**EGERTONUNIVERSITY**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**

**PROJECT PROPOSAL FOR**

**AN ONLINE AGRIBUSINESS SYSTEM**

**NAME: TOBIAS MUTUKU MUNYIVA**

**REG NO: S13/03125/18**

**SUPERVISOR: MR. INNOCENT NYALALA**

TABLE OF CONTENT

[ABSTRACT 4](#_Toc129786774)

[CHAPTER 1 5](#_Toc129786775)

[1.1 INTRODUCTION 5](#_Toc129786776)

[1.2 CURRENT SYSTEM 6](#_Toc129786777)

[1.3 PROBLEM STATEMENT 7](#_Toc129786778)

[1.4 OBJECTIVES 8](#_Toc129786779)

[1.4.1 GENERAL OBJECTIVES 8](#_Toc129786780)

[1.4.2 SPECIAL OBJECTIVES 8](#_Toc129786781)

[1.5 JUSTIFICATION 8](#_Toc129786782)

[1.6 PROJECT SCOPE 9](#_Toc129786783)

[CHAPTER 2 10](#_Toc129786784)

[2.1 PROPOSED SYSTEM 10](#_Toc129786785)

[2.2 FEASIBILITY STUDY 11](#_Toc129786786)

[2.3 TECHNICAL FEASIBILITY 11](#_Toc129786787)

[2.3.1 OPERATIONAL FEASIBILITY 12](#_Toc129786788)

[2.3.2 ECONOMIC FEASIBILITY 13](#_Toc129786789)

[2.3.3 SCHEDULE FEASIBILITY 13](#_Toc129786790)

[2.4 SYSTEM DESIGN AND ANALYSIS 14](#_Toc129786791)

[2.4.1 CONCEPTUAL FRAMEWORK 14](#_Toc129786792)

[2.4.2 CONTEXT DIAGRAM 15](#_Toc129786793)

[2.5 FUNCTIONAL REQUIREMENTS 16](#_Toc129786794)

[2.6 NON-FUNCTIONAL REQUIREMENTS 16](#_Toc129786795)

[2.7 PERFORMANCE REQUIREMENTS 17](#_Toc129786796)

[2.8 SECURITY REQUIREMENTS 17](#_Toc129786797)

[2.9 SOFTWARE REQUIREMENTS ATTRIBUTES 17](#_Toc129786798)

[3.0 HARDWARE REQUIREMENTS 18](#_Toc129786799)

[3.1 SOFTWARE TESTING 18](#_Toc129786800)

[3.2 SOFTWARE DEPLOYMENT 18](#_Toc129786801)

[CHAPTER 3 19](#_Toc129786802)

[CHAPTER 4 20](#_Toc129786803)

[CHAPTER 5 21](#_Toc129786804)

[5.1 SCHEDULING 21](#_Toc129786805)

[5.2 BUDGETTING 21](#_Toc129786806)

[CHAPTER 6 22](#_Toc129786807)

[6.1 CONCLUSION 22](#_Toc129786808)

[6.2 FUTURE WORKS 22](#_Toc129786809)

[CHAPTER 7 23](#_Toc129786810)

[REFERENCES 23](#_Toc129786811)

# ABSTRACT

An online agribusiness system is web system that enables farmers (sellers) to look for a ready market to sell their farm produce and also connect the customers (buyers) with the farmers directly and acquire fresh and quality products. The customers can register themselves in the website by clicking the register button, look through the products available in the system, identify them, check the price tag if it’s suitable for him/her, add it to the cart and order anytime and at the comfort of his home or work place without going directly to the physical market place[1] This method is time consuming and tiring, since the customers have to physically find the products interested in manually in the market place and sometimes, they might not find the desired product and end up wasting a lot of energy and time since because it’s not the season of such product.

Today’s online agribusiness systems are designed to do a whole lot more than just reduce physical movement but also relinquish the middle man(brokers) in the physical market place who exploit customers and surcharge the products than normal. It also ensures that the products reach the buyers when fresh and do not overstay in the market since most of the farm produce are perishable and might go bad when they stay on the market place without customers. This makes the company more popular and attracts more customers increasing its sales activity.

