iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** IV **Month of publication:** April 2022

DOI: https://doi.org/10.22214/ijraset.2022.41983

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue IV Apr 2022- Available at www.ijraset.com

E-Krishi Vikas - Multilingual App

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Abstract: ***The Indian agriculture sector has many growing concerns. As the Indian economy has diversified and grown, agriculture's contribution to GDP has steadily declined from 1951 to 2019. Agriculture in India has achieved grain self-sufficiency but the production is resource-intensive, cereal centric, and regionally biased. The resource-intensive ways of Indian agriculture have raised serious sustainability issues too. Farmers in India face the unavailability of resources or lack of ways to access the available resources. In the majority of cases, plenty of facilities are available for the farmers to succeed in their job, but there is a huge information gap between the farmers and those available schemes. In these kinds of cases also, there is another problem that makes those services insufficient, and that problem is the communication problem. India has a huge diversity in terms of languages, culture, region, and rich history behind that diversity. There is a huge probability that farmers speaking and understanding their own regional language do not understand the National and International languages to gain full advantage of the available services for them. In this paper, we propose an android-based app, E-krishi Vikas, intended to address this issue. Further, it will act as a complete farmers' friend, by helping them to get information about the weather, help them in finding the equipment of their needs, and much more in their preferred language. The unique features of E-krishi Vikas are its simple and user-friendly interface.***

Keywords: Krishi, Agriculture, Multi-lingual, Android, Marketplace, Community

I. INTRODUCTION

Agriculture is a strenuous and lengthy occupation that deals with growing crops, maintaining optimum conditions for the growth of these crops, cattle, and many more factors. Agriculture [1] may be defined as an integrated system of techniques to control the growth and harvesting of animals and vegetables. It is an uncomplicated endeavor consisting of technical and practical processes that helps in the maintenance of the ecological balance and protects human resources; most importantly it is a viable food production system. The agricultural sector is critically important in any developing economy and so it is in India, where it contributes close to 20% of GDP. Here 60% of the population depends on agriculture, either directly or indirectly. Small-scale producers, who make up the vast majority of Indian farmers, are often unable to access information that could increase yield and lead to better prices for their crops. The rapid growth of mobile telephony and the recent introduction of mobile-enabled information services provide a means to overcome existing information asymmetry. It also helps to bridge the gap between the availability and delivery of agriculture inputs and agriculture infrastructure. The increasing penetration of mobile networks and handsets in India, therefore, presents an opportunity to make useful information more widely available. This could help agricultural markets operate more efficiently, and overcome some of the other challenges faced by this sector [2]. The introduction of Information and Communication Technology (ICT) in Indian agriculture enables the dissemination of requisite information at the right time. This revolution in information technology has made access to relevant information easy and cost-effective [3]. The mass is surprised by the rapid emergence of mobile telephony and consider this connected world to be the virtue of mobile devices. There are so many possible applications arising, but as usual, the challenge is to understand the right place and role of technology in social, economic, and educational interactions. The main objective of this project is to develop a mobile phone-based solution that helps in farm management, leads to agricultural yield improvement, and helps in the care/maintenance of the farms. The recent introduction of a number of mobile-enabled information services suggests that it is time to take a fresh look at their impact on agriculture in India. These services deliver a wide range of information to farmers. We can look for the impact of mobile phones on the crop sector in India with a closer focus on small farmers [4].

Mobile and smartphones are becoming essential devices for all types of users irrespective of the age group. In India, mobile technology has unleashed a paradigm shift in the communication medium to reach out to the masses. Android, the open-source mobile operating system developed by Google, is quickly becoming the smartphone of choice for activists.

We mistakenly believe that it is the mobile phone that provides us with a large number of utility and fun applications while we are unaware that the applications come from the hands of the developers.

