

One Stop Solution for Farmer Consumer Interaction

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ABSTRACT

Digital revolutions are taking place in every aspect, in the society. Even there is need for farmer consumer interaction to be enabled using technology. There are many organizations for well fare of farmers and consumers like FPO, SFAC. The present hurdle that they face is one time communication. This paper comes up with concept of Android based solution for farmer consumer interaction. The objective will be to collectivize farmers and enable them to have access to better inputs and gain more productivity. Thus the income of the farmer would increase on the other hand they will be able to sell produce at least prices than before. This concept would also enable farmers to decide the rates for their produce themselves and get connected to the end consumers. Thus it will eradicate the role of mediators. The margins that the mediators use to gain won't exist. Also this concept accompanies idea of providing nutrient schedule for the farmer once he enters his sowing date and accordingly notify him time-to-time about activities to be performed. Farmer will be notified about the activities he should perform right from the time when the seed germinates till the day when the crop is ready to be harvested. Also farmer will be assisted for his queries as well as crop diseases through a photo uploading mechanism provided for the same.

General Terms

K-means Algorithm, GCM.

Keywords

Package of Practices, Android, Forward linkage, backward linkage, GPS.

1. INTRODUCTION

As compared to other sectors, the development ratio of farms is very low. The reason is that the land holdings are small and also there is use of traditional way of farming. There is widespread illiteracy among farmers about the new farming technology. They have least or no negotiating power for their own produce.

The concept proposed in this paper aims at minimizing productivity cost by enabling collective buying, collective selling ,providing assistance for farmers where right from the sowing date nutrient schedule will be generated and thus timely assistance notifications will be sent. The farmer will have power to decide rate of produce and no mediators would be entertained. This will eventually increase profit margin of farmers, enable customers to get agricultural products at affordable costs, efficient knowledge and use of recent trends

and package of practices [5].

It will provide forward communication linkage and backward communication linkage with respect to market, increase profit margin of farmers, enable the farmers in minimizing cost of production, equip farmers with timely nutrient schedule, with knowledge about package of practices and channelize work through Android based connectivity between the farmers and customer [8]. To provide analyzed reports of input database.

The concept will provide a system that will be easy to use. It will provide a list where user needs to select his requirements and requirements information will be delivered to the server end and accordingly information is sent back in response.

2. EXISTING SYSTEM

In the existing scenario there is no provision on Android for the farmer to sell his product. Thus the traditional approach is to sell the produce to the mediators (agents) at the price which they agree. Then the agent sells out the produce and returns the cash to the farmers. The mediator is the major gainer in this scenario. Here the farmer is unaware of the deal and cost at which his produce was being sold [5]. There is lack of transparency in this type of system. Today no suitable facility is present for the farmers providing produce rates at different markets so that they can get better price for their product [3].As there is inadequate knowledge among farmers, they are unaware about various schemes and subsidies provided by the government [4]. Though all the necessary opportunities are provided well to the farmers, they are unable to make proper benefit of those. Also the existing system is unable to provide android based handy approach to know about new techniques of farming.

3. IMPLEMENTATION DETAILS

The concept is proposed to be implemented as android application where a homepage will appear and user will be asked to enter user id and password .This unique login will lead to specific working and lead to different scenarios.

Namely:

Module 1: Farmer as customer.

Module 2: Farmer seeking assistance

Module 3: Farmer as Producer.

Module 4: Customer as buyer.

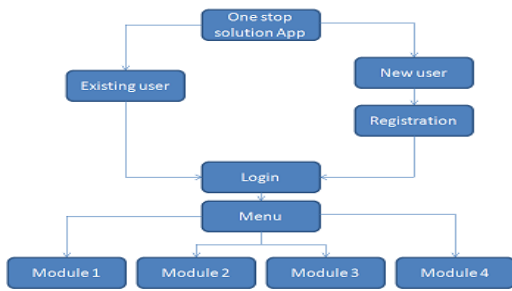


Figure 1: Flowchart for system architecture

3.1 Module 1: User-Farmer as customer

This module is one which is meant for farmer (as customer). The farmer will enter details of his requirements like fertilizers, pesticides, machineries, seeds etc. These requirements will be collected together at a centralized server then accordingly bulk buying will be done thus reducing cost at which they will be made available for farmers [7]. (Ref. Figure 2) Hence farmers will be able to get production related materials at cheaper rates [8].

Generally when a farmer used to buy fertilizers, pesticides, seeds the farmers would have to face numerous difficulties. Many times the products required would fall insufficient to meet the needs. Also there was least possibility of assured supply of proper stock mainly leading to hike in prices. Owing to above difficulties a farmer would normally agree on buying it at whatever price available [3]. Thus there would occur rise in cost at which production was been done. The concept proposed in paper arrives with a solution where farmer can overcome all above difficulties along with reduced productivity cost, enabling farmer to sell produce at cheaper price.

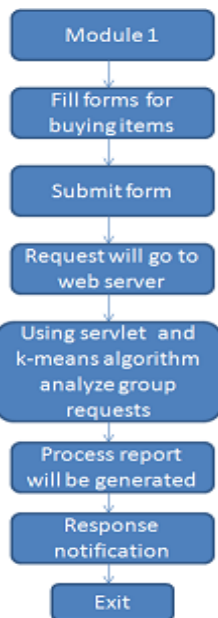


Figure 2: Flow chart for module 1.

