An Android Application for Agricultural marketing

Dr Rajashekarappa¹, Kishore Malji², Nayak Pooja³, Pratik Pavin⁴, Sangamesh Savadatti⁵

Department of Information Science and Engineering,

SDMCET, Dharwad, Karnataka, India.

***

Abstract – The main objective of this paper is to bring awareness about how the marketing of food crops is done and how food crops reach consumers and retailers from farms. The agricultural industry is the backbone of India, and it's crucial to bring the attention of common people towards agriculture marketing. With the latest inventions and upgrades of technologies and tools, we can achieve any kind of business with the right approach. To improve agriculture marketing, farmers need to have a piece of proper knowledge about how they can sell their crops at profitable prices without third party or middlemen. A mobile application can connect farmers directly to APMC (Agriculture Produce Marketing Committee) without the involvement of a third party. Thus, giving them the freedom of selling/buying the crops at the right profitable prices. Through this, we can create a healthy environment in the farming committee and encouraging them to increase their agricultural produce.

Keywords – agriculture marketing, mobile application, fair prices, retailors, sellers, buyers.

1. INTRODUCTION

The rising population of rural as well as urban areas is the driving demand for more and more agricultural produce. In a country like India whose half of the population is dependent on agricultural industries for employment and food, marketing of agriculture is quite difficult. Agriculture, the backbone of India continues to be in terrible shape in rural part of India. In the absence of modern marketing facilities, small and marginal farmers have to depend upon middlemen to sell their crops at throw- away prices. The main purpose is to eradicate unhealthy trade practices and facilitate proper trading practices. In turn, it would ensure fair prices, reduce marketing expenses, and loss of pre-and post-harvest. According to the national survey reports of farmers nearly ⅓ of the small independent farmers surveyed are potentially facing bankruptcy in 2020. In most cases, these farmers are forced, under financial conditions, leading to distress sale of their produce. In most small villages, the farmers sell their produce to the loan shark from whom they usually borrow money. To meet his need, commitments and to pay his debt, the poor farmer has no choice other than to sell the produce at whatever price is offered to him. The Rural unfavorable place and at an unfavorable time, and usually, they get unfavorable terms. In the presence of an unorganized marketing structure, private traders

and middlemen dominate and Arbitrary the marketing and trading of agricultural produce. The remuneration of the services provided by the middlemen leads to the increase of load on the consumer, although the producer does not earn a similar benefit like the middlemen. One of the main reasons of Indian agriculture lacking in marketing is the lack of cheap and efficient means of transportation.

1.1 Existing System

In the before independence era, farmers were used by traders and middlemen by trapping them into their produce for lesser prices than the existing market rates. They were also victims of unregulated faulty weighing machines and wrong accounting. Moreover, they were not capable to afford or possess storage facilities making them unable to hold back their produce to till they get better price in the future. Currently the same thing is happening with small farmers. ENAM is a pan-India electronic trading portal which is an initiative of central government its main agenda is to establish networks for existing APMC mandis to create a unified national market for agricultural commodities and apps like Agri buzz, Farm bee, Iffco Kisan app promotes agricultural marketing.

1.2 Proposed System

The main purpose is to create an android application that connects small and marginal farmers directly to buyers. Farmers can find the buyer and sell their products at a good price without the involvement of a third-party (Middlemen). The buyer will be able to search farmers based on their locations, crops they grow, and the quality and quantity of crops. Apart from this, farmers can be benefitted from the latest govt schemes and facilities. This would help to overcome the problems of farmers. The proposed system is subjected to a particular location. The Yerikkoppa village is in Dharwad, Karnataka. The village has a population of around 1541 people. Half of the people rely on farming and agricultural produce for living their life.

2. DESIGN AND DEVELOPMENT

2.1 Objectives

Objectives are specified for a particular village:

- To establish a connection between buyers and sellers.
- To analyze the characteristics of buyers and sellers (Farmers and traders).
- To promote healthy tradingpractices.
- To promote sound marketingfacilities.
- To provide regular updates regarding crop prices.

2.2 Tools and Technologies used

XML: Extensible Markup Language which is used to create frontend it's a standard way to encode data in internet-based applications. **Android** applications mostly use **XML** to create layout files and UI files. Unlike HTML, **XML** is case-sensitive, requires each tag to be closed, and preserves whitespace.

JAVA: Java is object-oriented programming language. java was created at sun microsystems. Java is also used to develop web applications and other applications. It provides vast support for applications through Servlets, Struts, or JSPs. With the help of these technologies and easy to understand orientation, you can develop any kind of application that you require.

PHP: PHP is the world's most popular back-end for android applications, with its framework being one of the main reasons behind its success. PHP provides a basic structure to build web applications. It makes PHP easy and rapid to use.

MYSQL: This is very useful in case you have to access a web server for data on your android application. MYSQL is one of the most popularly used database at the web server because of easy of handling data and PHP is used to fetch data from the database.