***“UptownFresh”*** which is the sales company buys farm produce from the farmers directly. Store the produce on their warehouses and do the shipping from there once a customer is authenticated and validated. The company monitors farmers throughout the planting season and estimated the harvesting time so that by that time they have ready market to sell because they have already advertised to the potential customers who sometimes might be the end users or resellers. This enables the company not to take too much time looking for customers while the products are in the store. Advertisement can be done on the website, flyers, roadshows, mainstream broadcasting or even one on one.

The main objective of this system is to design, develop and implement an efficient, user friendly, secure and interactive web-based agribusiness system.

# CHAPTER 1

## 1.1 INTRODUCTION

Computers have become part and parcel of our daily lives. A day can never pass by without humans interacting with at least one electronic gadget. Advancement of technology has increased over the years and it is very hard in this day and age for an organization to survive without the use of technology[2] Most of the companies, organizations and businesses nowadays have embraced the internet and have taken most of their functionalities online.

The earlier method of buying and selling which was done physically and manually has had so many issues. Some of the issues are middle men, tiresome means of transporting bulky products from physical market to the desired destination since customers are recording their financial statements manually and they may incur loses without their knowledge. Generating statistics and reports has also been cumbersome and prone to many errors[3] The system will generate financial report and purchase invoices for the customers once they make an order and also the company. This will enable company manage its finances and determine if they are making profits or losses in the business.

## 1.2 CURRENT SYSTEM

The current system is a manual system where everything is done with a minimum use of a computer. For every farm product you want to buy or sell, you have to appear physically at the market place on a specific day of the week. Most customers and farmers make long journeys to travel to market places and sometimes find the market filled up and sometimes queues outside so as to access the seller with some products which are in high demand and low supply. These farmers and buyers make long queues in the market, burning in the scorching sun or feeling cold outside for products which they are not sure they will get.

In the current system in place people have not embraced the use of new technology and social media advertisement[4] Most people nowadays spend most of their time online, specifically on social media, embracing social media advertising increases the number of target customers. A potential customer might be roaming on the social media platform and comes across a farm product being advertised and gets interest to buy it so he/she is able to log into the system and make an order, make payment and the product is shipped to the desired destination.

## 1.3 PROBLEM STATEMENT

The challenges encountered by the existing system serve as a major drawback to the realization of efficiency and seller and buyer satisfaction. The experience of walking to market places for customers and gathering all the products needed and for the farmers to transport their farm produce to the market it might be tiring and expensive.

Some of the problems occurred in the current system are: -

1. Expensive cost of transporting goods to the market by the farmers.
2. Customers being exploited by the middle man(brokers) who might double the price of the farm produce.
3. Cumbersome and tiring busy market places when customers are trying to locate and converge different products from different sections of the physical market.
4. Its time consuming since the sellers and buyers have to travel to the physical market place.
5. Due to low knowledge of customers about a new product in market, the product might go bad due to lack of customers and the owner will incur losses.
6. High chances of many perishables going bad due to enough preservation facilities in the open-air market.
7. Less demand of a certain product in the open-air market due to large production of the similar product hence farmers lack customers and sell in a throw away price and incur more losses.

## 1.4 OBJECTIVES

### 1.4.1 GENERAL OBJECTIVES

1. To improve and maximize the market scope of goods and service delivery between farmers and customer of farm produce through better applications of technology and increase on the user interface and experience.
2. To enable the **“*UptownFresh****”* farm produce sales company to stand out from all other competitors in the market and popularity to attract more farmers to sell us their farm produce and customers to buy from the industry.

### 1.4.2 SPECIAL OBJECTIVES

1. To save on time and increase the efficiency of the farmers(seller) and customers(buyers) to ensure they don’t get tired easily.
2. To enable customer to track the farm products available in the website at a certain period.
3. To enable the customers to have visual confirmation of the type of farm products availability and if the product is available to order and be delivered.
4. Eliminates brokers and increases the level of accuracy in finance management.

## 1.5 JUSTIFICATION

1. To reduce time wastage by eliminating the middle man.
2. The system will be user friendly and provide a high efficiency in the ordering of products
3. To increase job customer satisfaction by speeding up the buying and delivering process of goods once a customer places an order.

