Group Project Report

Understanding and working on the complexities involved
with the HOPCOMS system and it's online application.

A Project By Group 14,
Ashwini Baje PH20200003,
Fauzan Azhim DT2021101,
Fahed Shaikh IMT2019079,
Amitha Chinthakunta IMT2019023,
Manas Gupta IMT2019050.

1 Overview of HOPCOMS

The Horticulture Producers Cooperative Marketing and Processing Society Limited (HOPCOMS), as the name suggests is a cooperative of horticultural producers. It is based in Karnataka, which is considered one of India's top producers of horticultural commodities. Although the cooperative was founded in 1959 as Bangalore Grape Growers Cooperative Marketing and Processing Society Limited, by 1965, its operations had extended and it had begun to cover most of the vegetables and fruits grown in the state. In 1983, it was decided that the cooperative be renamed as Bangalore Horticultural Producers Cooperative Marketing and Processing Society Limited and this was again changed to HOPCOMS in 1987. Owing to administrative difficulties, in 1997 independent HOPCOMS at district level were spun-off. In 2006, administrative jurisdictions were redefined and currently, Bangalore HOPCOMS handles five districts– Bangalore Urban, Bangalore Rural, Kolar, Ramanagara and Chikkaballapura. The remaining HOPCOMS across the state are handled by their respective Horticultural Societies[6]

The aims and objectives of the society are[6]:

- to ensure remunerative prices to producers of horticultural crops;

- to free both producers and consumers from the clutches of middlemen;

- to ensure quality supply of fruit and vegetables at reasonable prices to farmers;

- to expand marketing and cold storage facilities progressively for the benefit of farmers; and

- to promote horticultural development on scientific lines by providing inputs and necessary technical advice.

The members of the cooperative include farmers, state financial organizations and representatives of Karnataka state government and every three years, they elect board members from amongst themselves who manage the cooperative[6].

2 Need for understanding complexity

The cooperative has often been considered a good example to urban cooperatives and has been hailed for its ability tobe inclusive (particularly with respect to smallholders), provide remunerative prices to farmers and high-quality produce to consumers. This is possible because, unlike traditional marketing channels, marketing via HOPCOMS does not involve any intermediaries like commission agents. It is called an innovative form of cooperative marketing that is inclusive of farmers and that has its own retail outlets.[6].

In the last few years, HOPCOMS which was once the major supplier of fruits and vegetables to several of the city's households for quite a few decades has been losing ground. The cooperative has been battling several issues such as fall in procurement and sales, soaring prices, farmers leaving the cooperative etc. mainly because of stiff competition from private retailers[1],[12],[14]. The occurrence of the pandemic has worsened conditions and owing to poor business, some of its retail outlets have even been shut down[11]. To catch up with competition, it attempted going online on pilot basis[3],[13] and failed both times.

It is this situation of HOPCOMS that we wished to study as part of our group project for the course Social Complexity and Systems Thinking. We chose to do this using Soft Systems Methodology (SSM) and in this report we discuss the steps we undertook in this process. The next section provides an overview of how we went about collecting information about HOPCOMS and its situation. Then we express the data collected using a rich picture that details the process, structures, people and issues. This is followed by a section where we focus on perspectives of various stakeholders identified through rich picture and come up with a root definition for a system that considers most of the stakeholders' perspectives. Finally, we try to model activity diagram for the proposed system and changes to user interface.

3   Methodology

We approached this seemingly problematical social situation using Soft Systems Methodology (SSM), which is an action-oriented process that helps organize our thinking about problematical situations such that an action to improve it can be undertaken[2]. Typically, there are seven stages when applying SSM to any problematic situation – defining the situation, arriving at root definitions of relevant systems, developing the model and then taking it back to real world for feedback. Since SSM is an action-oriented approach, it goes about in cycles i.e., the same steps are repeated again till we arrive at a solution that satisfies all/most of the stakeholders involved in it.

4   Data collection methods for understanding problematic situations

| Methods	Source/sample	Number of respondents
Online Survey	Residents of Bangalore	29
Analysis of Apps Reviews	Playstore and Appstore	58
Interview	Farmer	1
	HOPCOMS Employee running retail outlet	1
	HOPCOMS Officers/Managers	3
	HOPCOMS customers	5
Literature review		

5   Survey results

5.1   Customer survey

Gender Ratio

We had received a total of 29 responses through the online survey we held, among which, 21% were male () and the rest 79% were females.
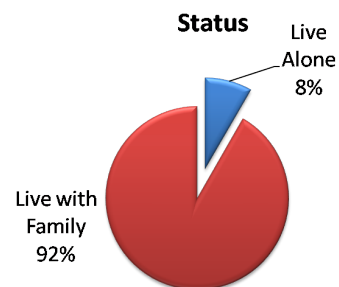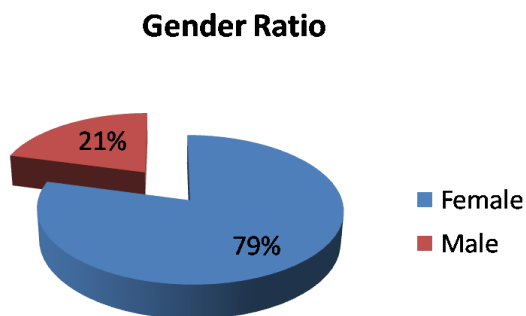
Again among whom, only 8% lived alone
and the rest 92% were living with their families.

