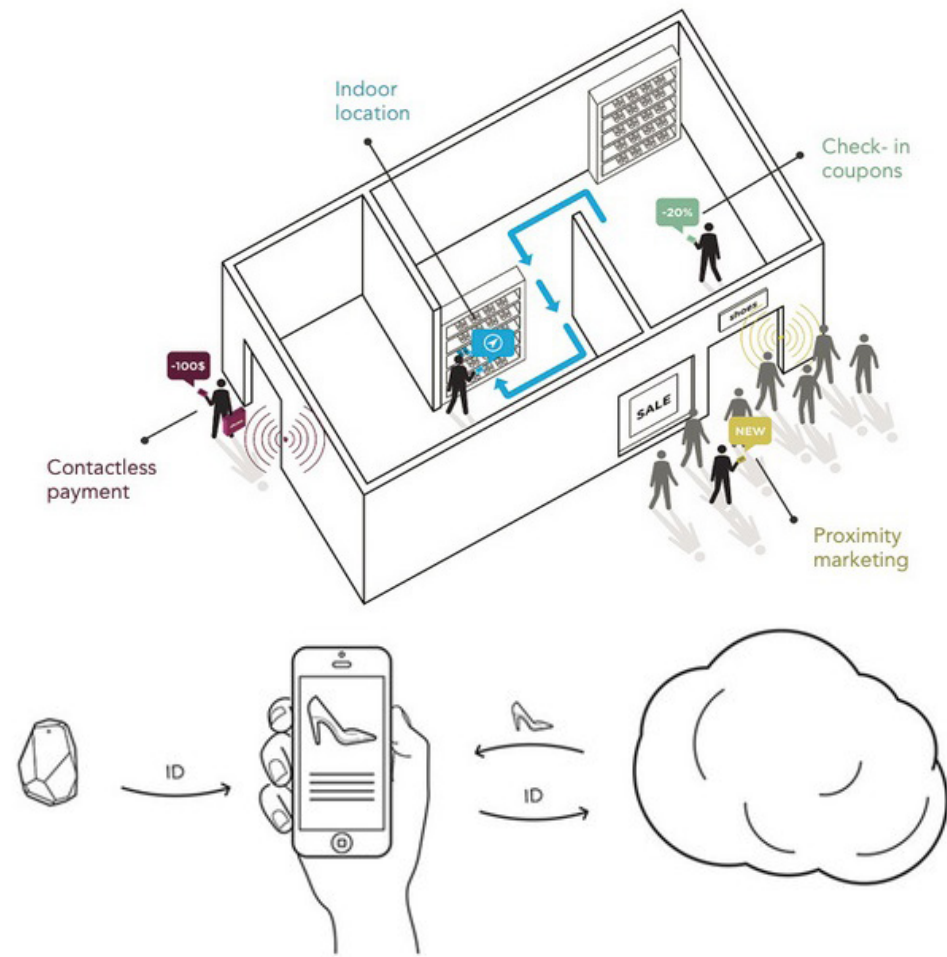
Figure 8. iBeacon for Retail

User study 1

The first user study was done using online survey, to get an idea about shopping habits of different users. A total of 61 users of different age groups responded. Their age distribution is as below-

18-21 years...17 Users
College students

22-25 years...28 Users
PG studies/ freshers entered in professional career

26-35 years...20 Users
High focus on profession/career

The users belong to middle class background. Half of them were working and the rest were studying.

User location

18
2
1
1
7
2
1
1
23
2
2
2
2
3
1

Gender

Male
Female

0   8   16   24   32   40   48

Male   42   65%
Female   23   35%
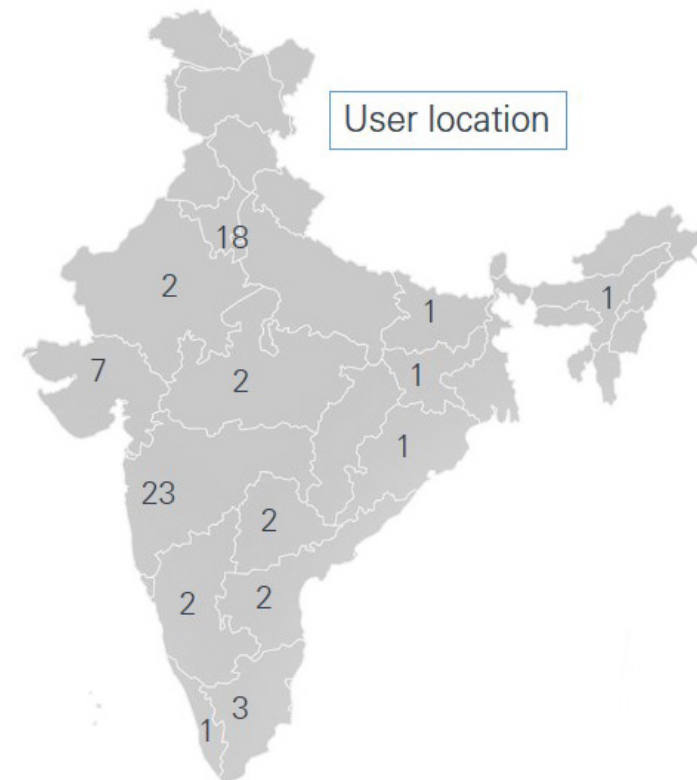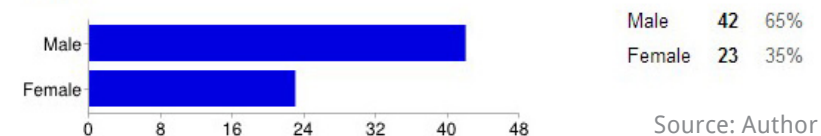
Source: Author

User study 1

Observations

- A majority of the users visit supermarket 1-2 times per month for their main grocery shopping requirement.
- Shopping from supermarket is considered time consuming. Various factor adds to the overall time taken at supermarket, such as searching for items and waiting in billing queue.

Inference

- Even though users use local stores for regular items, they need to visit supermarket at least once a month for specific items and shopping experience.
- Shopping involve regular items which are repeated frequently.

Insight

- Shopping time needs to be reduced for regular habits and items.

How Frequently you go to supermarket?

once in a mo [28]
in 2 months [12]
every week [2]
once in 2 we [13]
once in 3 we [10]
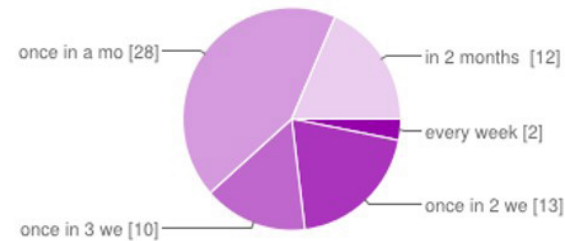
every week	2	3%
once in 2 week	13	20%
once in 3 week	10	15%
once in a month	28	43%
in 2 months or more	12	18%

How much timetaking is shopping in supermarket?
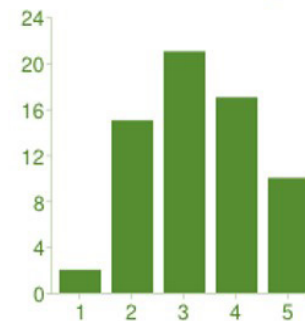
1	2	3%
2	15	23%
3	21	32%
4	17	26%
5	10	15%

Source: Author

User Study 1

Observations

- Small size items from home care and food are difficult to locate and find inside the store.
- Users right now are not using smartphone inside store for product information, except in case of costly items like electronics and books.

Inference

- Items size and form factor help in locating it inside store.
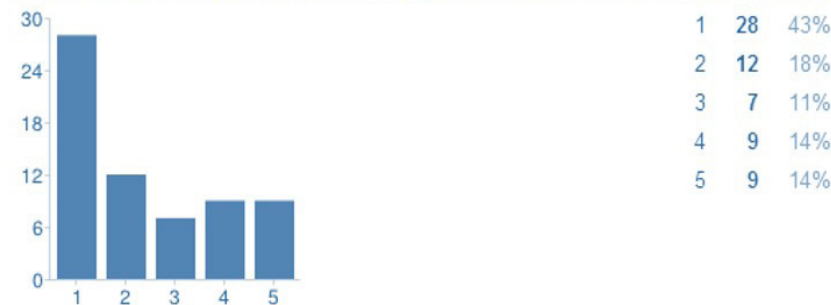- Smartphone can be used for finding product information inside store.

Insight

- Use of smartphone for providing product insights and creating a differential shopping experience.

Which item you find difficult to locate and find inside store?

Food- oil, chips, veg and fruits, etc	16	25%
Homecare - shampoo, detergent, etc	25	38%
Frozen and dairy items	12	18%
Apparels	9	14%
Electronics	11	17%
Other	4	6%
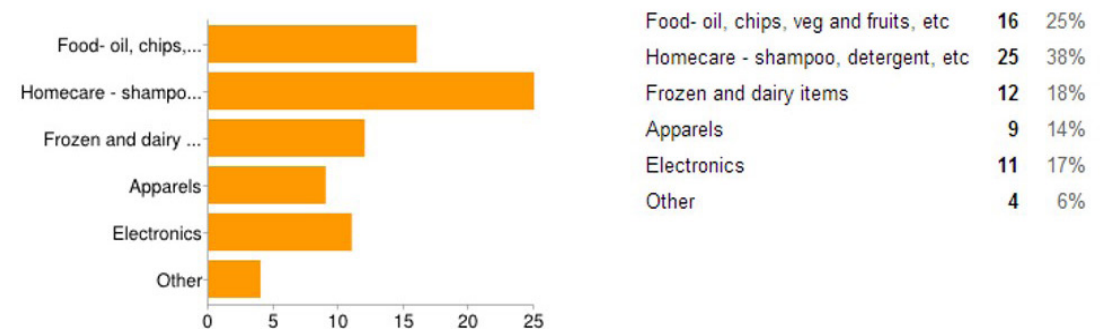
Do you use smartphone while shopping to check product information, review, price etc ?

1	28	43%
2	12	18%
3	7	11%
4	9	14%
5	9	14%

Source: Author

User Study 1

Observations

- All users are used to online shopping. They purchase electronics, apparels and books online.
- User prefer online shopping because it is convenient and provides decision making aid. Features such as search and sort by make shopping an hassle free experience.
- Users have smartphone.

Inference

- Users will use smartphone for online shopping.
- Features of online shopping reduces time and provide product insights.

Insight

- Use of smartphone for online grocery shopping to reduce shopping time and provide product insights.

No physical travelling

Everything a click away

No commute required

Saves time and money   Convenience   Online Shopping

Home delivery

Ability to shop in parts

Variety

Features

Search option

Sort by

Offers

Product details

Decision making aid

User review

Compare products

Organized information
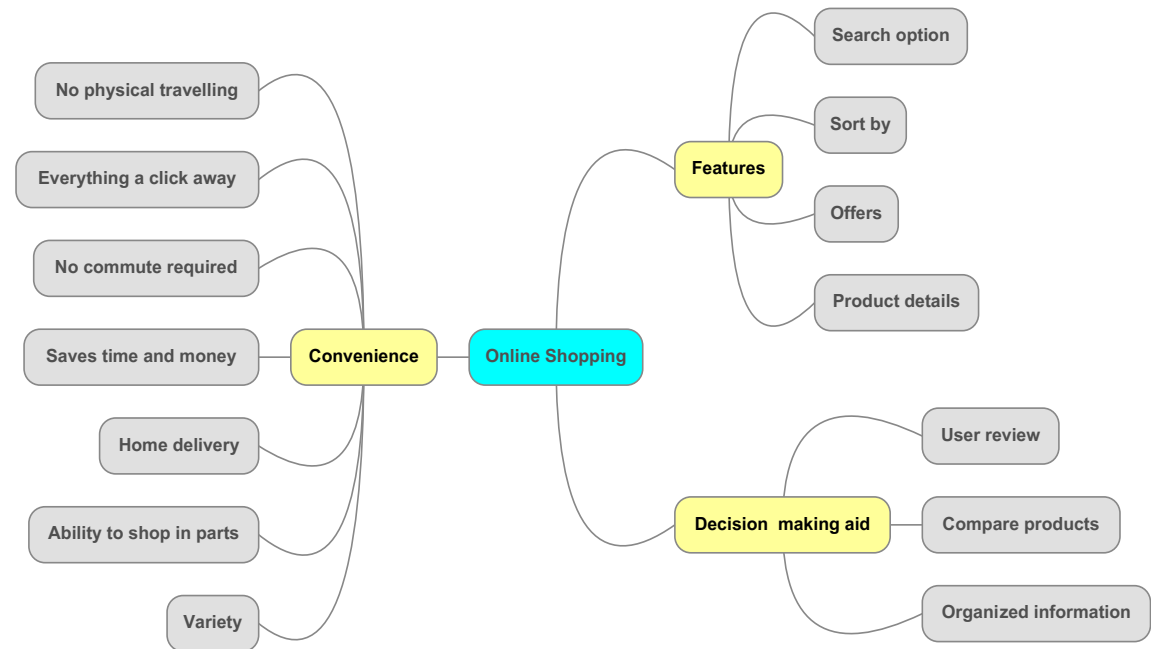
Source: Author

User study 2

The second user study was done using contextual enquiry and shadowing, to understand shopping behavior and purchasing habits. A total of 18 users were selected using convenience sampling.

