Mobile Applications Used For Farmers: A Survey

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Abstract : *Now A Day's Farmers Are Using The Internet Of Things And Smart Senses To Get Access To Information Of Product. The Importance Of Mobile Devices Is Increased And Farmers Are Also Included In Digitalization. Android Is New Interesting Mobile Based Language And By Using This Language Apps Will Be Created. It Provides Lots Of Inbuilt Functions, Api's For Development Of Mobile Application. It Provides Simple Way For Farmers To Sell Their Product To Their Product By Basis Of Quality Point Of View. In This Paper, We Have Done Rigorous Survey On Mobile Applications Used For Farmers Along With Problem Statement, Methodology Adopted, And Result And Discussion.*

Keywords - *Automation, Login, Android, Smartphone's*

I. INTRODUCTION

Our Government Initiates A Very Good Concept That Is Digitalization India And Basis Of This Concept There Will Be Reducing Time Consumption Problem, Automation Is Increased And Also Farmers Are Seeing This In New Way Interesting.. This Platform Will Be Able To Provide Sending Sample Product Image To APMC. Just Create Profile On This App By Registration Take Snap Of Product. App Will Automatically Check The Quality Of Product .After Deciding It Is Good Quality Product, App Automatically Compress Image And Send It To APMC. Mobile Devices These Days Have Gradually Become More Powerful And Distributive, Influencing Our Daily Lives On Larger Scale. Android, Which Has Proven To Be One Among The Best Mobile-Based Application Development Platform, Provides The Developers With Many Apis And Tools For The Development Of Mobile Applications. This Application Aims At Providing A Simple Solution For Providing Product Of Farmers To The Agricultural Produce Market Committee (APMC).It Is Simple Mobile Point Of Sale For Farmers. It Is Also Helps Them To Market Their Product Online. For Farmer It Offers Better Price Discovery.

II. SURVEY ON EXISTING WORK

Authors In [1] Implemented E-Agro Android Application (Integrated Farming Management System For Sustainable Development Of Farmers) For Modern Farmer For The Professional Management Of Agricultural Farms. Algorithm Adopted Works In Following Steps: 1. Keep Records For All Assets Of His Farm (Fields, Machines, Raw-Materials). 2 Get Access To Pesticides, Fertilizers And Seed Databases. Manage All Inputs Inventories And Stock, Keep Track Of Inflow And Outflow. 3 Plan Farming Activities, Monitor Execution And Have A Full Log Of All Farming Activities. 4. Receive Information, Warnings And Alerts Regarding Natural Calamities And Weather Disturbance And Also Comes With Proper Suggestions. 5 Prepare Financial Budgets And Monitor Its Execution. 6 Monitor Detail Farming Costs Per Crop, Field, Task And Individual Task Input And Have A Complete Picture Of Financials Of His Farm. 7 Full Portability. All Required Data Is Available Locally On The Mobile Device. No Internet Connection Is Required To Operate The Application. 8. GPS Location Tracking. 9. All Land Fields And Farming Tasks Can Be Located And Annotated On Google Maps. 10. Use Of Device Camera To Capture Images/Photos And Associate/Store Them With Fields, Persons, Machines, Crops Etc. Working Of E-Agro Android Application (Integrated Farming Management System For Sustainable Development Of Farmers) Is Given In Figure 1.
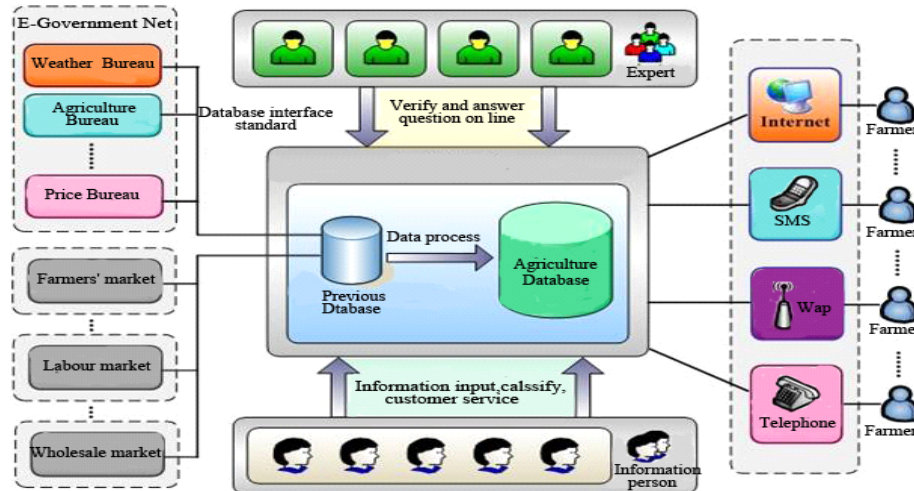
Figure 1 Working Of E-Agro Android Application [1]

