**CHAPTER ONE**

**INTRODUCTION**

* 1. **Background of the study**

From the evolution of man, it has been an essential needs for man to communication with one another without much stress and the purpose of communication should be met, be it for business, social, formal purpose e.t.c . From the history of time, man has been searching for a better way and fast means of communicate, convey information or message, and influence others, which brings to play the existence of computer, network, internet, cell tower, application packages, software’s such as mobile apps etc.

Today there are several communication systems which allows for quick and efficient communication. There are fixed wire networks, such as the telephone network, several mobile networks, satellite networks and the Internet. In addition to these networks, there are more simple systems such as walkie-talkies, which allow for two-way wireless voice communication over shorter distances. Compared to the networks mentioned, Walkie-Talkies have a more limited use, but at the same time does not require any sort of infrastructure.

The need for communication cannot be underestimated, as the society is becoming more advance in terms of technology and trying to create a better and faster means of transmitting message from one location to another. Even though as the world is becoming a global tech village , there are still some disruptive events or barriers in communication such as low signal, lack of cell tower , high traffic signal network, high cost of network infrastructure, cell tower breakdown/damage, users face issues with high or exorbitant prices for data plans or bundle in order to gain access to the internet, lack of internet facility. Sometimes due to poor internet connectivity, messages don’t get to their destinations. Also, even if there isn’t a breakdown in the network connectivity, users face issues with high or exorbitant prices for data plans or bundle in order to gain access to the internet. Also, there are situations where the cell towers, base stations are good but because the closest ones to a location is far away or isolated from the location, the signal strength is very poor, a network ping cannot be made. Thus, GPRS, EDGE,2G,3G,4G, LTE connections cannot be established. In addition, due to high cost of setting up and maintenances of these internet infrastructures and facilities­­, users of these mediums are charged highly to get access to internet. This basically means if I cannot afford to pay such amount of money for internet access, I cannot gain access to the internet.

Sometimes there are limitation to mobile telephone-based station and satellite telephone in terms of response time and access time. The need to create a complement to existing communication channel which lead to developing an app which treat each smartphone as a router, passing data from one node(phone) to the next in sending messages to the recipient via the most efficient pathway. The messages are encrypted, which simply means the recipient has the only access to the information. The mobile app makes it possible to chat on the smartphone without a data plan or network through peer-to-peer networking technology and ‘store and forward’ capabilities. It transmits messages from phone to phone (which have the app installed) until the messages reach the intended recipient. The app transmits messages by Bluetooth and WiFi radios installed in a smartphone.

* 1. **Statement of Problem**

In order to initiate successful and complete communication over the internet, cell towers and base stations must be involved. In emergencies such as natural disasters, where people’s communication is high priority for survival, but due to dilapidated internet infrastructures during disasters such communications cannot be initiated over the internet.

In the case of slow networks, sometimes, it takes forever to download some files from the internet due to more traffic on the network, poor or bad network connectivity. Messages are sent, hoping it would be delivered, but it never does .Imagine the amount of times one can put into productivity that are wasted on waiting for the internet to deliver a message, send a mail, or even a simple SOS.

* 1. **Aim and Objectives**

The aim of this study is to develop an android application that will address the issue of needing to communicate with base station in order to communicate with people and this process would be carried out by knowing and understanding the weaknesses and strength of the present communication technologies and find out the best possible solution to solve the above stated problem and to study and understand the selected communication technology.

The objectives of this study are listed below:

1. To develop an application that would implement best communication technology to combat the above stated problem.
2. To develop an application that has a simple and user-friendly interface to send messages.
3. To make the means of communication painlessly easy.

**1.4 Significance of Study**

* **Less Expensive than Traditional Networks:** Using fewer wires means it costs less to set up the wireless mesh network. The wireless mesh network is used particularly for large areas of coverage. Using wireless mesh networks eliminate the cost and complexity of installing fiber / wires between buildings, on campus grounds and business parks.
* **Adaptable and expandable:** Wireless Mesh is very useful for areas where there is lack of sight or where network configurations are intermittently blocked. An example of an area as this would be an amusement park where a Ferris wheel may occasionally block the signal from the wireless access point. With wireless mesh, adding more wireless mesh nodes will adjust to find a clear signal.
* **Support High Demand:** Wireless Mesh Networks deliver both indoor and outdoor connectivity. Wireless Mesh is an instant, complete solution for covering large areas without sacrificing quality of the wireless network. Wireless Mesh Networks are a reliable source of wireless connectivity for a variety of public safety applications, parking garages, campus grounds, schools, business parks, and other large outdoor facilities.
* **Reliable and dependable:** this means that irrespective of conditions e.g natural disasters, rainy season, e.t.c, communications can be made and established. Thus, there can be exchange of messages.
  1. **Scope of Study**

Every research usually has a scope and limitation. This research work covers the department of computer science Yabatech. The choice of the study area was based on the moderation level of connection between each node(devices) , which was develop base on connectivity between nodes without the use of a base station or cell tower to enable sharing of resource.

**1.6 Proposed Methodology**

This work is to be done by carrying out investigations to determine the needs of users using the methods

* Interviewing everyday users of the normal internet.
* Questionnaires.

**1.7 Definition of Terms**

**Network**: Is define as a group of two or more computer devices links together for the purpose of sharing resources.

**Topography**: Is define as the topological structure of network and may be physical or logically.

**Wireless:** This is a type of network that are not connected by the use of cable of any kind.

**Software Application:** Is any program or series of programs that is designed to carry out a specify task for the end user

**Connectivity:** is define as a state of being connected or interconnected to a network.