Primary users

22-25 years..10 Users
PG students

26-35 years..06 Users
Working professional focused on career

Secondary users

Retailer...02 Users

I gathered all the data and analyzed it to understand the problem area more clearly. Identified key factors determining repeat customers, motivation and reason for shopping to get meaningful insights which resulted in number of design ideas and concepts. In the next pages the findings from this primary study will be discussed.

Source: Author

Stages found in shopping

It was found that grocery shopping is a long process and is not only limited to going to supermarket and coming out. The process could be divided into three phases. Phase one includes making the grocery list and planning to go for shopping.

In phase two the user visits the supermarket. The first point of contact with supermarket is usually luggage counter to keep your bags followed by check-in.

After check-in the buying process begins. Majority of the user did not follow list while shopping. It is used only at the end or during shopping to make sure nothing is left out.

Stage two ends at the point of sale(POS). This is where people stand in long queues for billing their groceries.

There is a stage three which is post shopping experience. The person recollects if they need anything else and review the shopping experience.
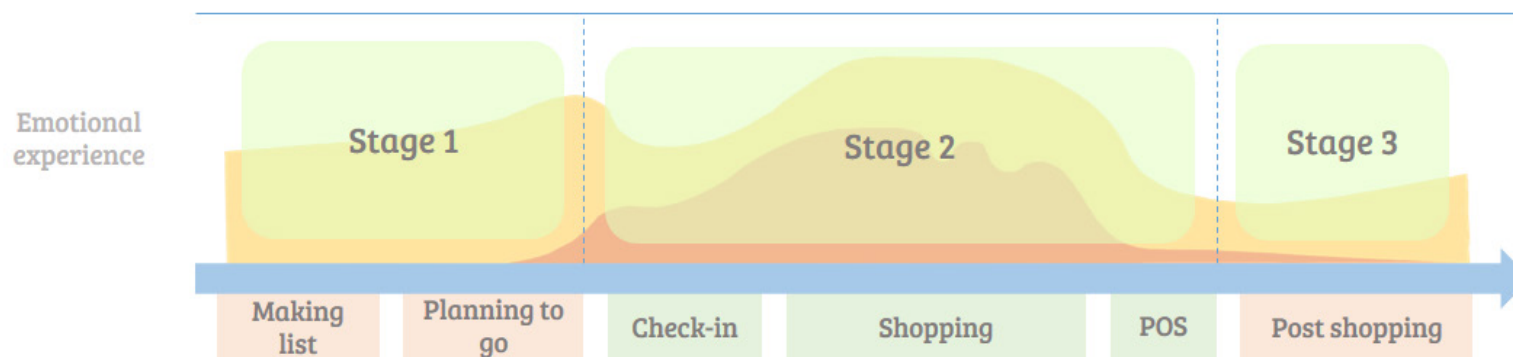
Source: Author

Drawn Experience Map of Supermarket

The user went through different stages of emotional experience, thoughts and feeling throughout this stages.

The diagram below tries to plot their emotional experience towards the supermarket and towards the journey

I have plot the questions they thought about at different stages.

Thought and feelings

Am I forgetting something ?

First supermarket or mall

Will go when less crowded

Where is luggage counter ?

Lets see what I want first

Oh, they have this product !

Sweet deal !

Where is this item ?

I am tired.

Such a long queue always.

Have I got everything ?

Emotional experience

Throughout Journey

Towards Supermarket

| Making list | Planning to go | Check-in | Shopping | POS | Post shopping |

Source: Author

Analysis

Supermarket

Pros

- Supermarket provides a huge variety of products under one roof. Usually Packaged items and uncommon items. Also household items and apparels.
- Mall and shopping experience of freedom and variety.
- Physically trying out items before making purchase decision.
- Instant gratification of buying.

Local Kirana shop

Pros

- kirana stores provides with daily day to day items along with regional and custom items that only a local kirana store can provide.
- A personnel relation is established with store owner if you are a repeat customer.
- The shops are in close proximity and also the no of shops are more.
- Home delivery for more items.

Online Shopping

Pros

- Users visit online store to buy apparels, electronics and life-style products.
- Use of features such as search, COD, browse, sort by and compare.
- User feels empowered as they can decide what to buy on their own time and when to order it.

Source: Author

Analysis

Supermarket

Observations

- Shopping from supermarket takes a lot of time and effort.
- Supermarkets are located at relatively longer distance and requires travelling using a transport medium.
- Long queue time for payment is usual at peak hours.
- Walking and Navigation

Inference

- Visiting supermarket requires planning because cost and time is involved.
- In this planning time list of items is prepared.

Insight

- Need for a planner that can help in planning stage as well as shopping stage.

Observations

- Repeat users have a rough idea of organization layout and seldom refer to the signage system.
- Initially users travel from aisle to aisle looking at everything, but after they are fatigued of walking they visit specific aisles to find items they need.
- Finding relevant product information takes time in the deliberate chaos of options.

Inference

- Repeat users have a mental map of layout of the store but not the specific location of items inside.
- After a point users are fatigued so they stop exploring and shop according to requirement.

Insight

- Some items require navigation help to locate inside store.
- There is a need to reduce fatigue by reducing effort on the user's part at least for repeating activities.

Findings

- Shopping time needs to be reduced for regular habits and items.

- Use of smartphone for providing product insights and creating a differential shopping experience.

- Use of smartphone for online grocery shopping to reduce shopping time and provide product insights.

- Need for a planner that can help in planning stage as well as shopping stage.

- Some items require navigation help to locate inside store.

- There is a need to reduce fatigue by reducing effort on the user's part at least for repeating activities.

Persona 1

Name: Gautam Patel

Details
- 25 years old
- Bachelor
- Recently placed in an IT company
- Recently shifted to Bangaluru due to job
- Lives in a shared flat with 3 other colleagues
- Recently joined a gym and trying lean diet

Scenario
- He has recently shifted goes to a local kirana shop for small purchases.
- Is health conscious therefore prefers to cook by himself and tries to maintain a lean diet.
- Since many of the items are only available at supermarket, therefore he maintains an items list before visiting supermarket.
- Maintains to buy list on his smartphone.
- He finds it difficult to find some items in the store.
- Some items are difficult to compare as they are not so regular items.

Persona 2

Name: Pooja kulkarni

Details
- 27 years old
- Married for 2 years
- Is a teacher in primary school
- Lives in Delhi
- She lives with her husband in a new flat
- Learning to cook new items
- Wants to decorate interiors of house
- Loves shopping and visiting mall on weekends

Scenario
- She likes to visit supermarket during her shopping visit to mall.
- She shares a common list with her husband, so she can know what he wants.
- She actively looks for deals in store and takes time to make choices.
- She looks at recipes of food items on her smartphone.
- Does not like to make list for repeat items.

Design Idea's

Idea 1: Make list and reserve items

Browse items, favourite them

Recommendation based on purchase history

Family can create list
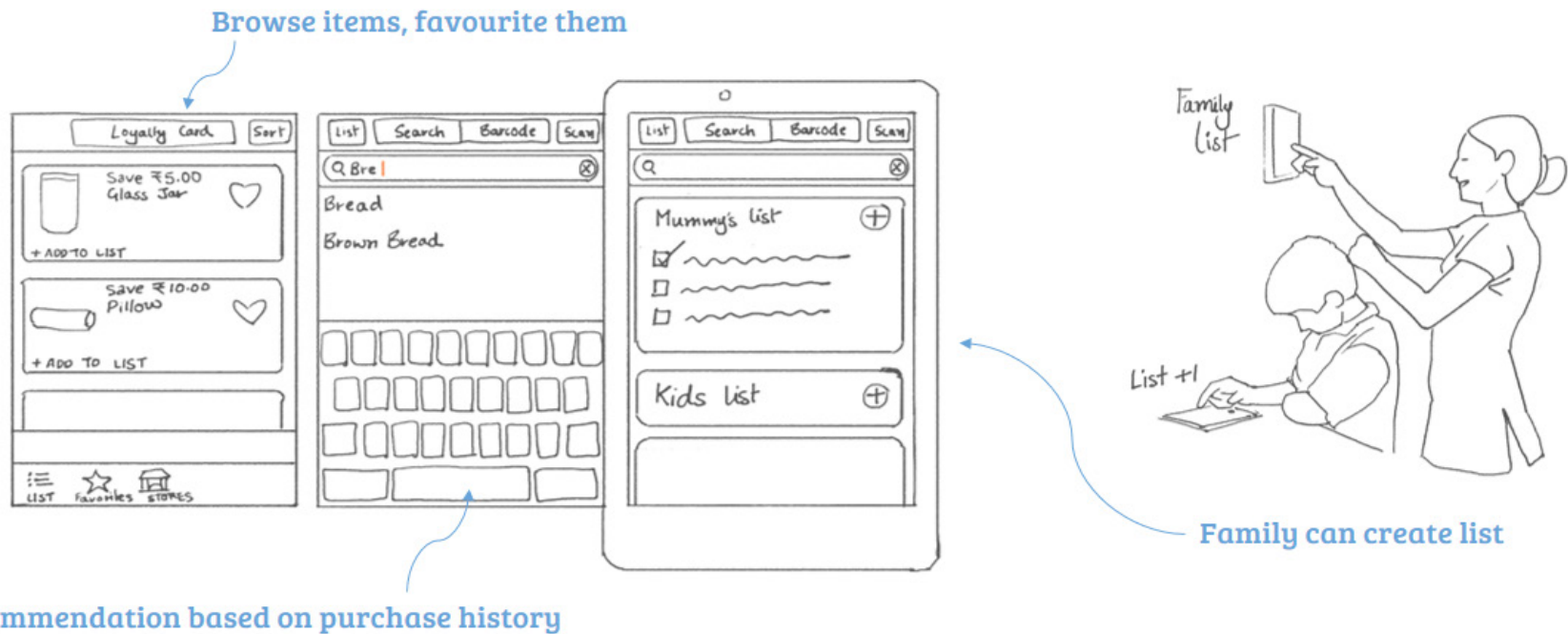
Idea 1: Make list and reserve items

The idea is to make an grocery list application which lets you create and share your list with people you want like family member and friends. Your will be able to browse through items with real time prices and add them to your list without going to the store. Supermarket will provide you with recommendation based on your list.

The application could be on a phone or common tablet, where family members and friends can add the items they need to the list after browsing. You can have a separate personnel list. These list can be saved and built upon later by adding and deleting items.

The list could be prepared overtime adding items as you need them. This reduces the chances of forgetting any item.

