

Efficient Farming – Hiring Equipments for Farmers

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ABSTRACT

In order to improve the economy of India, agricultural growth needs to levitate. This demands small and marginal scale agriculture to become efficient and self-sustaining. A mobile application that the farmers can use to hire tractors as well as other mechanizations at a nominal amount all using their mobile phones. This would not only help them avoid manual labor but can be also be considered as an important step to encourage this profession. Using kiosk software for farmers to hire farming equipment like tractors and other machines. We proposed a system to make the farmers aware of the current market rate of the product. This type of system is much beneficial for the young generation to adopt to the traditional farming technique. It will increase the easy access to farm mechanization solutions through rental of tractors and farm equipment for small and marginal farmers. The benefits of our project is Avoid bidding problem and Cost is not the issue because of the mobile based application.

Keywords - Hiring, Market rate, Bidding, Self-sustaining.

I. INTRODUCTION

To increment food production and productivity one of the required elements for such development is the adoption and usage of ‘power technologies’, for example such as animal muscle (oxen) and engines (tractors), and related equipment, such as for example no-till planters and improved hand tools. Most of the small and marginal farmers do not invest in mechanization due to related huge expenses of buying these machines. This lack, well recognized by both the public and private sectors for decades now, fostered the development of agricultural mechanization hire enterprises, more commonly known as hire services, that could potentially provide power technologies and equipment on a hire basis, where farmers could pay in cash or more commonly in kind. The selection of variables is dependent on the location for which the predication is to be made.

II. RELATED WORKS

Small-scale actors in agri-food value chains: The services of agricultural mechanization hire enterprises.” by Martin Hilmi Volume : 07 Issue : 04 | Oct.-Dec. 2018. Agricultural mechanization hire enterprises, commonly known as hire services, are service businesses that provide human, animal and mechanical-driven power technologies and equipment services. This article is based on qualitative based descriptive and explanatory research. The outcome of the research found that personal, entrepreneurial, social and brokerage services factors are to be considered alongside the financial/commercial aspects for a better understanding of the how and why of access and use of such services by small-scale actors.

III. PROBLEM IDENTIFICATION

Rural people depend heavily upon agriculture either as farmers, casual laborers, workers in agro-based industries traders in agricultural produce or as hire service providers. One of the principal causes of poverty among smallholder’s farmers is the lack of farm power and importantly access to it. Most of the small and marginal farmers do not invest in mechanization due to related huge expenses of buying these machines. This would not help to avoid the manual labor. The disadvantages are external hardware is used and very expensive.

IV. PROBLEM SOLUTION

A mobile application that the farmers can use to hire tractors as well as other mechanizations at a nominal amount all using their mobile phones. This would not only help them avoid manual labour but can be also be considered as an important step to encourage this profession. It will increase the easy access to farm mechanization solutions through rental of tractors and farm equipment for small and marginal farmers. We proposed a system to make the farmers aware of the current market rate of the product. The farmers were allowed to use his mobile to pay for the rental . SMS support for payment transactions also has to be supported. SMS/Notification will be send once the transaction is complete. This type of system is much beneficial for the young generation to adopt to the traditional farming technique. The benefits of our project is Avoid bidding problem and Cost is not the issue because of the mobile based application.

V. FLOW DIAGRAM

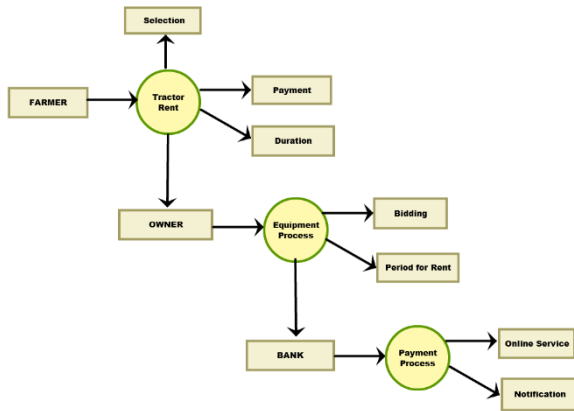


Fig 1.Flow Diagram

Diagram explains the flow of the app. The farmer will search the application for rent of any of the equipment's for farming by this application. During the time of rental, the duration, rent and equipment name was listed. After the amount is paid, notification message about the completion will be sent by the owner to the farmer.

