# CHAPTER ONE

**INTRODUCTION**

## Background of the study

Communication in any organization, firm, enterprise etc. whether it is a school, bank or any other sector that involves a head and its subordinates, is not just vital but essential and an integral part of the success of that organization. However, we can deduce the fact that not all methods and process of communication is effective.

The world is ever evolving, experiencing a sudden change from doing things manually to getting things done digitally with modern devices and technologies such as Artificial intelligence, data science, neural networks, IOT, web technologies, programming languages etc. Awotokun, K. (2004). In Nigeria, generally, communication which is the very core of the success of any organization is still done manually, thus hampering the overall growth of the organization.

Most organizations in Nigeria, even with the advancement of technology, still rely manually when it comes to communication, we are referring to creating projects, assigning tasks, disseminating information from the head of the organization to its staffs. Over the last few years, the use of modern techniques should be employed for the purposes of communication within an organization at local and international level.

The term ‘Messaging App for Organizations’ is not a new concept, messaging app is used in schools, banks, amongst workers, churches etc. but in this case, what we mean is, the messaging app ***will be used for collaboration amongst the head of an organization and its staffs, to assign tasks, create projects and notify staffs of updates and news via a web driven application***. It is an app that will be used for the sole purpose of collaboration, not just chatting with co-workers or staffs. In this system people who have an ID (a fundamental requirement in that particular system), can login with it and be part of the online collaboration.

Technology is changing everything we know, replacing old systems with new methods that will make a work to be done seamlessly. Therefore, systems should hinge on how technology has made communication to be done effectively, saving time and making the communication process easy.

In every messaging app, there is a database which is maintained, in which all the names of the users with their respective complete information is stored. In “Messaging App for Organizations” a user can be part of the collaboration process without any difficulty, or be physically present when it’s done. Staffs have to be registered before they can use the app.

The registration is done by the staffs themselves, but will be secure because before one registers, he/she will have done their *NACOSS Identification* and the ID will be used to uniquely identify a staff from another as the registration form is filled. After registration, the staff will be able to login and be part of the collaboration process. If invalid/wrong details are submitted, then the staff will not be registered.

## Statement of the problem

After critically perusing the old system of communication, here are some of the problems inherent in it;

1. Expensive and Time consuming
2. Too much paper work and errors during data entry
3. Loss of registration forms
4. Physically not able to attend a meeting because of an emergency
5. All staffs are not on the same comprehension level, so understanding a message will not be done collectively, thus bearing inefficiency in carrying out the work

## Aims and objectives

This research work aims to achieve the following:

1. Staffs whether present or not will be able to get the briefing of the meeting
2. Staffs can attend meeting anywhere, anytime, since its online
3. Build a system where staffs can contribute ideas
4. To develop a secure means for staffs to communicate
5. To improve on the drawbacks experienced in the manual system
6. To encourage and establish the use of modern technologies in Nigeria

## Scope of the study

This research work proposes a messaging app which will be used for the purpose of collaboration that will be applicable between the Head of Department and Academic staffs in the department of Computer Science, Kenule Beeson Saro-Wiwa Polytechnic. The app will be used for creating projects, assigning tasks and sending notifications.

## Significance of the study

The messaging app makes it easy for collaboration among the H.O.D and the staffs anytime, anywhere and with any device. It also ensures a 24/7 access to effective communication. One of the important significance, is that, the system is not location bound, any staff can register and collaborate, meetings can be scheduled online too. It will to a greater percentage be able to quickly notify staffs in terms of meeting a deadline, sudden meetings and important updates etc.

## Research methodology

The method used in carrying out this research work was analytical; analytical, because the old manual communication system was analyzed and also juxtaposed with some existing Online Messaging App. During this processes, the correlations and the exceptions were drafted out and used as a knowledge based in the design of the new system. Also some field data was taken for my requirement engineering.

## Definition of terms

1. **Collaboration:**
2. **Online Messaging:**
3. **Web Application:**
4. **Database:**
5. **System:**

YOU CAN ADD MORE AND THEIR DEFINITIONS

# CHAPTER TWO

**LITERATURE REVIEW**

## Preamble

## Messaging Process

## Manual Method of Messaging

## A New Proposed System – Online Messaging

### Online Messaging

### Advantages of Online Messaging system

### Disadvantages of Online Messaging App

### Review of Related Work

FIND MATERIALS OF THE ABOVE SUB TOPICS AND FIT THEM ACCORDINGLY. I HAVE MADE IT EASY FOR YOU, SO YOU CAN STREAM LINE YOUR RESEARCH. THANKS BRO

# CHAPTER THREE

**ANALYSIS AND DESIGN**

## Methodology

A methodology is a model, which project managers employ for the design, planning, implementation and achievement of their project objectives.