Problem areas
*   Providing the IT platform to provide information like real time prices to consumers.
*   Prices keep fluctuating so how would the list make up for the changed prices.
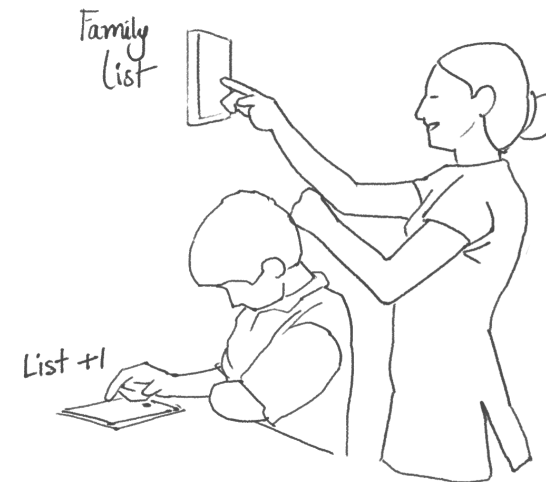
Design Idea's

Idea 2: Click and collect

Backend Person collects items

Kiosk for small orders

Shop for other items

Collect and pay
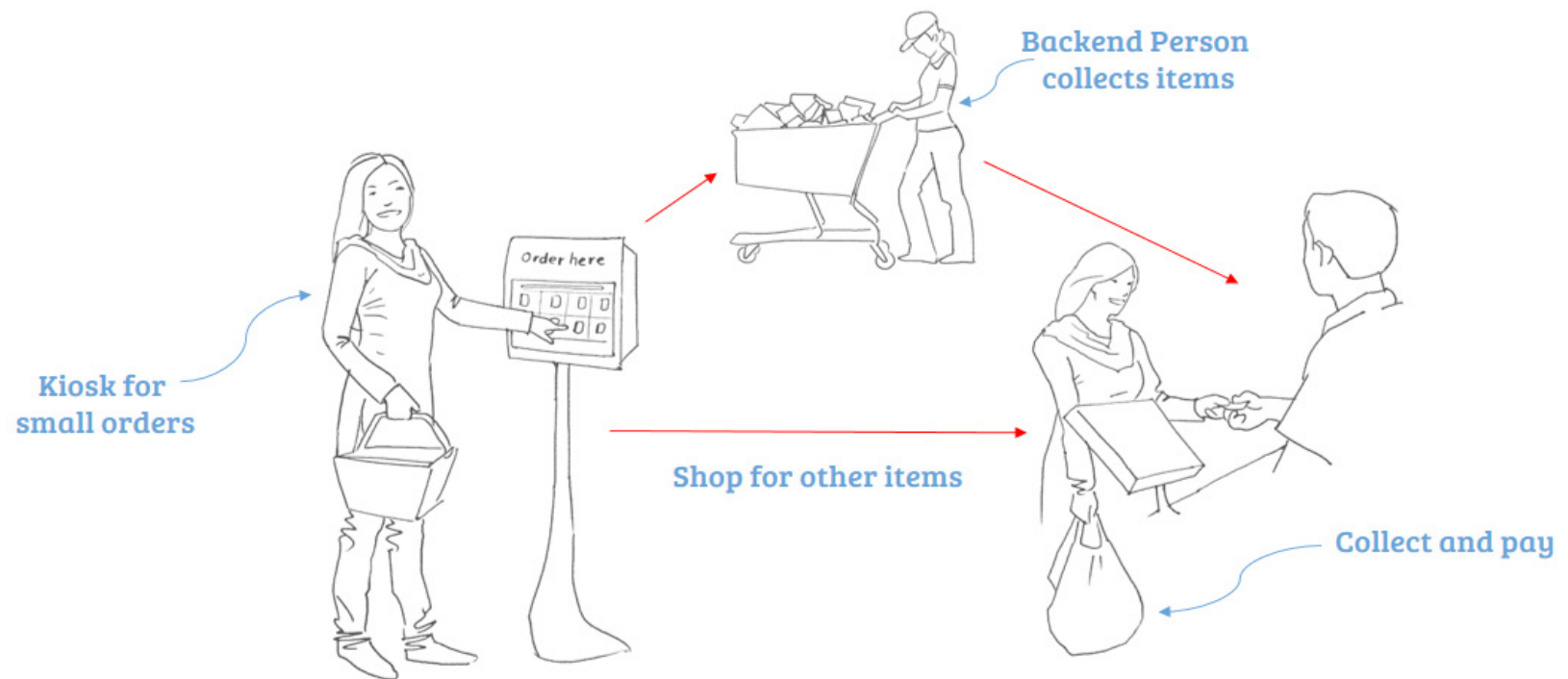
Idea 2: Click and collect

The idea is to reduce the process and time taken for buying the regular items that you are sure of. You can select the items at the supermarket by using the kiosk or share the list of items with the kiosk using your smartphone.

Once you have shared the list with the supermarket, you can your do your other groceries. In meanwhile at the back end the staff will collect your items and keep them ready at the counter. There will be minimum fixed amount of grocery for which this service could be used. This will help to reduce overall shopping time.

Problem areas
• Adoption by retailers because they want the user to go through every items in store, so they buy more items. But, supermarket chain such as TESCO have started using similar service.

Design Idea's

Idea 3: Interactive Aisle Display
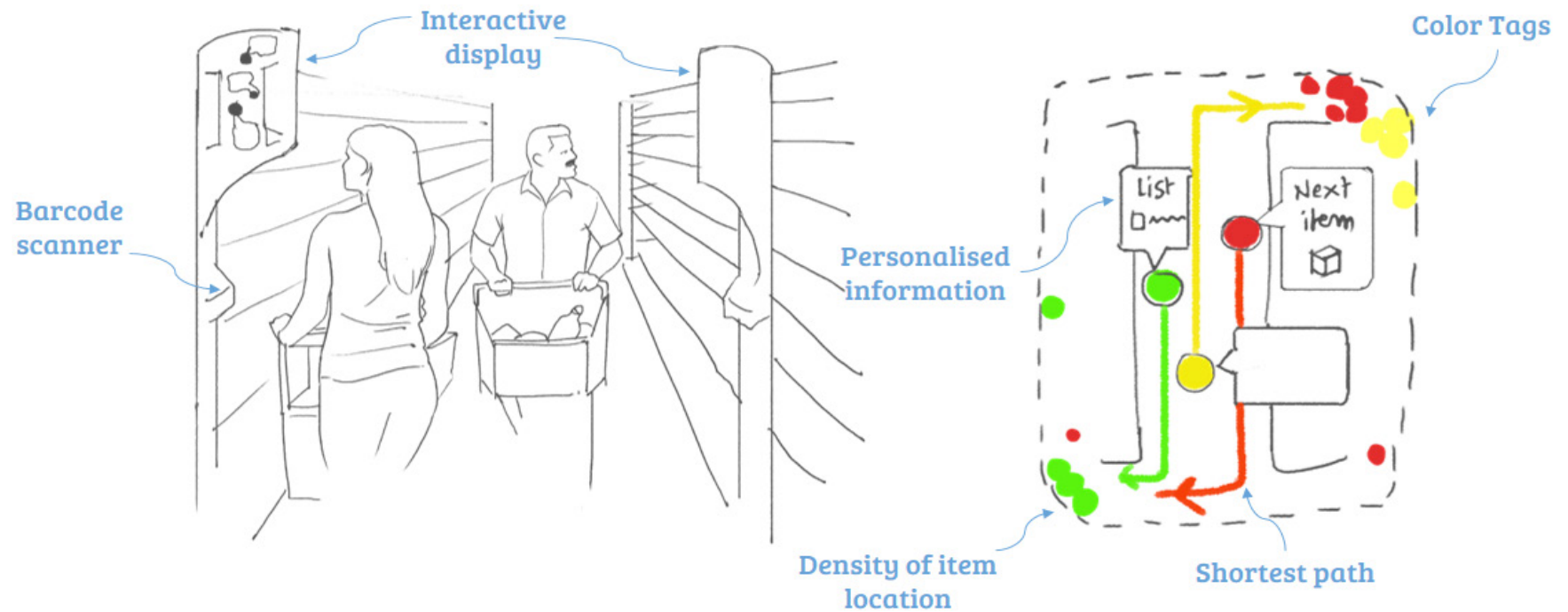
Idea 3: Interactive Aisle Display

The idea is to have interactive aisles which will show you the relevant items based on your location in the store. This will BLE technology to provide indoor locations using triangulation.

The information can be items to pick from that aisle or review on those items. It can also provide navigational aid and show where other items on your list are located.

Problem areas
- The Indian supermarkets are so crowded that it will be a challenge to impart information.
- The infrastructure will require to maintain the BLE devices network.
- The serviceability will depend on the user having a BLE enabled device and a platform support.
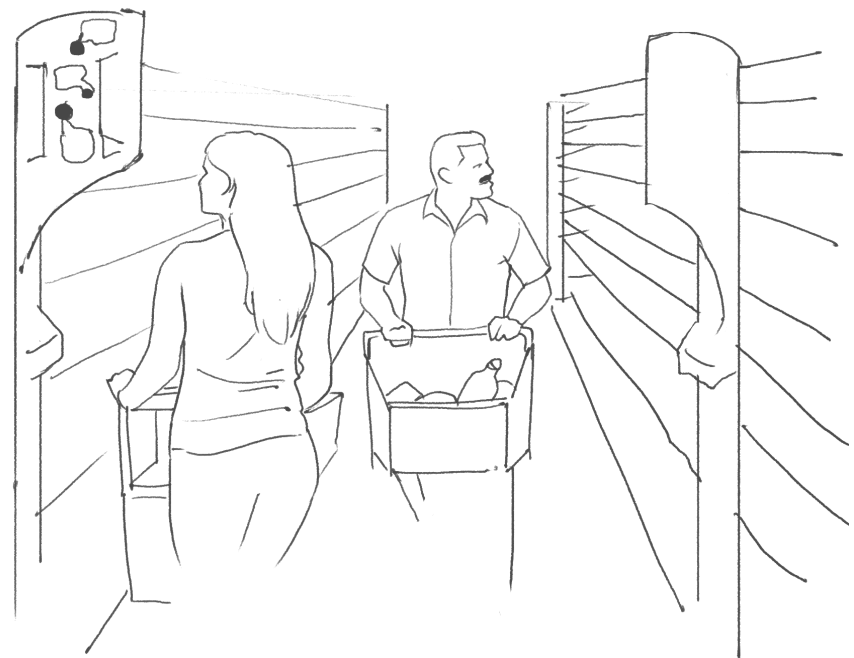
Design Idea's

Idea 4: Smartphone Shopping Assister
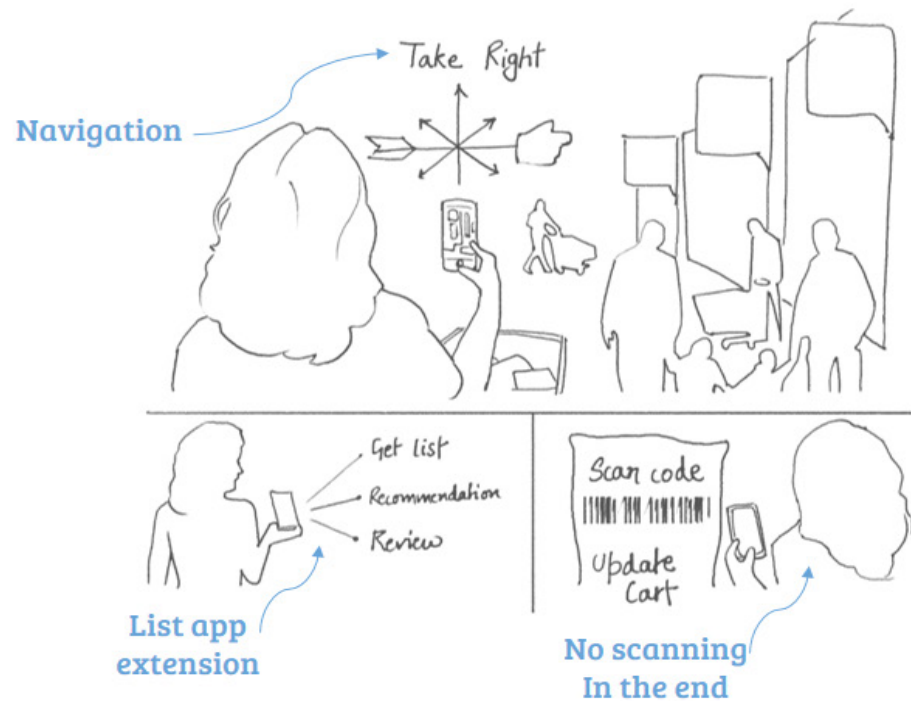
Idea 4: Smartphone Shopping Assister

The idea is to develop a smartphone shopping assister that can provide product insights inside the store. It will allow you to locate an item, scan it and get information on that item. You will get in store recommendations, offers and reviews of products.