In Result And Discussion Section Authors Focused On Offer Expertise Service To Farmers Regarding Cultivation Of Crops, Pricing, Fertilizers, And Disease Detail Method Of Cure To Be Used Etc. And Even Suggestions Regarding Modern Techniques For Cultivation, Usage Of Bio-Fertilizers, Can Obtain Best Crop Cultivation In The Recent History Of The Region Etc. Our Main Aim Will Be Concentrated On Bringing The Modern Agricultural Techniques To The Remote Farmers. The Relentlessly Increasing Importance And Application Of Information Technologies (Its) In Agriculture Have Given Birth To A New Field Called E-Agro, Which Focus On Improving Agricultural And Rural Development Through A Variety Of Technologies.

AGRONOMY-An Android Application Regarding Farmer Utility Discussed In [2] Makes Application Available 7/12 To The Farmer. To Provide The Information Of Manufacturers And Dealers Of Fertilizers, Pesticides And Insecticides. To Keep The Farmer Updated With News And Market Prices.

Authors Developed Algorithm Which Operates In The Following Steps:
1. Farmers Can Contact The Particular Company Through The App.
2. News Related Only To Agriculture Field Will Be Displayed So As To Avoid The Data Which Is Not Useful To The Farmer.
3. Farmer Will Get The Details About The Manufacturers And Dealers Of The Fertilizers, Insecticides And Pesticidesany Enquiry About The Crop, Seeds, Equipments, Policies, Etc.

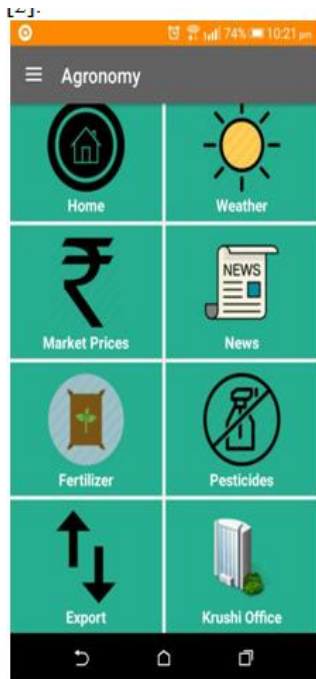Outcome Of AGRONOMY-An Android Application Regarding Farmer Utility Is Given In Following Figures [2].
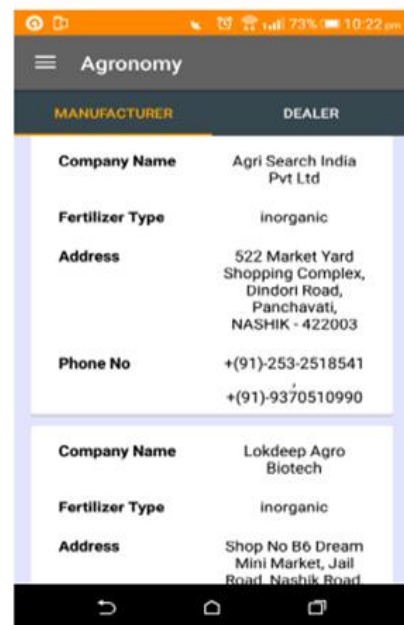

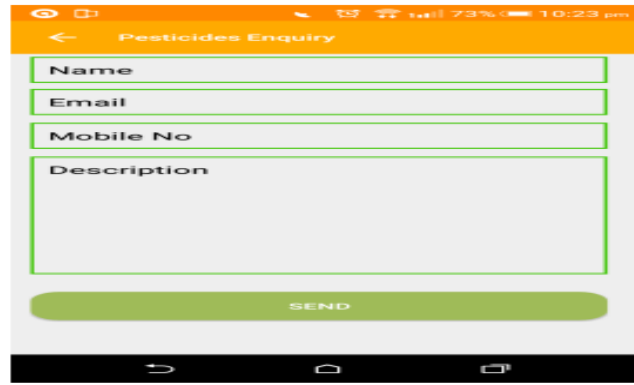Fig4: News Window

Fig5: Manufacturers and Dealers

Fig7: Enquiry Window

In [3] Discussed A Modern Farming Techniques Using Android Application Aim To Provide Modern Farming Technique Using Android App To Enhance Transparency In The Agriculture Commodity Marketplace By Providing Market Price Information, Facilitating Collective Buying Of Inputs And Collective Selling Of Produce. Authors Adopted Following Methodology To Provide Novice Techniques For Farmers.

