**Development of Decision Support System for Pig Farming**

**Chapter 1**

**Introduction**

This chapter deals with the presentation of the study. Specifically, this presents an introduction, the overview of the project, purpose and description, statement of the problem, objective of the study, and scope and limitations of the study.

**Project Context**

Agriculture is one of the most significant businesses in the world since it meets people's necessities for survival. As technology has advanced so much, managing agricultural data and information on the performance of animals is essential for profitable farms to compete in the market.

DSS is a computer software that an organization or corporation uses to support decisions, judgements, and courses of action. A DSS sorts and examines enormous amounts of data, amassing thorough knowledge that may be applied to problem-solving and decision-making. A computerized system known as a decision support system (DSS) collects, evaluates, and then synthesizes data to create detailed information reports. The purpose of an ordinary operations application, which is only to collect data, is different from a decision support system. With the use of decision support systems, better decisions can be made, difficulties can be resolved quickly, and operations, planning, and even management are dealt with more effectively.

The process of gathering, storing, and organizing data in a way that makes it possible for effective retrieval and use is known as information management. Its goal is to guarantee that the appropriate information is made available to the appropriate individuals at the appropriate time to assist decision-making and the effective running of an organization.

For this study the researcher’s chosen farm is Deroxas’s pig farm, it’s a back yard pig farm that can hold 95 pigs, 30 piglets and 5 sows. Many farms, like De Roxas's pig farm, continue to use paper for applications, invoices, and the storage of other forms of information. A paper-based document management system is required to efficiently manage multiple notebooks, per partner. When compared to digital platforms, this approach has a few drawbacks that should be taken into account before deciding how to keep your farm information safe and accessible. The owner uses multiple notebooks to store information most of the time the owner forgets where it stored, it’s a hassle to find it. There is one instance where the owner unintentionally puts it in the garbage and there is no backup notebook. Having digital format of this information in the notebooks. Manual documents can readily break, misplaced, lost, or taken. Information loss could result from a fire or other natural disaster. If you don't have any backups, you won't be able to restore the data if the files are deleted. A paper-based document must have all the text rewritten if you want to make changes. Every time you want to make further corrections, you must repeat this. To distinguish between all the modifications that have been made, you should make a copy of the original document. It is harmful for the environment and won't do much to improve your company's green credentials to use more paper.

The researcher’s will create a Farm Management Information Systems that can provide decision support, it will be using Android Studio as the integrated development environment (IDE) the app title will be “De Roxas’s Pig Farm” containing information about the farm like, Total number of pigs, which sow is about to give birth, how many months is sow pregnant, which pig had their vaccination. The app supports the user to calculate if the farm is going to profit by inputting all the cost and current liveweight per kilo price. The app also produces PDF file of information about the farm, in this way the owner is going to have a digital information about the farm rather than the old method of using paper to store information. Developing the app will help the farm to store information and support the farm by calculating and showing profit if the owner decides to sell.

**Purpose and Description**

The project was conducted in order to digitalize information and support the farm owner by developing an app called De Roxas’s Pig Farm. There is a lot of drawbacks in having manual documents compare to digital. Manual documents can break, lost, misplace and many other things. In terms of supporting the decision of the farm’s owner the app can give the estimated profit and sow due date with proper input variables. Once developed, the app shall digitalize and support the farm owner decisions.

De Roxas’s Pig Farm Decision Support System possess the capabilities listed below:

1. Give estimated Profit, inputting every expense after that the app can give estimation if the farm will profit or not.
2. Give estimated Sow’s Due date, inputting the insemination date and type of boar after inputting the information the app will produce an estimated due date and types of piglets that most likely be born. There will be a tab that shows information about the sows like have they got their vitamins, how much are they bought for, are they raised on the farm, how many times a day do they eat, how much do they eat, what brand are they eating. All that information can be viewed by the farm’s owner or user.
3. Showing different information about the pigs, there is multiple rooms for the pigs some are raised on the farm and most of them are bought from other farms. There will be a tab that show information about the pigs about what type of pigs are inside a room, have they got their vitamins, how many are male and female, how much are they bought for, are they raised on the farm, how many times a day do they eat, how much do they eat, what brand are they eating. All that information can be viewed by the farm’s owner or user.
4. Showing all the expense, there will be a tab that shows all the expense of the farm.
5. Making digital copy of information about the farm, there will be a tab on every section in the app that let the user or farm’s owner to save all the information into a excel file.

**Objective of the Study**

The main objective of the project is to support the De Roxas’s Pig Farm in computing profit if the farm owner decides to sell, transition into a digital information storing rather than manual documents. Specifically, it aims the following:

1. To create and develop an Android application named De Roxas's Pig Farm Decision Support System that can:
2. Simulate the farm calendar;
3. Integrate navigation user interface of the DSS
4. To identify the system requirements
5. To test and implement the system development of the DSS

**Scope and Limitations**

The app will focus only Deroxas’s Pig farm only, giving estimated Sow’s Due date, inputting the insemination date and type of boar after inputting the information the app will produce an estimated due date and types of piglets that most likely be born. There are several rooms for the pigs, some of which are raised on the farm and most of which are purchased from other farms, showing various facts on the pigs. There will be a page that displays details about the pigs, like their breed, whether they have access to vitamins, how many are male and female, how much they cost to purchase, whether they were grown on a farm, how frequently they eat, how much they consume, and what brand they consume. The owner or user of the farm can view all that data. There will be a tab that displays every expense incurred by the farm. Creating a digital copy of farm data, each component of the app will have a tab that allows the user or farm owner to save all the data into an PDF file.

The limitation is that app contains only the information about the pigs and not to other farm animals. The information needed to be updated weekly. The app does not have the liveweight per kilo information the user needs to fill that because it always changes.