This idea will uses BLE technology as base to provide services. Having this service on smartphone provides a common platform for customers.

Problem areas
* This is type of contextual retailing and and uses big-data to provide recommendations.
* This may not be acceptable by many users.
* It will be difficult to escape corporate grip.
* It is not clear is such granulation of services will be valid in Indian context.
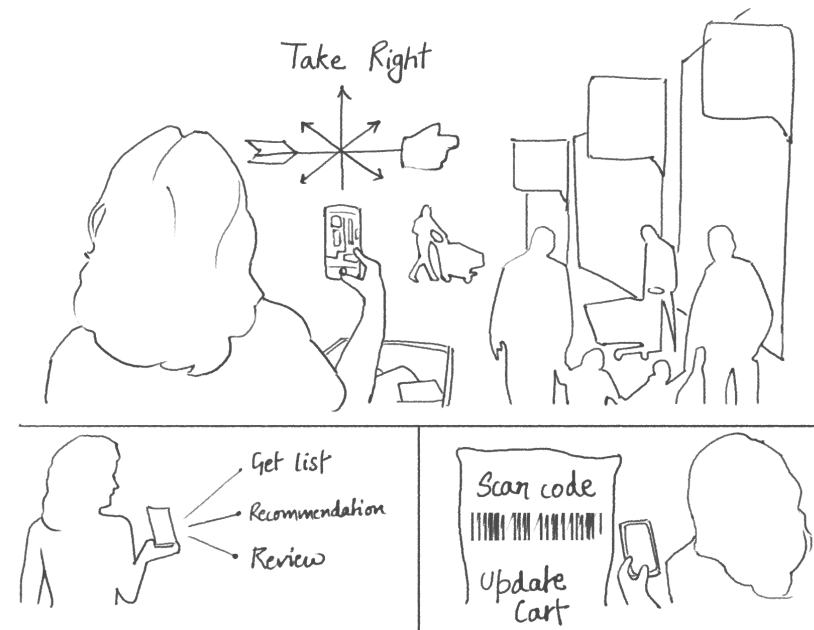
Connecting the dots

The final concept

The final concept is to provide a convenient platform, which will empower the consumers to have a differentiated shopping experience. It will use the insights learned from discussing online and physical retailing.

The final concept will use an hybrid approach, which will incorporate the best of all the discussed ideas and negate the limitations.

The final concept was focused on creating an application, which will allow users to plan their shopping and take some shopping decisions before hand. This will save them time and effort when they are actually shopping at the supermarket. Smartphone was used as the platform for this as the concerned user group is already using it.

Structure

Service Blueprint

The service blueprint indicates the basic service design flow which in this case is the supermarket service. The final concept tries to intervene at specific service points and try to improve the overall experience design from a service design perspective.

In the service blueprint, service structure has been divided into 3 stages based on service handling. Stage one is planning, which includes making the grocery list and planning to go for shopping. In the proposed blueprint planning, the user is provided with tools so that he can make shopping decisions before visiting supermarket. This will reduce the shopping time at the supermarket.

In stage two the user visits the supermarket. The first point of contact with supermarket is usually luggage counter to keep your bags followed by check-in. After check-in the buying process begins. The user takes help from sales person incase they need product location and information. In the proposed design the smartphone can also provide the information in case

sales person is not available or is not able to give correct information.

There is a stage three which is exit and post shopping experience. The user bills all his items and make payment for the items. Later he collects his luggage back. The person recollects if they need anything else and review the shopping experience. At this point or later user can give feedback and reviews about the supermarket or products.

Structure

Existing service blueprint

	Stage 1		Stage 2		Stage 3
Phase	**Planning**	**Entry**	**Shopping**		**Exit**

Physical evidence	Makes grocery list	Supermarket exterior	Luggage token	Security / shopping cart	Items in the shopping cart	Packing of items	Supermarket exterior / Parking

Customer actions	Plans to buy grocery	Arrives at supermarket	Handover bags	Check-in	Shopping	Billing / Check-out	Take back luggage

Front end Contact / employee actions		Greet and take	Security check	Help customer in store ⚠	Scan all items at POS ⚠	Give luggage for token

Back end Contact	Store manager	Store manager

Structure

Proposed service blueprint

	Stage 1		Stage 2		Stage 3
Phase	**Planning**		**Entry**	**Shopping**	**Exit**

Physical evidence	Shared list / Personnel list	Browse item list	Updated items in list	Gets confirmation on items				Items in the shopping cart			Give review
Customer actions	Plans to add items	Searches for items	Decides which items to add	Shares list with supermarket				Shopping			After thought feedback
Front end Contact / employee actions							Provide help				
Back end Contact		S-mart		S-mart			S-mart				S-mart

Structure

Information Architecture
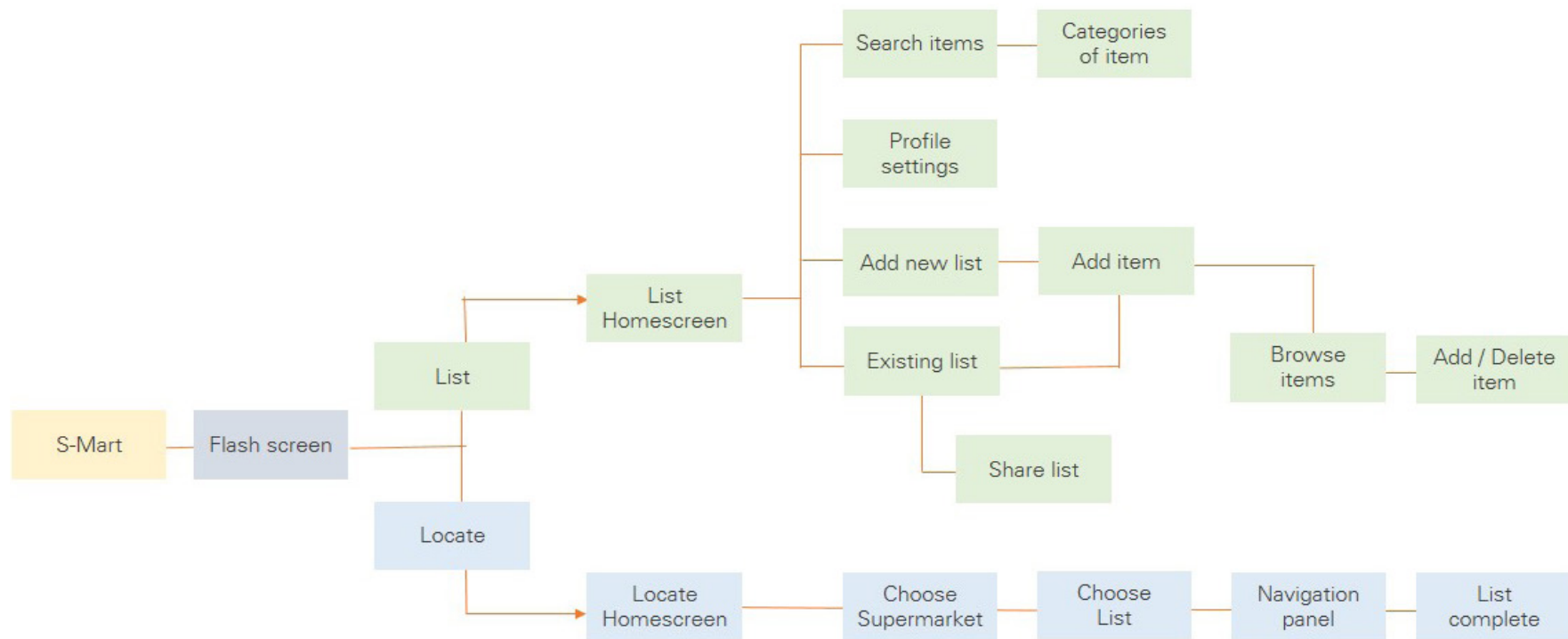
Final Design

Initial Wireframes
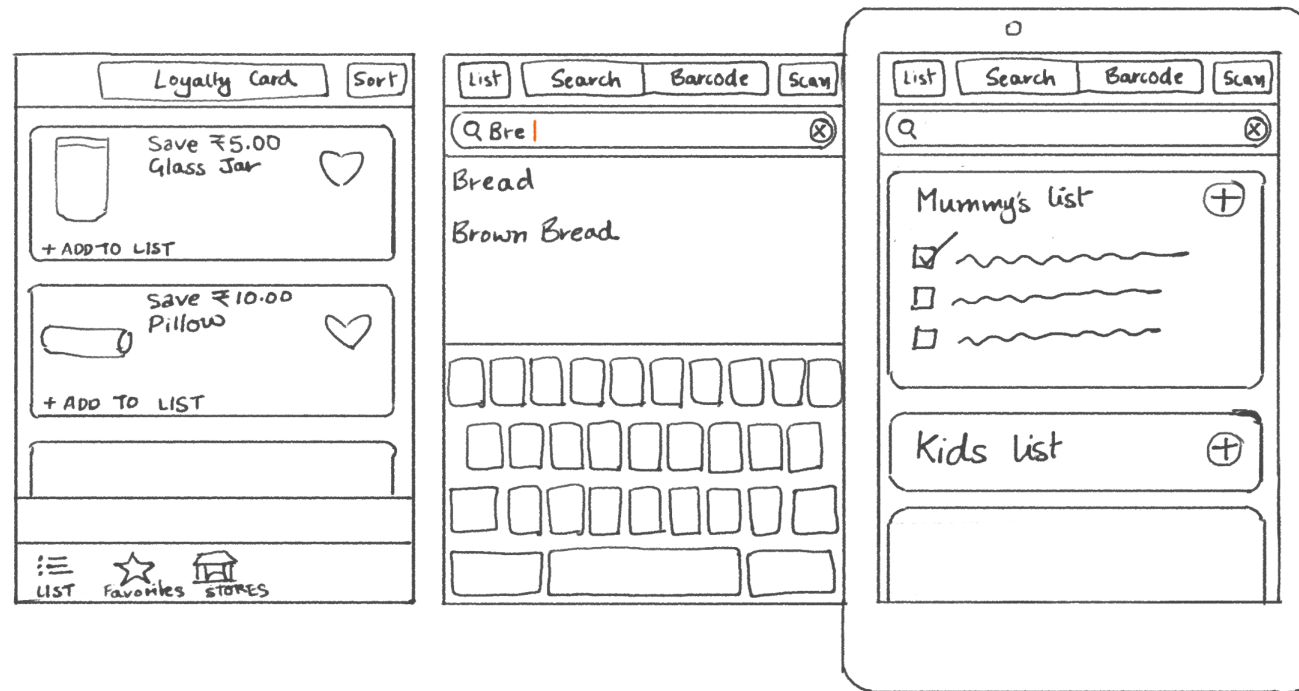
Final design

Scenario 1

Gautam Patel is 25 year old bachelor working in an IT company in Bangaluru. He recently shifted there in a shared flat with 3 other colleagues. He has started working out in gym. He is tech savvy and this is his second smartphone. He is active on social platforms like facebook, twitter, instagram.

As his colleagues have same working hours. They usually cook their own meals. Because of him, his friends have also become health concious.

Gautam uses S-mart, which helps him shop from different supermarkets and make his grocery list. His friend also use the application and they have a shared list.

