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**KENYA METHODIST UNIVERSITY**

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**DEPARTMENT OF COMPUTER SCIENCE**

**RESEARCH PROJECT PROPOSAL: BBIT 411**

**KAKUZI PLC MOBILE APPLICATION**

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**Submitted by Claire Nyarurii to Kenya Methodist University, in partial fulfillment of the requirements for the degree in Bachelor of Business Information Technology. Date of submission: 3rd December, 2019**

**Declaration by the Candidate**

This research project, which is my original work, has not been presented for a degree in any other University. No part of this research may be reproduced without the prior permission of the author and/or KEMU.

(Name and Signature)

Claire Nyarurii Wangui Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Declaration by the Supervisor**

This research project has been submitted for examination with our approval as University Supervisors.

1. Name of Supervisor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sign Date

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# CHAPTER ONE

# INTRODUCTION

1. **Background of the Study**

The original site of the current Kakuzi originates from land acquired by Donald Seth-Smith in 1906. Donald and his partners: Principal Packer and Lord Cranworth acquired land where the central location for this estate was Makuyu which remains the Head Office to this day.

Their products include; Hass Avocados, Meat, Poles, Macadamia nuts, Sisal products, Poles Coffee, Tea and Cattle. .Since local farmers grow avocados and macadamia nuts; the company purchases their produce for manufacturing or export. The company has selling their products locally and also exporting them over the years.

The first process is User Registration. Kakuzi PLC has a manual registration system where their suppliers have to be available physically at their offices for the registration can be done. The process can be tedious and also time consuming for the people travelling from all over the country just for a simple registration process which can be done in a couple of minutes.

Employee scheduling is another process. During the seasonal harvest, the regional supervisors are sent to different places for confirmation if the farmers will be selling their produce to Kakuzi. This process could take long since there are different places that need to be visited before the actual harvesting begins.

Farmers who sell their produce to Kakuzi are paid through M-Pesa and other Banking services. The disbursement of funds is done randomly in batches i.e. for the immediate payment and the bonus. An alert on when the funds are being deposited could be useful.

Kakuzi also sells their produce to the public. One has to visit their outlet in Kakuzi in search for something. Instead of going through this long process, shipping services can be offered at a fee to various regions of the country and thus the market will be wider and also it will increase the profits for the company.

Feedback to any organization is very crucial, be it Positive or Negative. Kakuzi uses the old-fashioned way of collecting feedback through anonymous letters/notes that are dropped in a box. The administration can be able to receive feedback and also know what to change to suit the customers’ preferences and also what’s good for the company.

Stock-in-Stock-out is another process that can be automated in order to make the process easier and faster. Stock in includes the procurement part where suppliers supply the industry with the products and stock out includes the sales where customers and interested premises buys the product from the company.

Currently, Kakuzi PLC has a web-based system. A mobile application will help the company to expand their market by selling their produce/ products and also buy produces from the farmers easily since they can access it at any time and place by login and requesting. The process described can easily be done using a mobile application.

## 1.1 Statement of the Problem

Ideally, online registration is way faster and easier thus most organizations have adopted online user registration. Kakuzi uses manual user registration where the customers have to be there physically for registration. This process can be tedious since the farmers have to travel and also queue in order to get registered. This process can be automated with using a mobile application and where the user can do the registration within minutes at the comfort of their home using a mobile application.

Organizations with a big number of staff need scheduling in order to easily assign duties for a smooth running in the organizations. Staff scheduling is done manually where the supervisors are sent in search for produce from the farmers. The process can be tedious and could also be time consuming. This process too can be incorporated in a mobile application where farmers who are willing to sell their produce to Kakuzi log in and book an appointment.

With the advancing technology, people prefer ordering goods online without making them go there physically to order and buy. Products and produces for Kakuzi are sold only on their outlets in Makuyu. Customers have to travel all the way in order to purchase these things. A mobile application should make it easy since the customers can order for goods and they can be delivered to various parts of the country at a fee.

Feedback is very important to organizations since it helps them know what to improve on their services and it also ensures customer satisfaction. Kakuzi PLC uses the anonymous boxes to collect feedback from their customers. Feedback can be collected through the mobile application where the customers can even rate the services offered, the products, the efficiency and also customer satisfactory.

Since the e-commerce business has really emerged, the generation of reports is also supposed to be automated to save time due to stiff competition in business industry. Stock management and recording the transactions between the firm and their customers is done manually. It is time consuming and generating reports even more difficult as they have to go over numerous files to calculate the amount of profit they have made over a long period of time which is cumbersome hence difficulty in generating reports. Generation of these reports will be easy while using an application. Also, there is no way of ensuring security of these files from unauthorized access.

## 1.2 Problem Justification

The proposed mobile application will allow new users to register easily, a process that will take them just a couple of minutes at the comfort of their home.