## 1.6 PROJECT SCOPE

The main aim of the project is to ensure simplicity and improve the efficiency of goods movement process for both the farmers and customers in need of the products. Local farmers will benefit from it since they will be able to have a ready market to sell their farm produce and make profits instead of going looking for customer in the physical market[5] It will also minimize the manual way of farmers taking their products to open air market and customers travelling long distances to come and buy preferred products. The project also focuses on ensuring time management and expenses of going to purchase manually in the open-air market.

The ecommerce system will be a web-based application whose main language of programming will be PHP 8.0, JAVA SCRIPT, HTML 5 and CSS. The database version will be MYSQL 5.7. Customers will have the ability to view available products uploaded by the admin and the HR will be able to manage all the customers, their orders and manage the entire system.

# CHAPTER 2

## 2.1 PROPOSED SYSTEM

***“UptownFresh”*** is the proposed system which will enable customers to register online and create accounts which enable them to make orders, purchase and make payments online and remotely. The customers details will be saved in the customers database details database. The admin will authenticate and validate the customers details before activating the customers’ account. He/she can deactivate a customer’s account when the account has suspicious activities, this is to secure the system from potential attacks since it has a financial sector which could fall prey to malicious attackers.

The system admin will get a detailed query of all the customers who log in and make orders through the website. From customers reviews about their customer service management the company and system administrator may get tips on how to improve the site’s efficiency, accuracy, responsiveness and security. The proposed system will have a section where customers will be able to search for a particular product if they don’t find in the products display, which will help them use the limited time to access the product and the customer save on energy used.

The system will also have a virtual shopping cart which will help the customers track the number of products to be purchased and also calculate the cost and even the shipping cost and give the total and final figure for the customer to pay online either through M-Pesa, PayPal or Bank. The system will also have fields for a customer to fill in the shipping details and address, the system can’t allow the customer to checkout and pay without filling in the shipping address This will ensure there is an efficient supply chain with clear logistics for exquisite service delivery to the customer.

The admin has the mandate and full control of the system and he/she is the only one who can upload the available products in the warehouse. He/she manages customer orders and will forward the order to the warehouse for shipping and logistics once the order has been validated and authenticated that the customer has paid the required amount.

## 2.2 FEASIBILITY STUDY

This study assesses the operational, technical and economic metrics of the proposed project. The feasibility study is intended to view the facts if it is worthy of proceeding to the analysis stage[6] From the system analyst perspective, feasibility analysis is the primary tool for recommending whether to proceed to the next phase or terminate the project.

## 2.3 TECHNICAL FEASIBILITY

This assessment is focused on gaining an understanding of the present technical resources of the organization and expanding the needs of the proposed system. It is an evaluation of the hardware and software and how it meets the needs of the proposed system. The systems project is considered technically feasible if the internal technical capability is sufficient to support the project requirements. Some of the essential questions that help in testing the technical feasibility are the following: -

1. Is the project feasible within the limits of current technology?
2. Is it a practical proposition?
3. Is it available within given resource constraints?
4. Does technology exist at all?
5. Does the required software and hardware exist?
6. Does the technology have the capacity to handle the solution?
7. Do we currently possess the necessary technology?

### 2.3.1 OPERATIONAL FEASIBILITY

Is the measure of how well the project will support the customers and the service provider during the operational phase. It is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed and implemented. Some of the essential questions that will help in testing the operation feasibility are the following: -

1. Is the system feasible to operate or not?
2. Could there be a reduction in cost or an increase in benefits?
3. Does the current mode of operation offer effective controls to protect against fraud and guarantee accuracy and security of data and information?
4. If the system is developed, will it be used?
5. Does it agree with the government regulations?
6. Will the proposed system really benefit the organization?
7. How will the end user feel about their role in the new system?

### 2.3.2 ECONOMIC FEASIBILITY

This assessment aims to determine the positive impact that the proposed system will provide to the organization. It mainly involves the cost benefits analysis and its mostly used for evaluating the effectiveness of a new proposed system. Possible questions to be raised are:

1. Is the system cost effective?
2. The cost of doing the full system study?
3. Do benefits outweigh the cost?
4. Estimated cost of the hardware?
5. Estimated cost of the software development?
6. Is the project possible given the resources constrains?
7. Cost for customer time to study and learn how to use the software?
8. Cost of packaged software/software development?
9. The cost of doing full system study?

