Impact Factor (SJIF): 5.301

International Journal of Advance Research in Engineering, Science & Technology

e-ISSN: 2393-9877, p-ISSN: 2394-2444
Volume 5, Issue 4, April-2018

e-Agriculture: Online Marketing Hub

Ms V.S.Sakharkar
Email:vssakharkar@mitra.ac.in

Jivan M. Jadhao
Email:jadhao.jivan60@gmail.com

Kanishka S. Talware
Email:kanishkatalware1496@gmail.com

Dattatray S. Dayma
Email:dattatraydayma@gmail.com

Ankush D. Wankhade
Email:ankushwankhadepatil100@gmail.com

***Abstract*— e-Agriculture is the web application that will help the farmers to perform the e-marketing of their crop products leading to fair price transactions and increased profit and standard of living. In India trade of agriculture product is regulated under the state APMC (Agriculture Produce Marketing Committees). Trade in APMC market are carried as direct auction by licensed commission agent, and details are manually noted by commission agent, hence government does not have exact and accurate on time trade records. Agriculture is an information intensive industry which is spatial in nature. In proposed system of we try to establish an e-governance on these market yards. In system we have different login for farmer, Wholesaler and administrative login for authorized person. Farmer will be able to add his crop information; farmer can see base prices declared by government for different crops. On the basis of this information he can search for merchant/ Wholesaler who is offering highest price. Merchant/ Wholesaler can also find a farmer with required crops.**

***Keywords*—e-Agriculture,Farmer,wholesaler,Agriculture,Crop**

I. INTRODUCTION

The main occupation of India is agriculture. India earns 65% of money in agriculture. About 70% of the population is engaged in this activity. India ranks second worldwide in farm output. e-Agriculture is a relatively new term and we fully expect its scope to change and evolve as our understanding of the area grows. Indian Agriculture contributes to 18.6 per cent of India's GDP, and approximately 59 per cent Indians derive their livelihood from the agricultural sector. Private sector initiatives like contract farming have commercialized the Indian agricultural sector.

With the help of website interested farmers can also know about new agriculture technologies and techniques which will help them for earning higher profit.

In the before days, the rate of information growth was less, so the decision making was easy but as for now, there is the need for the data mining techniques. Because day by day the growth of information is increasing. Although there was the rapid growth of the information the first and most important thing is we have to maintain the record and second most important thing is easy retrieval or extracting information from large dataset.

On the other hand, data security is the most critical issue that must be served by the portal. So, the various data mining algorithms can be used for this purpose . Therefore, data mining come into existence.

II. LITERATURE REVIEW

E-Agriculture is a rising field and can play very important role in improvement of rural and agriculture sector.[1]

Data related to agriculture sector is very intensive and spatial in nature this data can be properly maintained through ICT which will help in agriculture industry.[3] The demand for agriculture data is now stronger than ever before. Making farmer aware of e-agriculture platform and new technology will help to maximize profit and to compete with farmers of developed countries in today's globalized market

E-farming will serve as a efficient way for the Indian farmers to sell their products across the country just with some basic knowledge about how to use the website.[4]

for improving productivity in agriculture advice is given to the farmer both in timely and personalized situation.[2]

A. What is e-Agriculture?

"e-Agriculture" is an emerging field in the intersection of agricultural informatics, agricultural development and entrepreneurship, referring to agricultural services, technology dissemination, and information delivered or enhanced through the Internet and related technologies." More specifically, it involves the conceptualization, design, development, evaluation and application of new (innovative) ways to use existing or emerging information and communication technologies (ICTs). "E-Agriculture is platform for supporting marketing of agricultural products".

III. PROPOSED SYSTEM

In proposed system we have developed an interactive platform for communication and information exchange in between farmer, wholesaler and admin. All these three users have their own registrations and logins. Farmers and wholesalers will be able to do transactions from system. In this system wholesaler can search farmer from database with required crops. Farmer and Wholesaler can communicate with each other about selling and buying products. All the transactional data between farmer and wholesaler will be stored in database. we have used different data mining algorithms for performing above operations. System will be helpful for solving current problems faced by the agriculture market. In our system admin have complete access of transactional database which will be helpful for bringing transparency in the agriculture market. This will help government for minimizing and controlling black marketing of food grains. System also provide helpful information like weather updates. Farmer able to see different government policies and important notifications, minimum support prices of different crops etc. Our aim is to develop a user-friendly web portal.

