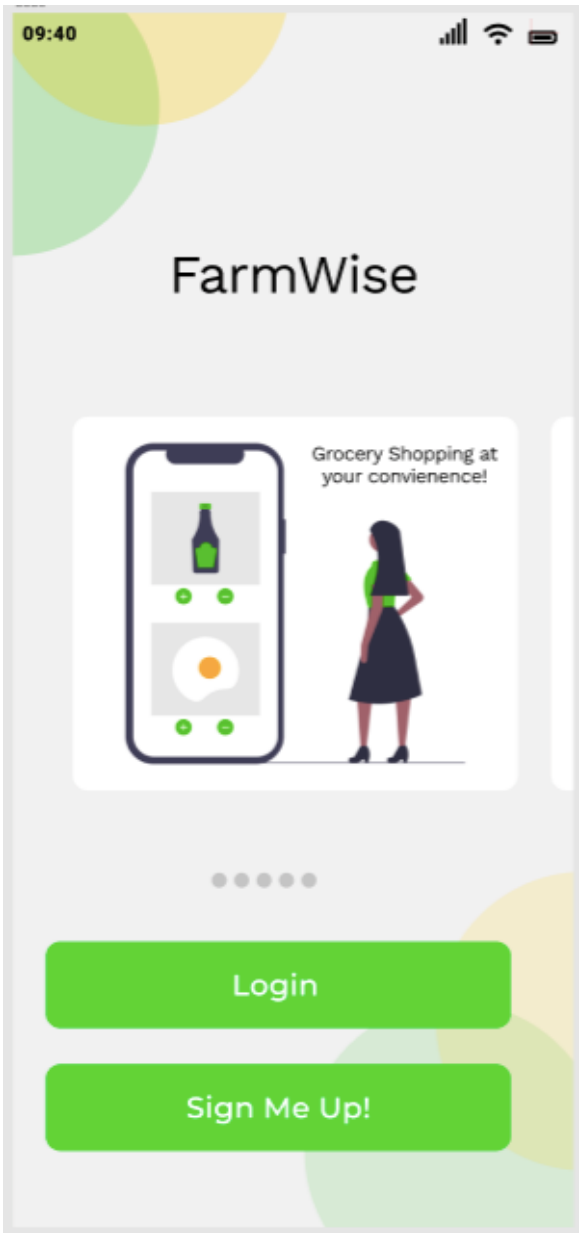
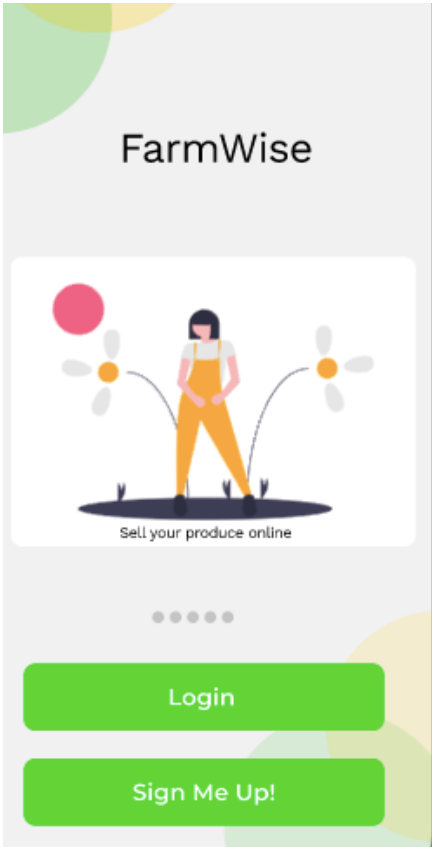
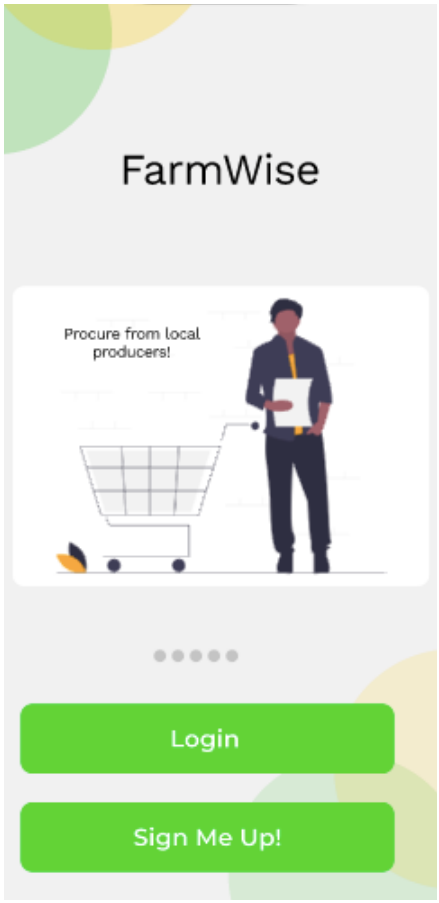
FARMWISE :

SUSTAINABILITY. RELIABILITY. TRANSFORMATION.

AJAY
VIJAYAKUMARAN


09:40
FarmWise
Grocery Shopping at your convienence!
Login
Sign Me Up!


FarmWise
Sell your produce online
Login
Sign Me Up!


FarmWise
Procure from local producers!
Login
Sign Me Up!

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Introduction

The objective of this report is to outline the various processes and learnings that have been acquired whilst working in the team to produce a high fidelity - mobile application design of the ***FarmWise*** application developed on the figma tool.

The FarmWise application : Background
The application has been modelled keeping in mind the strong pillars of ***sustainability, reliability and transformation*** – that is, an application aimed to provide sustainability in the way the business is carried out, reliability of the platform being used to carry it out and transforming small businesses digitally eventually impacting lives at different points in the supply chain.

- The FarmWise application is intended to enable the user groups (Grower, Seller and Buyer or the Shopper) to explore the farm produce that are available in the application and acquire them.

- The application is a one-stop platform that connects **Growers and Sellers** (Merchants/retailers) and **Sellers and Buyers** (regular shopper).

- The FarmWise application facilitates the user groups with several features to manage their business and/or achieve their objective on the application with ease. These features will be explained further in the upcoming sections.

- The application aims to provide an industry standard solution to the supply chain.

Background/Motivation
Having worked on multiple web and mobile applications spanning the agriculture sector, I saw a great opportunity to learn and explore this area in terms of digital transformation. Few of these applications and points of information that we looked into are :

- Agrifood and Fisheries Export Services Portal

  " The Export Services Portal is a central source of information to better equip Western Australian agrifood and fisheries exporters to develop their business. It's a comprehensive and easy tool to identify the key export related services provided by government (State and Commonwealth) departments and industry bodies to Western Australian agrifood and fisheries exporters. " (Agrifood and Fisheries Export Services Portal at https://export.agric.wa.gov.au/)

  The solution is offered by the Government of Western Australia, with insights into the offering of this web portal that connects small industries in the agriculture sector by providing information for developing various businesses.

- Phoenicia

  This application has a great role to play in the conceptualisation of "FarmWise" as this portal aims at providing services and facilitating the business flow between ***Growers and Sellers***. This idea became the seed for our application and we let it evolve and grow by defining functionalities and user flows.

