

**Dedan Kimathi University**

**Of Technology**

**DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY.**

**PROJECT PROPOSAL FOR DIPLOMA IN INFORMATION TECHNOLOGY**

BY

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**C131-01-0242/2022**

**AUTOMATED METBICS COMPANY LIMITED (ELECTRICAL SERVICES REPAIRS, INSTALLATION, PRODUCT SELLING AND ADVICE ON PPRODUCT)**

**SUPERVISED BY**

**MR.GATHONDU**

A project proposal submitted to the Department of Information Technology in the School of Computer Science and Information Technology in partial fulfillment of the requirements for the award of the Diploma in Information Technology, Dedan Kimathi University of Technology.

April 2023

# **DECLARATION**

I hereby declare that this project (Automated Metbics Company Limited) is my original work and has not by any means either published/ presented for any academic award to any school.

**Name:** Mwangi Beatrice Muthoni

**Signature:**

**Date:**

Department of Information Technology

School of Computer Science

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# **Approval**

This project has been submitted for examination with my approval as a University supervisor.

**Name:**

**Signature:**

**Date:**

# **DEDICATION**

I dedicate this work to God Almighty who has given me the wisdom, great fortune in my education and opportunity to do this project oriented work. Also to my dearest family for their endless support, being there for me at all times and financial support throughout the course. In spite of many challenges along the academic journey they have been a great pillar to me and thus has made my heart desires fulfilled.

# **ACKNOWLEDGEMENT**

To complete this proposal, I received immense support from a multitude of people to who I owe gratitude.

First is the Almighty God whose love, peace and mercy have taken me through my course and the proposal. Am sincerely grateful.

Secondly, is Dedan Kimathi University (department of Information Technology) for giving me an opportunity to study at the school, for the skills and knowledge gained and availing more resources like internet that I needed.

The valuable guidance I got is not taken for granted especially from our supervisor.

My sincere gratitude goes to Metbics Limited staff for their continued support during my data collection stage

Lastly, I thank my parents and friends who have supported me during the course of study, they have granted all their time, encouragement and financial support to pursue this course. Without their support I could not achieved what I have achieved by now.

# **ABSTRACT**

Electrification in Kenya has made our domestic and industrial life easy. Electrified home applications are in use since 50 % of our population is electrified. However many times poor installation, disconnections and at times dangerous connection due to under qualified personnel providing the services has caused a lot of losses and to some fatal cases. Low quality electronics which in turn causes losses to consumers and lack of trust to some brands.

This proposal is centered to give a remedy to these problems within Nyahururu area an later on it can spread to other counties in Kenya. The aim is to develop a website where customers can log in book our services either electronic repairs, installations, product purchasing or even get educated on best brands to use.

This will reduce hazards caused by poor installations and use of in quality goods for domestic and industrial use. Customers can reach out to us 24/7 and our services will be availed to them.

We shall deliver our services at an affordable price where customers shall receive a quotation of services provided and their payment. Payments will be done by mobile money. If a customer purchases our product, the product description will be provided that including the product brand it’s quality and the price per unit purchased and a warranty for the product. This will assure the customer the quality of our products.

Customer information will be stored in our databases which shall make it easy to retrieve hence eliminate bulk of paper work.

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# **CHAPTER 1: INTRODUCTION**

## **1.0 Introduction**

This project will be designed so as to be used by Metbic limited for their services (electronic services and advices, selling of electronics, installations and repair of electronics). It is a system through which customers can view the services Metbic limited offers, request our services, order our products or even ask for electronic advice from our qualified personnel.

## **1.1 Background**

Metbic limited is a company that was started in 2020 with the aim of bringing Excellency in electrical and telecommunication field. This includes electronic installation, repairs, selling and advising our customers. It’s a registered company that operates within Nyahururu area and the surrounding areas. It uses a network of independent technicians who are trained and certified by Metbic limited. It was started by Stephen Mwangi after completing his education in degree in electrical engineering. He formed a network of qualified engineers who were certified by metbics to assist in service providing in the area.

Since then, it has experienced increase in number of customers who request and book our services and technician personnel. Customers who wish to get our services or product move to our premises so as to get or request for them. Due to this, the company finds it viable for a web based system to be developed so that it can ease the paper work for booking, ordering, requesting of services and reduce the time wastage for the movement.

The web system will enable our customers to log in easily, view our services and product, request their preferred services, order our products which if they are within Nyahururu town area will be delivered for free or even ask for free advice from our personnel. This will make the compans work easier because entering and retrieving information will be made easy. With that monitoring the work of the limited will become easy and work will be efficient.

### **1.2 Problem Statement**

Metbic Limited is a company that offers electronic services (that is installations and repair), sells electronics and gives advice to potential customers within Nyahururu and the surrounding areas. It uses manual file systems to file, store, manipulate and retrieve data. This makes it’s working to be difficult in terms of data retrieval, slow and messy. Customers who need our services have to come to our premises so as to order, request or even book our services. Therefore there is need to develop a web based system that will allow our customers to access the electronic services we offer (installation and repairs), book them, order our products or even seek our advice by just login in from the comfort of their homes any time 24/7. The system will improve the work of management since retrieving and accessing information shall be made easy.