The proposed mobile application will allow the customer to view the products offered by the company, their prices and quantities so that they will be aware of what to buy. It will also help the customer view the product that they can sell to Kakuzi PLC for exportation. The proposed mobile application will show their main premises and exact location using famous landmarks so customers will be aware where to physically buy/ sell the goods.

The proposed mobile application will offer tips on how to grow/ maintain products while still at the farm and also provide tips on how to protect them from pests. It will also provide security for the records and personal information about the users of the system.

The proposed mobile application will allow customers to purchase goods and make payments online and the business to receive payments online hence eliminating the need to be physically there to purchase.

Record keeping of customers details will be kept in the application and not manually making it less tiring and saving time. Security of one’s information will be enhanced since each customer will have his or her own user name and a password

The mobile application will also provide means for monitoring the stock in and stock out.

The proposed mobile application will help their supplier’s book appointments for goods delivery and even request for the regional advisors when needed.

The proposed mobile application will help to improve the company since there is lesser time used since everything is done on the app and thus the administrators will be busy trying to improve the products. It will help the customers to be able to give feedback.

## 1.3 Objectives

### 1.3.1 General objective

* To develop a mobile application for Kakuzi PLC.

### 1.3.2 Specific Objectives

* To create a database module for storing customers details and information for Kakuzi PLC.
* To create an administration interface for Kakuzi PLC.
* To create a mobile interface for the Kakuzi PLC customers.
* To create a report generation module for Kakuzi PLC.

## 1.4 Scope

* **Database module:** It will store customer data and company’s data
* **Administrator module:** will approve customers’ accounts and be able to access data about transactions from the database.
* **Customer Module:** It will help capture and update the customer details.
* **Farmer Module:** Farmers will be able to log in and sell their produce to Kakuzi.
* **Supplier Module:** Will manage the stock.
* **Payment module:** Customers will make payments required for the products and also receive payment for their products through this module.
* **Help module:** this module will contain instruction for customers on how to use the application and create accounts.
* **Ordering module**: Help customers to make orders.
* **Shipping module:** will show the shipping cost and location where goods can be shipped to.
* **Stock module**; this module will show and monitor the stock in and stock out.
* **Advisory module:** This module will contain all the information necessary to grow quality crops and also help the farmers take care of their products.
* **Search module:** It will allow customers to search for specific products or information about the product and allow the administrator to look for specific information from the database.
* **Feedback module:** It will let the customers give feedback on their experiences with the center.
* **Reports module:** This module will be used to generate required reports from the database that will be useful to the administrator, will include records of transactions.

# CHAPTER TWO

# LITERATURE REVIEW

Mobile applications are rapidly raising segments of the international mobile market which has software that runs on a mobile device and performs certain tasks for the clients (Mobile Market Association, 2019). Mobile applications are used by many businesses to sell their goods and to save time and cost of some business processes. This has enabled businesses to reach out to new customers and maintain their own customers, thus eliminating the geographical limitations of selling products.

According to business daily Africa the emerging technology has led to massive increase of businesses and E-commerce has experienced unprecedented growth following the invention of the internet. The creation of business model where company conducts most of its business online has really increased these days. Indeed (Flick, 2015), there is little doubt that the internet has made it possible to start a global online business than it ever was to start a business before. While the e-commerce sector is still in the formative stages in Kenya, consumers are opening up online shopping and few online companies are already in operation in the country (kenyaplex.com)

According to Michael`s porter objectives which include competitive advantage, operational excellence, survival, improved decision making and increase customer and supplier intimacy from organization, Porter has explained the competitive advantage where every organizations goal is to achieve a sustainable competition where a firm can gain if it is able to create value for its buyers and by having a mobile application it will help maintain their custom.

Internet has greatly increased and many people own smartphones nowadays and thus are able to make business transactions wherever they are and thus organization that has e-commerce site develops mobile application to maintain and give customers interests (Criterion 2016).Organizations to cope with competition they must keep track of latest trends taking place since business daily Africa has shown that organizations which are more competitive are quick to adopt to any positive changes.

Mobile applications with help of internet have changed the food industry by offering better customer support and engagement and gone are the days where people queued to orders (Anurag, April 30, 2019). With the help of smartphones, IOS application development administrations and Android mobile application, mobile applications are accessed easily by anyone interested by just downloading the application in play store which every smartphone have.

Amazon.com is an E-commerce company which is a similar system because it deals with selling of their goods online and worldwide. It is the largest online shopping website in the world. It sells books and it has expanded the site to sell electronic, music, furniture and apparel. The domain Amazon.com attracted about 615 million customers every year (Amazon). The most popular feature of the website is the review system and clear user friendly advanced search facility which enables visitors to search for keywords in full text of many books in database (Amaritesh and Jayanta 2016). Users can also purchase and sell items using Amazon online marketplace system which brings the similarity with Kakuzi PLC mobile application which customers will buy goods online while suppliers supplies the goods. Amazon.com is a web application since a visitor is a consumer and users cannot change the information contained in it (Amin Yazdoni 2015 present) while Kakuzi PLC is a mobile application where visitors will be able to create information.