1. Weather Forecast Report
2. Information About Crops
3. News And Feeds
4. Farming Tools And Technology

Use Case Diagram For A Modern Farming Techniques Using Android Application Is Given In

Figure 3 Use Case Diagram For A Modern Farming Techniques Using Android Application

Use Of Modern Farming Techniques Using Android Application Farming Are Given In Following Snapshots.
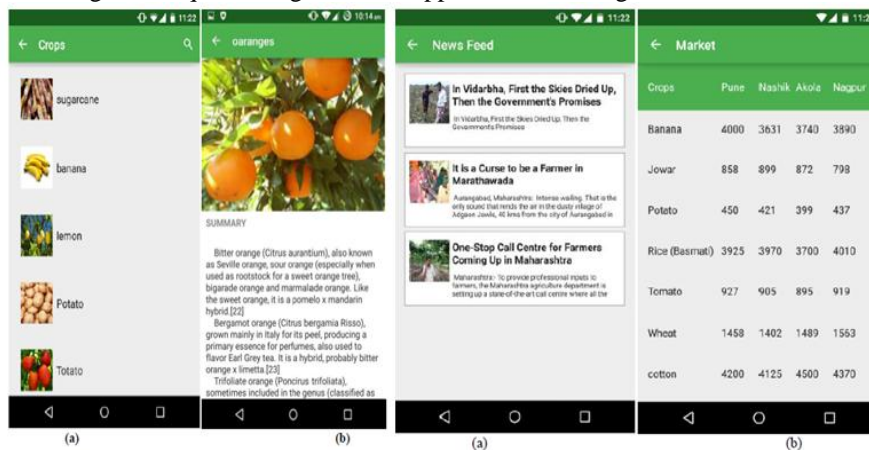

Fig. 4.Crops option (a) Crops list (b) Details of a crop

Fig. 5.Other options (a) News screen (b) Market screen

Authors In [4] Discussed On Android Based Solution For Indian Agriculture Management Which Is To Develop An Android Application To Manage Agricultural Activities Those Are Doing On Daily, Weekly And Monthly Basis In The Farm.

Android Based Solution For Indian Agriculture Management Works In The Following Steps To Create Profile Of Farmer, Farm And Crop In That Farm.
1.   Weather Information On The Basis Of Village Registered.
2.   Prepare Financial Budgets And Monitor Its Execution.
3.   Keep Records For All Assets Of Farm (Fields, Machines, Raw-Materials).
4.   Maintain Expenditure Record.
5.   Generate Revenue On The Basis Of Expenditure Record And Income Generated.
6.   Information Of Different Government Of India Scheme For Indian Farmers.
7.   Get Access To Pesticides, Fertilizers And Seed Databases

Working Of Android Based Solution For Indian Agriculture Management Is Given In Figure 4.
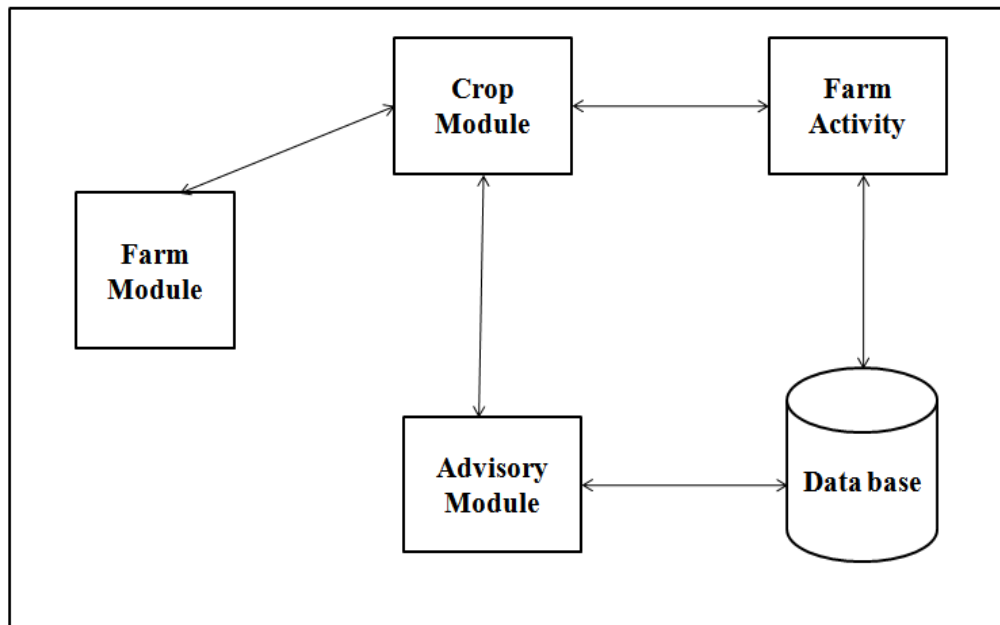