### **1.3 Goals**

Deliver quality electronics to our customers

Accessible any time anywhere

Make our customers to stay connected always

Provide quality electronic services beyond expectation

Provide quality assurance through our professional advices to our customers

Eliminate cash payment

### **1.4 Importance of the project**

The system shall enhance data consistence and easy generation of records, storage and retrieval of stored data ensuring data security

The system shall reduce management cost by reducing paper work time wastage

By the end of the project it will improve my web system development skills, knowledge

It shall also improve social behavior through the social interaction with people when trying to get the user requirements

### **1.5 Problems it will solve**

Physical customer movement to our premises to seek our services

Cash payments

Difficulty in data storing and retrieving

Customer movements to electronic shops to seek quality electronics since they shall be described

Disconnections within Nyahururu area

## **1.6 Objectives**

### **1.6.1 General objective**

To design an automated web based system that will enable customers to log in to access our services ay time anywhere.

### **1.6.2Specific objectives**

The system shall enable customers to log in easily

The system shall enable our customers to view and book our services, ask for advice or order our product

Once a service is ordered the system shall request the customer to key in their location so that Metbic can send their technicians

The system shall allow customers to see available products for sale, their cost and description

Once a service is paid for the system shall send a notification to customers

The system shall enable our customers to pay for services via mobile money

The system shall eliminate paper work since data shall be stored in database

The system shall enable customers to cancel anything easily

The system shall be easy to logout

### **1.7 The Scope of the Project**

The project shall be carried out within Metbic Limited and its operation area that is Nyahururu. It will concentrate on developing a web based platform for easing it’s operations of electronic servicing, electronic selling and reaching out to more potential customers who would need their services.

# **CHAPTER 2**

# **LITERATURE REVIEW**

## **2.0 Introduction**

The chapter shall review literature on related web based systems which shall be of relevance to the study

### **2.1.0 Web based systems**

Web based systems are online platforms that are easy to interact with for users and also administrators. A log in interface is designed where users fill in the required details to access the resources they need. With the advancement in technology organizations that want to grow and achieve a competitive environment so as to reach out more customers. This also brings about efficiency in day to day out of such organizations as it eliminates bulk of paper works involved in existing systems.

## **2.2 Case study 1: Icracked Company USA**

The company was founded in 2010 by Christopher Bohn and A.J. Forsythe, two college students who wanted to create a more convenient and affordable way for people to get their mobile devices repaired. The iCracked business model is based on a network of independent technicians, known as iTechs, who provide repair services to customers in their local areas.

Customers can book a repair appointment through the iCracked website or app, and the iTech will come to their location to perform the repair. The company offers a range of services, including screen repair, battery replacement, and water damage repair.

iCracked also offers support services, such as tech support and device protection plans, to help customers maintain their mobile devices and prevent future issues. The company uses online marketing channels, such as social media and email campaigns, to promote its services and reach new customers.

In 2017, iCracked partnered with Assurant, a leading provider of mobile device insurance, to offer its customers comprehensive protection plans for their mobile devices. The partnership helped to further expand the company's reach and establish it as a leader in the mobile device repair and support industry.

Overall, iCracked Limited is an example of an online electrical business that has successfully leveraged the power of technology to provide a convenient and affordable service to customers. By connecting customers with independent technicians through its online platform, the company has been able to grow its customer base and establish a strong reputation in the mobile device repair industry.

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## **2.3Case study 2: Handy Electricians**

Handy was founded in 2012 by Oisin Hanrahan and Umang Dua, two entrepreneurs who wanted to simplify the process of finding and hiring home service professionals. The company's platform connects customers with local electricians who have been vetted and certified by Handy.

To use the service, customers simply need to create an account on the Handy website or app, select the electrical service they require, and provide their location and availability. Handy then matches the customer with a qualified electrician in their area who can provide the service at a pre-agreed time and price.

Handy's online platform offers several benefits for both customers and electricians. Customers can easily book appointments at a time that suits them, without the need for lengthy phone calls or emails. Electricians, meanwhile, can use the platform to find new customers and manage their schedules more efficiently.

To promote its services, Handy uses a range of online marketing channels such as social media, Google AdWords, and email campaigns. The company also offers discounts and promotions to new customers to encourage them to try the service.

Overall, Handy is an example of an online electrical business that has successfully leveraged the power of technology to provide a convenient and reliable service to customers. By streamlining the process of finding and booking electrician services, the company has been able to grow its customer base and establish a strong reputation in the home services industry.

## **2.4 Case study: EGauge System LLC**

To promote its products, eGauge Systems LLC uses various online marketing channels such as Google AdWords, social media, and email campaigns. The company also participates in industry conferences and events to connect with potential customers and partners.

In addition to its energy monitoring system, eGauge Systems LLC offers customized solutions for solar power systems, electric vehicle charging stations, and other energy-related applications. The company prides itself on its ability to provide personalized support and consultation to help customers find the best solution for their specific needs.