He is planning to visit supermarket so decides to check his list, if anything is left out.
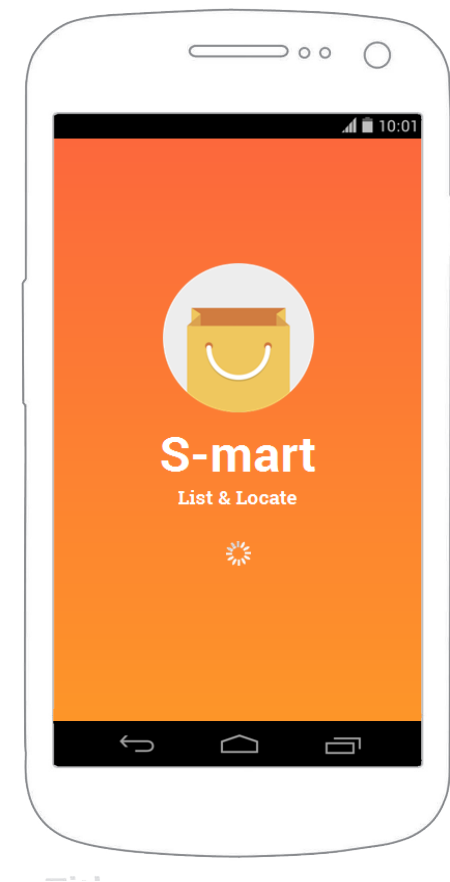
Scenario 1

He can go to list or locate option. He clicks list as he wants to check his shared list.
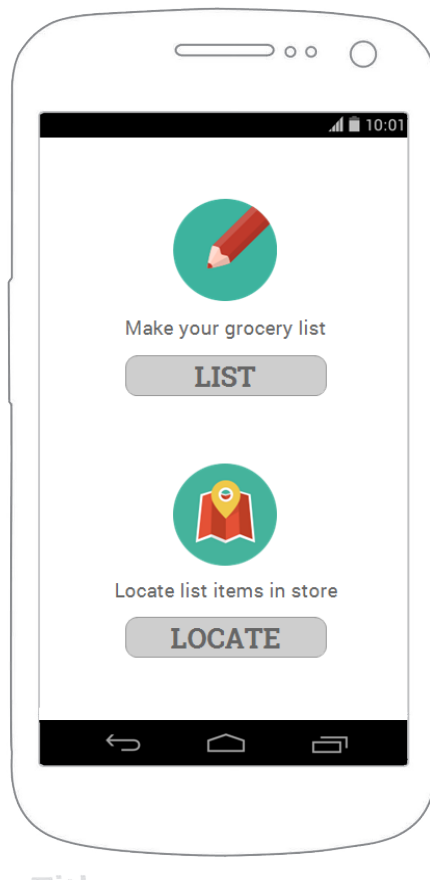
He clicks on his rommie list and sees that he is about to cross budget limit.
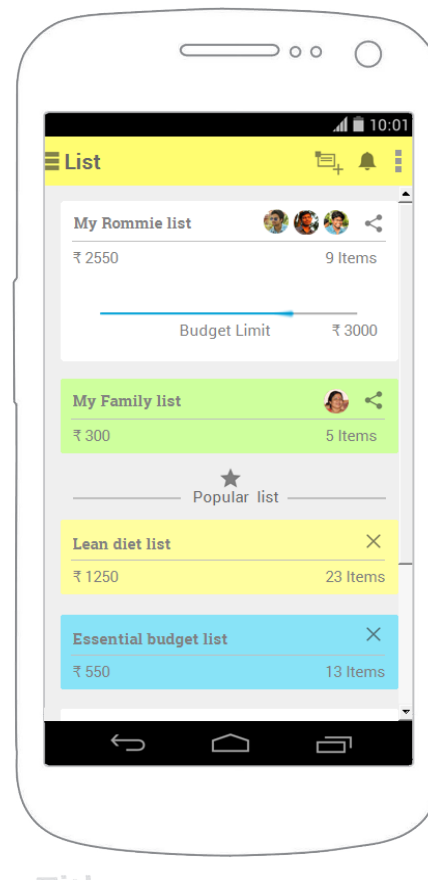
The rommie list expands showing all the items present in the list. It shows who ordered which item.
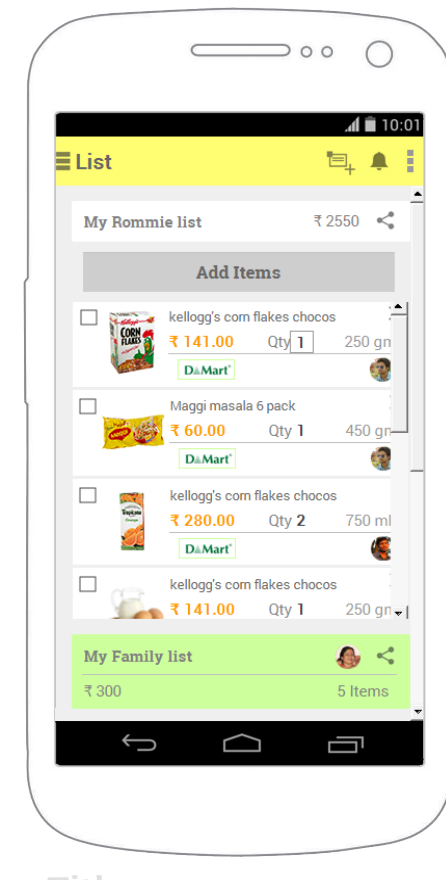
Scenario 1

The list contains items from two supermarkets, D-mart and Big-bazzar.
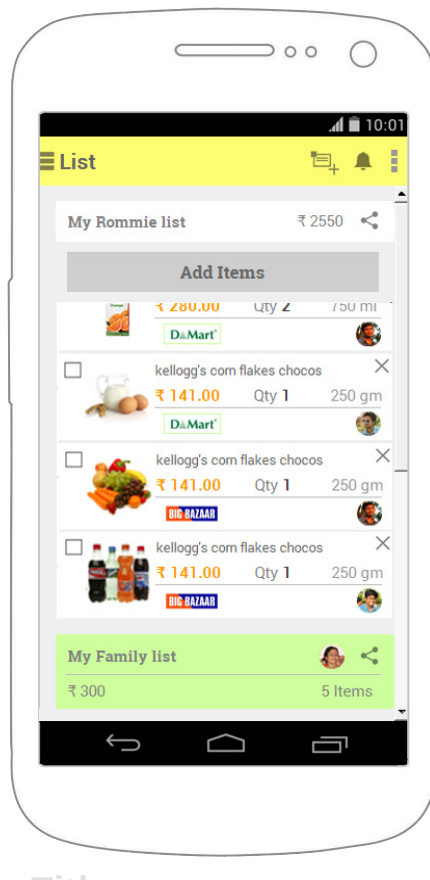
The items are arranged according to the supermarket having maximum no of items.
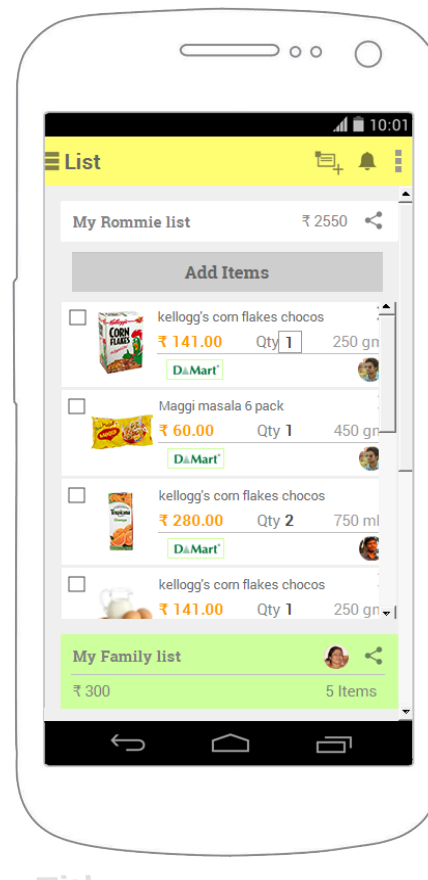
Gautam does not wants maggi, so he deletes it from the list.
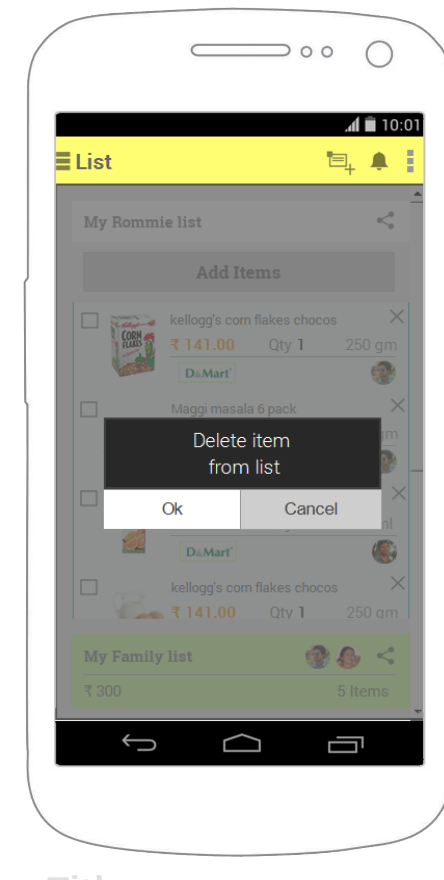
Scenario 1

The other items on the list are fine. He realizes he need to buy juice.
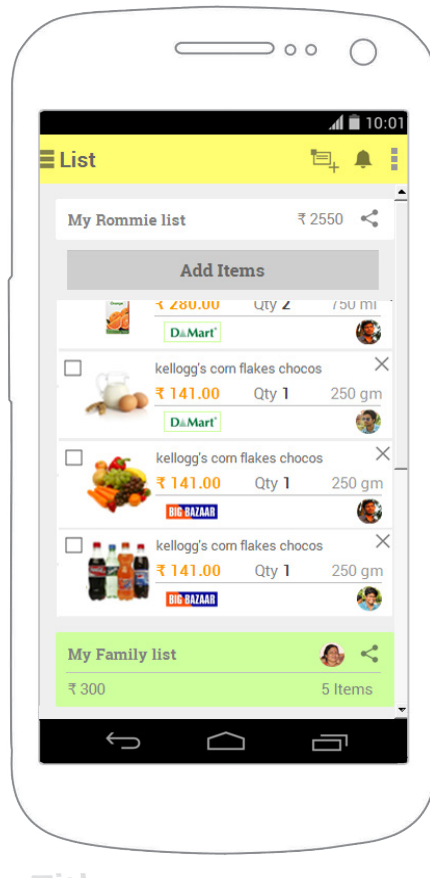
He searches Tropicana juice. He ticks D-mart as he wants to get it from there.
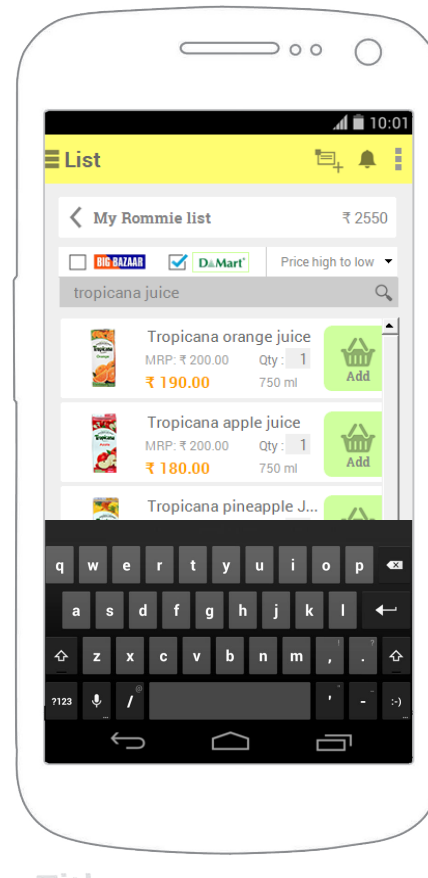
The items are sorted from high price to low. He adds Orange juice to his bucket.
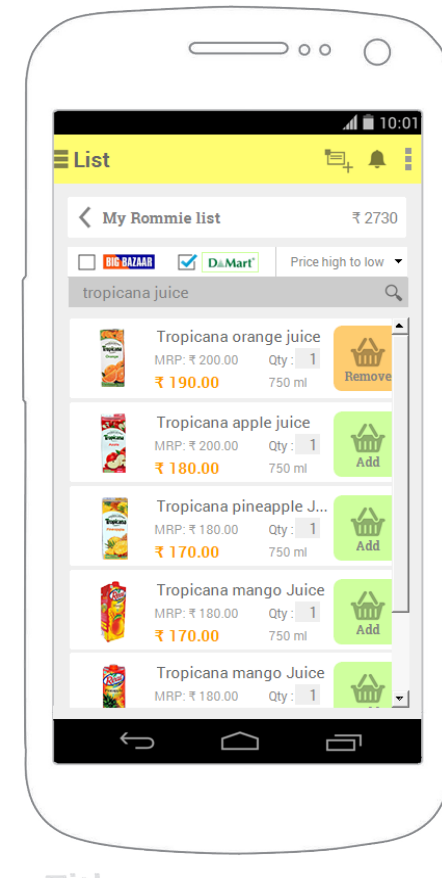
Scenario 1