  "connects fresh produce growers, merchants and buyers – online.
  Phoenicia provides unprecedented visibility and transparency across the fresh produce value chain. With access to real time market data and the ability to manage your business when and where you choose, Phoenicia will save you time, strengthen your relationships, make you better informed and improve your decision making. It is the new way of doing business." (Phoenicia at https://phoenicia.com.au/)

- Sinarmas (Golden Agri-Resources Ltd.)
  " GAR is committed to be the leader in sustainable palm oil production by adopting best industry practices and standards, managing the environment responsibly, creating employment and empowering the communities." (Sinarmas at https://www.sinarmas.com/en/agribusiness-and-food.html)

- Teagasc
  " Teagasc – the Agriculture and Food Development Authority – is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities." (Teagasc at https://www.teagasc.ie/about/)

  Teagasc provides Farm Advisory services being a Agriculture and Food Development authority of Ireland.

  The motivation of working on FarmWise piqued due to my inclination into this sector by the virtue of exposure into development of similar projects such as the Agrifood and Fisheries Export Services Portal and Phoenicia and I was able to leverage it to steer the team to think in the direction of the solution through the design of FarmWise.

FarmWise : How it came to be?

The name FarmWise resulted as a group conversation when the discussion was initiated around the concept of connecting a local producer to the end customer. It piqued curiosity when we started discussing how ***"wise"*** it would be if the producer knew how much to grow based on the demand for the produce from their ***"farm"*** and hence the name came to being for this application as ***"FarmWise".***

Usability and Background Research

Usability and Heuristics

In the development of the high fidelity of the prototype, it was checked for compliance at several points for the ***10 heuristics*** provided by the ***Nielsen Norman Group.***

This high fidelity prototype however contains mostly all the positive flows.

We shall look in-depth for these 10 points of heuristics :

1 Visibility of system status

The design quality ***"Feedback"*** has been pre-emptively leveraged to keep the users informed of the state of the application when a particular action is in progress or a message that delivers the success of the action that is being carried out.

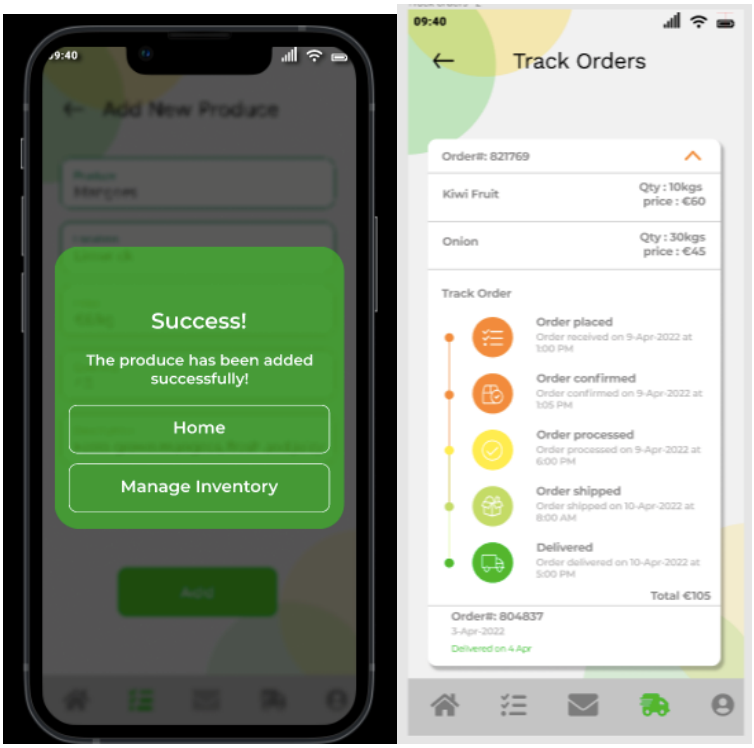

Figure 1feedback : heuristic 1 via feedback

2 Match between system and the real world

The language that is being used is kept consistent throughout the application, the words used are the most common ones interacted on a daily basis by a regular user and is ensured that the application does not have technical “jargons”. The page headers and the menu items speak to the user, in the most natural tongue.

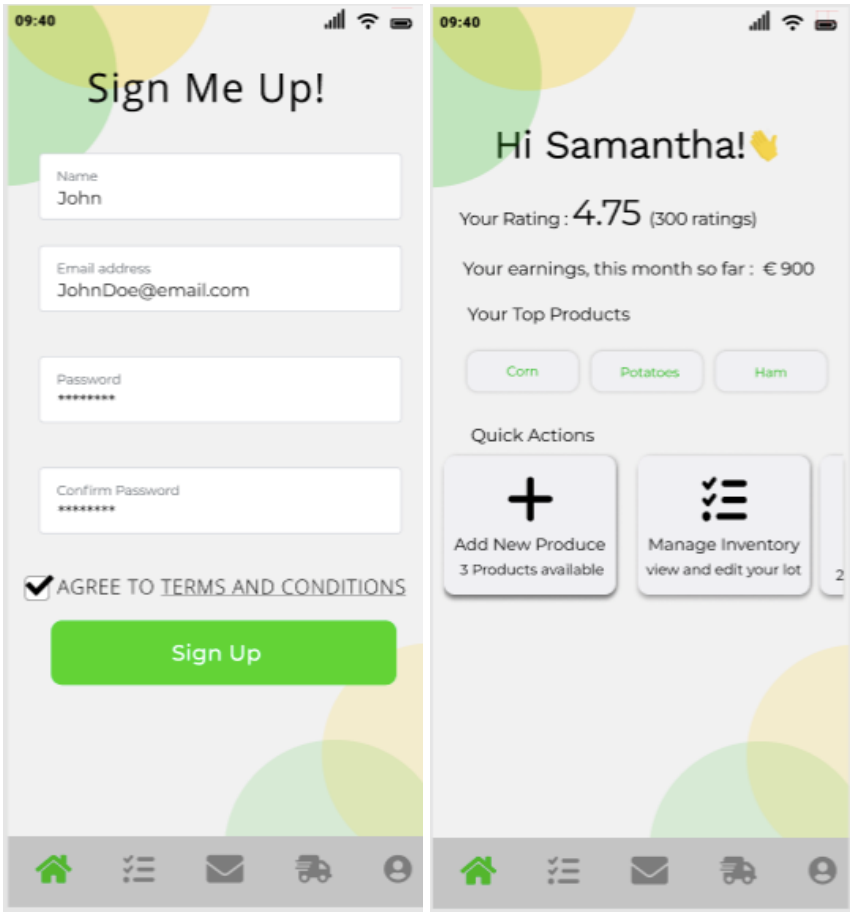

Figure 2 Heuristic 2 :Simple language and relevant icons

3 User control and freedom

The application is designed to make the user feel in complete control and exercise freedom as much as possible, the user should never feel trapped while using the application and is facilitated by clear navigation controls. The application is kept as minimal as possible to avoid complex flows, yet with complete functionalities.