Overall, eGauge Systems LLC is an example of a successful online electrical business that has leveraged the power of technology to provide innovative solutions to its customers. By offering a range of products and services through its online platform, the company has been able to expand its reach and serve customers all over the world.

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**CHAPTER 3**

# **METHODOLOGY**

## **3.0 Introduction**

This chapter focuses on techniques and tools that shall be used for research and development of the project. It contains of the research methods. The chapter also contains research about existing system, requirements specification and design tools that shall be used.

## **3.1 Data Collection Techniques**

These are techniques that shall be used to gather and generate information from Metbic Limited and also from their frequent customers.

### **3.1.1 Observation**

The method shall be used to witness how activities of the limited company’ are carried out and being a frequent customer, it will be easy to know the requirements for a better system by observing the constraints of the existing system. These constraints will help in making judgement of user requirements and this method shall be the main method for data collection and recording. Will help covering the area under study.

### **3.1.2Document Review**

Reviewed several documents from Metbic Limited, internet and journals on development of web based system

### **3.1.3 Interviews and discussions**

Interviews shall be conducted to Metbic staffs and customers face to face. The merits and demerits of manual systems shall be discussed.

### 

### **3.1.4 Use of questionnaires**

Both closed and open ended questionnaires shall be distributed to staff and frequent customers.

Since the population to be questioned is quite large, it shall be assumed that the questioned population shall be the true representation of the feeling, opinions and experiences of the whole population. Random sampling shall be used for questionnaires.

### **3.1.5 Shortcomings of the methodology used**

Since the population to be questioned is quite large, it shall be assumed that the questioned population shall be the true representation of the feeling, opinions and experiences of the whole population. Random sampling shall be used for questionnaire.

## **3.2 Data Sources**

Data shall be gathered from both primary and secondary sources. Primary data shall be collected from respondents and secondary data shall be from reading from the Internet, textbooks and other documents.

### **3.2.1The Primary Data**

Shall be basically from the staff, the management of Metbic limited especially those who were involved in data collection, those who receive requests and orders, frequent customers

### **3.2.2 Secondary Data**

Shall be from obtained through reviewing literature of already published information from the internet, journals

## **3.3 Data Presentation and research designs**

Data shall be represented using conceptual table framework designs and research shall use logical designs to come up with the actual design of the system

## **3.4 System requirements and analysis of specification**

### **3.4.1 User requirements**

This shall involve the identification and analysis of the end users requirements through generation of information by conducting survey on customers of Metbic limited

**3.4.2 System requirements**

This shall involve finding out the nature and capacity of hardware and software requirements and tools required for the entire development of automated Metbic limited

## **3.5 System development methodology**

I will use waterfall method to design the final system-water fall method is a plan driven approach for coming up with system

### **3.5.1Stages of waterfall**

The Waterfall model is a sequential software development model that follows a linear and sequential approach, where each stage of development must be completed before moving on to the next one. The stages of the Waterfall model are as follows:

Requirements gathering and analysis: This stage involves gathering and analyzing the requirements of the system or software to be developed. It includes identifying the user's needs and expectations, defining the project scope, and determining the feasibility of the project.

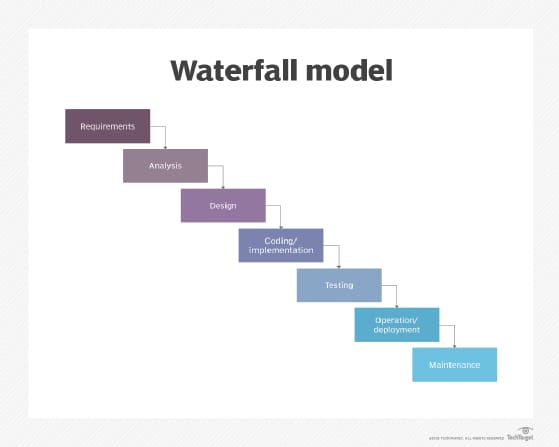
System design: In this stage, the system architecture and design are developed based on the requirements gathered in the previous stage. The design includes the software's functional and non-functional specifications, such as hardware requirements, software components, data structures, and interfaces. The challenges experienced in the current system.

Implementation: In this stage, the software development team develops the software based on the design specifications. This stage involves writing the code, testing it, and debugging any errors that arise.

Testing: Once the software is developed, it undergoes testing to ensure that it meets the specified requirements. This stage includes unit testing, integration testing, system testing, and acceptance testing.

Deployment: In this stage, the software is deployed to the production environment. This stage involves preparing the software for release, installing it on the user's system, and providing necessary user training.

Maintenance: Once the software is deployed, it requires ongoing maintenance and support. This stage includes bug fixes, updates, and enhancements to the software based on user feedback and changing requirements.



### **3.5.2 Software and hardware requirements**

Laptop

Flash disk to transfer and keep back up

MySQL-for managing database

HTML for developing the website

Windows 10/11

Internet connection

Printer-to print