**CHAPTER ONE**

**INTRODUCTION**

**1.1 Background of Study**

Travel is by its very nature mobile, and “going mobile” is currently considered by many travel specialists as a central part of travel agents’ strategy for growth, even a do-or-die decision for travel industry (Abacus, 2008). In recent times, a number of handheld mobile communications devices have taken prominence with a significant impact on global business operations. This is evident in the convenience and ease of service delivery customers are provided in examples of successful implementation of mobile communications in businesses. For instance, mobile banking applications provide useful information to bank customers such as: access to users account, current bank balance, un-cleared balances, payment of utility bills and effecting transfers between accounts (Oloyede and Adeyemo, 2006).

Significant change has come in the Nigeria Airline industry together with the advancement in technologies. Information technology generates fundamental changes in the nature and application of technology in business. Information Communication Technologies (ICTs) can provide powerful strategic and tactical tools for organizations, which, if properly applied and used, could bring great advantages in promoting and strengthening their competitiveness. To meet requirements in the business efficiently, many airlines are exploring ways to use their IT infrastructures to transform their companies into more agile, profitable businesses. (Ekelhart and Manhoot, 2008).

The flight ticket reservation method has better organization of information for better retrieval with mobile airline reservation system. All relevant data can be managed and well-organized using the system. Data stored in the database accordingly. Thus, users can make a clear view on any traveling details of the operators as they wish without any problem. (Hens, 2006). Mobile applications are becoming inevitable in day-to-day activities of the people. It has become part of daily living for several people, something one cannot do without in all facets of economic growth of any country in the world. This is evident in the convenience and ease of service delivery customers are provided with. To succinctly examine the potential benefits of Mobile Airline Reservation System, this work looks into existing process of seat reservation in the Nigerian Aviation Industry and explains potential benefits and widespread adoption of the system. This project models an effective reservation system implementation with real time mobile access using speech to text technique, this will eventually save time, cost, and other risks in airline reservation.

* 1. **Statement of the Problem**

Mobile devices are fast becoming the place where numerous technologies meet and create applications that are useful for both consumers and businesses across the globe. Nigerian Airlines have had launched web based reservation system which is mainly used by its international customers than local customers. The growth of mobile technologies in an alarming rate has forced many service provider institutions to recognize the importance of delivering content and services to users through their mobile devices. The importance is even more relevant in the airline industry. A Mobile based service will encourage users as using mobiles to get services is more convenient than any other ways. As for Nigerian Airlines enabling users get access to its services from their mobile phone with the speech-to-text functionality will allow its customers get service more easily than before. The goal of this project is to expose Nigerian Airlines’ reservation services for mobile user passengers with minimum cost, in a short time using easy to use technologies.

* 1. **Aim and Objectives**

The aim of this project is to design and implement mobile speech enabled airline reservation system. The objectives are to:

1. design mobile speech enabled airline reservation system
2. Implement the designed mobile application software
3. Evaluate the developed mobile application software for efficiency.
   1. **Significance of Study**

Implementing a mobile business model can increase the level of personalization of a company’s business relations, which in turn creates new possibilities of customer segmentation. This mobile business model is generally deployed in form of mobile applications which integrate existing internet technology with the competitive edge of mobile technology making it possible to have access to information anytime, anywhere.

With Mobile Airline Reservation system, passengers can be tracked on purchasing preferences and with this, special flight packages for existing passengers can be promoted. Passengers’ reservations patterns can also be used to determine the marketable flight and then try to provide more flights and services to fulfill the high demand. Besides, reservation system is also capable of increasing passengers’ loyalty and satisfaction by providing good reservation and services. Traditional paper reservation records have many drawbacks like incomplete, torn, worn, misplaced, or loss of records. It also require a lot of storage space in addition to requiring extensive administrative time from user. With the implementation of this new proposed system, cost and time required is minimal. However, there will be increase at the rate in which people reserve seats because there will be no more queue at the airline checking desk. All that will be required is to get bar-coded message to the port of entry for confirmation and get on the plane. Thus, giving satisfaction and better convenience to passengers.