Age Count
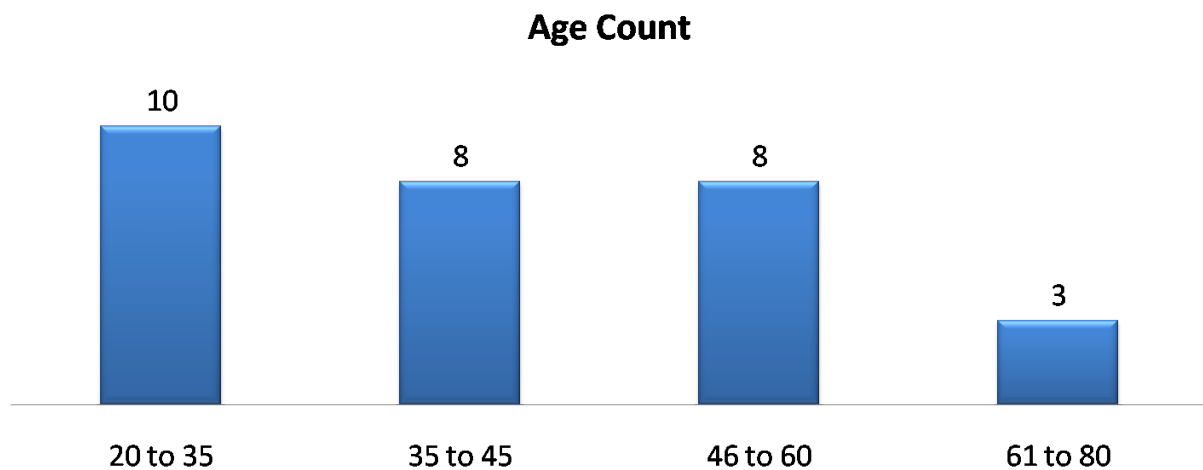
When segregated by their age, this is how the age group histogram looked like, with 34.4% of people from 20-35 age group, and 27.5% of each 35 to 45 and 46 to 60 age groups, and 10.3% of senior citizens.

On being asked about HOPCOMS, a whopping 91.7% of people responded with yes, they were aware of it. This indicates the popularity of the grocery market system in the state of Karnataka.

However, the response when asked about how many of them were regular customers to HOPCOMS was not so welcoming. Almost half of them, (52%) dropped down when it came to being regular at HOPCOMS.

Aware of HOPCOMS

Sales

3
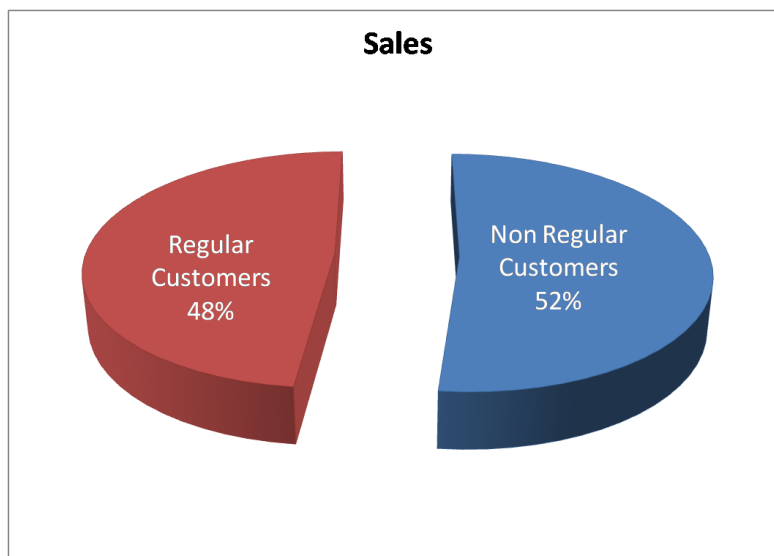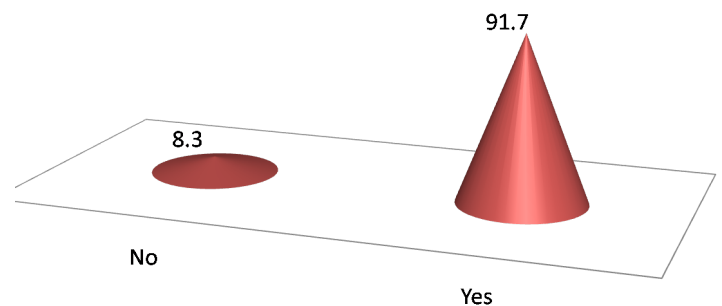
We asked them their reasons to purchase from HOPCOMS, and their response was something as shown below.

.
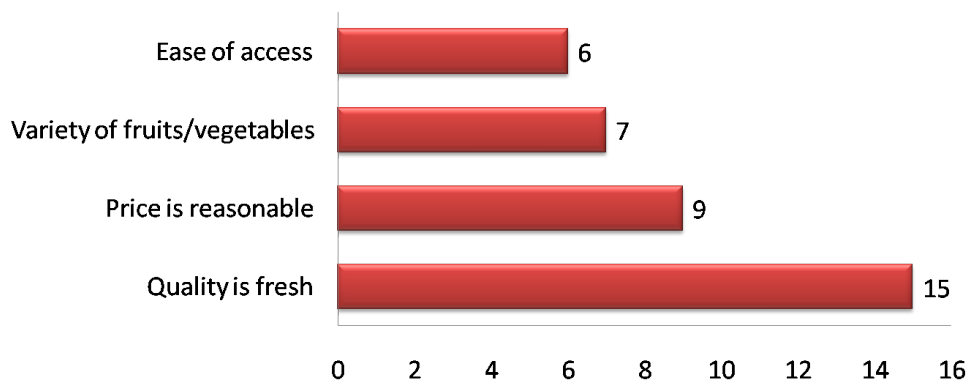
Clearly, the quality of products was the key factor for the success of HOPCOMS. And given the options, everyone would obviously choose HOPCOMS as their products are fresh, and better than other sellers. But notably, HOPCOMS wasn't so successful due to their potential competitors. We asked our surveyees to mention their main source for purchase of fruits and vegetables, and noted their response as the potential competition for HOPCOMS.

