

Smart Agro- Supply Chain Management

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Abstract: In this digital era, technological importance has been excellent support for making decisions in agriculture. The development of agriculture has been under development for the past few years due to a lack of technology usage and environmental changes. The aim of this paper is to reach farmers marketing through technology. The study used a statistical survey design technique to collect data from farmers for their awareness of e-Commerce. E-Agriculture is a platform to support the marketing of agricultural products. The main objective of our project is to establish a bridge between a farmer and a customer. The price will be fixed by the farmers, and there is no intermediate between farmers and the customers. So the customers also get their products (vegetables/fruits/grains, etc...) at the actual price, and also, the farmers get the right estimate from a customer.

Keywords: Agriculture, Farmers, Organic products, Profit, Middle man

I. INTRODUCTION

Marketing is one of the common problems faced by all farmers. Production of good quality products is a necessary condition but not a sufficient criterion for profitability. Most agricultural products go through several intermediate hands before reaching the customer. As a result, costs involved in handling food products will raise little by little in each medium, at last, the customer gets the product at an almost high rate. This causes more profit to the middleman rather than farmers. Farmer-to-customer direct marketing is a way by which farmers sell their products directly to consumers without any intermediate or middleman. Agriculturalist views direct marketing as an alternative market outlet to increase their profit while customers see it as a means of gaining access to fresh, higher-quality foods at lower costs. Customers also derive cultural and social benefits from direct contact with farmers, visits to farms, and nature. Nowadays, farmers view direct marketing as an alternative way to attract more of the consumers, while consumers welcome the opportunity to get fresh, high-quality products at lower costs.

II. EXISTING SYSTEM

In the existing system buying and selling a product is done manually through a farmer's bazaar/market. The price of the product is fixed by the seller. All the details of the product to be sold or purchased are maintained manually. Sellers or buyers were not able to get complete information about the product.

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There is no digital platform for the agriculturalist to sell their farm product. At present, the farmers have to go to the nearby store to sell their farm product to the intermediate. An agent handover the agricultural product to another intermediate or a dealer. The farmers are not aware of the selling price of the products which are set by the sellers. There is no glassiness. There are many agricultural schemes provided by state/central government, but there is no particular system or embedded system which reaches the farmer. Organizations and Governments that care about farming can learn and apply smart agriculture model that proved successful. It provides a unique opportunity to support small farmers in developing countries and potentially increase jobs and supports in long term economic growth. The framework aims to support farmers in improving their production systems at the farm level. However, poor farming families or communities usually do not have the means or knowledge to make use of such a framework. In such a case, they can use smart agro to sell their products and earn maximum profit by displaying their products.

III. METHODOLOGY

A. Problem Description

Portal for Farmers to sell their products at a better rate. System that provides farmers an interface to sell their products, and connect with the buyers all over India there is no interface that works on mobile, SMS to upload produce details and respond via phone and SMS (taking care of digital divide) Farmers can get a better price for their product, no additional cost spent in marketing and delivery of goods, however they can choose to charge more by delivering the items themselves. The purpose of this analysis is to benefit all the local farmers

B. Objective

Farm-direct marketing is a solution for the current agricultural issue that is needed for farmers and customers. Farmers find it difficult to sell their products in the market since they need to cultivate the crops in their field. They cannot sit in one place for a whole day to sell their products. All successful farming operations require mastering the satisfaction price for the farmer's work and also the customers. Many agriculturalist choose to direct market their products because it allows for better profit margins compared to selling wholesale or through a middleman. The benefits realized by cutting out the agent and getting a direct agricultural product from the farmers can make these marketing. Our application will eliminate the process of selling agricultural products on the road side or giving an entire product to middleman for low cost.



C. Module Design

Fig-1 shows the basic system architecture design of the Smart Agro. It includes the seller side (that is Farmer) and customer side.

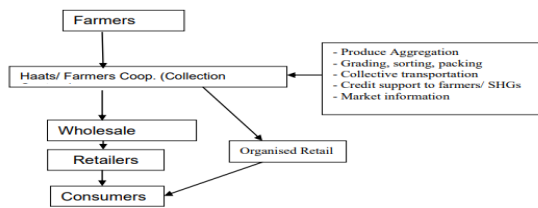


Fig-1 Architectural Design

IV. MODULES IN SMART AGRO

A. DataBase Connection

Using Xampp Server for MYSQL, a database is created. The admin table contains farmer’s information, customer’s information along with their contact detail and so on. Farmer table contains the farm details and the crops cultivated there. The consumer table consists of the consumer’s necessary information such as username, address and phone number. Those contact details and address is used for delivering an item in future.