Upon adding this item, the value of his shopping cart is updated. Then he adds apple juice to list.
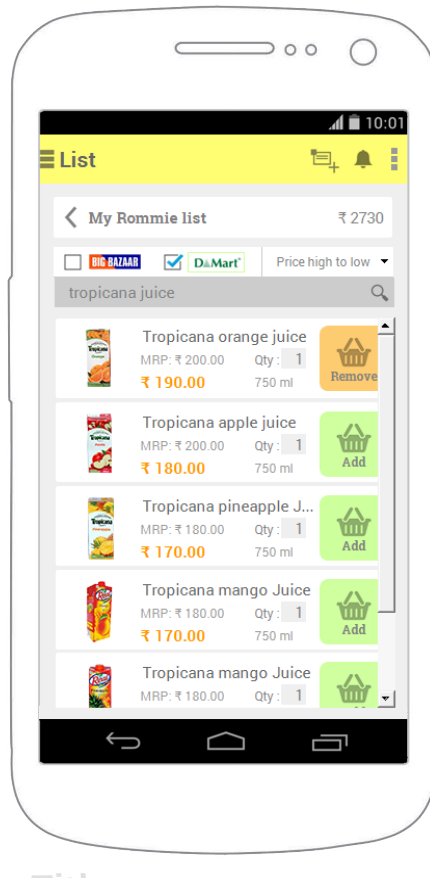
Upon adding the total value turns red showing that he is nearing his budget limit.
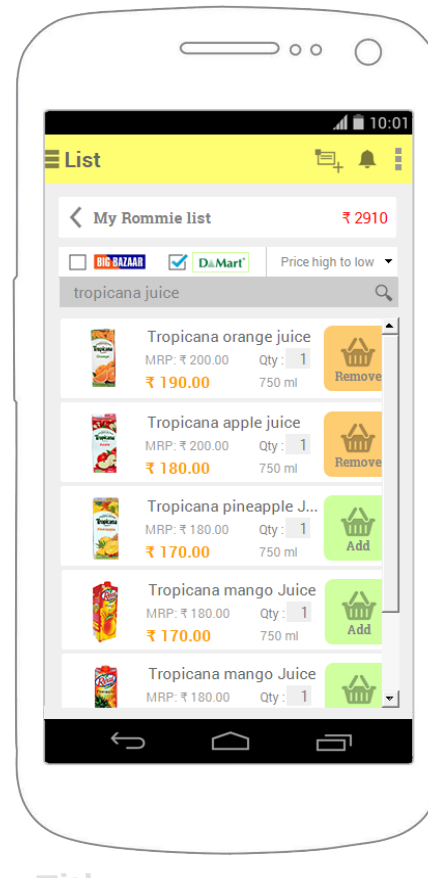
He removes the juice from the list and goes back to his rommie list.
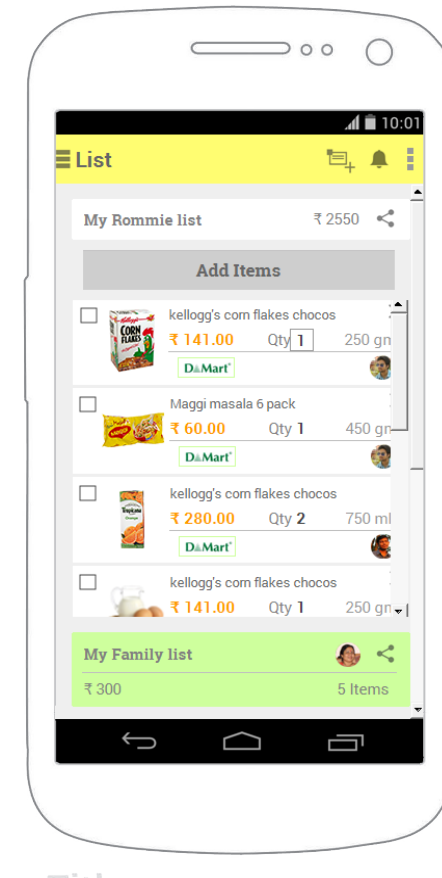
Scenario 1

He wants to go browse items in store. So he clicks on list.
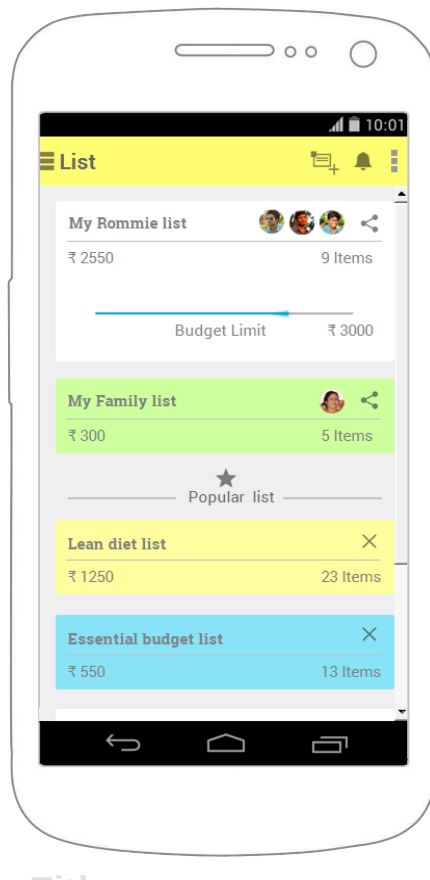
A dropdown comes showing different categories and search bar to find items.
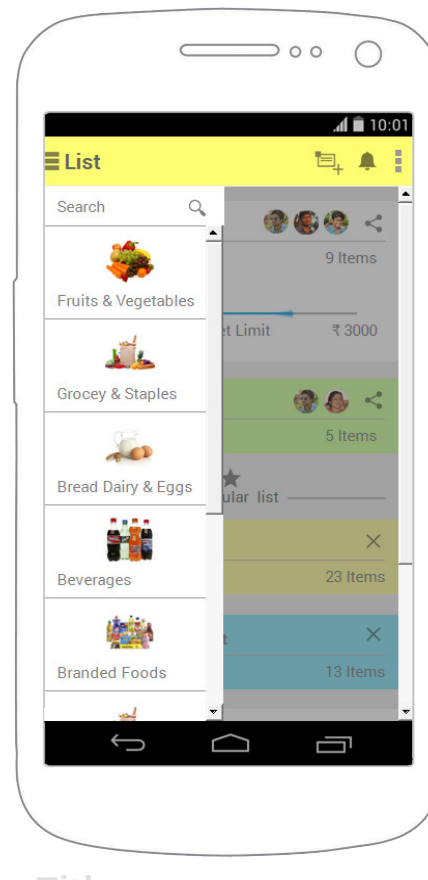
He clicks on grocery & staples and a second menu comes with all sub categories.
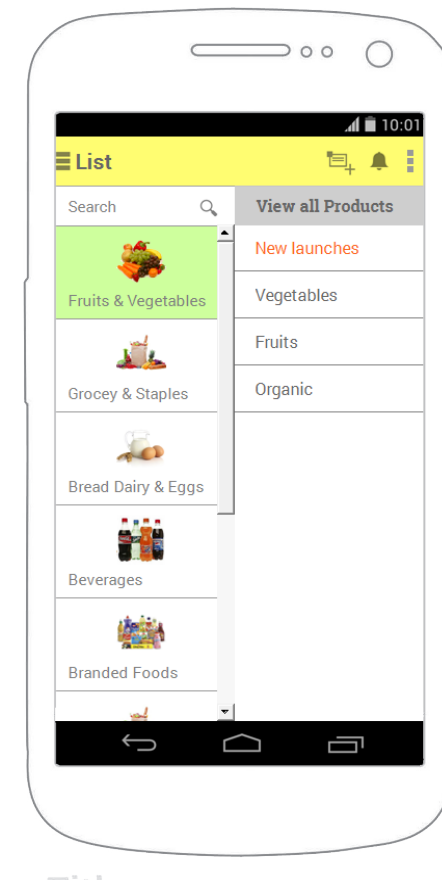
Scenario 1

He then goes to grocery & staples and clicks new launches.
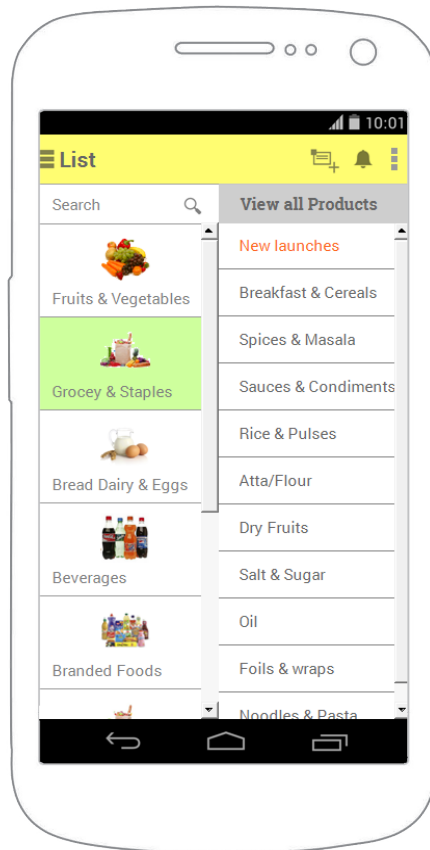
He adds pineapple juice to the list. The list price is updated.
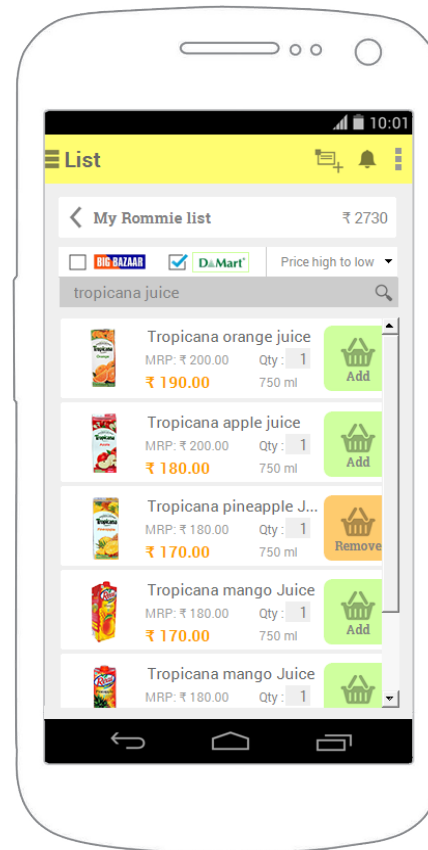
He returns back to list home screen.
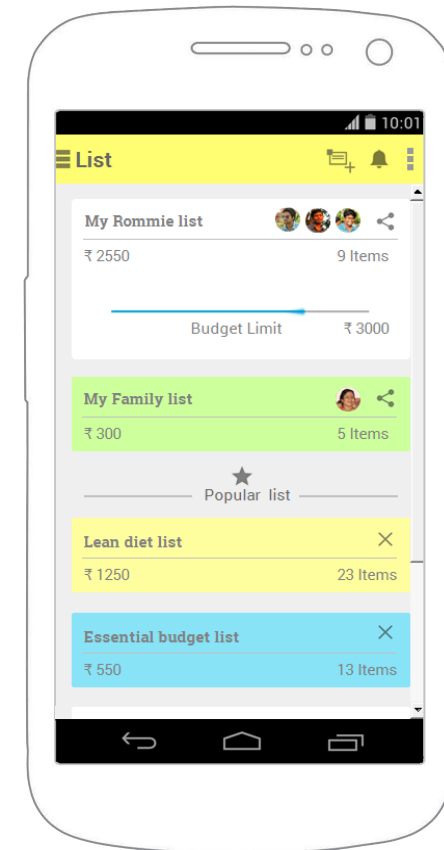
Scenario 2