3.2 Module 2: User-Farmer Seeking Assistance

This module is basically meant for provision of assistance to the farmers.

1. First concept will be one in which farmer will enter details about his crop to be taken and sowing date on the android

application. Depending upon which the nutrient schedule will be generated and exactly before one day when certain activity is to be performed the farmers will be notified about it [1],[5],[8]. There will be mechanism using GPS to assist the system about user's location too [6], [9]. The assistance module considers the location of farmer.

2. Secondly a database providing detailed information about package of practices, the recent trends and technologies followed. This will also provide a platform for communication between different farmers and sharing their experiences etc. [2], [4], [13]

3. Third provision will be for disease detection related assistance where the farmer needs to upload photograph of the affected area of crop. The expert assistance will be provided about the type of disease (if any), the medications etc.

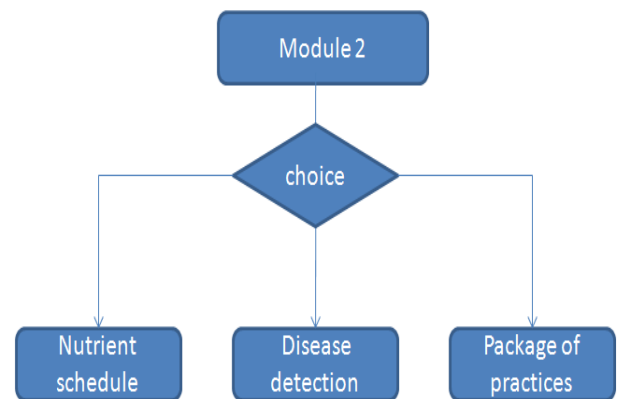


Figure 3: Flow chart for module 2

3.3 Module 3: User- Farmer as a producer

In this module farmer will notify about the produce that is ready with him in terms of quantity and the price at which he would like to sell it. He doesn't deal with any mediators instead directly deals with the end user. He is able to decide rates for his products and also know the product rates at various markets for achieving higher profits [3]. This system helps to overcome the ill-effects faced due to globalization on farmers and enables farmers to participate successfully in modern competitive world [13].

3.4 Module 4: User-Customer as buyer

In this module customer views the available grains, agricultural products their quantity and prices. Then consumers can directly get information of prices for agricultural produce thus enabling them to decide which one is affordable for them. They place orders accordingly and buy directly from farmers without involvement of mediators thus gain agricultural produce at lesser rates [3], [11].

4. SYSTEM ARCHITECTURE

The system architecture is as in Figure 4. The architecture is composed of main four component modules and a web-server mainly meant for the processing of all information collected by the android devices [10], [12]. There will be database which will store information about each farmer's request, producer data, package of practices that need to be followed and the analyzed data in each case. This paper uses K-means algorithm to group similar type of request of farmers and to categorize it [10]. All requests will be collected to central web server then using K-means data categorization takes place. Then this analyzed data will be used by admin and bulk

buying takes place. Then the request will be satisfied and relevant notification will be sent. Using GCM we will send messages or notification [6]. Also K-means comes into picture when we have to generate nutrient schedule for each farmer and send notifications to them accordingly and maintain the database accordingly to be accessible by respective farmer. Even in the third as well as fourth module categorization of data entered about produce related details and orders placed by customers will be analyzed using K-means algorithm. CCAI is a team of experts for assistance in second module.

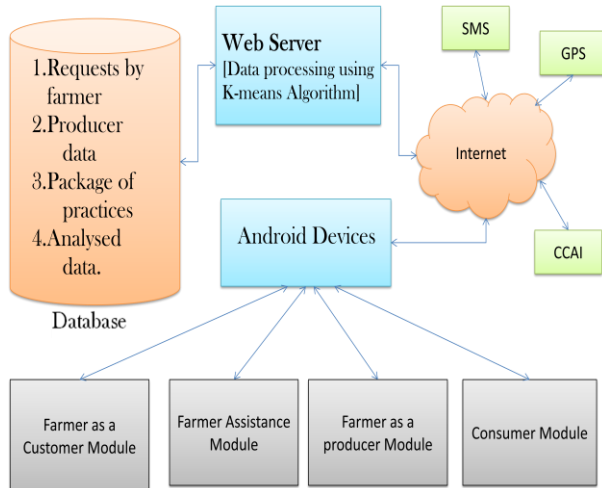


Figure 4: System Architecture.

5. APPLICATIONS

➤ Relevant to Farmer

- Increase the profit margin of farmers.
- Enables the farmers in minimizing cost of production.
- Helps to equip farmers with timely nutrient schedule and with knowledge about package of practices.
- Provides them a platform where farmers can share their experiences, queries with each other.
- Helps to get them affordable cost of goods.
- No mediators required.
- Lessens the production cost as well as reduces time required.

➤ Relevant to Customer

- Enable to get the vegetables, fruits and textures of serials and pulses with cheap cost.
- It assures the purity of goods without any adulteration
- Attains goal of maximizing benefit within least amount of time.

6. CONCLUSION

In this paper we are establishing a communication link between farmer and customer. It deals with rendering efficient communication buying at efficient prices, getting commodities required for producing at least prices, as well linking producers to their direct consumers without any mediators. This android based device would be very handy

and channelize the present scenario of communication.

There is a wide future scope to provide mechanism to where can channelize the working at FPO's, SFAC's and other such organizations. We can provide a platform for farmers and consumers around the nation to interact using android application. Thus we have nationwide scope to enhance this concept.

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