### 2.3.3 SCHEDULE FEASIBILITY

Is the measure of how much time it will take to complete the project. Can the project be completed within a given period of time?

## 2.4 SYSTEM DESIGN AND ANALYSIS

The analysis specifies the system's objectives and constraints to which designers have to comply. The purpose of doing analysis is to transform the system’s major input into structured specification.

### 2.4.1 CONCEPTUAL FRAMEWORK

1.Customer login details

2. Admin login details

Inputs

1.Sign up

2.Login

3.View catalogue

4.Adding products to cart

5.Deleting products in cart

6.Check out from the cart

Make payment

Processes

1.customer profile

2.Admins Profile

3.Product catalogue

4.Order Report

Shipping details

Outputs

Figure1;

### 2.4.2 CONTEXT DIAGRAM

This is a brief structure which provides the environment in which a software system exists and helps in communicating about what lies outside the system boundary.

Admin

Customer

View System

Create Use, /edit and Delete

New customer

Order submission

View product catalogue

View product Details

Make payment

## 2.5 FUNCTIONAL REQUIREMENTS

They define functions and functionality within and from the software system and along with the data operated on by the functions. They focus mainly on what the system should do.

1. Register farmers and customers.
2. Login farmers and customers.
3. Updating information that is products that the farmers are selling.
4. Information validation
5. User authentication.
6. Administration control.
7. View products in the catalogue
8. Submit an order
9. Make payments

## 2.6 NON-FUNCTIONAL REQUIREMENTS

They address actions of the system other than the specific function it performs. They focus on how the system works or how the system should behave by providing its quality attributes. The aspects include system performance, cost and such general system characteristics such as reliability, security and portability.

The system will be of high performance with very high security features. The pages of the system are responsive and the entire system content can be contained in different screen size of different users hence making it easy and user friendly.

## 2.7 PERFORMANCE REQUIREMENTS

Since User Experience (UX) is critical to the success or failure of our system in the market and performance is UX, we should put a strict requirement on our system’s performance which includes: -

* 1. The system should support more than 50 users to checkout at the same time.
  2. The response time of HTTP interfaces should be less than 5 seconds.
  3. When the user requests data, the result shall be presented on the screen within no more than 5 seconds.

## 2.8 SECURITY REQUIREMENTS

User’s personal information like phone number and passwords should be encrypted before storing in databases. In this system Message-Digest hash function algorithm (MD 5 HASH) which is a type of cryptography protocol for digital signatures will be used to encrypt the log in passwords of the customers and of the admins.

## 2.9 SOFTWARE REQUIREMENTS ATTRIBUTES

1. The system should be available 24/7.
2. The server shall be capable of supporting an arbitrary number of available products, that is, no product uploaded by the admin shall be lost under any circumstances.
3. Operating system-Windows XP/Windows 7,8,10.
4. Technology used PhP, Java Script, HTML, CSS and Bootstrap.
5. Database- MYSQL.
6. Backup and Data Recovery Software.

## 2.10 HARDWARE REQUIREMENTS

1. **Processor:** Intel dual core or above
2. **Processor Speed:**1.0GHZ or above
3. **RAM:** 1 GB RAM or above
4. **Hard Disk:** 20 GB hard disk or above
5. Printer for printing reports
6. Uninterruptible power supply to ensure a constant access of data.
7. USB flash disk (At least 2GB)

## 2.11 SOFTWARE TESTING

Upon the completion of the development phase the system will be tested if it meets all the requirements it was designed for. This includes ensuring the customers are able to create and account, log in successfully, be able to view available products, add them to the cart and check out successfully and other functionalities.

## 2.12 SOFTWARE DEPLOYMENT

When the testing phase has been completed and the system approved that it meets all the requirements, then the deployment phase begins where is now released to the public for use. The system will be hosted online so that the potential customers can access it and make their purchases using the website.

# 

# CHAPTER 3

The final results of the whole project are to be able to come up with a system that will help the farmers to have a ready market and sell their products while still fresh to minimize losses after production.