Figure 4: Working Of Android Based Solution For Indian Agriculture Management

Outcome Of Android Based Solution For Indian Agriculture Management Is An Android Based Solution For Indian Agriculture Management Which Will Be Useful To Give Solution For Indian Agricultural Management To Improve Their Crop Yield. The Application Would Be A Benefit To The Indian Farmers As It Addresses The Key Problems Of Getting The Market Updates Of Different Products.

An Android Application For Farmers To Disseminate Horticulture Information Is Discussed In [5] Is To Introduce This System Is To Provide The Flowers, Fruits And Vegetables Details Information(Such As Soil, Fertilizer, Method For Harvesting, Etc) To The Farmer In Voice Form, Free Of Cost, Anytime , Anywhere Using Android Smart Phone Without Internet Service.

Authors Adopted Following Methodology To Overcome The Limitations Mention In Problem Statement. Authors Have Design A System That Will Provide The Horticulture Information To The Farmer Using Android Phone In Form Of Voice Data. No Cost Of Pc & Laptop Is Required. No Internet Services Required. All The Information Is Provided In Gujarati Language So The Literate Farmers Of Gujarat State Can Easily Operate The System Just By Dialing Numbers From The Mobile Keypad. No Call Or SMS Charges, It Provides Free Information Anywhere And Anytime. As The System Gets Installed On Android Phone, Tower Problem Will Not Be A Problem Anymore.
Outcome Of The An Android Application For Farmers To Disseminate Horticulture Information Is As Follows
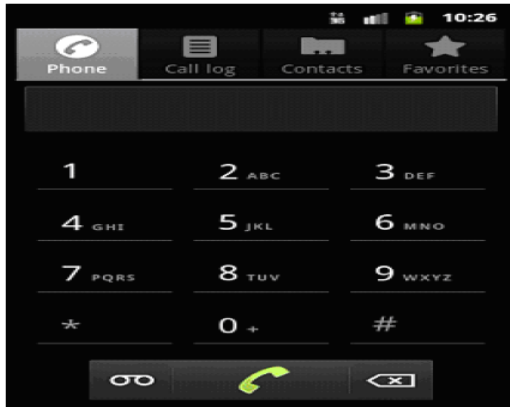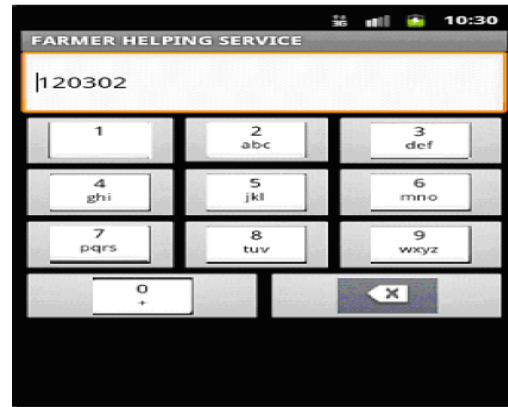
Fig. 3 Starting stage of Application

Fig. 7 Details of Fruit Information

Agriculture Based Android Application [6] Is An Agricom Application Which Will Be Useful In Agriculture System To Suggest Farmers To Select A Crop For Cultivation Mapping Using Different Ground Parameters Crop Production, Methods, Fertilizer, Technology, Tools.
Agriculture Based Android Application Consists Of Following Modules.

Admin Module
1. Login
2. Add Crops
3. Update Crops Info
4. Upload Video
5. View Feedback

Figure 2: Login page of AgriCom app

User Module
1. Registration
2. Login
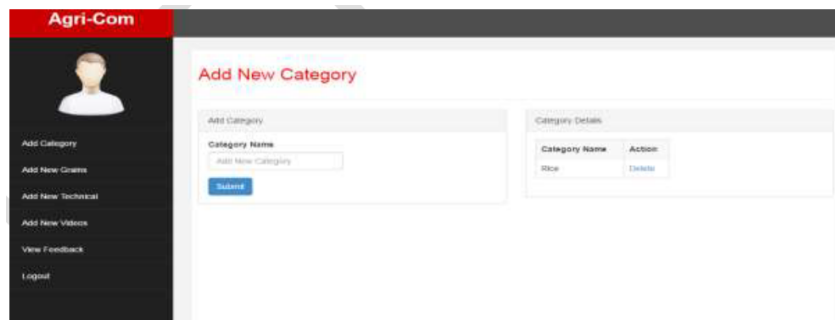3. View Crops /Video
4. Upload Video
5. Feedback
6. Chat