Later that day he goes for shopping to the supermarket. He clicks on locate.
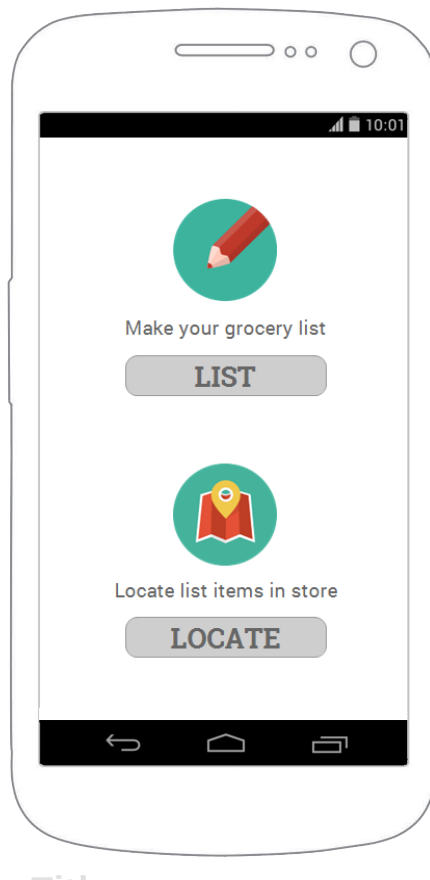
The application detects his location.
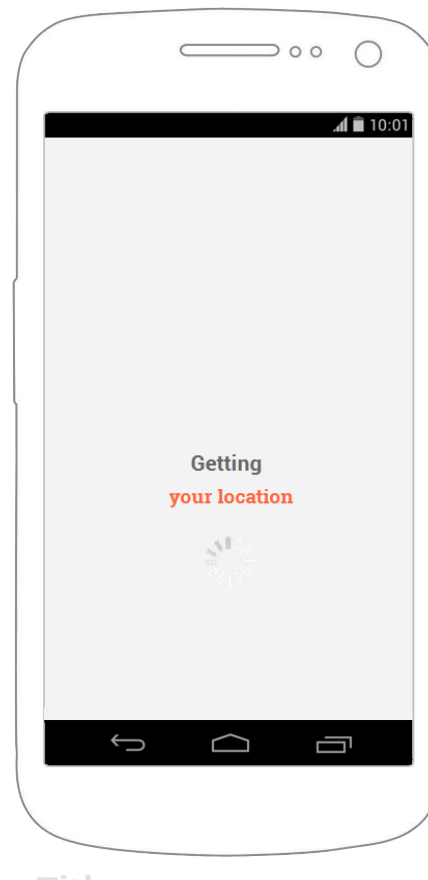
It shows where he is. He chooses the supermarket he wants to check-in.

Make your grocery list

LIST

Locate list items in store

LOCATE

Getting
your location

Locate

You are in R-city Mall

Big- Bazzar

Go
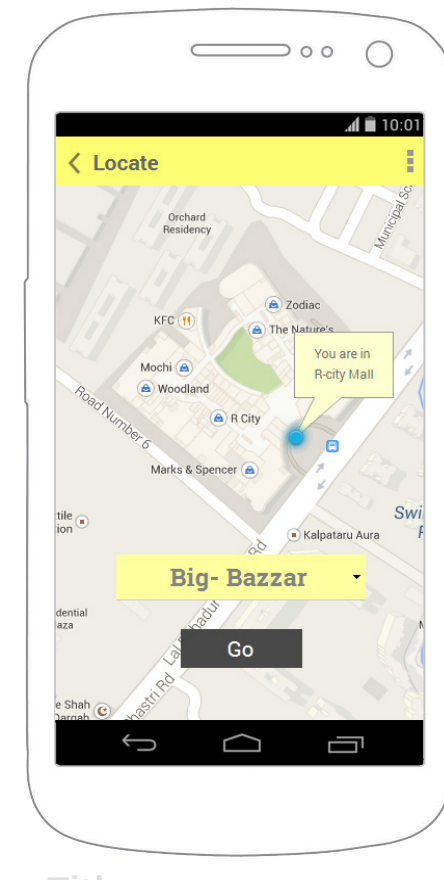
Scenario 2

He clicks on go after choosing Big-bazzar.
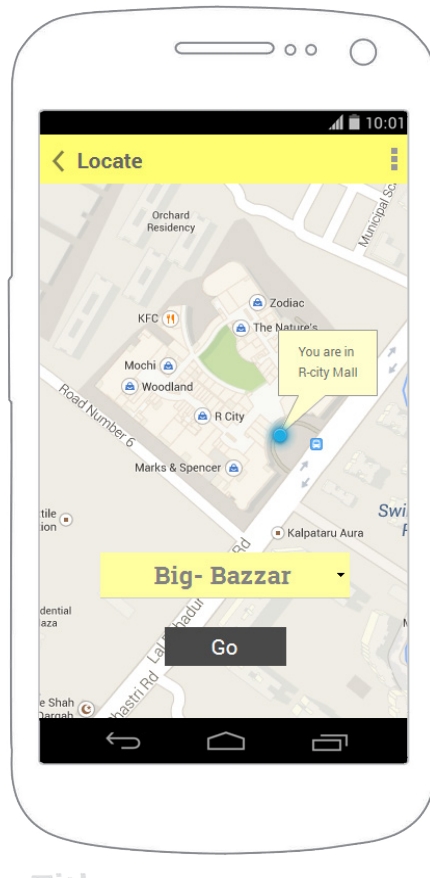
The store map appears. He then chooses the list he wants to locate in the store.
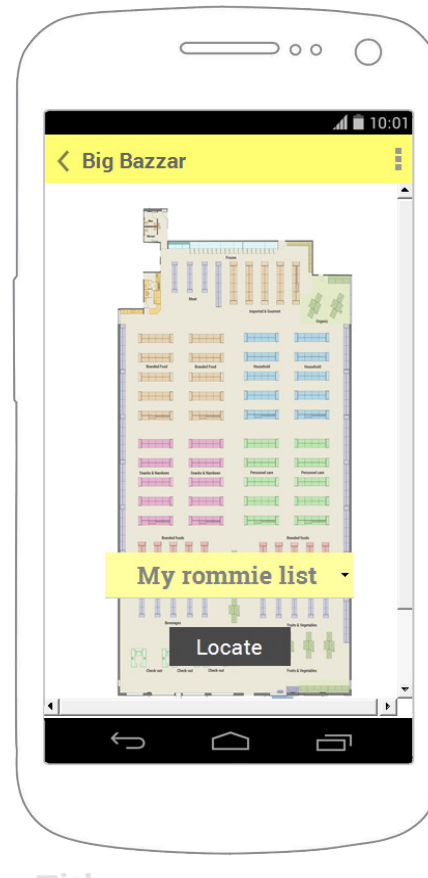
In the navigation pane it is showing that he has entered the store and is standing at gate.
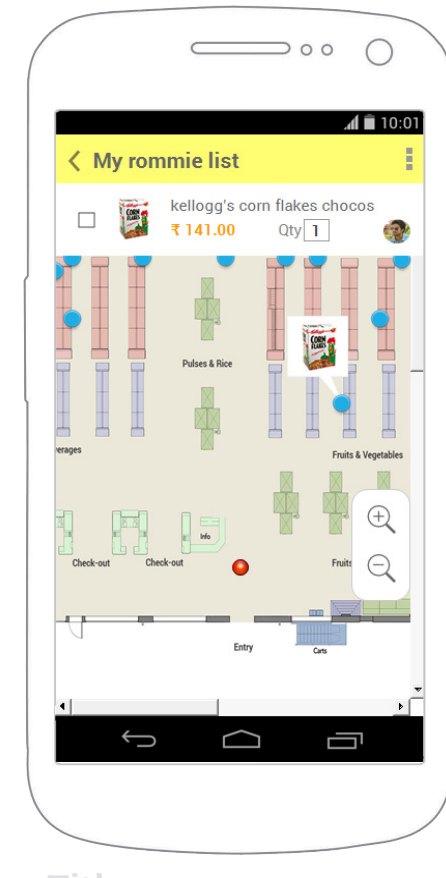
Scenario 2

The blue dots stuck to the periphery are the items on list. The closest list items is shown.
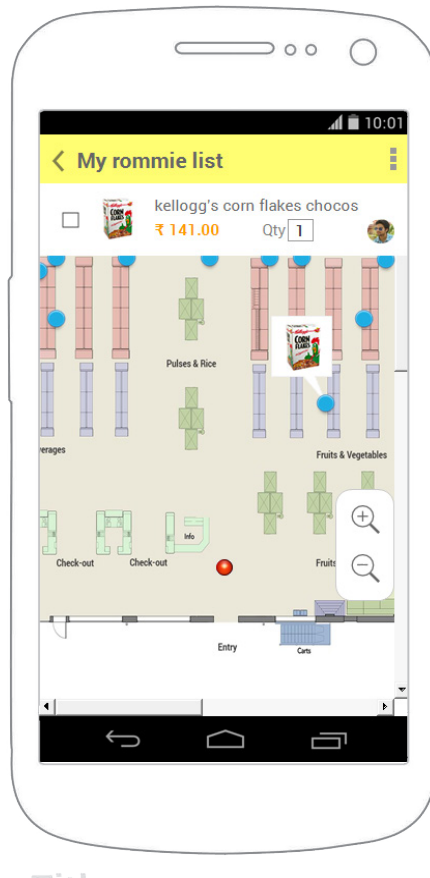
Once he picks that item, the dot turns grey and the next closest item is shown.
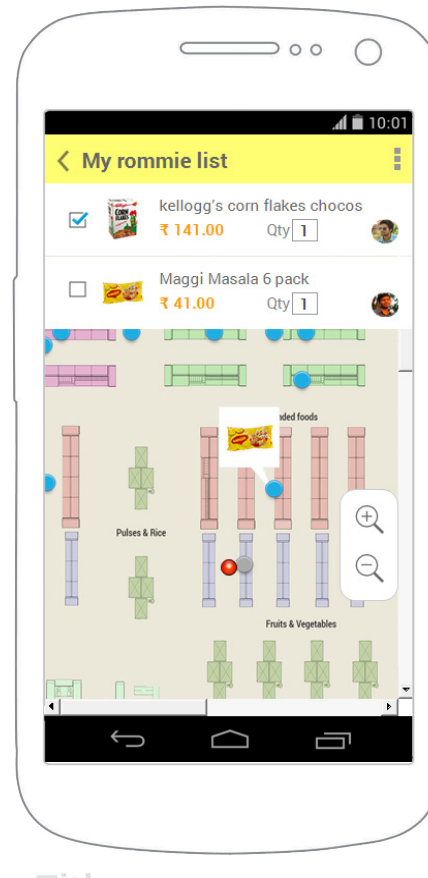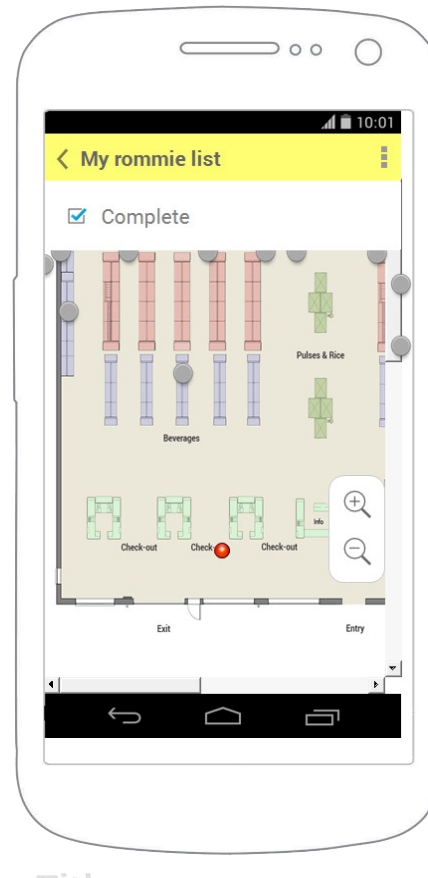
While getting this item, based on his previous purchase the App recommends wei wei noddles.
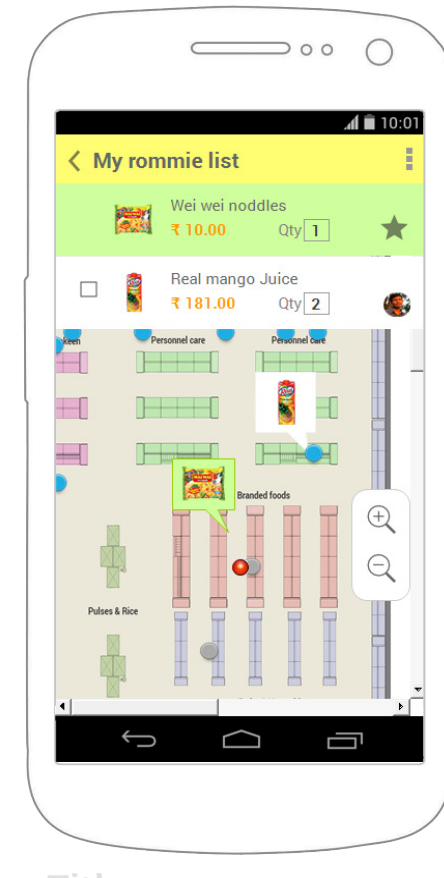
Scenario 2