B. Admin Module

The admin has a individual login. There is no adding admin features for security propose. The local admin will be added by the developer and they provide the username and password for admin. The admin is responsible for adding the farmer’s detail. The admin contacts the farmer whenever the order is placed for an item. The admin manages the products available in the farmer’s side.

C. Customer Module

The consumer access the portal by signing up into the portal. Then they have to login in and enter their locality. The farmers around their location will be displaced. The consumer can add the products they need into the cart and later they can check it out.

D. Notification Module

Whenever a new scheme is announced by our Chief Minister/Prime Minister for the welfare of farmers, the scheme will be notified to the farmers through Smart Agro. The farmers can register themselves into the scheme with the help of Smart Agro. Notification will also be sent to the consumers on current events of Agriculture. Sudden fall/raise of the cost of the products will be notified to the consumers.

V. RESULT AND DISCUSSION

A. Home Page

The home page of our Smart Agro contains details of nearest farm as shown in Fig-2. Admin and Consumer’s can login into to the portal and they can access the portal. The home page has sign in button, sign up button, contact us button and also about us button. The signup button is meant for new user, sign in button is meant for already registered

customer, contact us contains the detail address along with the email and phone number of a local admin and about us tells about our website/application. The new user will know about our website/application by just reading a small description about Smart Agro in the bottom of the home page.

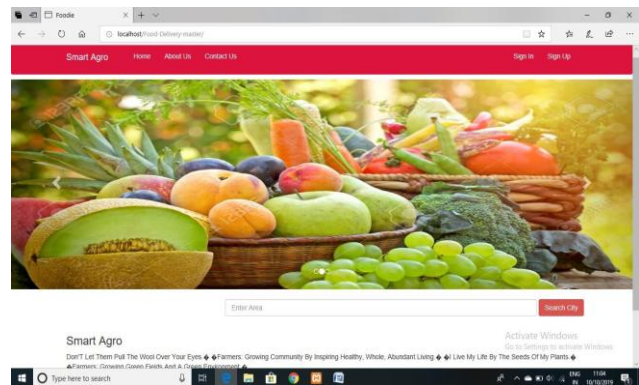


Fig-2 Home Page

B. SignUp Page

The signup page is meant for the people who are new to our Smart Agro can sign up using their details as shown in Fig-3. Each time user has to give their username and password to sign in to the portal. This signup details later

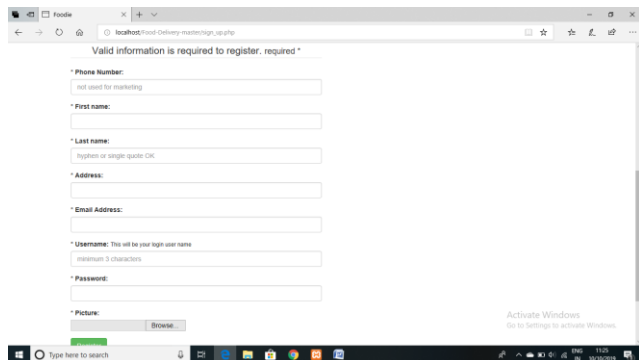


Fig-3 SignUp Page

converted and stored as customer profile. The customer can able to change their phone number and address if needed. The change in username and password is restricted. This address and phone will used for delivering an item/product.