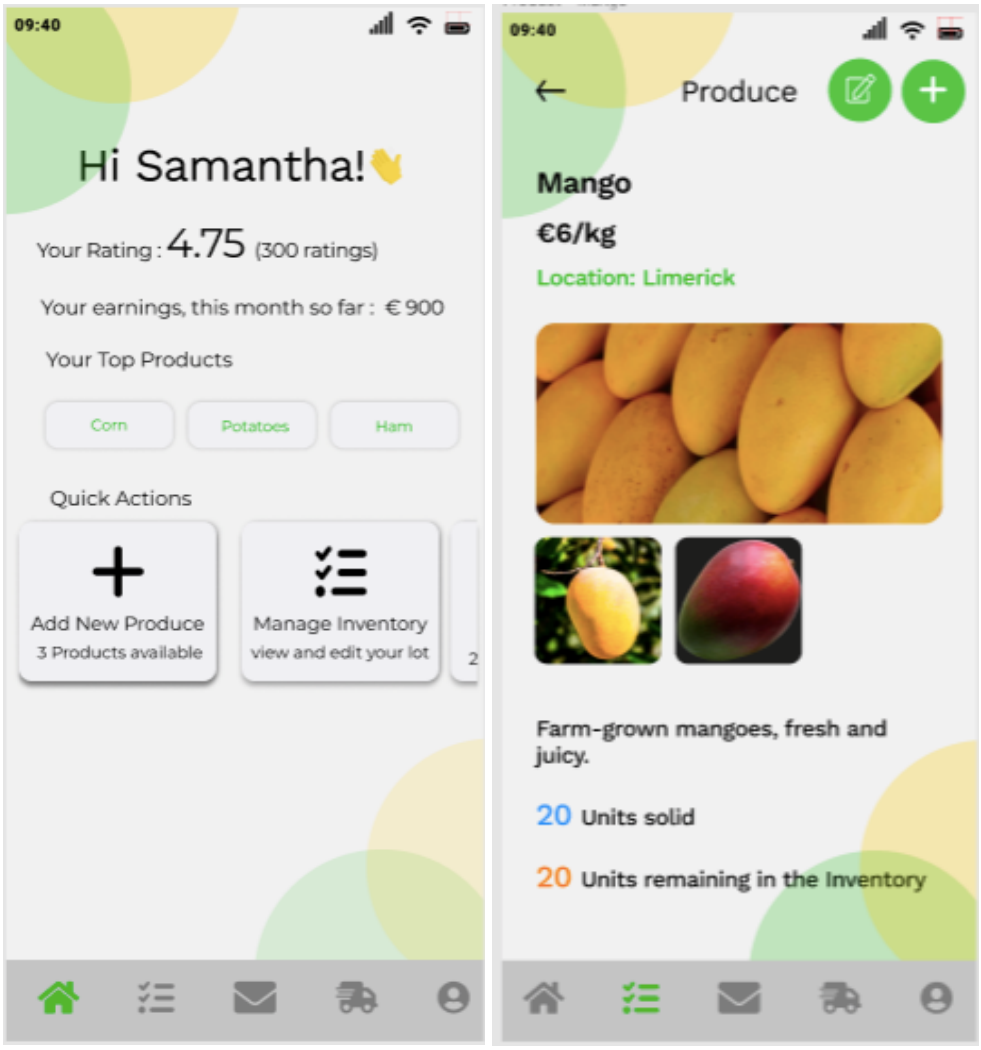

Figure 3 heuristic 3 : easy navigation; user never feels trapped

4 Consistency and standards

The User Interface of the application is drafted to be consistent across all the screens with the messages and interactions.

The design quality of ***"Affordance"*** has been leveraged to empower the user with minimal explanation to perform the most natural task on the application.

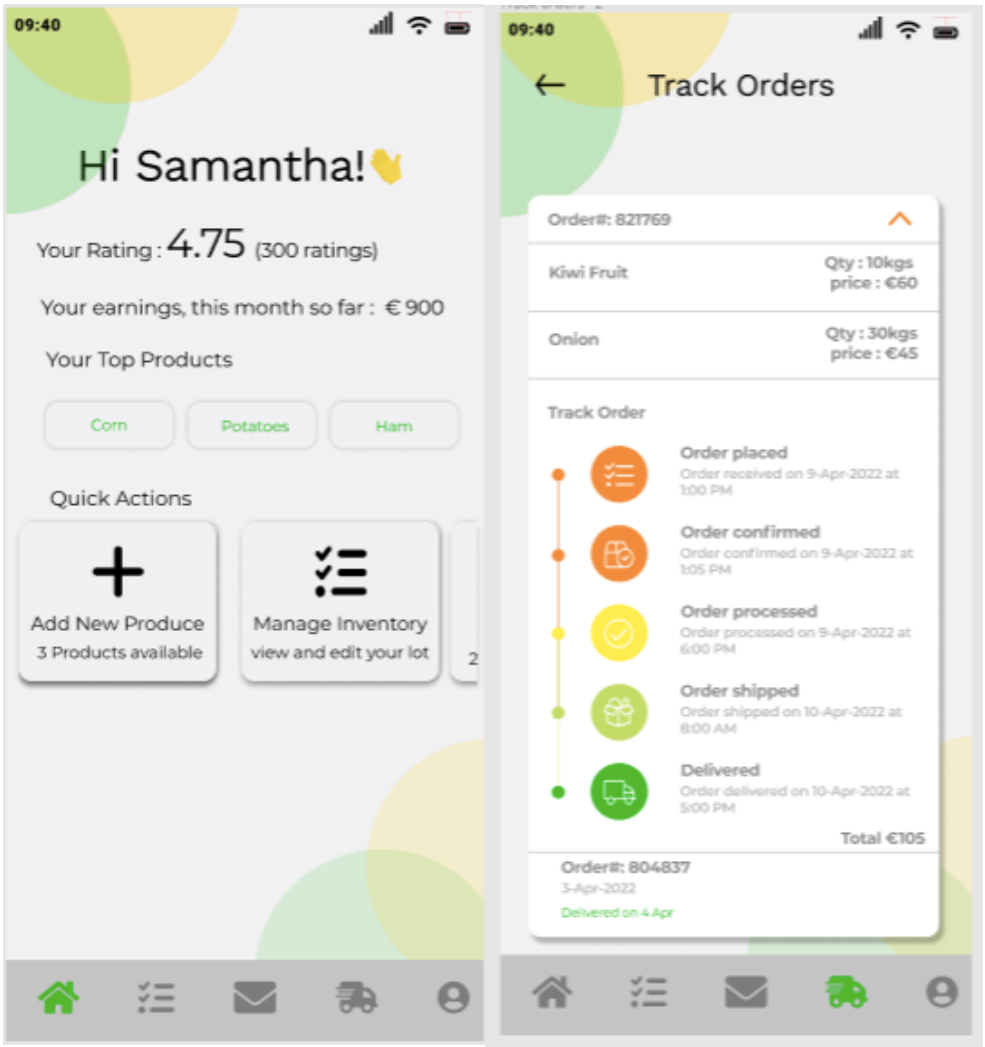

Figure 4 heuristic 4 : affordances at best - the tiles afford to be clicked and the accordion affords to be expanded or collapsed feedback for order status and mapping of colors and icons accordingly convey consistecy and standards

5 Error prevention

As mentioned above the application is designed with a positive flow in mind, therefore all the erroring scenarios are prevented and are carefully crafted keeping the vastness of the scope of the application and the time constraints in mind. Thereby, the user flows often end in positive journeys.