VI. SOFTWARE USED

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.



Fig 2.Android Studio

Android Studio supports all the same programming languages of IntelliJ (and CLion) e.g. Java, C++, and more with extensions, such as Go and Android Studio 3.0 or later supports Kotlin and "Java 7 language features and a subset of Java 8 language features that vary by platform version."

The first stable build was released in December 2014, starting from version 1.0. The current stable version is 3.3, which was released in January 2019.

The Java Development Kit (JDK) is an implementation of either one of the Java Platform, Standard Edition, Java Platform, Enterprise Edition, or Java Platform, Micro Edition platforms released by Oracle Corporation in the form of a binary product aimed at Java developers on Solaris, Linux, macOS or Windows. The JDK includes a private JVM and a few other resources to finish the development of a Java Application. Since the introduction of the Java platform, it has been by far the most widely used Software Development Kit (SDK). [citation needed] On 17 November 2006, Sun announced that they would release it under the GNU General Public License (GPL), thus making it free software. This happened in large part on 8 May 2007, when Sun contributed the source code to the OpenJDK.

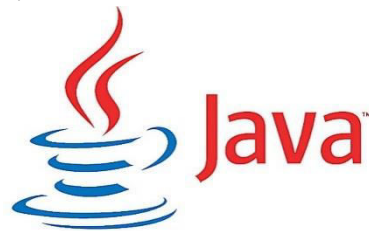


Fig 3.Java JDK

The JDK forms an extended subset of a software development kit (SDK). It includes "tools for developing, debugging, and monitoring Java applications". Oracle strongly suggests to now use the term JDK to refer to the Java SE Development Kit. The Java EE SDK is available with or without the JDK, by which they specifically mean the Java SE 7 JDK.

VII. PROGRAM OUTCOME

7.1 MODULE 1-Agricultural Equipment Rental
 India primarily consists of small and medium landholding farmers who look to rent equipment, usually on an hourly basis. In this module, the list of tractors and other equipment details will be displayed. By leasing out agricultural equipment from the owners, we increase its utilization and often pay higher rentals than they would get just by serving their existing pool of customers.

7.2 MODULE 2- Rental hiring Duration and charges

The Details of the available machineries and equipment will be provided to farmer by the owner. He will update their equipment information along with the hiring duration and charges for the rent. The Expert/Farmer will view the details and can contact the tractor owner for further queries.

7.3 MODULE 3- Online hiring of tractors and transaction notification

The farmers will now be able to hire the tractors and farm implements using their mobiles just the way to make it easy for common farmers. The economic performance of a tractor hiring service should be more attractive than the traditional system. The online transaction for hiring the Equipment was done through gateway Ease Buzz. Ease Buzz will provide API's for mobile application which will

enable protective layer for each transaction done. Once the transaction is completed, SMS will be sent to the Farmer.

7.4 MODULE 4 – Equipment return notification

Agriculture man's online sales model is trying to generate demand from farmers in the unorganized agriculture sector and bring services to the rural doorsteps. The farmers will get the notification when it needs to return the tractor which they hired it from the tractor owner.

VIII. CONCLUSION

Hire service equipment can also have multiple functions and so provide more benefits to the farm family. With increased yields and increased time savings, farming becomes more efficient costs can be reduced. This can signify more income for the farm family. Importantly, efficiency increases even more as tools, equipment and machinery are not left idle for lengthy periods, but are hired out to other farmers in the local area.

IX. FUTURE ENHANCEMENTS

Tractor rent Services facilities the hiring of tractors and modern farm machinery to farmers at free of cost. Farmers looking to rent their existing tractors and farm equipment are linked directly to farmers seeking to hire them through the free of cost.

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