EBay is another E-commerce company similar to this system since it deals with online shopping and also users can purchase and sell items. EBay uses PayPal as its payment method and one just have to create a PayPal account to shop easily. Well in this application, is a mobile application where users can create information themselves unlike on eBay you can’t change any information you just fill the required parts.

Jumia being among the leading e-commerce company in the country ([www.jumia.co.ke](http://www.jumia.co.ke)) customers can order online and pick from any Aramex center across Kenya (Jumia). It is a mobile based and thus the same difference occurs but it does not work on weekends or public days which my application will be available any day and people can order or receive goods any day of the week bringing that advantage to try and cope with stiff competition. Jumia has three ways of payment being cash on Delivery which is simple and easy, credit or debit card and mobile money. This application will have one way of payment which is mobile money and customers after ordering will have to pay half of the money for assurance and to avoid cases like people denying of their order after delivering the goods which brings loss to the company.

MkulimaBora is a mobile application that offers a platform that creates a link between the farmer and the market (MkulimaBora). It helps the local farmers to sell the produce to suppliers and also to companies like Kakuzi. A high percentage of the harvests goes to waste since the farmer has no idea on where to sell their harvests. MkulimaBora application makes it easy for the farmer since they do not have to worry on where to sell their produce by creating a link between the farmers and the global and local market. A touch of such excellence will be incorporated to the Kakuzi to make it easy for the farmers who wish to sell their produce to Kakuzi PLC.

Similar Applications:

<www.amazon.com>

[www.jumia.co.ke](http://www.jumia.co.ke)

<www.mkulimabora.org>

[www.kilimall.co.ke](http://www.kilimall.co.ke)

[www.delmonte.com](http://www.delmonte.com)

# CHAPTER THREE

# RESEARCH METHODOLOGY

The waterfall methodology will be used to develop this proposed mobile application following the system development life cycle approach (SDLC).

**Problem Identification**

The problem to be solved is identified by interviewing the workers of the firm about the processes. The scope of the problem should be found out and solutions to the problems to be identified.

**Planning**

After identifying the problem, planning on how to achieve the solution takes place

**Feasibility Study**

This is a phase where the measure of how beneficial and practical the proposed project will be to the firm.

Feasibility study will contain the following;

1. Economic feasibility analysis: checking whether there are enough resources to develop and complete the proposed mobile application and the amount of money required.
2. Operational feasibility analysis: the study addresses whether the application satisfies its objectives as expected by the user.
3. Technical feasibility analysis: carried out to determine whether the technology required for this application is available or not and is done by specifying the equipment and software that will successfully satisfy the user requirements.
4. Schedule feasibility analysis: involves assessing the degrees to which the potential time frame and completion dates for all the major activities to be carried out while developing the application in order to meet deadlines.

**System Analysis**

1. User requirements are developed in this phase and developer gathers information from users on what the system should do.

2. System requirements: It is in this phase where all possible requirements for the development are gathered, tools and devices needed to come up with proposed mobile application.

**System Design**

In this phase ERDs, DFDs and Databases are obtained.

**System Development**

This involves coding, testing and debugging. Testing will be done for unit testing, integration and system testing.

**System Documentation**

Microsoft word is used to document the procedures involved in the system developed.

## 3.1 Project Resources

1. XAMPP for database creation and management.
2. Internet for research.
3. PHP for server side scripting.
4. Microsoft Word for documentation.
5. Microsoft PowerPoint for presentation.
6. Dreamweaver for coding
7. A computer with windows 10 operating system.

### 

### 3.1.1 Budget

|  |  |
| --- | --- |
| **ITEM TO USE IN PROPOSED APPLICATION** | **COST** |
| Printing | 300ksh |
| Binding | 250ksh |
| Flash Disk | 500ksh |
| 2 DVDs | 100ksh |
| Documentation | 600ksh |
| Miscellaneous expenses | 600ksh |
| **TOTAL** | **2,350ksh** |

### 3.1.2 Project Schedule

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MONTH | MILESTONE | | OCT | | | | NOV | | | | DEC | | | | JAN | | | | FEB | | | | MAR | | | | APRIL | | | |
| WEEKS |  | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| PROBLEM  IDENTIFICATION |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FEASIBILITY STUDY | STUDY FIELDS | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SYSTEM ANALYIS | SYSTEM/USER REQUIREMENTS | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SYSTEM DESIGN | ERD | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Database | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SYSTEM DEVELOPMENT | Coding | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Testing | Unit |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Integration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| System |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Debugging | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PRESENTATION | PROPOSAL | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FINAL PROJECT | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DOCUMENTATION |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SUPERVISION |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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