C. Admin Login

Admin has the access to manage the existing crops, add new farmers and delete the current farmers into the database. Fig-4 shows the admin page. Apart from the delivery item,the local admin will manage view user, view product details, sales detail with in a specific time period

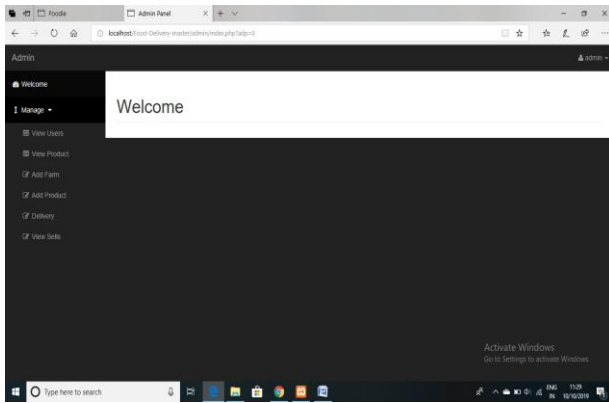


Fig-4 Admin Login

And view sales of a specific farmers/farm and most crucial work of a farmer is to contact farmers and customer for no interpreted delivery system. Once the deliver button click by the admin the respective product in the customer cart will disappear, which means the respective product is out of delivery.

D. Delivery Items

Admin can view the items which are ready for delivery. Fig-5 shows the items which should be delivered to the customers. Admin will manage the product details, sales details, view the sales and most important work is to contact farmer and customer for no interpreted delivery system. Once admin click the deliver button of the respective product in the customer cart will disappear, which means the product is out of delivery.

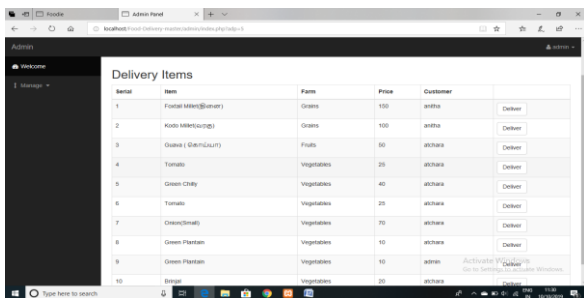


Fig-5 Delivery Items

E. Check out

This is customer side process. This checkout page shows the list of items that are selected by the customer. Here the customer just chooses the quantity of product they want and select the checkbox under each product, finally click the proceed button for payment.

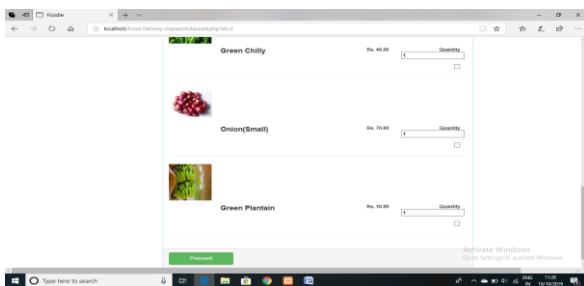


Fig-6 Check Out

F. Payment

Once the order is made, the order should be confirmed by clicking on place order button. Fig-7 shows the order confirmation page through cash on delivery.

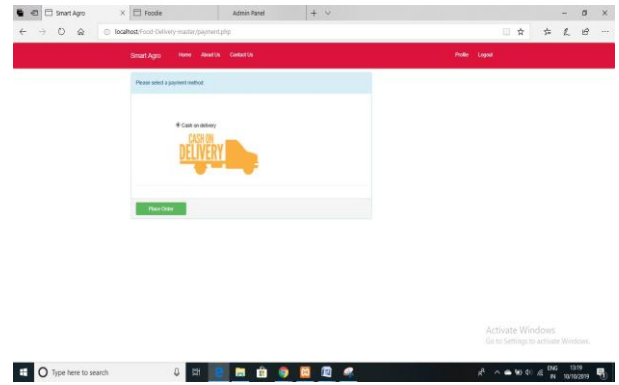


Fig-7 Payment

G. Schemes notification

The schemes that are announced by the government are updated on this page, Once the farmers click the schemes name it will redirect to the page contain entire detail about the schemes along with their eligibility, benefits, due date, procedure to apply the schemes every thing is in their own language, so that it will be easily understood by the farmers



Fig 8-Schemes list



Fig 8-Scheme Details

H. Order Confirmation

Order Confirmation is just an intimation message send to the customer registered mobile number as their product is ready to deliver. Here the message will send along with their specific order id .This order id is helpful while tracking a product in future



Fig 9-Order Confirmation Message

VI. CONCLUSION AND FUTURE ENHANCEMENT

Smart Agro is the best ecommerce application for the local area farmers to sell their products at reasonable price. Now we have focused on particular area farmers. Though creating awareness about ecommerce is a bit difficult for the farmers in rural area, so that we created a pure user friendly application along with their local language so that it is easy to understand by the farmer .The local admin will taken care of delivery process. They will contact the farmers and get the detail about their stock and give information about the customers ordering and also controls transaction. Now-a-days the farmers are not aware about the schemes which are declared by the government. This may due to lack of knowledge about government schemes, or language might also be one of the barrier for this problem. To overcome this we include a notification module so that it pays a way to the farmers to know more about schemes easier.