The design quality of ***"Constraints"*** has been effectively employed to avoid the user from encountering error scenarios such as submitting the form without crucial details – the form will have the buttons in the disabled state when the required information is not provided.

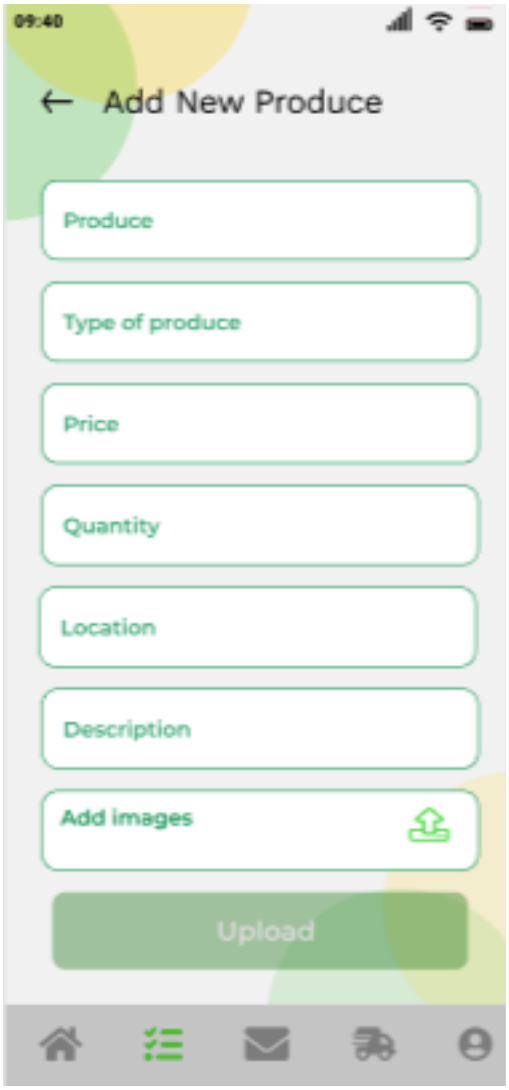

Figure 5 : error prevention by disabling the upload button in the form

6 Recognition rather than recall

As mentioned in the 4th heuristics point, the natural affordances are leveraged to enable the user to recognise each User Interface element without having to learn them or refer to any sort of documentation. The flows are also straightforward in nature that let the user know as soon as they log in to the application, as to what they have come on the application for, what their objective is and how they are going to achieve it.

Further the design quality of ***"mapping"*** has been leveraged by the means of icons and labels throughout the application to register in the users conceptual model while utilizing the application to provide a better sense of recognition of User Interface elements throughout the application.

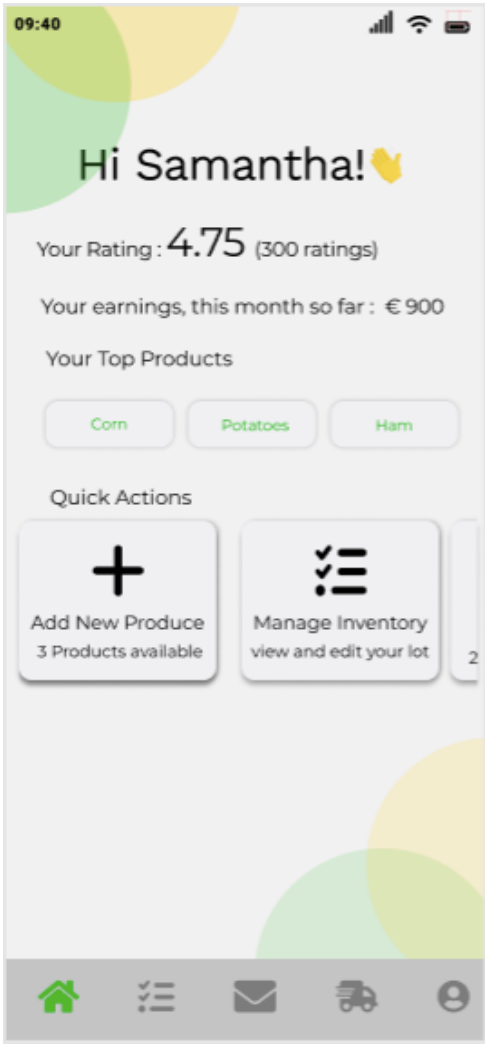

Figure 6 heuristic 6 : user knows what to do, simple tasks, mimimalistic UI with tiles that tell user where to navigate for a functionality on home screen

7 Flexibility and efficiency of use

At various instances of the application the user has several shortcuts they can use, for instance the quick add option in the landing screen for grower as well as sellers enable them to quickly add an item to inventory, rather than visiting the item from the inventory which is another flow in the application through the menu items.

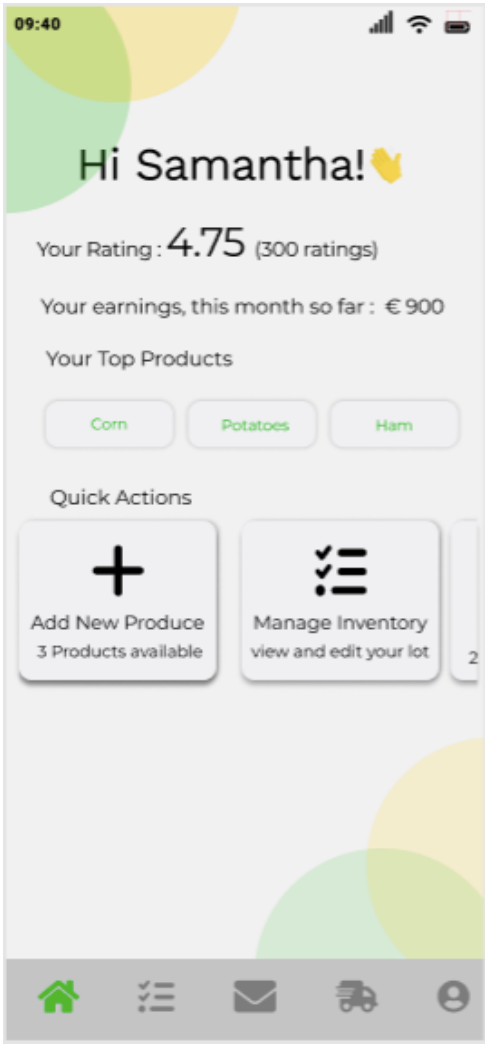

Figure 7 heuristic 7 : shortcut to sub-tasks, for eg. add new produce is a sub task of manage inventory, it promotes ease of access to the user to diretly add new produce than to locate it in the inventory to add it

8 Aesthetic and minimalist design

The application is designed to be aesthetically pleasing, it lets the target users, in our case belonging to Ireland, have a sense of pride as the application empowers local sourcing – this is highlighted by the colour palette and the base theme of the application.