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II. LITERATURE SURVEY

There are few existing systems that try to solve some of the mentioned problems, they are as follows:

A. Krishi Ville (IEEE paper)
B. MahaFarm (IEEE paper)

We referred to the official IEEE paper Krishi Ville [5] as a comprehensive reference and enhanced its applied features. It is an Android-based application that would provide all the facilities to the farmers related to their agricultural activities in their preferred language.

1) The application has an easy-to-use Graphical User Interface (GUI).
2) An open to all marketplace is present in the application.
3) A community section for the user to get agriculture-related information from the people.
4) Information retrieval is done through:
5) Weather info that forecasts for a week and gives updates every 3 hours in a day.

To decide the languages for our initial release we had research on top agricultural states of India. If we want our app to benefit most of the farmers in their regional language, then we need to know where they live and the language they speak.

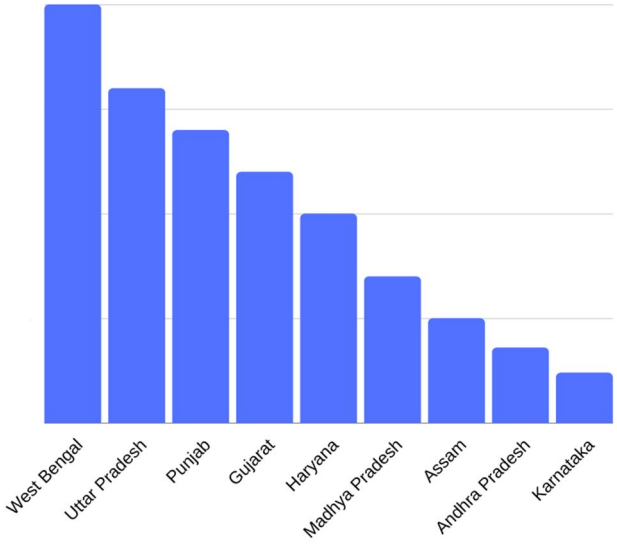

Fig. 1 Top crop-producing states in India

As seen from the chart, we have these top 5 states in India. West Bengal, Uttar Pradesh, Punjab, Gujrat, Haryana. So, depending upon the state language, we have chosen those five languages that our app will support in our initial release. They are Bengali, Hindi, Punjabi, Gujarati, and Marathi.

III. PROPOSED SYSTEM

Modern features such as social networking or interaction and building a community of people doing similar occupations in their daily life are very helpful in today's date. This project tries to cater to the increasing need of making existing resources readily available and accessible to the farmers who simply may not be aware of the information or are not able to utilize the information for their benefit.

A. Features of the proposed system

1) Multilingual support (additional four languages)
2) Social networking
3) Product trading marketplace
4) Weather information

B. Implementation of multilingual support

Now, we will discuss how we will be implementing multi-language support in our app. This flow chart helps to understand it more clearly. Let's break down the main problem into the following steps:

1) Start
2) We have a piece of data in one particular language
3) To provide multi-language support we need to translate this data into the required form.
4) End.

C. Translation of different kinds of data

We proposed and implemented the following approach for the translation of static and dynamic data.

1) Start
2) Follow best practices of native android development that translate predefined data locally with offline functionality.
3) If the data is static we prepare a separate strings.xml file for each language that contains all the static information that needs to be displayed on the screen.
4) Android framework will choose the appropriate file for a given language and the feature will work.
5) If the data is dynamic, data available for the requested service is loaded from the custom database.
6) A custom backend server after loading the data uses the translation API to translate the data into the desired language.
7) The final processed data is then transferred to the client from the server and displayed.
8) End.

The overall algorithm for solving the multilingual problem can be summarized in the following flow diagram.