A. Admin

The user has to complete registration and then that user is classified as a student or an employee. Then the user has to specify locations where most of the time is spent. And these areas can be categorized as highly prioritized areas. The registration module is designed using firebase authentication service. The user has to create an account and then he can log in using the credentials.

Videos linking will be there on the portal for the adoption of new techniques and experience of farmers who have adopted new farming techniques and increased their yield of crop.

Also, the information about new farming techniques, modern technology and current events of agriculture will be there for motivating farmer for taking new crops with the necessary requirement including soil required, irrigation & more information related to the crop.

B. Farmer

The database includes the kinds of crops, the size of cultivated area, time of harvest and yield. Farmers or the extension personnel transmit those data via the Internet to database server. Further, information provides the farmer with the guidelines for decision making trade. Crops information service system should be created by the farmer. In between the deal of farmer and wholesaler the full authentication is given to the farmers weather they want to accept or decline a deal. There will be direct transporting from farmer place to the company so the cost involved will definitely less than that of transporting to the market place and then to company. Moreover, the transport expenses can be shared.

C. Expert

Gradation of crop will be found by agricultural Expert. The grade obtained as well as certificate details should be filled by the farmer on the portal, these details will be assured by the administrator so that no fraud takes place. The expert has full authority to reject the product if the sample sent by the farmer is not of good quality. The gradation request of the crop will be delivered to the nearest expert since they are categorized according to their areas. The most important role of the expert is to answer the queries and issues faced by the farmer. In case of rejection of the sample in certification process expert also has to give a reason for that to

D. Wholesaler

e-Agriculture is playing an important and vital role in agricultural production and marketing. This system allows wholesaler to save time on order and delivery. This portal will integrate various agricultural produce across the state, bringing them all to one platform and the wholesaler can buy the best quality product. Once the Quality certificate is verified by the admin then the product is visible to the wholesaler. The wholesaler can add as much of available quantity of the product to his cart, there is automatic calculation of total price and then he can confirm his order. The wholesaler will pay the payment after the delivery of the product. For solving in between queries they can contact and communicate with each other.