30% of our surveyees were purchasing from online services where as people bought equally 35% each from street vendors and retail stores. We had to ask the major role for which people were using other measures. And the responses were recorded as following.
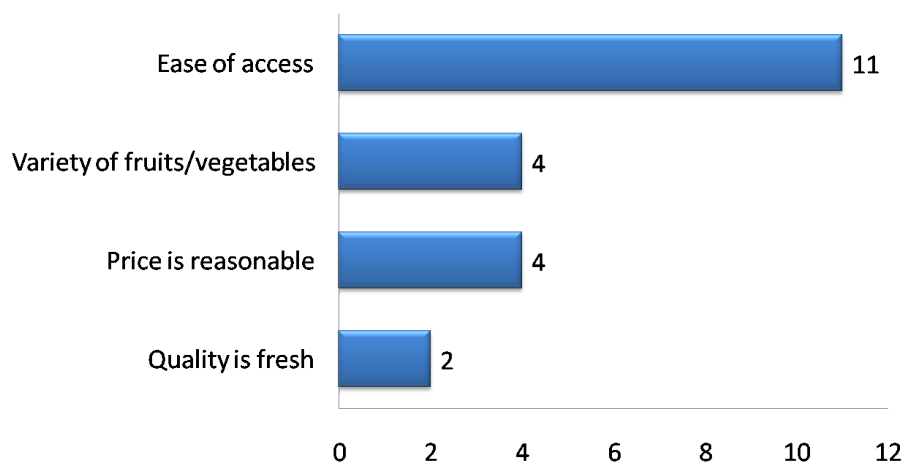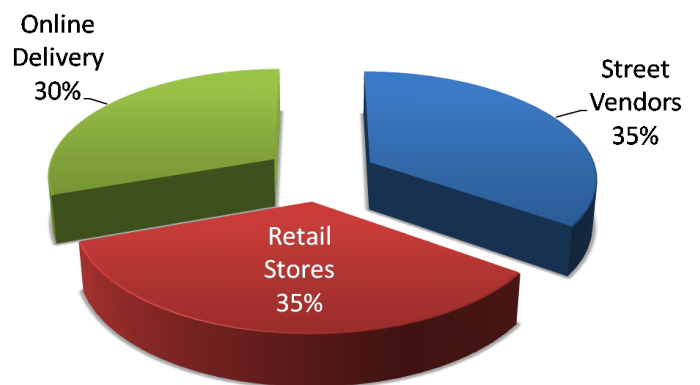
The above chart shows, people were not consuming from HOPCOMS mainly due to the ease of access. If we make HOPCOMS an easier option as a business, we may eliminate the competition as we had the bonus factor of fresh quality products.
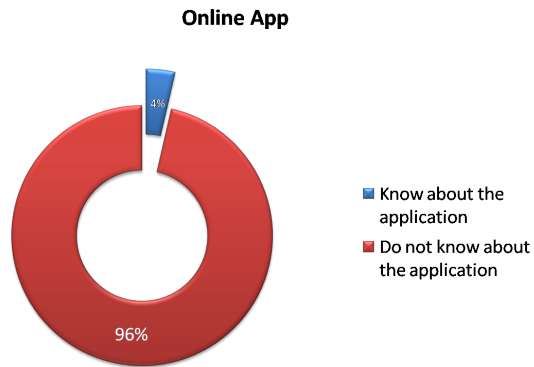
Online App

Then we also asked them about the online application of HOPCOMS, which would play as a key factor in making it's access easier to the customers. Almost everyone, 96% of people in our survey knew about the HOPCOMS online app. Then we had to ask them would they like to use the application, or they actually use it, and the response was quite expected. 19 of them were reaady to try out the application. Whereas 10 weren't ready to use it. And when crosschecked the responses with the age group, we noticed that most of the senior citizens of higher agr group weren't comnfortable with the application, technology and stuff.

Would you like to try the app?
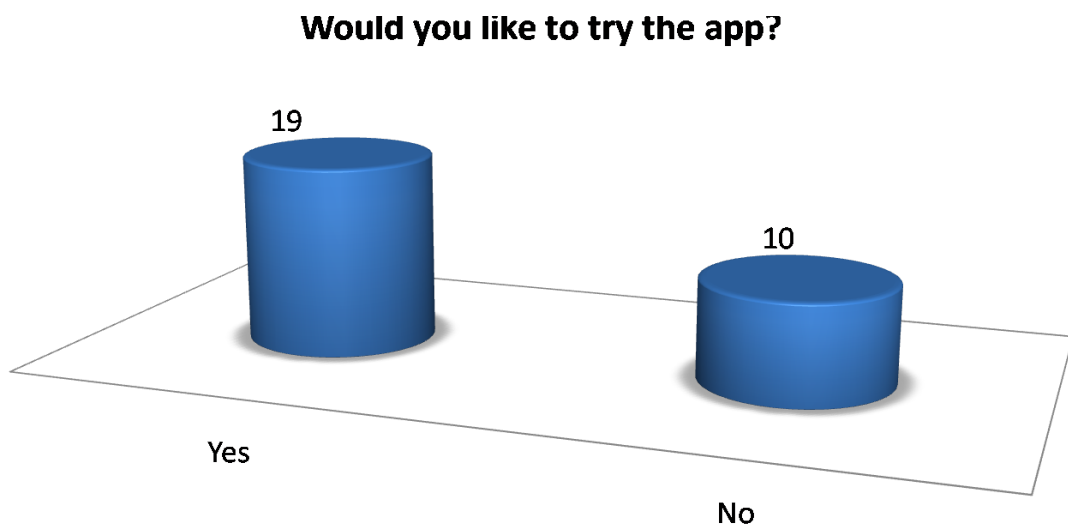
5.2 App reviews