Some elements leverage ***"neumorphic"*** design, as a part of exercise to improvise and provide sleeker look and feel to the application.

The app is minimalistic in nature and covers all functionalities in a minimalistic fashion.

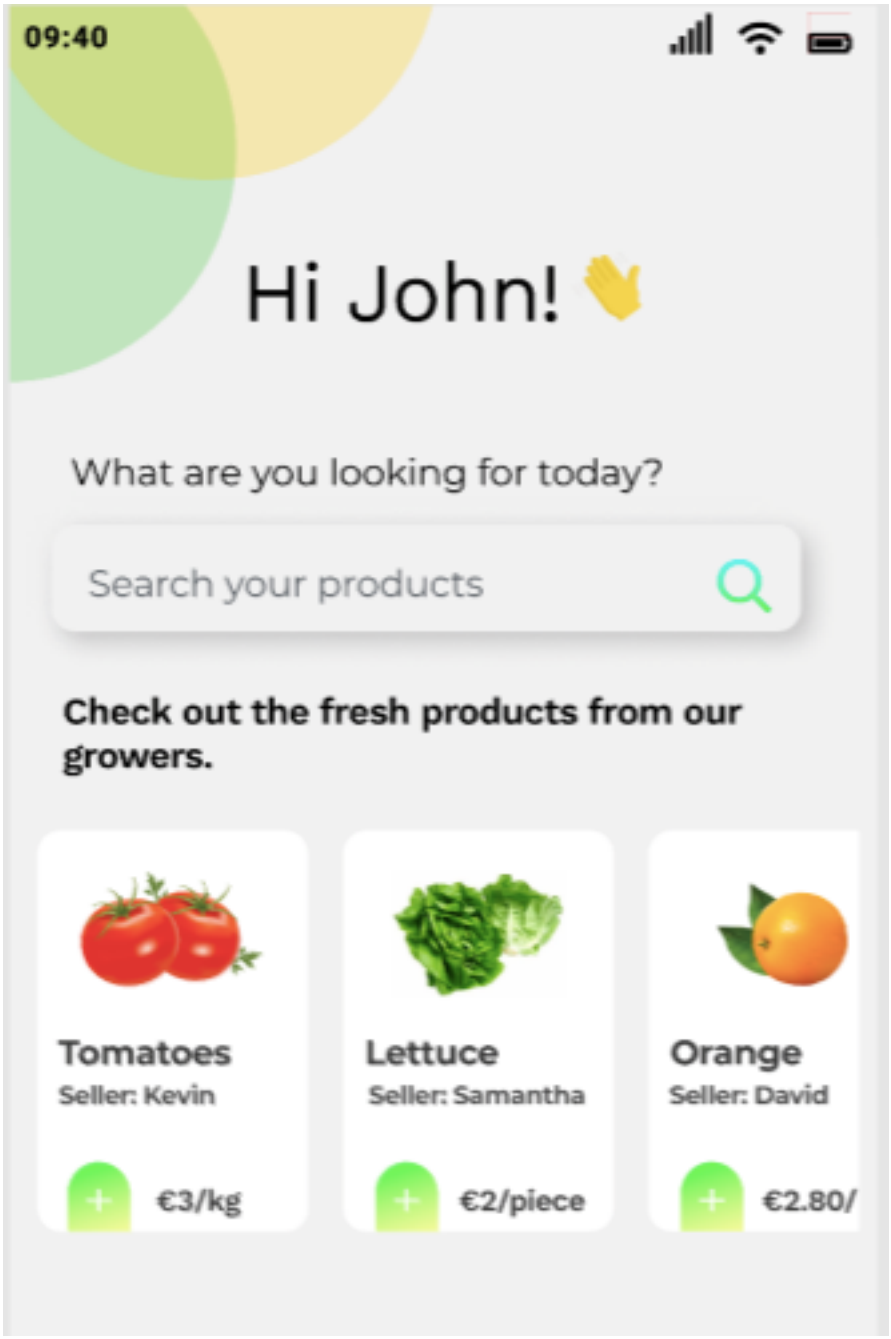

Figure 8 : heuristic 8 : neumorphic design, simplistic UI yet impactful

9 Help users recognize, diagnose, and recover from errors

As mentioned in the previous points, the application focuses more on the error prevention aspect. However, the consistency of the application follows clear messages of the action in the background and this could be leveraged in the next phase to draft error messages and scenarios that would help the end user recover from errors.

10 Help and documentation

As the application's scope is vast, the features, flow and the usage is described in the video walkthrough of the prototype.

Background Research

As pointed out in the introduction section, the various products and resources that we explored are as :

- Agrifood and Fisheries Export Services Portal
- Phoenicia
- Sinarmas (Golden Agri-Resources Ltd.)
- Teagasc

For the motivation and research purposes, some of the online sources for data points from an inductive research point of view were explored and can be found as under :

1. Supply Chain Governance of Agricultural Products under Big Data Platform Based on Blockchain Technology

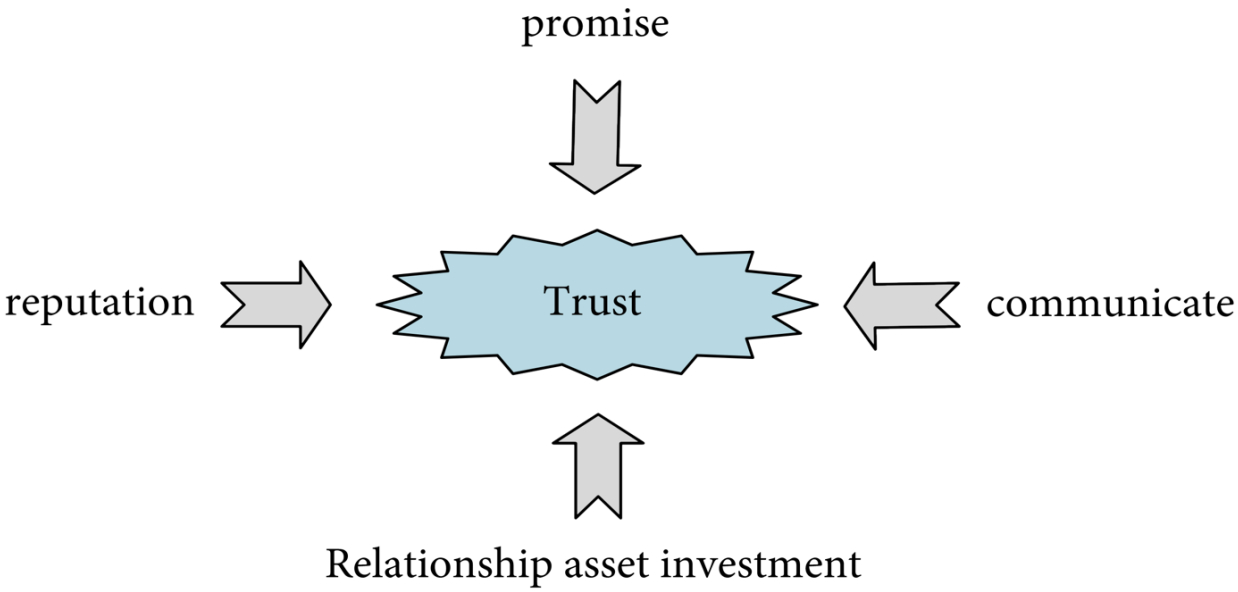

Figure 9 Informal governance mechanism of supply chain agricultural products

> "The present work serves to improve the stable cooperation relationship among subjects of supply chain such as enterprises, farmers, intermediary organizations, and retailers and enhance the governance and optimization of agricultural product supply chain, thus strengthening the competitiveness of China's agricultural industry. The supply chain governance of agricultural products is taken as the research object." (Guo W. and Yao K, 2022)