* 1. **Methodology**

The methodology employed in this work is by the use of mobile app development programming tools for the coding of the features from scratch. The whole project is divided into six phases in order with each of the project phase is to be executed:

• Phase 1 (Requirement Engineering): This phase involved the gathering of required information from the public; sampling the opinions stake holders in the airline and I.T industries. This phase helped in getting various information that gave insight into what area of the project to give more of rapt attention to; when compared to the existing airline reservation applications currently being used by some airline operators in developing nations such as Nigeria. Various methods were applied in gathering of the information ranging from questions, interviews etc. A review of previous literatures that have relevance with the thesis work was conducted. From the literature, different concepts and methodologies were adopted as deemed necessary.

• Phase 2 (System Design): Here, the gathering of software tools and other necessary materials that are relevant were done. The materials are Android Studio IDE, Java 2 Mobile Edition (J2ME), different mobile simulators, etc.The result of the analysis and the specification from phase one alongside the modern conceptual tools were used to design the speech enabled airline reservation system. This specifies the data flow diagram, the entity relational diagrams, the database schema, the modules and the processes for each model. It also shows the layout of the tables and documents the data dictionary of the system.

• Phase 3 (System Coding): This phase deals with programming of the mobile application using Java programming language and SQLite for database management.

• Phase 4 (System Implementation): This phase involves installing the software on an android mobile phone and test running it among the students of Computer Science of Adeleke University. Android enabled phones of different capacities are to be selected to widen the depth of the application testing.

• Phase 5 (System Testing): This phase involves testing each module that has been developed, to see if the desired functionalities have been properly programmed. Every bug noticed to be reported and corrected.

• Phase 6 (System Maintenance): This phase involved correction of bugs and improvement upon the already developed system to increase its usability and functionalities.

**1.6 Scope of Study**

This project entails the design and implementation of speech enabled airline reservation application software. The software is limited to mobile use on android operating system. The application was coded from scratch using android studio. This project work seeks to promptly examine the potential benefits of Mobile Airline Reservation System, and look into existing process of seat reservation in the Nigerian Aviation Industry and explain the potential benefits and widespread adoption of the proposed.

* 1. **Limitations of Study**

This speech enabled mobile application is to be restricted to android platform alone. That means it can only be used on android-enabled phones. Other limitations during the course of writing this project are;

1. Financial difficulties**:** Lack of financial backing posed a problem to the study which hindered the researcher from traveling to different states of the Nation where there are airline companies in order to get needed information from the necessary quarters.
2. Time Constraint**:** The time was a problem as the time allocated for the research was not enough to undergo a comprehensive implementation of a robust mobile application as it should have been.
3. Inadequate materials: This was another constraint as the researchers was unable to execute the work more effectively due to the paucity of need materials such as journals, newspaper, seminars etc. from the school library.

**1.8 Organization of Thesis**

The remainder of this project work is divided into five chapters as follows:

• Chapter Two: In chapter two, relevant literatures on past works on airline reservation system and speech recognition system to be intensively reviewed. This done in order to perfectly understand the full concepts behind the airline reservation exercise in general as well as the technologies behind mobile application development, and the inclusion of speech-to-text functionality. The chapter also contained a brief overview of the tools used in the implementation of the system.

• Chapter Three: This chapter carefully explains the procedure followed in the implementation (the design and development) of the speech enabled application software. Entity relational diagrams, flowchart and analysis of the mobile application development methodologies and tools used presented in this chapter. The relationships between the programming languages and tools used were properly given. The source code written in this chapter are to be attached as an appendix at the back of the project report when done.

• Chapter four: Here, the result of the implementation in chapter three is to be presented. The tools used in the development and presentation of the finished mobile speech enabled application to be showcased and explain the way the system works. Snapshots of the working mobile android app were captured and shown in this chapter as well.

• Chapter Five: This is the chapter where a brief summary of the whole project work was given. Some conclusions drawn and further study recommendations were given as well.