The Hopcoms application review posted by the users within the Playstore and Appstore has been processed in a simple analysis. There are various reviews from all aspects, starting from the quality of the application to the service aspect of HOPCOMS itself. We group the total of the 58 reviews into two broad categories, namely positive reviews, and negative reviews, then created sub-categories that represent the various types of responses.
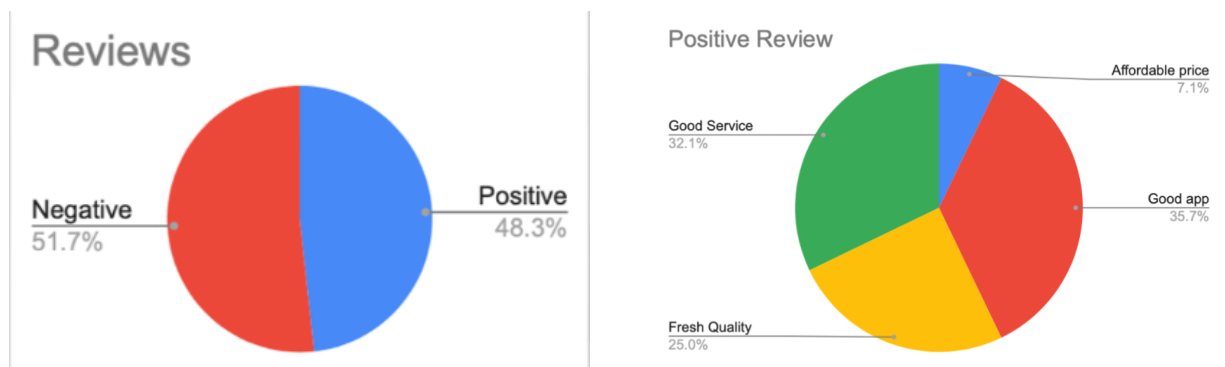
On the one hand, among those who gave positive reviews, the majority wrote complaints about the application aspect. On the other hand, 25% of reviews appreciate the quality of fresh products, and this is indeed a value proposition for the HOPCOMS business model. There are also 7% of reviews stating that the product price is quite affordable. Good Service is the coding for the response which mainly said about prompt delivery and good customer care.

As for the negative review, 40% complained about apps that didn't operate and felt uncomfortable with the existing interface. Also, there are 13% of people complain about prices, while 10% question the no clarity on coverage area, especially the coverage in the southern Bangalore area. Poor service is the coding for the response which mainly complaints about customer care, and issues with delivery order. The service aspect received several positive and negative comments in considerable numbers. Specifically, within this aspect, most respondents commented on customer service and delivery order services.

6 Interview

6.1 HOPCOMS Office Employees

We interviewed three employees of HOPCOMS – Officer, IT Head and Procurement Manager.
Following are what we gathered from our interactions with them –

HOPCOMS has around 280 retail outlets in Bangalore Urban, a total of 680 employees and 8800 farmer members. Their retail outlets also sell eggs, processed products made up of Millet and few products from MTR etc. They track their sales to gauge demand for different products to help decide how much to procure. Typical procurement involves telling a farmer how much to bring to the procurement centre. When selling to consumers, they keep a margin of around 25-30%. This includes their marketing costs and driage. They send a few of their employees to some of the major mandis in the city and they come back with price list of different commodities in those markets. An average of the prices at different markets for a given commodity is calculated to determine the price at which produce is to be purchased from farmers. Fierce competition and the pandemic have reduced their procurement from almost 100 tonnes to 60 tonnes. Their salesmen at retail outlets keep a margin of 2-3%. They also get a sales commission of 3%. They provide inputs to farmers at subsidized rates. Members of the

cooperative elect board members through election held every five years. Government nominees are also part of the board. They distribute and sell their produce through four channels – retail outlets (who make up for 60-70%) of the sales, institutional buyers who are mainly public sector companies, hospitals and hotels etc., mobile vans and online app (handled by a third party called Code Catalyst). They have a database with all details about farmers including their finger print. To bring in transparency, they have introduced spot billing machines at every outlet. They do not have any software for tracking consumer analytics. They have issues with respect to qualified manpower and developing second line leadership. This prevents them from implementing new ideas to tackle competition in the market. Code catalyst gets 12% commission for the sales it makes. They are the developer of the app and also handle logistics from central procurement centre (a 10000 sq.ft land given to them) in Lalbagh. Currently the app is making less than 25 sales per day because of logistics issues.

6.2   Shopkeepers

The shopkeeper we interacted stated that there is a section of consumers who still prefer visiting the shop, but it is the middle aged second generation in households who compare prices between various retailers and prefer home delivery. He said that around 25% of sales has reduced due to competition.

6.3   Farmers

The farmer we spoke to belongs to a family that has been associated with HOPCOMS for generations. He states that their first preference for sales is always HOPCOMS. Recently, he states the cooperative has been facing more political interference, becoming less transparent and farmers facing delay in payments

7   Literature Review

Here are some additional findings from review of literature pertaining to HOPCOMS.

Farmers :- Farmers engaged with HOPCOMS reported higher profits, lower transaction costs per acre of land cultivated and shorter transaction time at HOPCOMS collection centre. While the farmers considered their remuneration fair, they also complained of certain issues with the cooperative's operations. One was quality checks that were not based on any standards, but just visual in case of certain commodities. The notion of quality being subjective thus hindered small farmers who had limited access to any form of technology or good agricultural practices that help improve quality of the produce. Another was top-down approach to decision making, which restricted farmer members participation in decision-making to just voting in elections. Other problems included poor leadership with no vision or strategy, lack of capacity building programmes for members, especially to build next level leadership, lack of transparency about strategies to overcome the threat of competition, greater power vested in the hands of few politicians who are also farmers and members of the cooperative etc.[6]

Comparison of HOPCOMS marketing channel with other channels operating in Bangalore, such as that of Reliance Fresh, wholesaler, or traditional one, indicates that the channel benefits farmers in the form of lower marketing and transaction costs, lower post-harvest loss and higher price realization [5],[8].

The farmer members of the cooperative have few privileges like subsidized inputs, accommodation when they come to the city for selling their produce, priority over non-members during purchase etc. Over the years, the number of members of the cooperative and also farmers arrival at the procurement centre has declined significantly[7]. According to a news article in Spotbye, a farmer member of HOPCOMS holds the society's unfriendly attitude towards farmer members responsible for its downfall. He alleges that facilities like free storage in godowns remain only for namesake and they are charged for any facilities provided. He also reports that on-the-spot cash payment has also been scrapped[12].