There are certain methodologies available depending on the software development environment, the requirements of the user, the nature of the software being developed etc. Some of the methodologies are as follows:

1. Structured System Analysis and Design
2. Object Oriented
3. Rapid Prototyping, etc.

But the one applied here is object oriented.

### Object Oriented

In object oriented design methodology, the whole project is structured into small, well defined modules. Object oriented also specifies the modules and the modules contains classes of different objects and these objects interacts with each other. In developing aspect, programs are broken into functions and subroutines and there is always a single entry point and a single exist point into and from each function and subroutine. In Software Engineering, they are interrelated modules that can be segmented, which when combined, forms the whole system.

Most of the research done using this methodology, usually consists of the following stages;

1. Requirement Analysis
2. Domain Analysis
3. Specification
4. Implementation
5. Testing (Alpha and Beta Testing)
6. Documenting
7. Deployment
8. Software Training and Support
9. Maintenance and Bug Tracking System

Object oriented methodology was chosen because most high quality systems are most often done by this methodology and its method separates the logical aspects from the physical aspect of the system and it goes with well-defined techniques and documentation. And above all, the user involvement of the method gives more room for both the user and the developer to have a better understanding of the proposed system.

However, whatever with advantages also goes with disadvantages: The size of the object model is a hindrance to using it in some circumstances. There is an investment in cost and time in training people to use the techniques. The learning curve can be considerable if the full method is used, as not only are there several modeling techniques to come to terms with, but there are also a lot of standards for the preparation and presentation of documents.

## ANALYSIS

### Analysis of the existing system

Collaboration in organizations in Nigeria is done still done manually despite the increase of technology in the world today. The process in Nigeria is mainly divided into 3 main parts;

**Registration:** The first stage involves the staff registering his/her details to the database via a web based form. But how can we be certain a particular staff belongs to the NACOSS department? The registration will make use of a **Staff ID**, uniquely distinguishing one staff from another.

**Login:** The next stage is when the staff login with their username and password into the app. The system checks if the login details presented are valid, if valid, the staff will be given access to use the app, otherwise they will be asked to input the correct login details.

**Participate:** This is the last phase. After a staff has logged in, he or she can now be part of the collaboration phase, in which they can contribute to ideas, check tasks and projects assigned to them.

In the manual system, the communication files are stored in a file cabinet and in a specific location. Each time the documents are needed, a search operation (***deterministic or probabilistic***), will be made to get a particular result. This will make it time consuming and ineffective.

### Problems of the existing system

Manual system of operation faces a lot of problems which includes:

* Expensive and Time consuming
* Too much paper work and errors during data entry
* Loss of registration forms
* Physically not able to attend a meeting because of an emergency
* All staffs are not on the same comprehension level, so understanding a message will not be done collectively, thus bearing inefficiency in carrying out the work

### Analysis of the new system

The new system is designed to solve problems affecting the manual system in use. It is design to be used online thereby relieving both the staffs and those in charge of the collaboration process from much stress as experienced in the manual system.

The proposed system will also have some other feature like:

* Accuracy in the handling of data.
* Direct capture of Staffs register
* Error free processing of data
* Checks double collaboration assignments
* Detects double registration
* Transparency

### Input, process and output analysis

* **Input Analysis:** The input to the system is the collection of staff’s information. The details of the staff’s data especially age, name, emails etc.
* **Process Analysis:** The information gathered was processed into a more meaningful format for entry into the system. The staff’s registration ID is stored in the database for use during collaboration.
* **Output Analysis:** The output from the system designed, is generated from the system inputs. More of the output generated will be on the staff’s dashboard, the details of the staff and the operation that can be performed by the user.

## Design

System design is the process of defining the architecture components, modules, interfaces, and data for a system to satisfy specific requirement. It is the application of systems theory to product development. There is some overlap with the disciplines of system analysis, system architecture and system engineering.

The physical portion of system design is broken down into three parts namely:

* User interface Design.
* User Experience Design
* Data design
* Process design

**User Interface Design:** This has to do with how the staffs uses the system in terms of visuals, especially receiving and interpreting easily the things pertaining to the application.

**User Experience Design:** This has to do with the overall satisfaction the user gets when and during using the application.

**Data Design:** Data design has to do with how data are represented and stored within the system.

**Process Design:** This has to do with how data moves through the system and with how it is validated, secured, transformed as it flows into, through and out of the system.