Future work may include the services for various area farmers and add the delivery module. This module will maintain the details about the delivery person and their current location to deliver the product to the respective customer from the farmers.To maintain delivery details some minimum percentage of amount will be taken from either customer or farmers side based on their profit or sales. Our work will enhanced by creating a separate application for the farmers to upload their agricultural product on daily basis by its own, this may require spreading awareness about application to the rural side farmers Apart from this, a separate application for delivery person with GPS so that they can able to identify the customer address and also farmers residence quickly. Though this we can tracking the product travel history from the customer side application. Enhancement may include seasonal agricultural product module, It will send an alert or notification to the customer application about seasonal vegetables/fruits along with their benefits, so that we can market our agricultural product and also it is benefited for the customers those who are not aware about rural side vegetables /fruits. It not only creating benefits for the user but also to the farmers to sell their product.

REFERENCES

1. http://ijarcsse.com/Before_August_2017/docs/papers/Volume_5/1_January2015/V511-0292.pdf
2. https://www.researchgate.net/publication/311822033_E_Agriculture_and_rural_development
3. <https://www.agripartner.com/software-development-agriculture/>
4. https://www.researchgate.net/publication/251954470_A_Web_Based_Project_Management_System_for_Agricultural_Scientific_Research
5. https://www.academia.edu/36964413/E_Agricultural_Concepts_for_Improving_Productivity_A_Review
6. https://en.wikipedia.org/wiki/Information_and_communications_technology_in_agriculture
7. https://www.academia.edu/36964413/E_Agricultural_Concepts_for_Improving_Productivity_A_Review
8. https://www.intel.in/content/dam/www/public/us/en/documents/corporate-information/eagriculture_program_cs.pdf
9. http://www.academia.edu/Documents/in/Agricultural_marketing
10. <https://www.irjet.net/archives/V6/i4/IRJET-V6I476.pdf>
11. http://ap.fttc.agnet.org/ap_db.php?id=1000
12. <http://www.businessworld.in/article/E-Commerce-In-Agriculture-Marketing-A-New-Frontier/04-10-2017-127543/>
13. <http://www.businessworld.in/article/E-Commerce-In-Agriculture-Marketing-A-New-Frontier/04-10-2017-127543/>
14. [sciencedirect.com/science/article/pii/S2212567115005730](https://www.sciencedirect.com/science/article/pii/S2212567115005730)
15. <https://www.sciencedirect.com/science/article/pii/S2212567115005730>
16. <https://spore.cta.int/en/trends/article/new-opportunities-for-agribusiness-in-e-commerce-sid0573c5461-b118-4fc2-b6c5-17fbabe14860>
17. <https://www.gsma.com/mobilefordevelopment/resources/e-commerce-in-agriculture-new-business-models-for-smallholders-inclusion-into-the-formal-economy/>
18. https://link.springer.com/chapter/10.1007/978-1-4757-5226-7_13
19. <https://journals.sagepub.com/doi/abs/10.5367/000000003101294235?journalCode=oaga>
20. <https://scialert.net/fulltext/?doi=itj.2006.230.234>
21. http://ijasrm.com/wp-content/uploads/2018/02/IJASRM_V3S1_440_99_104.pdf
22. http://www.choicesmagazine.org/UserFiles/file/cmsarticle_337.pdf
23. <http://www.jocpr.com/articles/development-model-of-agricultural-e-commerce-in-the-context-of-social-commerce.pdf>
24. http://ijasrm.com/wp-content/uploads/2018/02/IJASRM_V3S1_440_99_104.pdf
25. https://www.researchgate.net/publication/314783177_Research_on_the_Development_of_E-commerce_Model_of_Agricultural_Products

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