If a farmer's produce gets rejected at the procurement centre, he/she sells it for lower prices through other marketing channels or just throws it away. Apart from issues with quality inspection, limited procurement is

another problem farmers complain with HOPCOMS. If procurement at HOPCOMS falls short of expected demand, they procure from local markets or from other states and agencies like NAFED, HPMC, Safal wholesale market etc. In the past decade, procurement of fruits and vegetables by the cooperative has witnessed frequent fluctuations and since the pandemic, it has dropped significantly[7].

Return of packing material, on-spot-payment, and quick procurement are some of the benefits reported by farmer members of the cooperative. Producers of exotic fruits and vegetables stated that HOPCOMS is only a minor purchaser of their produce. Farmer members mentioned their association with the cooperative is linked to higher incomes and poor assistance from the cooperative and inadequate supply of inputs as reasons owing to which they could discontinue their association in future. Farmers avail credit from the cooperative and also commercial banks and private moneylenders[7].

Farmers mostly come to the procurement centre once or twice a week to sell their produce. They either use their own transport or public transport to haul their produce to the procurement centre and the choice depends on the quantity to be transported. Farmers held poor state of road infrastructure, and public transportation responsible for loss or deterioration in quality of produce. High transportation costs, lack of choice in transportation were few other issues reported by farmer members. Farmers suggested that grading, processing, storage and transportation facilities are some of the areas the cooperative should focus on[7].
.

HOPCOMS :- The cooperative receives two kinds of subsidies from the state government - financial funds for investing in infrastructure, free premises like procurement centres and retail kiosks[6]. Infrastructure with the cooperative is frugal and limited. It encompasses retail outlets, cold storage, mobile coolers, procurement centres, grading and processing unit, weigh bridge, and storage centres or godowns[7].

At the procurement centre, there are also outlets that sell inputs like manure, seeds, fertilizers and pesticides and this is to facilitate easy purchase for farmers who come to the procurement centre for selling their produce. Some of the cooperative's retail outlets are strategically located inside public sector institutions, railway stations, bus stands or even next to milk booths[6]. The retail outlets of HOPCOMS also cross sell products of manufacturers like MTR and Nandini[7]. These are its marketing strategy to increase consumer footfall. The assistants at the retail who are generally on a temporary payroll[6].

They have a spot billing system where retail outlets have scales coupled with internet-connected billing devices such that customer gets a digital bill and the sales information gets directly updated at the Head Office in Bangalore[7].
.

Consumers :- Large public sector institutions and health-conscious middle class are assured customers of HOPCOMS[6]. Generally, consumers of HOPCOMS are educated and employed. Families with 2-7 adults and 2-4 children are its main consumers[7].

Consumers primarily look for easy access to stores as key point when making purchases for fruits and vegetables and HOPCOMS consumers are mostly located within 1 km radius of the retail outlets. Some also opined that affordable rates, fresh quality and variety as reasons for opting for HOPCOMS. Other reasons include good customer care, goodwill or connect with shopkeeper, home delivery service etc. Few consumers feel that grading and sorting facilities and hygiene at the outlets need to be improved[7].

A study conducted among residents of Bangalore to determine consumer preferences regarding purchase of fruits and vegetables, showed that there is a growing concern about food safety, quality and nutrition among them. This was especially the case among female, well-educated, married consumers with young children and who belong to higher-income groups. This, according to the study indicates a huge market opportunity for organic produce and necessity to implement food traceability system by institutions in order to boost consumers' confidence about food quality and safety[9].

8 Rich Picture
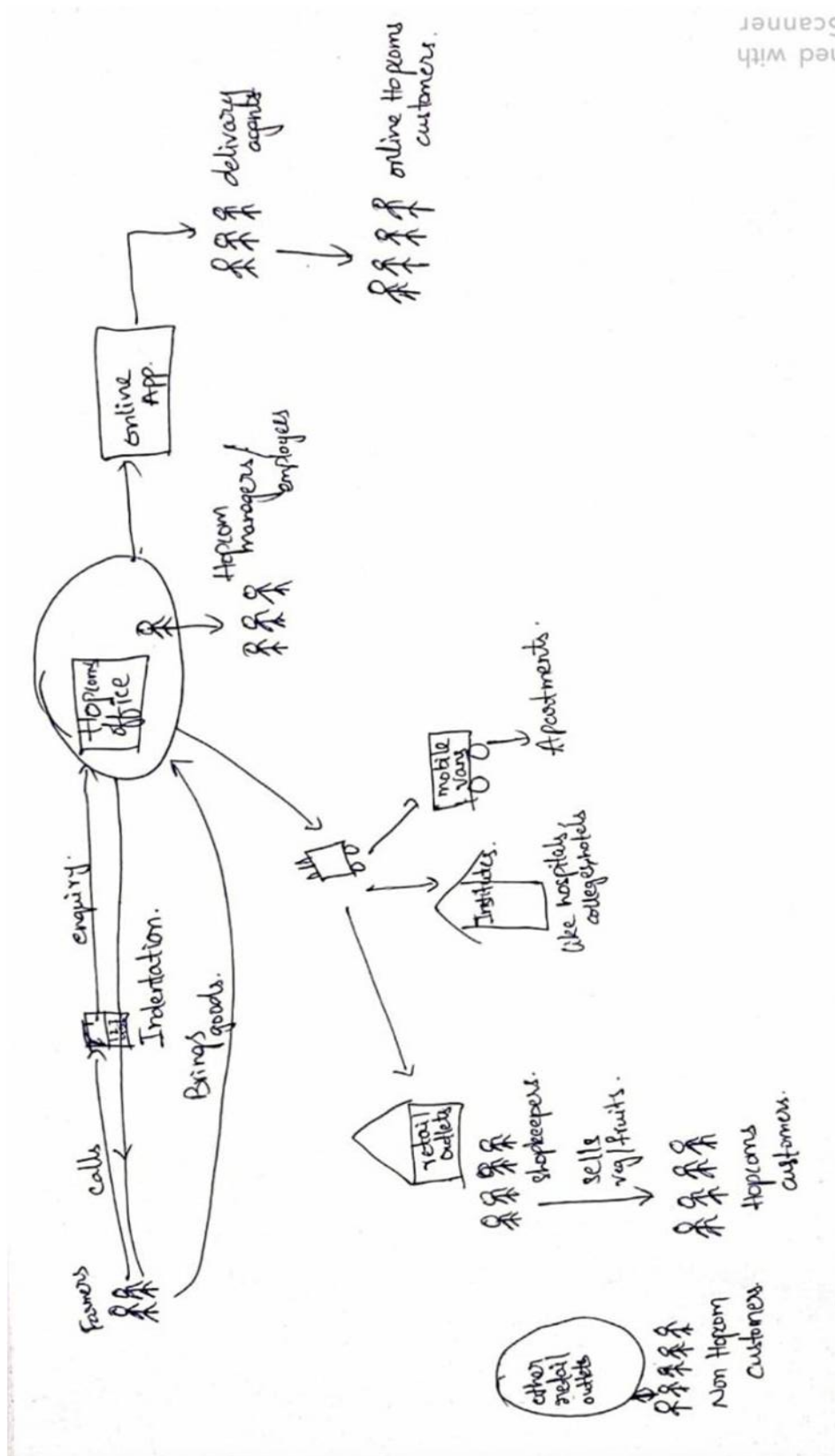
- After production, farmers from these five areas Rural Bangalore, urban Bangalore, Colar, Chikbalapur and Ramnagar call the Hopcoms and inform them about the produce. Whenever there is a necessity the hopcoms ask the farmers to bring the produce and this process is called Indentation.