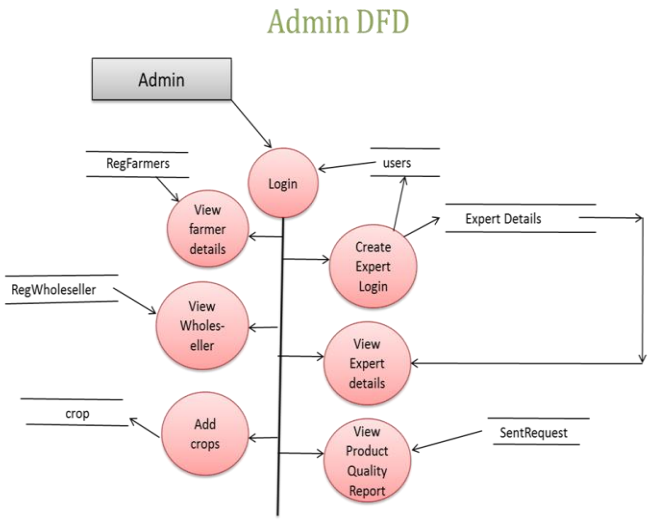

Fig. Dataflow Diagram of Admin

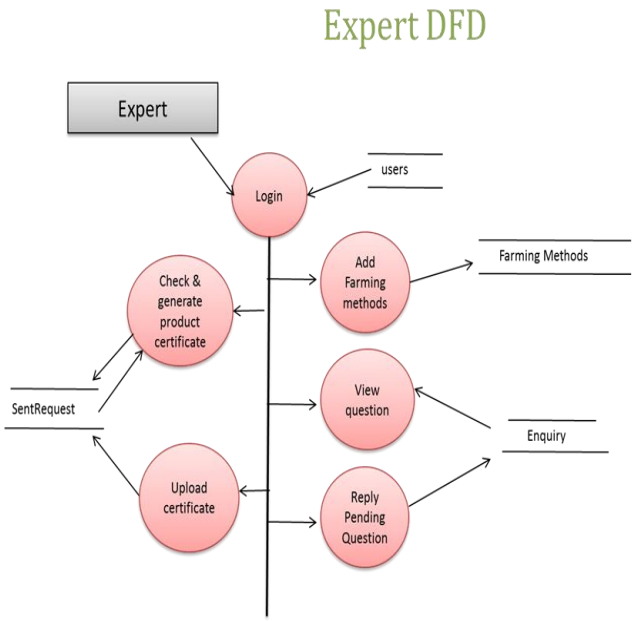

Fig. Dataflow Diagram of Expert

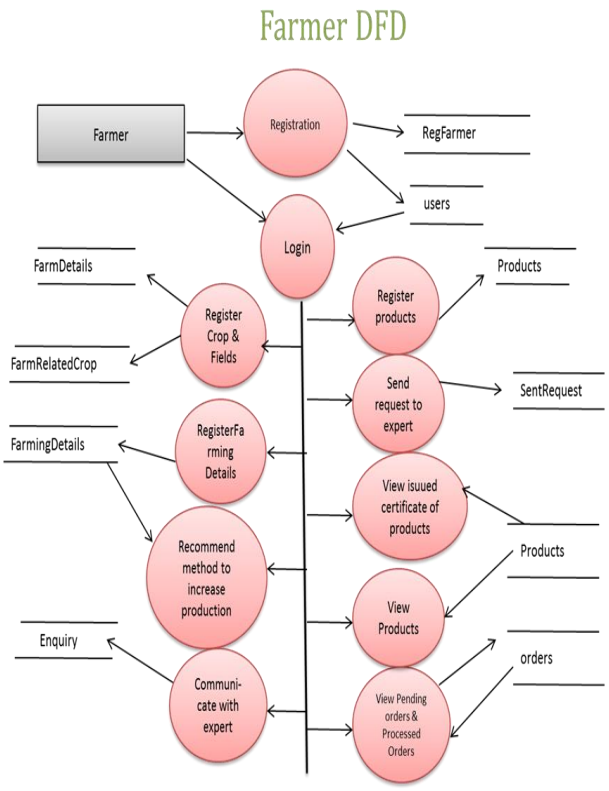

Fig. Dataflow Diagram of Farmer

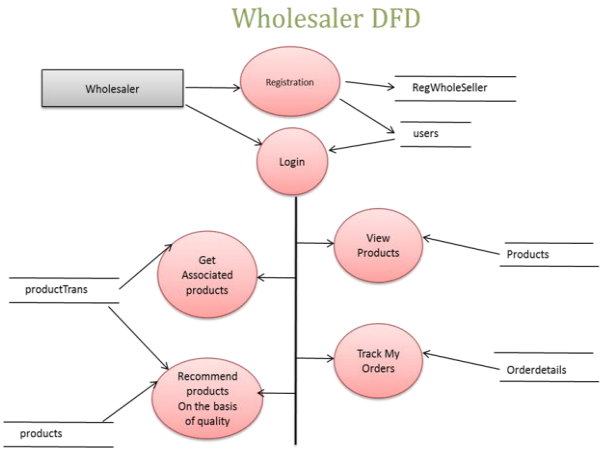

Fig. Dataflow Diagram of Wholesaler

IV. ALGORITHM

- *Association Rule Mining*

Association rules are if/then statements that help uncover relationships between seemingly unrelated data in a relational database or other information repository. An example of an association rule would be "If a customer buys a dozen eggs, he is 80% likely to also purchase milk."

Recommend Farming Method Products to increase a product production and quality with the help of classification.
Types of soil and crops farmer recommend farming method like seed company, fertilizer type, fertilizer company, cultivation method, etc.

It is based on to improved seeds of high yielding varieties, adequate and assured supply of water for irrigation, cultivation method, seed company, seed type and increased and appropriate application of chemical fertilizers for increasing agricultural production.

It is recommended one farmer farming method products with same soil type and crop type to other farmer which has highest production.

Association rules are created by analyzing data for frequent if/then patterns and using the criteria support and confidence to identify the most important relationships. Support is an indication of how frequently the items appear in the database. Confidence indicates the number of times the if/then statements have been found to be true.

