Farm Management Information System

Chapter 01

Introduction

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Abstract

Our country is an agricultural country. Here the vast majority of people directly rely on agriculture for their livelihood. Our country's agriculture is complex and labor intensive. Here, our farms practice different production systems. Most of the large farms may have more than one enterprise that may be complementary or supplementary depending on the situation. As a result, an improved efficiency of management practices would benefit our agricultural sector significantly.

Farm Management Information System is used for optimization and management of farm operations and production activities. Farms will be able to have instantaneous data regarding labors, products and other critical management activities. This will also help them make decisions that would improve productivity and maintain quality.

1.1 Problem Statement

Though in several parts of our country traditional methods are still being used for farming activities, still in many parts of the country, application and adaptation of mechanical and technological equipment are clearly visible.

With these improvements already playing their role, if a real time management system can be introduced with proper decision-making facilities, it would immensely benefit our country's farming sector.

Besides, due to the increasing trend of urbanization, many people are leaving for urban areas. So, the numbers of people interested in farming are gradually decreasing. This also results in labor scarcity. With a proper management facility that ensures the best utilization of the farm resources, this gap can be filled. Thus, overall production of farm goods may be kept in balance.

1.2 Motivation

In our project, we endeavor to demonstrate how it can be done considering the whole farm as a production unit and providing a single software and hardware-based solution point utilizing which the farms can be managed in a more efficient and productive manner. Our motivation for this project is as follows:

1. Our country is a land of agriculture. We have a strong human resource blessed with generations old experience and techniques in this sector. Our country is also full of agricultural resources. In this era of technological advancement and globalization, we are very keen to employ our best efforts to introduce new technologies and concepts which will benefit this sector and people involved. We would be very happy if we could contribute to our country's development as a whole through our efforts and by bringing new ideas to the table.
2. An efficient management system for a farm will reduce the cost and increase productivity. If we can take this project to a larger scale then it might revolutionize the country's farming sector. Which directly or indirectly affect our socioeconomic status in a positive way. If we can set an example, that might inspire others in future.
3. As students of Computer Science and Engineering, it is our responsibility to research and analyse the implementation and application of new technologies to the potential sectors. FYDP provides us huge opportunities for this purpose. We would very much like to try our level best to make the best utilisation of this opportunity.
4. If we have a successful project then we might extend its efficiency of services. This will probably open an industrial opportunity in the country.

1.3 Objectives:

Farm management software (FMIS) includes all the software used for supporting various processes involved in advanced agricultural operations like contract management, crop management, customer management, financial management, greenhouse management, inventory management, labor force management, livestock management, pricing management, supplier management, as well as order processing, financial calculations and analysis, bar-coding/RFID, and traceability (Capterra.com, 2017). FMIS is an innovative technology used for optimizing the use of resources in the farms. It includes best agricultural practices based on usage of farm software, data analytics solutions, and software delivery models, among others. This kind of software helps in enhancing farm production and reducing the wastage of input and is integrated with hardware equipment and devices to enhance the productivity of the farmland with the help of GPS, sensing, and communication technologies (MarketsAndMarkets, 2016).

1.4 Methodologies:

In our project, methodologies are divided into three parts namely as Analysis, Design and Implementation. Analysis involves studying the current state of farming sector, existing systems and literatures, Design part consists of building models using UML diagrams and designing user interface and user experience based on the study. Finally, implementation part of the project involves coding and testing parallelly. For the first part, we tend to explore current situation of our farming sector, study different similar systems and research papers. Based on knowledge and information obtained from our exploration, we tend to design system models using different tools and techniques. Then according to the models and designs we will implement our project.

1.5 Contribution:

In our project, we intend to build a system that would keep track of farming operation and production activities. The main focus is to reduce the workload of farm management in our country. Using this system, a farm will be able to increase its production with the efficiency of resources.

We are keen to see and inspect different aspects of farming that can be made more developed and efficient through digitalization. We are looking forward to studying issues might originate from digitalization of farming so that we can keep track of negative impacts as well. We tend to research about different parts of a farm and crucial data regarding each part and ways we can make valuable information out of these data by combining, filtering and manipulating them.

We focus on discovering how digitalization might make it easier and faster for farms when it comes to management and making critical production decisions. How a well thought implementation of a digital system in a traditional sector can change the total outcome of the sector also included in our study. We are to determine whether the implementation should be gradual or not. If not gradual then what problem might arise.

Through all our efforts we will try to create an advanced and time-befitting system that will gradually improve the management and operational tasks previously relied on traditional procedures.

1.6 Organization of the report:

Problem statement: This section describes the necessities behind building the system mentioned in our project along with important role it might play in the concerned domain.

Motivation: This section explains motivations behind selecting the topic of our project.

Objectives: This section explains what exactly we aim to achieve through our project and what purpose our system ought to serve.

Methodologies: This section gives a brief idea about how we plan to carry on our project activities dividing it into separate parts.

Contribution: This section is about our desired outcome from this project.