- Farmers take the produce to the hopcoms main office with their own transport which is located in Lalbagh, Bangalore.

- In hopcoms office, all the produce goes under sorting, grading and processing. To decide the selling price, a few hopcoms employees visit the nearest local markets and take the average of the costs.

- Hopcoms sells the produce in four different ways, 60-70 % is sold to the retail outlets and a few % to institutes such as hospitals, colleges, hotels and also through mobile vans sent to apartments and residential complexes.

- Recently last October, hopcoms went online in collaboration with CodeCatalyst which takes 12% of the share and provides tech support.

- Code catalyst manages all the logistics from the main office.

- The app hasn't been very much successful and there are quite a few complaints from customers.

- The retail outlets have 2-3% margin in sales. People who buy from these retail outlets are mostly older people and women who live nearby.

- The shopkeepers also occasionally do door-to-door delivery services and these shopkeepers are also the employees of hopcoms.

- There are nearly 280 retail outlets in Bangalore.

Expression of problematic situation using rich picture From the above rich picture, the identified stakeholders are farmers, shopkeepers, hopcoms customers, online hopcoms customers, code catalyst and hopcoms employees.

Issues and expectations of different stakeholders:

1. **Farmers** :
   - Hopcoms procurement is limited.
   - The payment delays frequently.
   - The farmer's income is poor from agriculture.
   - Hopcoms doesn't provide any transportation or storage facilities.

2. **Shopkeepers**:
   - The competition is high from different local stores and online companies.
   - The sales rather get affected by the location of the shop.
   - Need manpower for home/door-to-door delivery.

3. **Customers** :
   - Need more variety.
   - The produce is often not very fresh.
   - Prices are high compared to other markets.

4. **Online Hopcoms Customers** :
   - The app has a very poor interface and is not user friendly.
   - It has no return or replacement policy.
   - Delivery takes a lot of time and costs are high.
   - The customer care is poor.

5. **Code Catalyst** :

– The logistics cost is high.

– Sales are poor.

– No proper groundwork has been done.

6. **Hopcoms** :

– Competition is high.

– Hopcoms receives very less or zero funds.

– Many outlets are being closed due to fewer sales.

– Unable to do the proper groundwork for the online App due to lack of knowledge in IT's.

– Lack of manpower to perform specified tasks.

9   Why is this complex situation – wicked problem or mess?

From different worldviews that we have gathered, we can say that the problematic situation at HOPCOMS is more of a mess that has a longer time-scale, involves more people and includes many interlocking aspects in different forms. It can also be called a mess because there are lot of uncertainties associated with the situation at HOPCOMS and also conflicting perspectives about it. It is difficult to pin down the actual cause for concern or the source of the unease. There appear to be multiple possible trajectories and no single answer that can address all possible concerns. Several of the concerns are beyond direct control, and we have to decide how much weightage to give to different perspectives. Systems approaches such as Soft Systems Methodology that we have applied here is considered the right method to understand such messy situations[10].

# 10   Root Definition, perspectives and Mnemonic – BATWOVE

One of the steps to determine the root system is to create a transformation model that will be proposed, together with all the stakeholders involved in the transformation process. We choose to use the BATWOVE category system instead of Catwoe because we see from the implementation of SSM to consider the root definition in the model, that there will be a stakeholder affected by the loss, namely the Hopcoms Shopkeepers.

Root Definition:- An online delivery system that provide higher sales for HOPCOMS better prices for farmers and fresh quality products at affordable price for customer.

BATWOVE:-

– **B**: Customer, farmers, HOPCOMS Shopkeepers, HOPCOMS

– **A**: HOPCOMS, Farmers, Shopkeepers, Apps Provider: codecatalist

– **T**: Delivering fresh quality products to customers at affordable prices through online delivery

– **W**: Being a good role model for the agricultural supply chain system in Karnataka

– **O**: HOPCOMS

– **V**: HOPCOMS Shopkeepers.

– **E**:

  - Internal: Human resource, Budget, technologies;
  - External;: storage, competition, delivery logistic.