Figure 3: Home page of admin

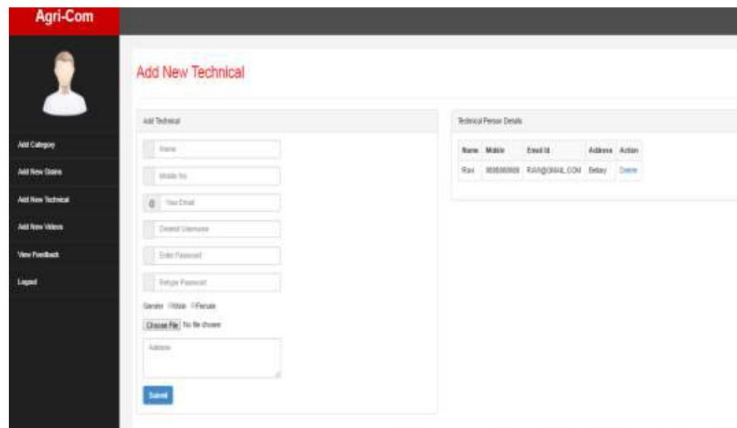**Technical Expert Module**
1. Registration
2. Login
3. Chat

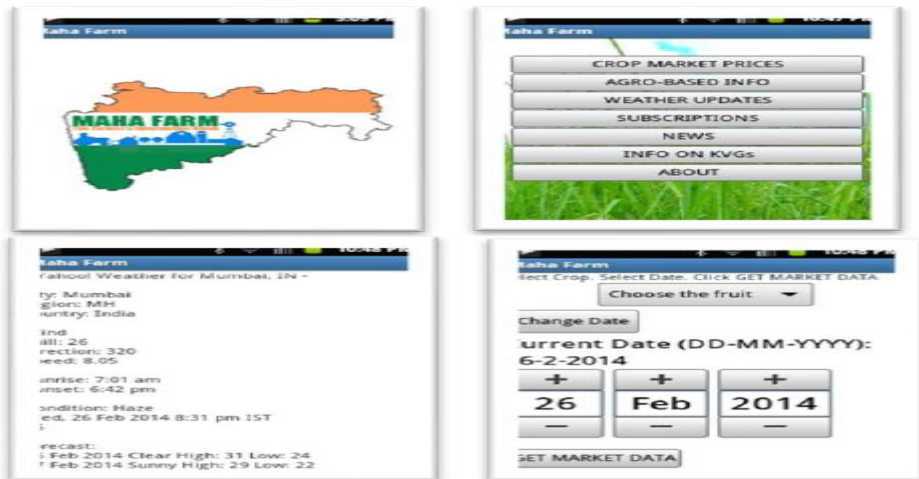Figure 4: user page for accessing information

Mahafarm-An Android Based Solution For Remunerative Agriculture [7] Is The Advancement Of ICT Can Be Utilized For Providing Accurate And Timely Relevant Information And Services To The Farmers, Thereby Facilitating An Environment For Remunerative Agriculture.

Authors Adopted Following Methodology To Provide Solution To The Farmers

1. Crop Specific Data Would Be Made Available By Means Of A Static Database Present Within The Phone Itself In Order To Reduce Data Transmission Costs.
2. Crop Prices With Respect To Date As Well As Market Location.
3. Agricultural News Feeds Relating To Loan Schemes, Government Sanctions Etc.
4. Information Retrieval Is Done Through: *GPRS:* The Connection Cost In This Case Is Reduced To A Minimum Since Only Those Few Bytes Requested By The User Will Be Downloaded To The Mobile Phone.
5. *Wi-Fi:* A Feature Available For Smart/3G Mobile Phones Having A Wi-Fi Adapter. The Application In This Case Directly Routes The Connection Through Wi-Fi, Hence Totally Eliminating The Cost.

Outcome Of Mahafarm-An Android Based Solution For Remunerative Agriculture Are As Given Below.

III.   Conclusion

In This Paper, We Have Done Rigorous Survey On Mobile Applications Used For Farmers Along With Problem Statement, Methodology Adopted, And Result And Discussion.

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