Source : *https://www.hindawi.com/journals/sp/2022/4456150/fig17/*

2. How to Design an App to Support Local Farmers — Grow It, a UX Case Study (source uxdesign.cc)

Figure 10 : Survery results of Antoine Fourrier

The author, Antoine Fourrier , conducted a survey with 230 answers regarding the opportunity to access a digital platform to support local growers and the above are the results of the survey. It provided us with a good motivation to proceed with the design process.

Having the conceptual model of Phoenicia in mind, we explored the website of the same and drew out the features to adapt some of the core offerings into our application and we completed an end to end flow of our application with buyer, seller and grower.

Source : https://uxdesign.cc/grow-it-how-to-design-an-app-to-support-local-farmers-a-ux-case-study-cad4e7302039

Design and Development Process

The design and development process was carried out in a structured manner.

The Agile Sprint Methodology

The Design and development phases started on February 26th 2022, the process started in an Agile sprint methodology fashion.
Trello board was leveraged to facilitate this process.

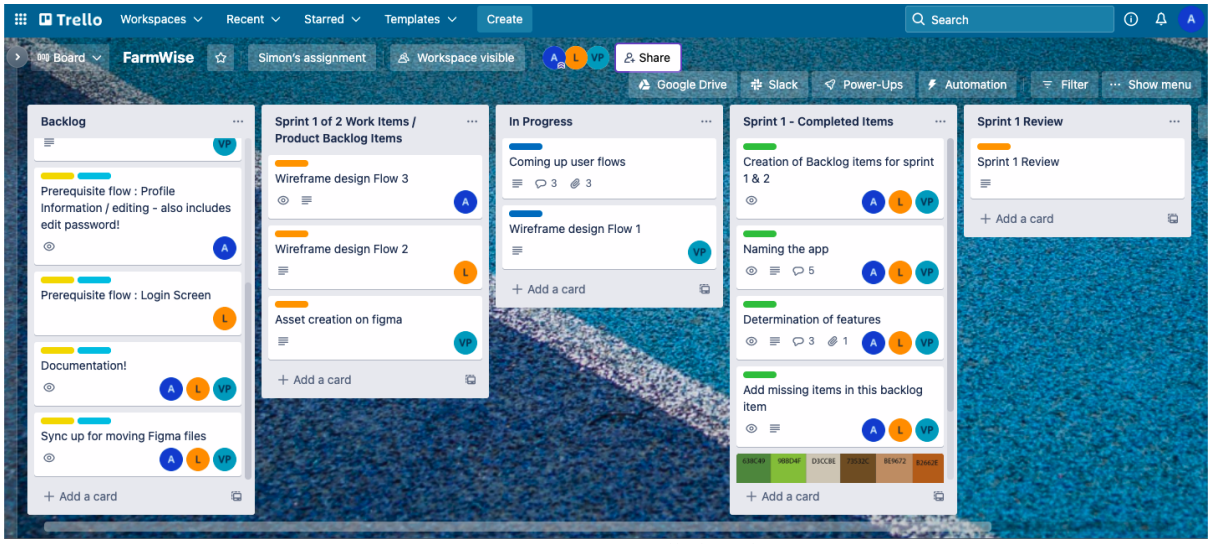

Figure 11Sprint 1 trello board

The platform was leveraged to track our progress, brainstorm ideas, create tasks and assign it to different team members.

Various tasks that were recognised are as under :

- Colour palette identification
- Asset creation
- Storyboards to come up with brainstorming scenarios
- User Personas
- User flow identification
- Feature mapping
- Initial wireframe design
- Final Prototype design
- Integration of work

As a peer group, the work was evenly distributed with the intention to help each other out as and when possible.

Storyboarding

The Storyboarding method was used for ideation and narrowing down of the features some of the storyboards can be found as under :