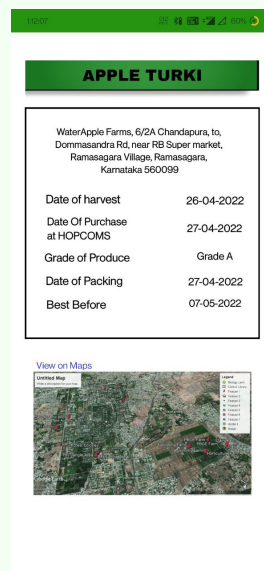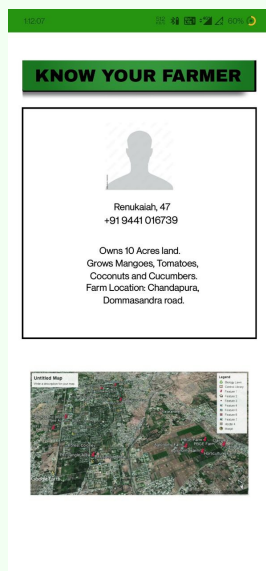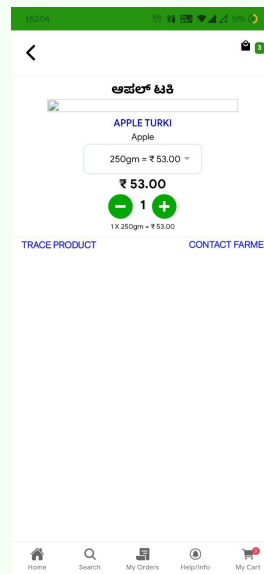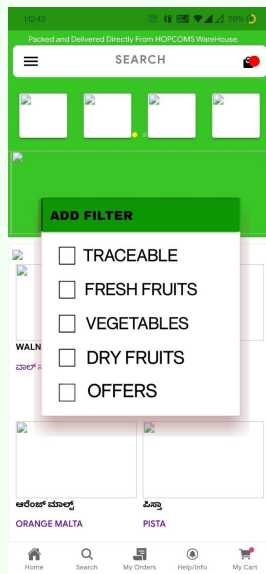# 11   Activity Model Diagram
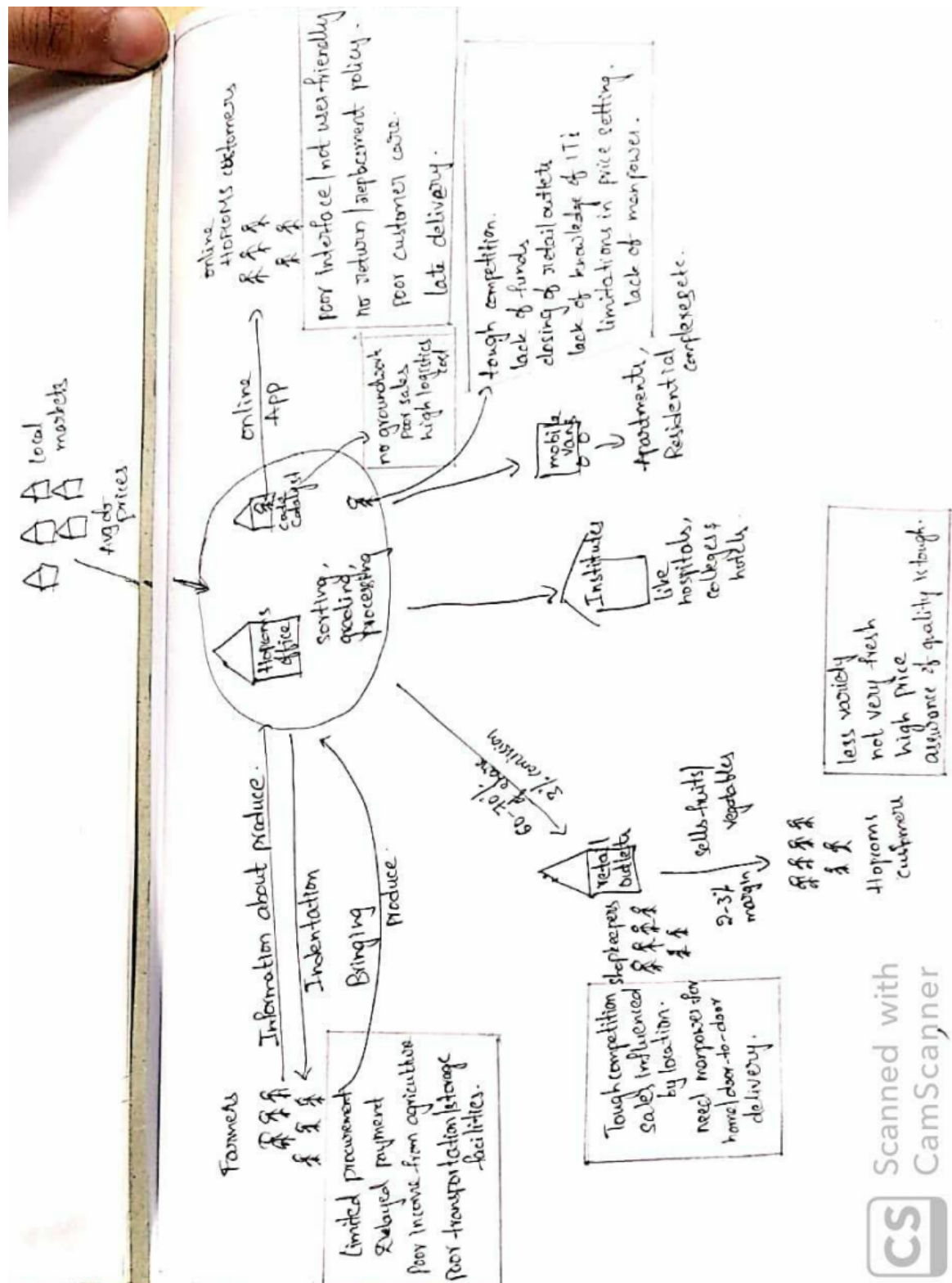
.
From the root definition, we have made an activity model diagram. It has 4 separate activities.

1. Procurement from farmers:

    (a) Farmers contact HOPCOM to provide information about the quantity of their produce.