### Database Design:

**Online Messaging App Database:**

Table .. Showing the Online Messaging App

|  |  |  |
| --- | --- | --- |
| **S/N** | **Table Name** | **Type** |
| **1** | ***Nacoss Staffs*** | ***InnoDB*** |
| **2** | ***Admin*** | ***InnoDB*** |
| **3** | ***Users*** | ***InnoDB*** |
| **4** | ***Chats*** | ***InnoDB*** |
| **5** | ***Projects*** | ***InnoDB*** |
| **6** | ***Tasks*** | ***InnoDB*** |
| **7** | ***Notification*** | ***InnoDB*** |
| **8** | ***Subscription*** | ***InnoDB*** |

**Nacoss Staffs Table:**

Table . Showing the Nacoss Staffs Table

**Admin Table:**

Table . Showing the Admin Table

**User Table:**

Table . Showing the User Table

**Chats Table:**

Table . Showing the Chats Table

**Projects Table:**

Table 3.6 Showing the Projects Table

**Notification Table:**

Table 3.7 Showing the Notification Table

**Subscription Table:**

Table 3.5 Showing the Subscription Table

### Class Diagram

A class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects. The diagram below describes how different classes in Online Messaging App relate with each other.

Figure . Showing the Class Diagram for the Online Messaging App

### Use Case

A use case diagram at its simplest, is a representation of a user's interaction with the system that shows the relationship between the users and the operation that could happen.

Figure . Showing the Use case for the Online Messaging App

### Gantt Chart:

This provides a standard format for displaying the ***project* *schedule*** by listing the project activities and their corresponding starts and finish dates in a calendar format. The Gantt Chart for the Online Messaging App is displayed below.

Figure . Showing the Gantt Chart of the Online Messaging App

# CHAPTER FOUR

**IMPLEMENTATION AND DISCUSSION OF RESULT**

## Reason and Choice of Language

The Messaging App for Enterprise, is a Web Application. The researcher, in the course of developing the messaging app, used PHP as the core backend language. Other languages used are;

**HTML:** This is the language of the web. It stands for Hypertext Markup Language. It is not a programming language, but a markup language, this means the HTML is used to ***‘mark up’*** a text document with tags that tells a web browser how to display it.

**CSS:** An acronym for Cascading Style Sheet. This is used to style the hypertext documents to give it a better ‘feel’. The CSS that was applied here is ***Bootstrap***. It can control a layout of multiple webpages at once.

**PHP:** This is a server side scripting language, it tool used for making dynamic and interactive web pages.

The reason for using these languages to create the web app is that, since it’s an online system, it has to involve the web (html), and it has to have a good UI (css) and the system has to be interactive with the user and store, retrieve and manipulate information in the database (php).

## Tools and Components Used

The following tools and components were used in the design of the Online Messaging App

**Xampp:** [*phpmyadmin*] – A tool used to create the database

**Mobirise:** [*www.mobirise.com*] - A software used for designing the webpages

**Visual Studio Code:** A powerful text editor used to write the codes.

**Bootstrap** [*bootstrap.min*]: A styling framework to beautify web pages

**Mozilla Firefox:** A powerful and integrative web browser for testing the system

**MySQL:** This is used to for interacting with the database

**Apache:** This component acts as the local server for the system

## Documentation

This is used to guide the user on how the system operates, it is divided into 2 parts namely:

### Functional Requirements

The system must have a platform where the Head of a Department can collaborate with staffs in order to assign tasks and create projects and send notifications as well.

### Technical Requirements

Implementation of this system can be carried out on any device accessible to the internet; the architecture of the hardware on which it is to run may not really matter, but access will be given based on registration as a staff in NACOSS Department.

## Discussion of Results:

This system produces solution to the issues observed in the existing system. With collaboration now done via a messaging app, tasks and project can now be distributed and carried out efficiently.

## Source Code

(Refer to Appendix A)

## Sample Outputs

(Refer to Appendix B)

# CHAPTER 5

**SUMMARY**, **CONCLUSION AND RECOMMENDATIONS**

## Summary:

The research work was able to do the following

1. Replace the error prone manual system with the new Online Messaging App
2. Data are now processed with great speed and efficiency
3. Staffs can now easily participate
4. Meetings are done remotely
5. Dissemination of information is now effective

However, some constraints were experienced in the building of the Online Messaging APP, some include;

1. Time factor
2. Financial issues
3. Regulatory issues.
4. Schedule deadline and
5. Ineffective Technical ‘knowhow’, like integrating video calls and meetings with more recent web languages

## Conclusion

The Online Messaging App has been implemented and seen to be working fine, but will be further improved. Despite the limitations listed above, the system was able to accomplish the following;

1. Reduce Time
2. Less Paper work
3. Traveling to attend meetings will be stopped
4. Increased efficiency
5. Having a complete record
6. Better system of tracking staffs’ activities in handling tasks and projects.

## Recommendation:

This research work is limited to Online Messaging APPs and their related systems (school elections, organization, churches, etc.). However, this is just the first version of the system, it can be improved upon to make the system more effective some modules recommended in this research work are

1. Introducing video chats
2. Retrieval of lost or misplaced staffs’ ID
3. Downloading and printing of tasks, projects and notification
4. Expanding the features of the collaboration app, like personal chats etc.

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**APPENDIX A**

**SOURCE CODE**

**APPENDIX B**

**SAMPLE OUPUT**