**CHAPTER THREE**

**SYSTEM ANALYSIS AND DESIGN**

**3.0 INTRODUCTION**

This chapter focuses on the analysis of the existing system, limitations of the existing system, justification of the new system, research methodology, methods of data collection and a detailed description of the proposed new system.

**3.1 ANALYSIS OF THE EXISTING SYSTEM**

The organization of systems differ from one system to system, the analysis of the system is divided into two parts; Analysis of the existing system and the setback or limitations of the existing system.

The method of obtaining certificate of occupancy in Katsina state is manual and cumbersome. The applicants obtained a form from the area land office of Katsina State Ministry of land and housing. The applicants will obtain the bank draft from the bank.

The applicants then attached documents such as site analysis report, feasibility report to the form.

The forms with the documents are submitted to area land office for processing. The area land officers checks the authenticity and validity of the form before it is recommend for processing. The land in which the applicant is seeking land title and ownership is being visited for inspection. There are many reasons for the inspection.

The land area offices will want to ascertain if the land has not been issued land title and ownership before. They will also want to verify if the land is not a government land and also to know if the building on the land is the building that is supposed to stand on the land.

If the area office has been satisfied with the land, they will now forward the report of their application to Surveying Office of Katsina State geographical information system, (NIGIS) to verify if the document that was submitted along with the application is processed by a registered Surveyor. If the documents contained in the application are processed by a registered surveyor, NIGIS generate an ID for the application. NIGIS will now forward the application to town planning office of Katsina state ministry of land and housing to check for obstruction. After the inspection of town planners, the officer of town planner and that of the area office will now go for second visitation for final inspection so as to jointly agree to approve the request.

Finally, the report of the satisfaction will be sent to NIGIS in order to generate a bill called intent which will decide the amount which the applicant will pay.

**3.2 LIMITATIONS OF THE EXISTING SYSTEM**

Limitations of the existing system include;

1. Inflexible Operational Hours: Applicants may want to apply any time of the day but due to the fact that the office open from 8am to 3pm
2. Inability to Track Application: applicants cannot track their application online. They cannot know the stage in which their application processing has reached.
3. Delay in Processing:there is delay in processing the application due to cumbersome and manual process.

**3.3 JUSTIFICATIONS OF THE NEW SYSTEM**

1. Ease of Access: documents relating to land and land owners can be retrieved with less time.
2. Flexible Operational Hours: application can be made anytime of the day.
3. Flexible Administration: Administrators or supervisors are created seamlessly on the system to enable easy processing of application for certificate of occupancy.
4. Speed of Processing: Application can be processed on time with less effort.
5. Preserved Documents: There’s no need to bother about mutilation of land documents because most of the documents are now electronic.

**3.4 Research Methodology**

This study is to enable applicants to have a reliable and secured process of applying for land title. In order to ensure a qualitative system, the system development life cycle was used.

SDLC is composed majorly of four different phases which are used by system developers to plan, design, test and implement a system.

**3.4.1 Program Design**

The proposed system makes use of the Top-Down design approach (also known as structures design) using ASP.net which is a server-side scripting language that allows your Web site to be truly dynamic.This method focuses on major aspects of the system and breaks them down into smaller units known as modules.

The Top-Down method is made up of the top level which is broken down into inputs, processes and outputs and each of this is also broken down into some other lower modules to the last detail. One major advantage of this method is that it makes your job highly structured and modularized. This approach is shown in Figure 3.1

MAIN PAGE

ROOT ADMIN

USERS

ADMIN

SUPERVISORS

TASKS

TASKS

TASKS

APPLY FOR CofO

UPLOAD NECESSARY DOCUMENTS

**CREATE SUPERVISOR**

**ADD USER**

APPROVE APPLICATION

**APPROVED/REJECT APPLICATION**

**DATABASE ACCESS**

**ADD USER**

RECOMMEND APPLICATION

PROCESS APPLICATION

VERIFY DOCUMENTS

Figure 3.1 Top down design model

A top-down approach (also known as stepwise design and in some cases used as a synonym of decomposition) is essentially the breaking down of a system to gain insight into its compositional sub-systems. In a top-down approach an overview of the system is formulated, specifying but not detailing any first-level subsystems. Each subsystem is then refined in yet greater detail, sometimes in many additional subsystem levels, until the entire specification is reduced to base elements.

**3.4.2 Database Design**

The database was created using MSSQL Database Management System (DBMS). Here the table is designed and explained. The database design is a process of producing detailed data model of a database. This logical data model contains all the needed logical, physical design choices and storage parameters needed to generate a design in a data definition language, which can be used to create a database.

Below are the steps involved in database design:

1. Determine the data to be stored in the database.
2. Determine the relationships between the different data elements.
3. Superimpose a logical structure upon the data on the basis of these relationships.

**3.5 DATA COLLECTION**

Katsina State was used as the case study and Interview Method was used as data collection technique.

**3.5.1 INTERVIEW METHOD**

In the cause of this project work, investigations were carried out which involved sourcing information from Katsina state ministry of lands and housing, Katsina State geographical information system (NIGIS) and Katsina State urban and regional planning department. The following questions were asked so as to gain more understanding to the system.

1. How do you apply for certificate of occupancy?
2. How payment is being made?
3. How many days does it taketo process a certificate of occupancy?
4. To what use is the certificate of occupancy?
5. What do you feel about the proposed system?
6. Do you think the proposed system will be adopted by the state government and users?
7. What benefits do you think the proposed system will offer the administrators and users of land in Katsina state?

**3.6 THE PROPOSED SYSTEM**

The system is uniquely divided into two parts;

1. Administrator Section
2. User Section.

**3.6.1 ADMINISTARTOR SECTION**

The administrator shows what happens behind the scene; this section is handled by the system administrator who can be handled the processing of the certificate of occupancy until the success stage of receiving it by the land owners.

The role of the administrator is to receive application and verify if all the uploaded documents are valid and original.

The root administrator logs in with his credentials to create other administrators. The root administrators only has the privilege to create users, other administrators (secondary admin) won’t have such privileges.

Administrator

Figure 3.2: The administrator section.

**3.6.2 User Section**

The user only needs to use the system by applying online and submitting necessary files for approval. The users are the applicants for the land title and ownership. The flowchart diagram in Figure 3.1represent the user section of the system.

VIEW APPLICATION STATUS

SUBMIT APPLICATION

PAY PROCESSING FEE

APPLY FOR LAND TITLE

Figure 3.3: The user section.

MS SQL Server

Handling queries and responses.

Data Base

Web based User Interface

PC running Web server (Microsoft Internet information Service)

Browser running on any PC over Internet

Fig 3.4:Proposed system architecture.