    (b) HOPCOM then inform farmer about the amount of their produce they will buy and the date to bring their produce.

    (c) HOPCOM then purchases the produce and makes full payment to farmers. Organic produce will be given a higher price.

2. Perform assaying activities:

    (a) HOPCOM will now make the produce of farmers customer-ready by performing activities like grading, sorting, etc.

    (b) It will store a small quantity of produce (mainly organic products) with the corresponding details of farmers and produce. Making the produce traceable.

3. Distribute produce:

    (a) Sell online: HOPCOM hired code catalyst to sell the produce online, Code catalyst will itself do home delivery if the produce delivery location is near to it. When the location is far then it will use hopcom outlets to do the home delivery.

    (b) Sell offline: HOPCOM will sell through its retail outlets.

    (c) Demand: by adding the sales figure from both online and offline modes, demand will be calculated and will be used to determine the amount of produce hopcom will buy from farmers.

4. Payment to distribution channels:

    (a) When the retail outlets sell the produce, HOPCOM will give a 3% commission to the retailer.

    (b) Code catalyst will be given a 12% commission for online sales if it did the delivery.

    (c) If code catalyst used hopcom outlets for the delivery then 9% commission will go to Code Catalyst and 3% commission will go to the retail outlet which did the Home delivery.

Through this model, we aim to make farmers get better prices consumers get fresh quality produce at their doorsteps and HOPCOMS and code-catalyst make better profit.

12 Sample UI

1. We noticed HOPCOMS lacked the filter option in it's application. We added this feature where it filters out leaving only what the customer is looking for. This makes it a little bit more easier for users to operate the app and find what they want more easily.

    – We added the **Traceable** option which shows only the products which are treaceable and are tagged with their source of produce.

2. Next, we added two options, **'Contact Farmer'** and **'Trace Product'** which are only available in traceable products, as shown in the picture below.

    – **Contact Farmer** option gives you the details of the farmer who cultivates this product and you can visit the farm by contacting him.

    – **Trace Product** takes you to the details of the product, where it has been produced from, quality, it's grade and other useful information.

Screen 1 (Search with Add Filter):

SEARCH

ADD FILTER
- ☐ TRACEABLE
- ☐ FRESH FRUITS
- ☐ VEGETABLES
- ☐ DRY FRUITS
- ☐ OFFERS

Packed and Delivered Directly From HOPCOMS WareHouse.

WALN...
ವಾಲ್ ...

ಆರೆಂಜ್ ಮಾಲ್ಟ
ORANGE MALTA

ಪಿಸ್ತಾ
PISTA

Home | Search | My Orders | Help/Info | My Cart

Screen 2 (Product page):

ಆಪಲ್ ಟರ್ಕಿ

APPLE TURKI
Apple

250gm = ₹ 53.00

₹ 53.00

— 1 +

1 X 250gm = ₹ 53.00

TRACE PRODUCT   CONTACT FARMER

Home | Search | My Orders | Help/Info | My Cart

Screen 3 (Know Your Farmer):

KNOW YOUR FARMER

Renukaiah, 47
+91 9441 016739

Owns 10 Acres land.
Grows Mangoes, Tomatoes,
Coconuts and Cucumbers.
Farm Location: Chandapura,
Dommasandra road.

Screen 4 (Apple Turki):

APPLE TURKI

WaterApple Farms, 6/2A Chandapura, to,
Dommasandra Rd, near RB Super market,
Ramasagara Village, Ramasagara,
Karnataka 560099

Date of harvest	26-04-2022
Date Of Purchase at HOPCOMS	27-04-2022
Grade of Produce	Grade A
Date of Packing	27-04-2022
Best Before	07-05-2022

View on Maps

13   References

1. Bharadwaj, A. (2015, January). The rise and fall of HOPCOMS.

2. Checkland, P. P. (2020). Soft Systems Methodology. In M. H. Reynolds, Systems Approaches to Making Change: A Practical Guide. Springer.

3. Deccan Herald. (2017, April). Now buy fruits, veggies from Hopcoms online.

4. Gajanana, T. M., Sudha, M., & Dakshinamoorthy, V. (2006). Marketing and post-harvest loss assessment in sapota. Journal of Horticultural Sciences, 1(1).

5. KIRAN, R., & SIVAKUMAR, S. D. (2017). THE COST AND RETURNS STRUCTURES OF MAJOR VEGETABLES UNDER DIFFERENT SUPPLY CHAINS IN BENGALURU RURAL DISTRICT OF KARNATAKA. International Journal of Agricultural Science and Research, 7(6).

6. Kolady, D., Krishnamoorthy, S., & Narayanan, S. (2007, August). An "Other" Revolution?

7. Krishna, K. M. (2015). Role of horticultural producers cooperative marketing and processing society Ltd HOPCOMS in marketing of Fruits and Vegetables in Karnataka a case study of Bangalore.

8. Murthy, D. S., Gajanana, T., & Mysore, S. (2007). Marketing Losses and Their Impact on Marketing Margins: A Case Study of Banana in Karnataka. Agricultural Economics Research Review, 20.

9. Nandi, R., Bokelmann, W., Gowdru, N. V., & Dias, G. (n.d.). Consumer Motives and Purchase Preferences for Organic Food Products: Empirical Evidence From a Consumer Survey in Bangalore, South India. Journal of International Food & Agribusiness Marketing, 28(1), 74-99.

10. Reynolds, M. a. (2010). Introducing systems approaches. In M. a. Reynolds, Systems Approaches to Managing Change: A Practical Guide (pp. 1-23). Springer.

11. Sripad, A. M. (2020, July). Hopcoms stares at losses, many outlets closed.

12. Sureban, H. (2021, November). City HOPCOMS on a slow decline.

13. The Indian Express. (2021, May). Bengaluru: State-owned HOPCOMS starts online delivery of fruits, veggies on pilot basis.

14. The Indian Express. (2022, May). Tomato prices soar in Bengaluru as heat takes toll on yield. Bangalore.