❖ **Support**

Support is an indication of how frequently the item set appears in the dataset.
s u p p (X) = | { t ∈ T ; X ⊆ t } | | T | {\displaystyle \mathrm {supp} (X)={\frac {|\{t\in T;X\subseteq t\}|}{|T|}}}
In the example dataset, the itemset
X = { b e e r , d i a p e r s } {\displaystyle X=\{\mathrm {beer,diapers} \}}
has a support of
1 / 5 = 0.2 {\displaystyle 1/5=0.2}
since it occurs in 20% of all transactions (1 out of 5 transactions). The argument of
s u p p ( ) {\displaystyle \mathrm {supp} ()}
is a set of preconditions, and thus becomes more restrictive as it grows (instead of more inclusive)

❖ **Confidence**

Confidence is an indication of how often the rule has been found to be true.
Confidence is defined as:
c o n f (X ⇒ Y) = s u p p (X ∪ Y) / s u p p (X) {\displaystyle \mathrm {conf} (X\Rightarrow Y)=\mathrm {supp} (X\cup Y)/\mathrm {supp} (X)}

For example, the rule
{ b u t t e r , b r e a d } ⇒ { m i l k } {\displaystyle \{\mathrm {butter,bread} \}\Rightarrow \{\mathrm {milk} \}}
has a confidence of
0.2 / 0.2 = 1.0 {\displaystyle 0.2/0.2=1.0}
in the database, which means that for 100% of the transactions containing butter and bread the rule is correct (100% of the times a customer buys butter and bread, milk is bought as well).

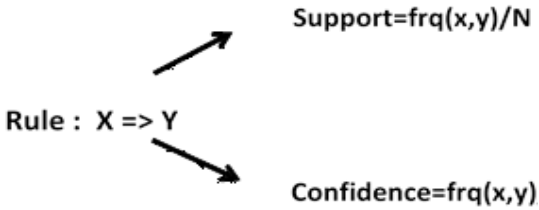

Fig. Association Rule Mining

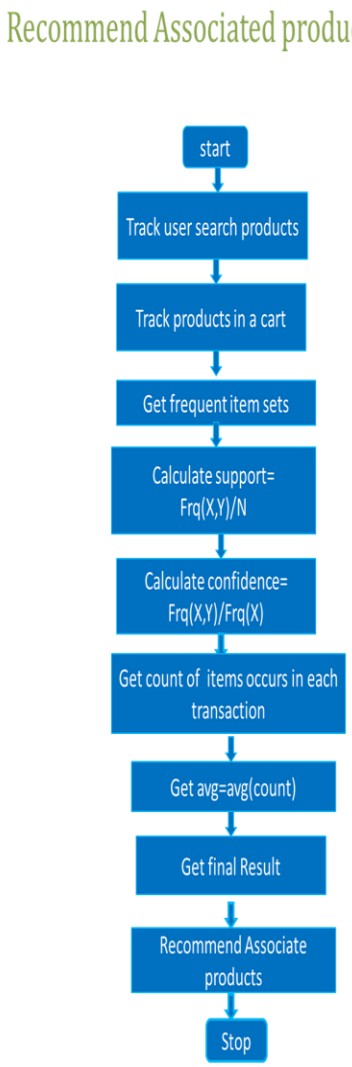

Fig. Flow chart of Recommended Associated Products

V. CONCLUSION AND FUTURE SCOPE

The present work on e-Agriculture conveys the information regarding agricultural details to farmers in SMS via SMS gateway and hereby propose to switch over e-Agriculture. The details such as daily alert, seasonal alert and other additional details can be sent to farmers. The daily alert can be sent to all farmers in the database. Seasonal alert can be sent to farmers only for selected farmers based on clustering result. Finally, the other or additional detail which is announced by agriculture can be sent to all farmers. Experimental result shows better result when compare with the existing work. This paper also talks about Pros and cons of e-Agriculture. Every system rides drawback with it. but It seen that technology gives much better advantages in 90% cases. but we can reduce gap of these drawback by implementing better platform for farmers and teach them for solution for this drawback

References

1. Sumitha Thankachan, Dr. S. Kirubakaran, (2014) proposed "E-agriculture Information Management System".
2. Saurabh A. Ghogare, Priyanka M. Monga, Ram Meghe, "E-Agriculture Introduction And Figuration Of Its Application". International Journal of Advanced Research in Computer Science And Soft-Ware Engineering, Volume 5, Issue 1, January 2015
3. L.Pradhan, B. B. Mohapatra, Fakir Mohan, (2015) proposed "E-Agriculture: A Golden Opportunity for Indian Farmers"

4. Ghodke Tushar D, Devde Nitin N, proposed "E-Farming: An Innovative Approach for an Indian Farmer".
5. Lal, R. (August 2001). "Thematic evolution of ISTRO: transition in scientific issues and research focus from 1955 to 2000". Soil and Tillage Research. 61 (1–2): 3–12 [3]. doi:10.1016/S0167-1987(01)00184-2.
6. "Livestock and Poultry: World Markets & Trade" (PDF). United States Department of Agriculture. October 2011.