Tools:

1. **Android Studio -** Android Studio is developed by google and JetBrains which provides a unified Platform and environment where you can build Apps with a basic knowledge of programming for Android phones, tablets, Android Wear, Android TV, and Android Auto.

2. **WampServer -** The WampServer is a local database program and environment helps you to create and manage web applications with PHP Apache2 and MySQL database. The application is very intuitive even though it has a lot of functionalities and complexity. The service and software appear to be free to use.

2.3 Methodology

directed to the login page. After logging in, the buyer will be directed to UI (User Interface) where he will be given options of viewing sellers and their products(crops). If buyers want to purchase products from the sellers (Farmers). He can contact the farmers with the information provided. If the user selects user type as sellers (Farmers), the user will be directed to a login page. After logging in, sellers will be able to add his/her products (crops) with the specifications (quality, quantity, price, type). He can approach buyers as well.

A. *The System overview diagram represented in Fig.1.1 shows the flow of data from login to adding products in the cart, identified by following steps:*

- The first step is to register as a user and login into the application.
- After signing in, you will get the home page consisting of option of buyer and seller.
- The user chooses seller option, adds product description and his contact information.
- The user chooses buyer option, searches and views the products and add products to cart and contacts seller.
- The buyer and seller can view other features such as help section, settings and agricultural related news.
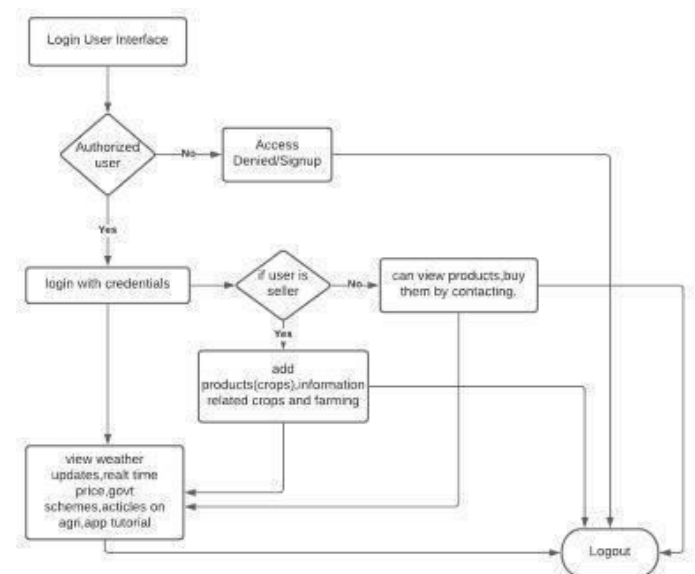

Figure.1 A system overview diagram

B. *Software and Hardware Requirements: -*

For Android app development, the Android Studio is the official Integrated Development Environment (IDE). Also, IntelliJ has a well-developed code editor and developer tools that help the developer to code better. For the backend, Firebase Authentication is used, because it provides easily available SDKs and inbuilt UI libraries. The authentication in the firebase is supported using passwords, phone numbers, and popular

federated identity providers like Google, Twitter, and many more.

C. Product Perceptive: -

The application is user friendly, easy to understand and self-explanatory. The performance requirement of this application depends on how good the internet connection is. If the user has a poor internet connection, then user might face some issues.

Logical database design helps us to define and communicate with the users' information requirements. In this application, we have normalized the table which contains email-id, password, and phone number of the users where the email-id is a unique key value/primary key.

3. IMPLEMENTATION AND RESULTS

A. Working

Initially, the user has to Log in using an Email Id and password if the user is already registered, else the user has to Sign Up using their Name, Email Id, birth date, Aadhar card number, address and password. Here the valid data entered gets stored in the Firebase and each time a user login the data is validated and it lets the user only if his credentials are valid.

Once the user logs in successfully, the user is directed to the home page where the user is provided two options "buyer" and "seller". Upon choosing the seller option, user will be allowed to add products he wants to sell. If the user chooses buyer option, the user will be able to buy the products added by the seller. The seller has to add the details of the products, product description, quantity and price. The application includes help section where user would be able to post the queries.

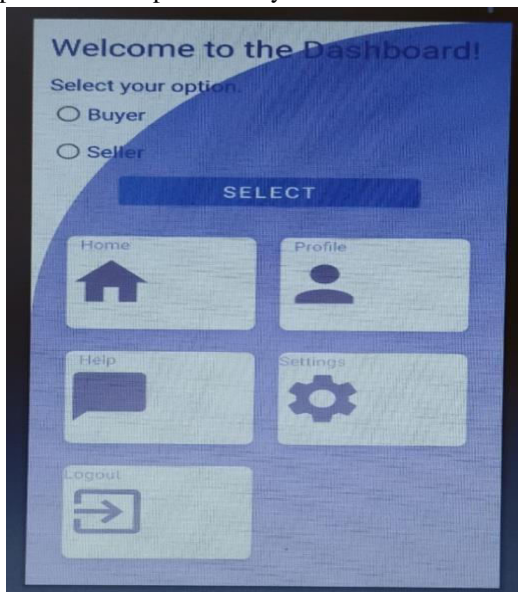The snapshot in figure 2 shows the dashboard where the user is provided the option of buyer and seller.