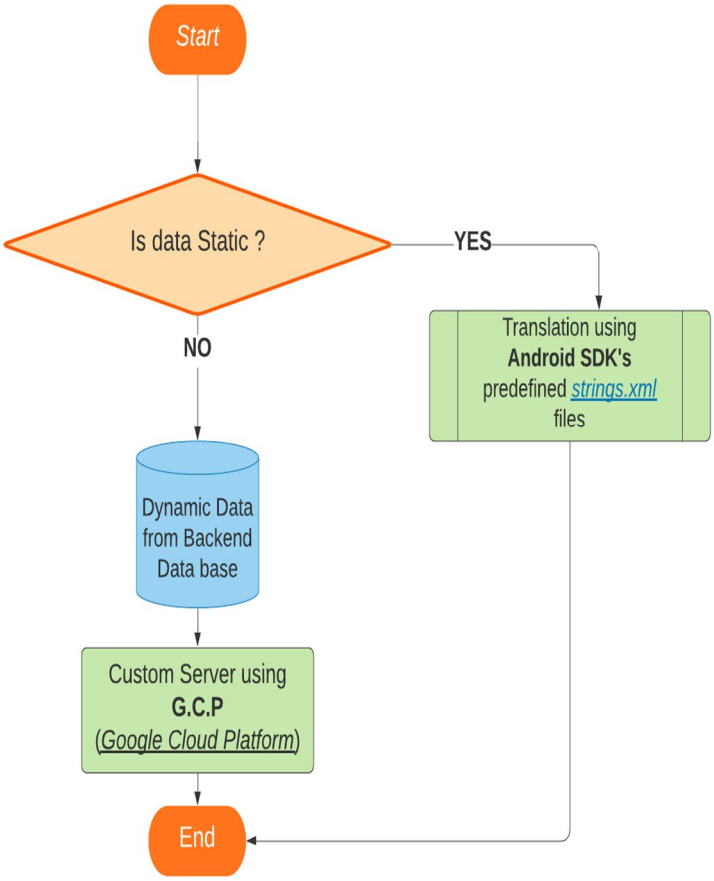

Fig. 2 Translation procedure flowchart

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IV. SYSTEM DESIGN

A system architecture is a conceptual model that defines the structure, behavior, and integration of various parts of a proposed system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system.

We have implemented the system by following the proper separation of concerns. The frontend is an android application and the backend is built using modern server technologies and cloud services through a cloud provider.

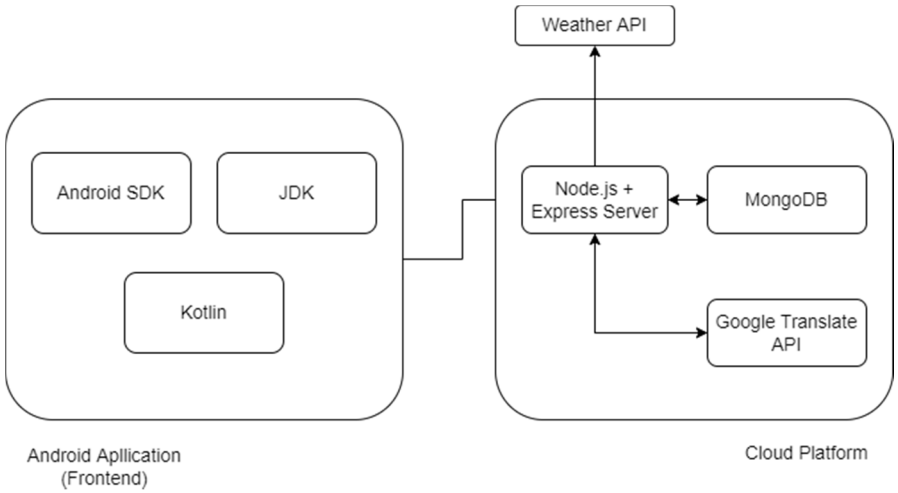


Fig. 3 System design block diagram

V. RESULT

After comparing the results of our project with existing papers, the following improvements and updates have been found.