The system will also help customers to easily buy the farm products at a cheaper price and minimizing time wastage and efforts of going to the physical open-air market to buy the products. It will also enable the company keep track of its financial status and be able to evaluate if it’s making profit or losses.

# CHAPTER 4

During the development of the system some of the challenges, obstacles and risks faced are: -

1. High cost of the hardware like the laptops
2. Expensive internet connectivity since I have to buy internet data bundles so as I can do research
3. Shortage of power during the system development.
4. Lack of enough information from the locals because of language barriers and uncooperative individuals.
5. Absence of enough man power to see through the completion of the software development.

# CHAPTER 5

## 5.1 SCHEDULING

The system is scheduled to be developed, designed, tested and deployed in a period of 9months. Within this time the system will be set for full functioning and deployment in the market.

## 5.2 BUDGETTING

The table below gives a brief summary of the total cost of the development and maintenance of the proposed system.

Table 1: Budget

|  |  |  |
| --- | --- | --- |
|  | **ITEM DESCRIPTION** | **AMOUNT (KSH)** |
| 1 | PHP SOFTWARE | FREE |
| 2 | LAPTOP/ DESKTOP | 60000 |
| 3 | DATA COLLECTION | 1000 |
| 4 | FLASH DISK | 500 |
| 5 | STATIONERY AND PRINTING | 400 |
| 6 | INTERNET AND HOSTING CHARGES | 100,000 per year |
| 7 | MISCELLANEOUS COST | 4000 |
|  | **TOTAL:** | **165,900/=** |

# CHAPTER 6

## 6.1 CONCLUSION

After a thorough analysis of the manual system, the problems identified could not be improved or reduced manually. It was therefore seen as necessary to introduce a new user-friendly computerized system. The analyst waits for the approval from the management to proceed with the project. Upon approval, it is now necessary to make careful planning for the resources needed, project duration and its feasibility therefore the next chapter.

## 6.2 FUTURE WORKS

The system will be basically be used in Kenyan region and future improvements will be made to accommodate international purchasing of products and shipping to other countries and continents. The system has only 2 users, that is the customer who their main work is to purchase and order good through the system and the second user is the system administrator whose work is to manage the whole system and its users.

Future improvements will be done to accommodate more user with different specified roles like registering farmers so that they can post their produce directly into the system without relying on the system administrator. We will also introduce more payment methods like paying using cards like the debit cards.

Since this is a web-based application system we will also come up with a mobile application for the same so that users who have mobile phones can also enjoy our services too.

## REFERENCES

[1] J. G. Beierlein, K. C. Schneeberger, and D. D. Osburn, *Principles of agribusiness management*. Waveland Press, 2013.

[2] D. K. Fisher, J. Norvell, S. Sonka, and M. J. Nelson, "Understanding technology adoption through system dynamics modeling: implications for agribusiness management," *The International Food and Agribusiness Management Review,* vol. 3, no. 3, pp. 281-296, 2000.

[3] W. Ma, C. Gan, P. Vatsa, W. Yang, and H. Zheng, "Factors affecting online shopping frequency: lessons from New Zealand," (in eng), *SN Bus Econ,* vol. 2, no. 6, p. 41, 2022, doi: 10.1007/s43546-022-00214-5.

[4] A. Semkin, A. Alpatov, E. Voronin, and K. Belyakova, "Areas of development strategy for the regional agribusiness management system," in *IOP Conference Series: Earth and Environmental Science*, 2019, vol. 403, no. 1: IOP Publishing, p. 012122.

[5] L. Dubé, P. Webb, N. K. Arora, and P. Pingali, "Agriculture, health, and wealth convergence: bridging traditional food systems and modern agribusiness solutions," (in eng), *Ann N Y Acad Sci,* vol. 1331, pp. 1-14, Dec 2014, doi: 10.1111/nyas.12602.

[6] C. A. Jennissen, S. Sweat, K. Wetjen, P. Hoogerwerf, and G. M. Denning, "Engaging Agribusinesses: Feasibility and Cost of an ATV Safety Poster Project," (in eng), *J Agromedicine,* vol. 22, no. 4, pp. 364-375, 2017, doi: 10.1080/1059924x.2017.1358228.