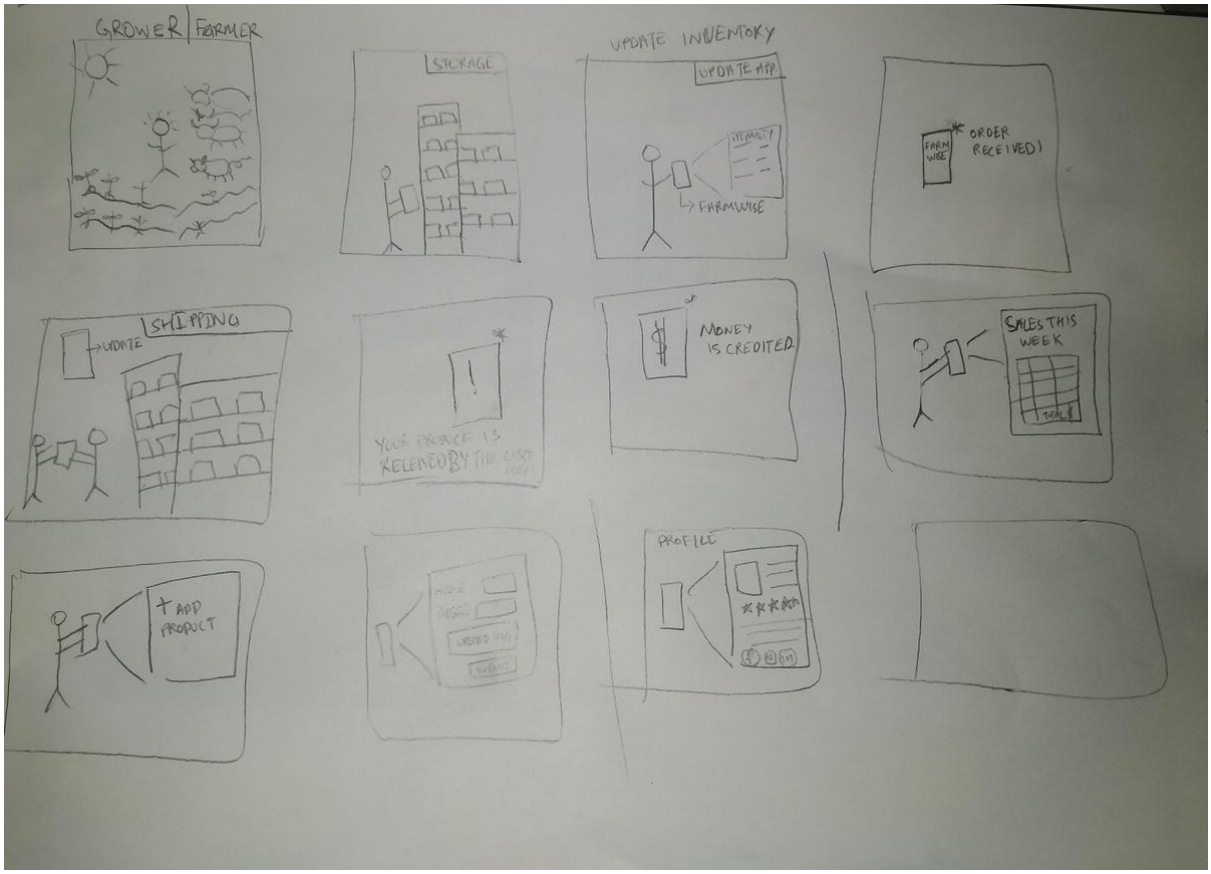

Figure 12 : Story board for Grower

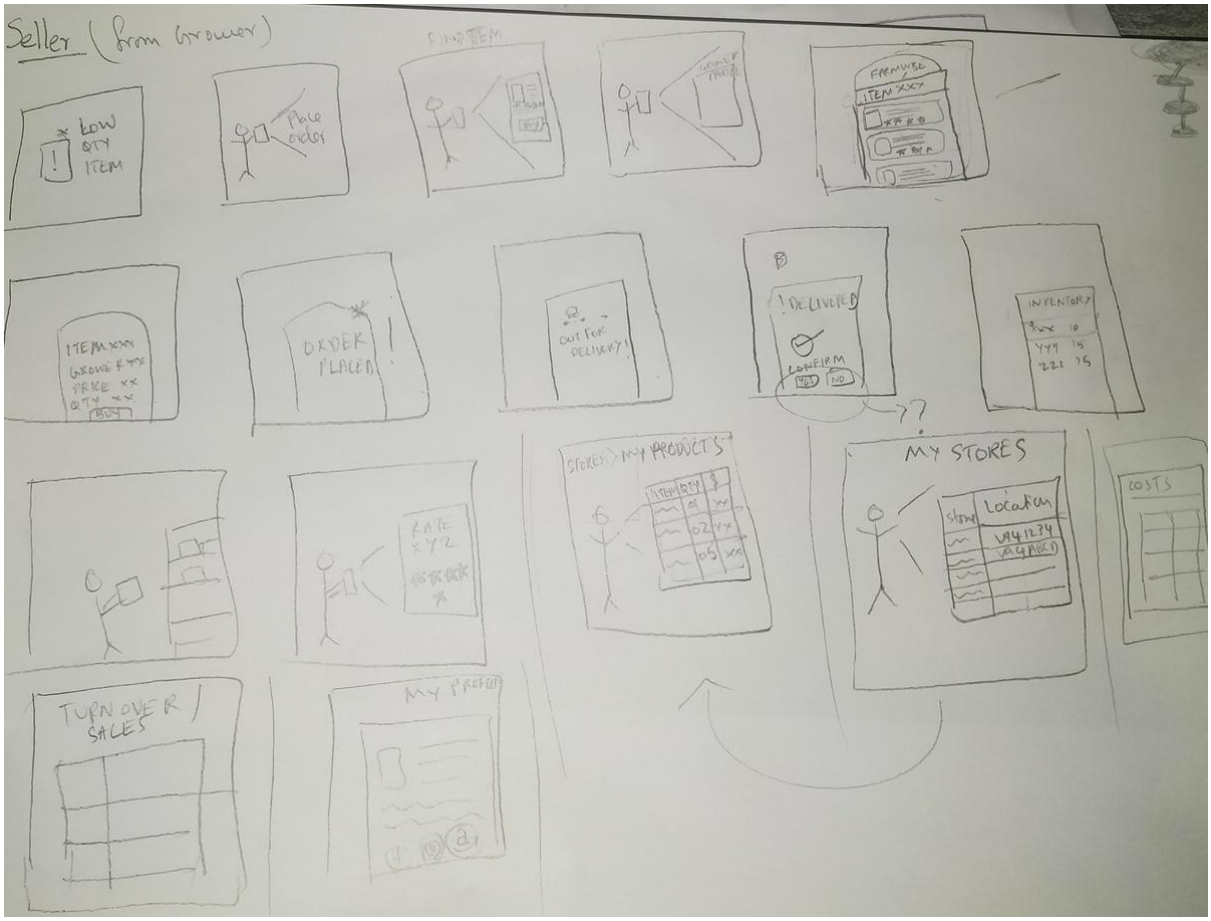

Figure 13 : Storyboard for Seller

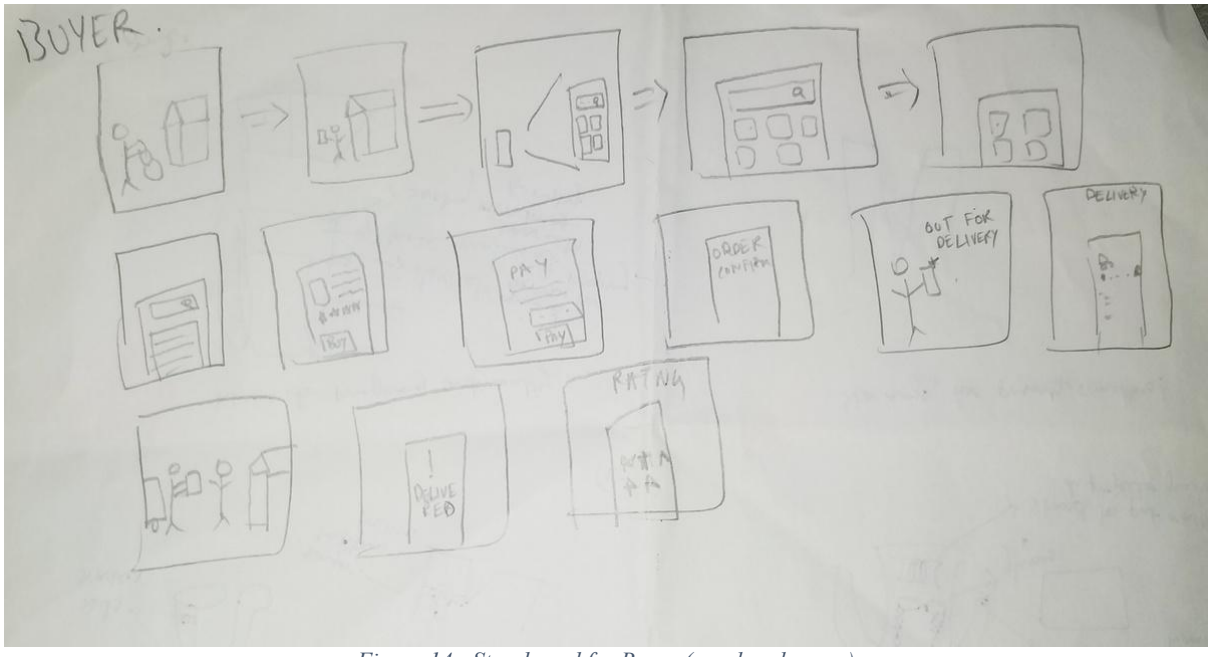

Figure 14 : Storyboard for Buyer (regular shopper)

The Service Design

The service design is to support and foster the ecosystem where the grower grows the local produce and the seller buys it from the grower and stocks it in their inventory.