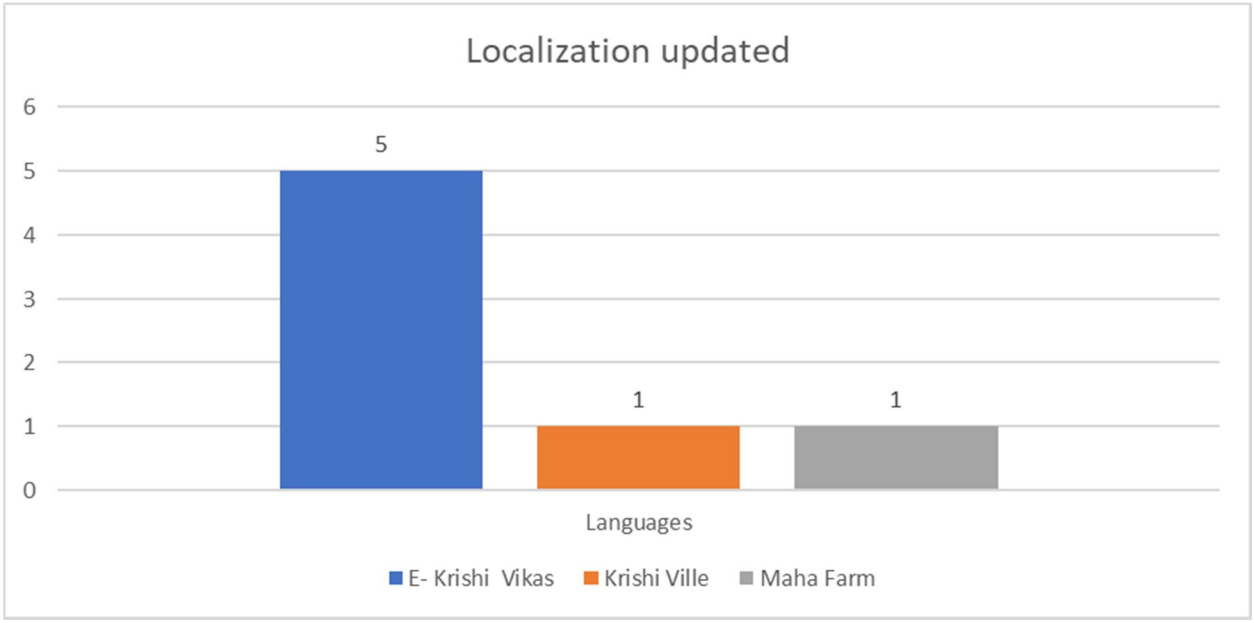


Fig. 4 Comparison of localization with the existing system

Providing features in regional language was the most important requirement for this project. As we have seen in the literature review, there were five languages that were expected to be provided in our application. E - Krishi Vikas provides five different regional languages whereas Krishi Ville [5] and MahaFarm [6] only provide one language which is English. In those papers, it was mentioned that for the further release, the app will support more languages, the same has been achieved in our project.