This way recommendations are given based on purchase history for repeat items.
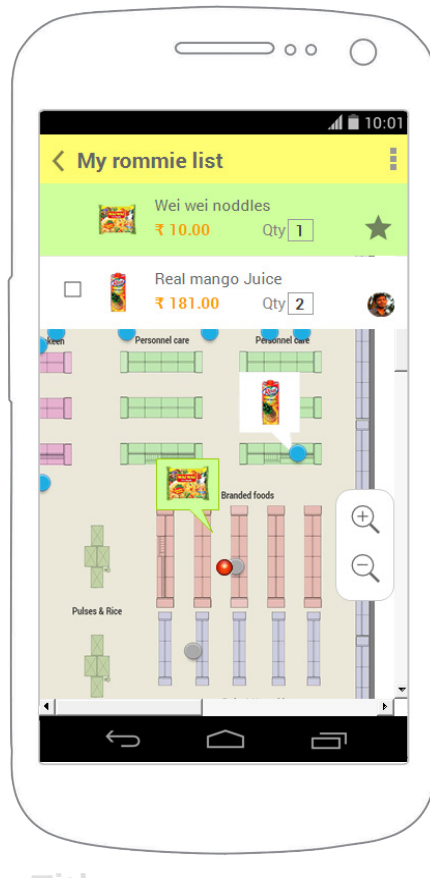
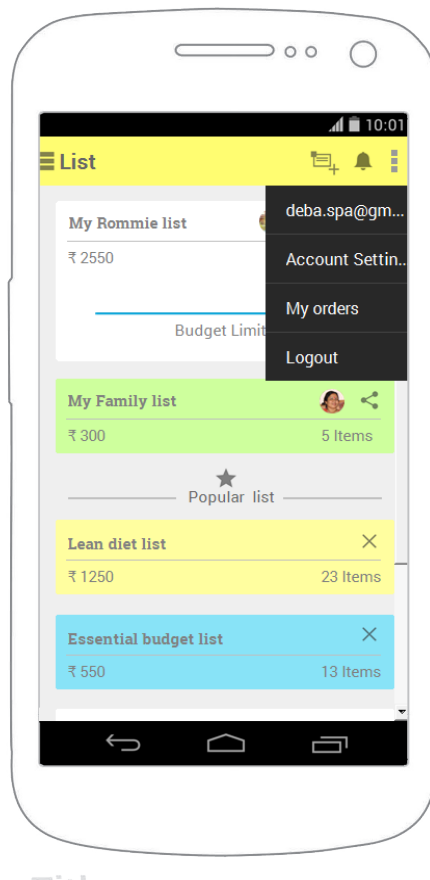Once all items are brought, all dots turns grey showing that the list is complete.

He can now decide to go to other store or just do shopping in the mall.
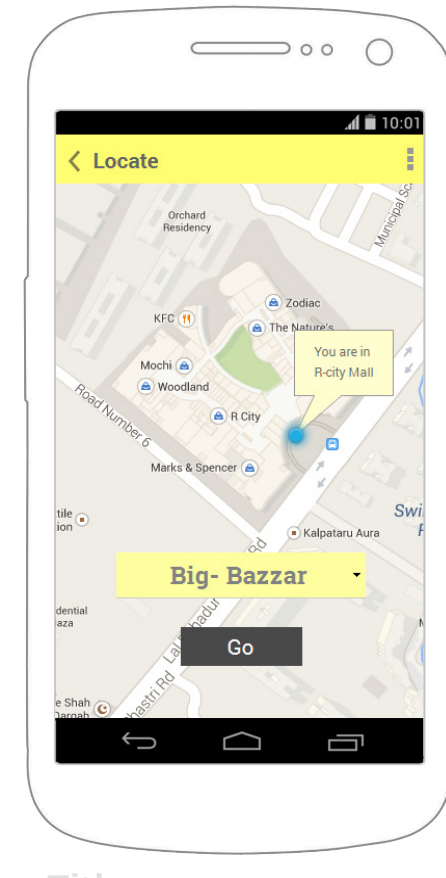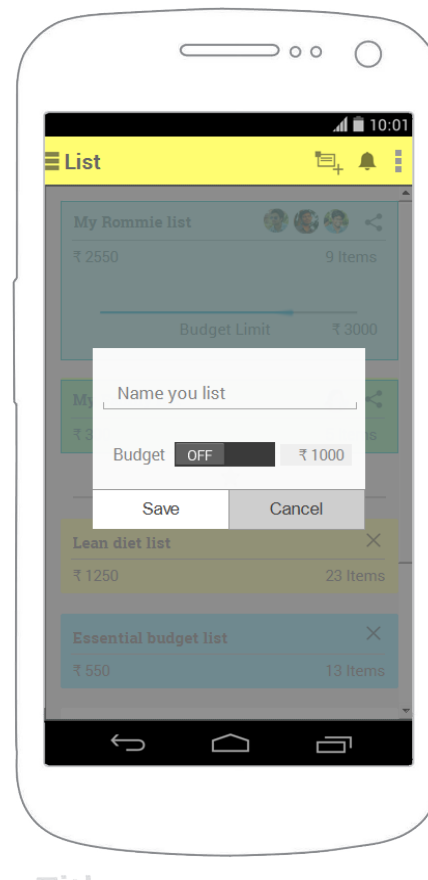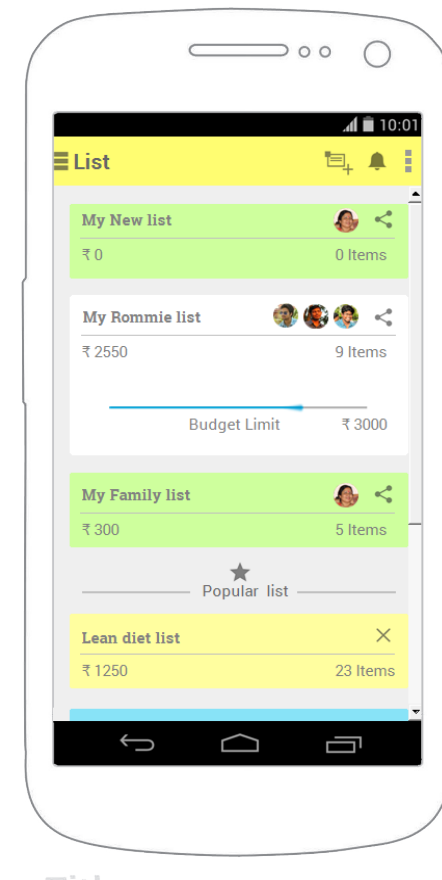
Other features

He can edit profile settings from the dropdown at the top-right corner.

He can create a new grocery list by clicking on add new list icon. And fix a budget for the list.

The new list shows on the home screen, drag-drop to change its position or share with others.

Shopping Cart Phone holder

The universal mobile holder for bicycle was used as an attachment on shopping cart. This will allow user to navigate within store without holding the smartphone.

These are way users interacted with the the device during the test. This will be used only for the locate feature. The mobile phone can be unmounted at the exit.

Evaluation Plan

Goals of Evaluation

The project will be successful if users finds the new retailing format better than the traditional one. This will also depend upon adoption by the retailers.

From user's perspective the goals of evaluation is to examine the usability of newly proposed retail solution and perceived usefulness of the service. Additionally, it is also essential to evaluate whether this product is able to successfully help user in making shopping decisions without going to supermarket and save time.

Key Questions

- Is proposed shopping solution better and more useful than the existing ones.
- Are users able to perform task using the interface of the application.
- Does proposed solution build a clear conceptual model for a novice user.

User Test Plan

Protocol

The project needs to be assessed for user and an evaluation test has been designed for them. Each assessment will contain and evaluation test and post-test.

Before conducting evaluation, participants will be given an short introduction to the solution. After introduction, in evaluation test, participant will be given goals to accomplish using the application on the smartphone provided to them. While conducting evaluation test, participants will be observed to collect data about evaluation criteria.

After evaluation test, participation will be asked to give post-test which will record their conceptual understanding, reaction, likes and dislikes about the product.

Criteria for recruiting participants

Required participants: 6 (3 male, 3 female)
- Age range: 20-30 years old
- Smartphone user- advanced beginner, competent performer
- Independently living and doing his/her own grocery shopping
- High exposure to media and services
- Visits supermarket at least once a month.

Evaluation test

This evaluation plan will be worked upon after getting initial feedback on the prototype. But the evaluation will be on similar lines.

Introduction
A brief the participants will be introduced to the application. They will be told about the navigational and structural aspects of the application.

Evaluation Test

1. The user will be asked to perform an unfamiliar task.

Scenario Description: The user should perform one unfamiliar task from the list of tasks, like making a new grocery list or adding items to the grocery list.

Evaluation Criteria: Completed or not, no of tries required to complete the task, time required to complete the task.

2. The user will be asked to make a pre-planned grocery list on the application.

Scenario Description: The user will be given a list of items, he should make a list of these items using the application without taking any help.

Evaluation Criteria: Completed or not, no of tries required to complete the task, time required to complete the task.

Post-test Questionnaire

1. Do you find new grocery shopping format useful? Rate you experience with the new list and locate application. (Likert sale of very easy to very boring, very easy to use to very difficult to use)
2. Do you think the application will be useful tool to improve your grocery shopping (Likert sale of very useful to not so useful)
3. Do you think you will use the app to maintain grocery list.
4. Do you think improvement is needed in the application.

References

[1] Mapsofindia, *Growth Factors in Indian Organized Retail Sector,* 14 Nov 2014
http://business.mapsofindia.com/india-retail-industry/growth-factors-in-indian-organized-retail-sector.html

[2] Rajesh Thambala – Research Analyst, *Indian Retail Industry 2012 - 2013,* 14 Nov 2014
http://rajeshthambala.blogspot.in/2013/02/indian-retail-industry-2012-2013.html

[3] Piyush Kumar, Sanjay Kumar Kar, *An Insight into the Growth of New Retail Formats in India,* IIM Ahmedabad, March 2007

[4] KPMG Report, *Emerging Consumer Segments in India,* Retail leadership summit 2014, page 10-28/ Feb 2014

[5] KPMG Report, *Emerging Consumer Segments in India,* Retail leadership summit 2014, Page 29-38/ Feb 2014

Table of Figures