Figure 2. Dashboard

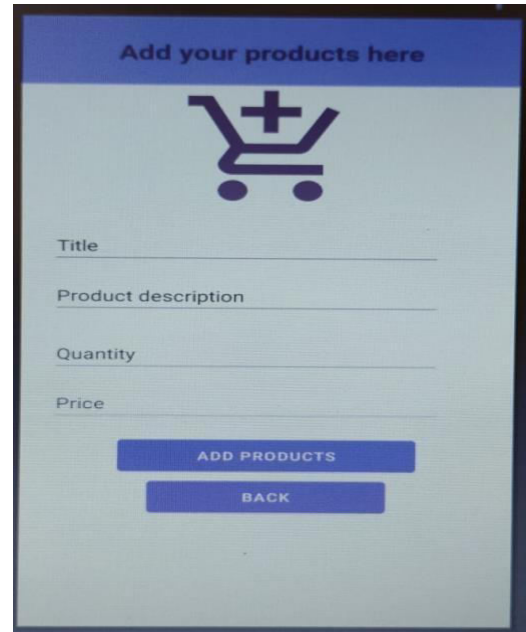The snapshot in figure 3 shows the details of the products added by the seller.

Figure 3. Seller Page

4. APPLICATIONS

This android application is subjected to a particular location "Yerikkoppa" situated near Dharwad. This android application would help to eliminate the bridge gap between buyers and sellers. Sellers and buyers can communicate directly without the involvement of a third-party or fraud agent. The application is user friendly and easy to access information. To provide sound marketing facilities and encouraging people to use digital platforms. The drawback of this proposed system is the user needs to have smartphones to use the application. The unstable internet connection in rural areas can hold people back from using the application.

5. CONCLUSIONS

Agriculture marketing refers to cover of services involved in moving and marketing of an agricultural product direct from the far to the target consumer and retailer. The use of mobile applications providing wider range of market and day to day price information to farmers can reduce market distortions. Being aware of the prices and practices of market products will help them increase their overall productivity. At the same time, they may come in contact with suppliers giving better perks of post-harvest technologies such as transport, marketing, storing, and packaging. While there are several challenges involved in adapting to the digital marketing for agricultural produce it shows a huge opportunity for agriculturalists marketing in the future.

6. FUTURE SCOPE

This application can be enhanced by including more features such as latest tools and technologies used in farming, covering a greater number of villages and connect more people.

7. ACKNOWLEDGEMENT

REFERENCES

[1]   Dr. M. Laxmaiah K. Navaneetha, "AN EFFECTIVE AGRICULTURE MARKETING BY USING ANDROID BASED APPLICATION" National Conference on the convergence of Emerging Technologies in Computer Science and Engineering (CETCSE -2K17)

[2]   Viska Mutiawani, Muhammad Subianto, Misbahul Makruf "An Android Agricultural Commodity Price Information Application by Utilizing RESTful Web Service" International Conference on Electrical Engineering and Informatics (ICELTICs 2017) October 18-20, 2017 - Banda Aceh, Indonesia.

[3]   Kalyani Khodaskar, "Virtual Fruits Market – An Application for Farmers." Dept of Computer Science and Engg. Yeshwantrao Chavan College of Engineering, Nagpur (MS), India.

[4]   Jaiprakash Bisena, Ranjit Kumar "Agricultural marketing reforms, and e-national agricultural market." ICAR - National Rice Research Institute, Cuttack-753006, Odisha, ICAR- National Academy of Agricultural Research Management, Hyderabad 500030, Telangana, India.

[5]   Mr. Pranav Shriram, Mr. Sunil Mhamane, Assistant Professor "Android App to Connect Farmers to Retailers and Food Processing Industry." School of Computer Engineering and Technology MIT Academy of Engineering, Alandi(D), Pune.

[6]   Sowmya Gupta, Gaurav Trivedi "e-krishakMitra" College of Agricultural Information Technology, Anand Agricultural University, Anand, Gujarat, Department of Electronics and Electrical Engineering, Indian Institute of Technology, Guwahati, Assam, India.

[7]   Mrs. Manisha Bhende, Ms. Mohini S. Avatade, Mrs. Suvarna Patil, Mrs. Pooja Mishra, Ms. Pooja Prasad, Ms. Pooja Prasad, "Digital Market: E-Commerce Application for Farmers" Computer Engineering Department DYPIEMR, Akurdi, Pune, India.