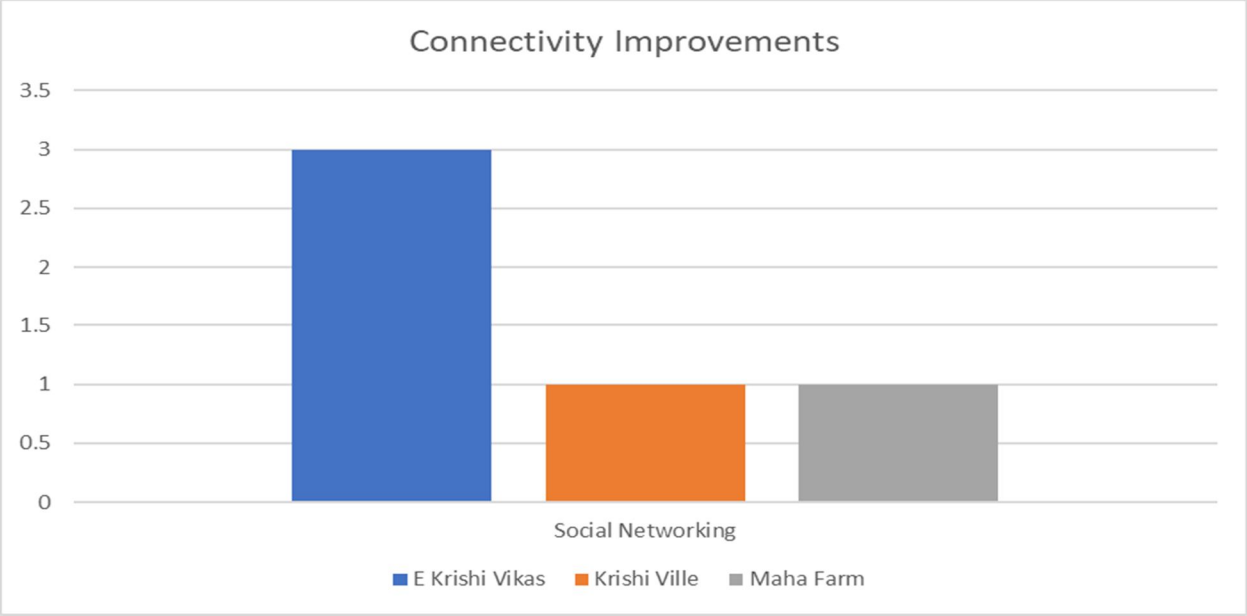


Fig. 5 Comparison of connectivity with the existing systems

Social networking or connectivity has been provided as an advancement to the news feature that was given in Krishi Ville [5] and MahaFarm [6]. In today's date, people use many social media platforms, the same idea was used to provide useful feeds in regional languages for the people and by the people. Users can ask questions, post their doubts, and can get a quick answer/review from the community.

VI. CONCLUSION

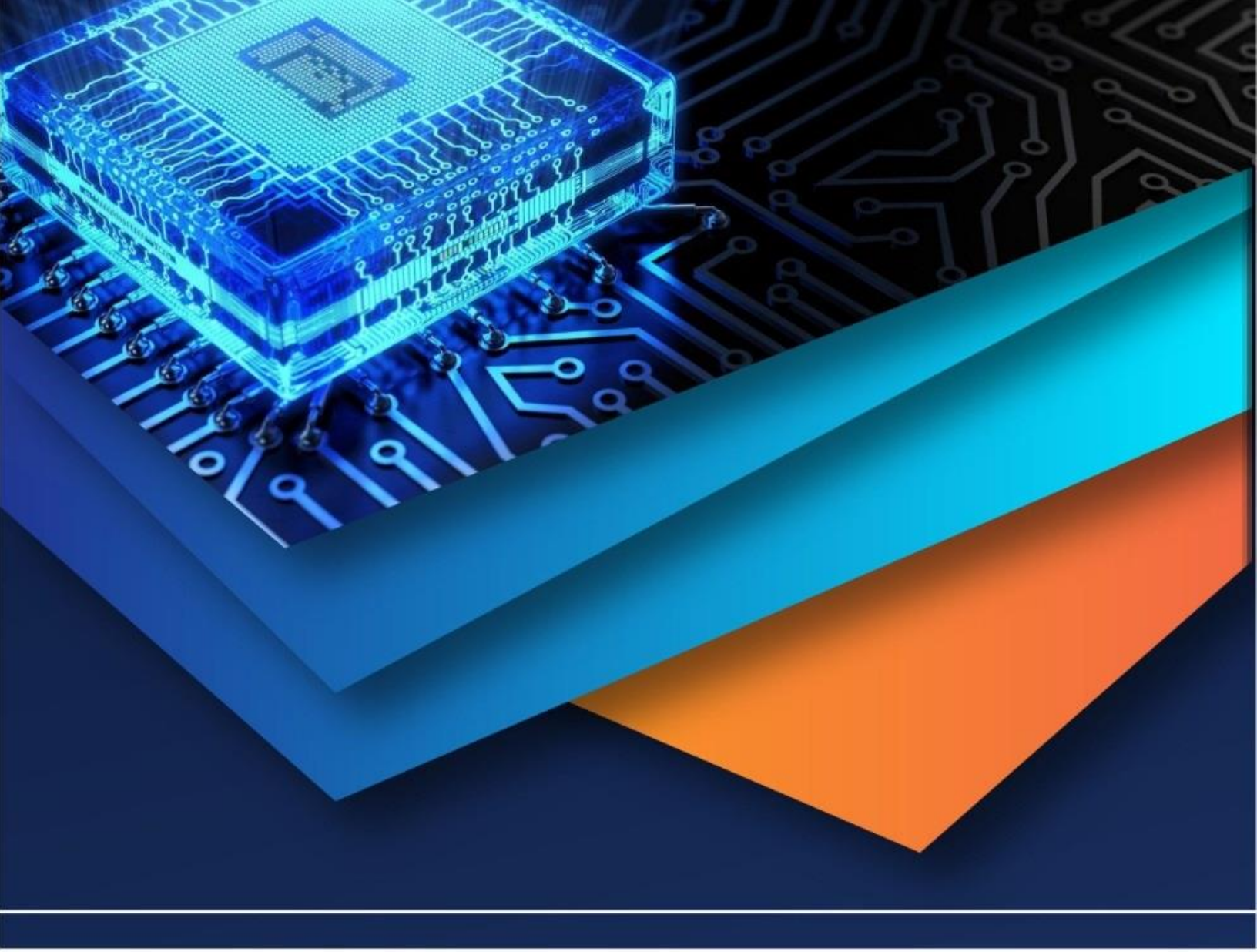
In this project, we present an attempt to provide different facilities to farmers in the form of an android application that can be accessed with multilingual support, so that a major population of farmers across India can use the app without facing any issues. The UI and design of the app have been made in such a way so that a common user can find it very easy to use as it adopts common use cases in the designs. The app supports the community feature that helps in socializing and solving local problems with each other's help. It also makes it easy to get in contact with the marketplace, where users are directly navigated to Whatsapp for a quick chat or call with the shopkeeper.