The buyer that is the end customer would in turn go to the seller to buy the product. This empowers the economy as they source locally and hence enables the seller to facilitate the sale of a diverse range of produce that is sourced from the local grower and sell it to the buyer who has the option to buy a whole range of products from the seller instead of just one from a grower.

The Seller has the ability to source produce from multiple growers.

This proposed model would thereby serve the economy by making it reliable, sustainable with a lesser carbon footprint as the produce is not shipped from another far-away location and would help transform and foster small businesses.

Personas

Grower : Samantha McSweeney

- Samantha is a 26 year old farmer from Askeaton, Limerick.
- Her business is blooming from the farm and she wants to get the best of the deals to reap higher profits.
- She deals with fruits such as mangoes and vegetables such as potatoes.
- She also rears poultry and livestock in her farm.

Seller : John Lopez

John is a 32 year old retail businessman from Limerick city.

- He has long experience of working in retail and now has finally opened up his small venture
- John wants to empower small businesses in and around his area and thereby reduce costs.

Buyer : Timothy Smith

Tim is a 35 year old manager in the corporate sector. He has 2 very young kids and he lives in Limerick.

- He is regular shopper for everyday groceries.
- He finds it difficult to go shop every day and balance work to spend time with his family, he wishes for an easier solution that would deliver his weekly groceries at a nominal fee.

Figma Design phase

After narrowing down the features and user flows, the visual designing phase was executed on figma.

I executed the primary task of ***Grower***'s user story and aligned with the storyboard and the features that were discussed by the team.

Figure 15 Grower designs : Figma

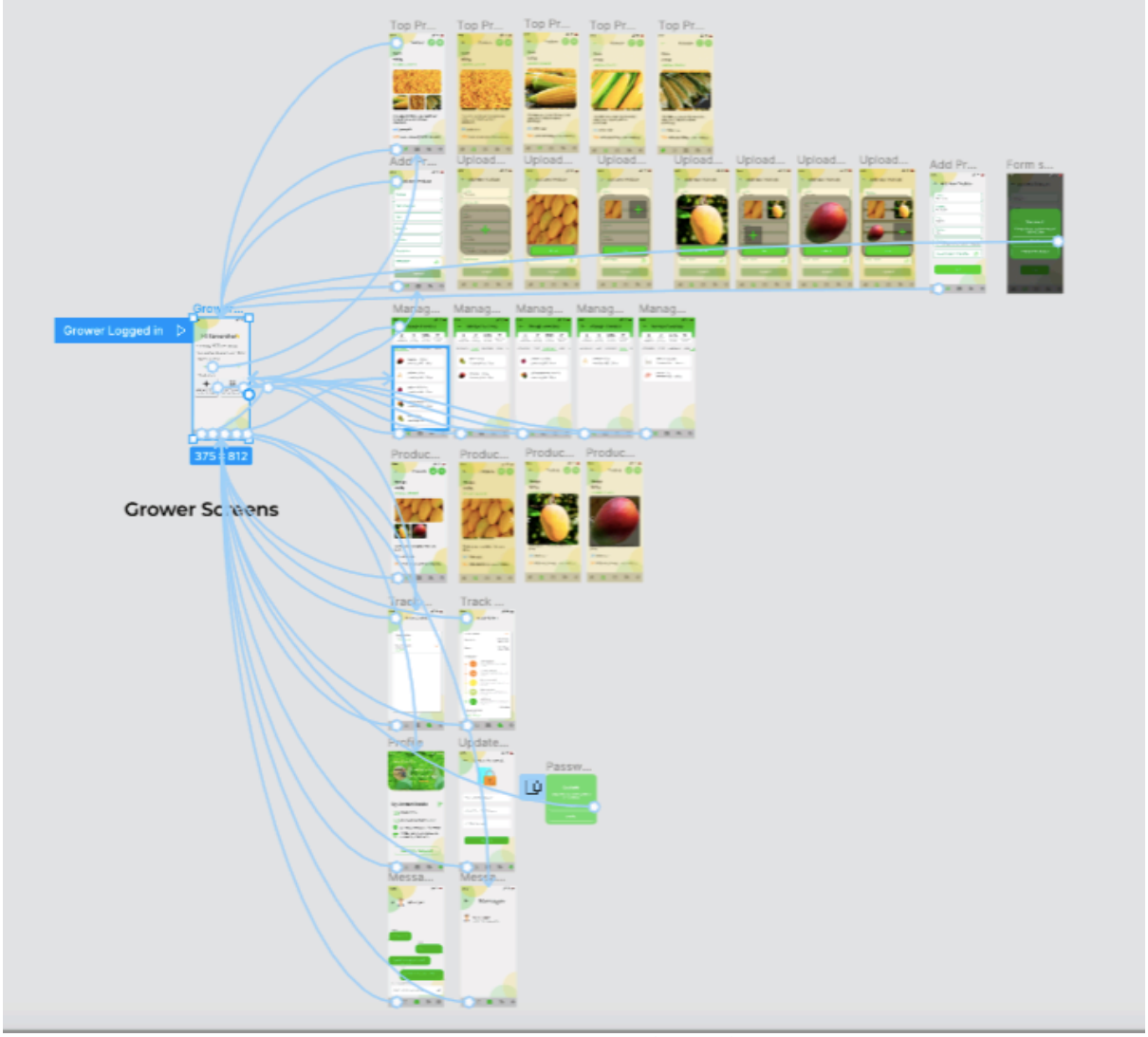

Figure 16 Grower Screens Design : Flows and interactions

The collaboration was well executed. The team members were able to help each other out for the effective output in the respective flows that has a vast number of screens.

Teamwork

The most enjoyable part of the experience was working with the team, though all the members had tight deadlines across the course. Discussions were often facilitated and ideas were opened up to enhance the scope of work, we were able to exchange critical feedback and improve our designs and ability to work in our team by the means of sprint review and retrospective. Following Agile sprint framework also enabled us to manage work in an efficient way.

Link of the prototype

The link to the figma prototype can be found here :

https://www.figma.com/proto/YzCWiNWH7Dwlu16ujsKwla/FarmWise?node-id=117%3A951&scaling=scale-down&page-id=111%3A258&starting-point-node-id=117%3A951

Conclusion

There are several aspects to designing an application. Various points that need to be kept in mind right from researching the topic, to brainstorming the idea, to checking compliance with the Neilsen Norman group's heuristics, making storyboards, drawing personas, lets us empathise with the end user which is a very important aspect for application design.

Leveraging the design quality of everyday things, such as the Affordances, Mapping, Constraints and feedback and incorporating them in the design are indeed a great learning opportunity through practice.

Above all, learning to effectively collaborate with the team is another crucial aspect.

The application FarmWise is incubated under the above mentioned environment and is designed to suit the end users achieve their objective and establish a sustainable and reliable supply chain in food logistics that would transform businesses and empower local communities and businesses.

References, Webography & Bibliography

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8. *https://www.hindawi.com/journals/sp/2022/4456150/fig17/*