VII. ACKNOWLEDGEMENT

We owe sincere thanks to our college Mahatma Gandhi College of Engineering and Technology for giving us a platform to prepare a project on the topic "E-krishi Vikas - Multilingual App" and would like to thank our Vice-Principal Dr. V.G. Sayagavi for instigating within us the need for this research and giving us the opportunities and time to conduct and present research on the topic. We are sincerely grateful for having Dr. Ashok Kanthe as our guide, without their motivation, constant support, and valuable suggestions this project would not have been possible. Moreover, the completion of this research would have been impossible without the cooperation, suggestions, and help of our friends and family.

REFERENCES

[1] Android Based ICT Solution in Indian Agriculture to Assist Farmers - CEUR-WS.org. http://ceur-ws.org/Vol-1498/HAICTA_2015_paper27.pdf
[2] Smart Krushi - ijcaonline.org. https://research.ijcaonline.org/accnet2016/number6/accnet2301.pdf
[3] ICT led Knowledge Management in KVKs. http://icarzcu3.gov.in/book_publications/Concepts_2nd_Edn/10Chapter%209.pdf
[4] Surabhi Mittal, Sanjay Gandhi, Gaurav Tripathi Working Paper No. 246 Socio-Economic Impact of Mobile Phones on Indian Agriculture. http://www.icrier.org/pdf/WorkingPaper246.pdf
[5] Manav Singhal, Kshitij Verma and Anupam Shukla, Krishi Ville – Android based Solution for Indian Agriculture, 2011 Fifth IEEE International Conference on Advanced Telecommunication Systems and Networks (ANTS)
[6] Aniket Bhave, Rahul Joshi and Ryan Fernandes, MahaFarm – An Android Based Solution for Remunerative Agriculture, International Journal of Research in Advent Technology, Vol.2, No.4, April 2014



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