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Web Design and Development for Land Registration: An Online Cadastral Delivery Service in Nigeria

S. O Babalola*[1 2], L. T Choon[1], A Abdulrahman[1], H. Tata[2] and A. A Tukka[2]

1 Faculty of Geoinformation and Real Estate, Universiti Teknologi Malaysia, Skudai, Johor Bahru, Malaysia. omooroloba@gmail.com*, aliias@utm.my, tlchooon@utm.my

2Department of Surveying and Geoinformatics. Federal University of Technology, Akure, Akure Ondo state, Nigeria. omooroloba@gmail.com, htatta@futa.edu.ng, aatukkaa@futa.edu.ng

Abstract

Land administration system in Nigeria includes the processes of land registration, cadastral mapping, land valuation and land inventory. Developing countries particularly Nigeria is faced with challenges of poor land administration and management. However, whatever the stage of the development of any country, technology plays very vital roles in acquiring a sound technological development in land administration. Traditional approaches to the land administration in the time past, has resulted in the delay of the processes of land titling and registration. The innovative technology brought by geographic information system (GIS), land information system (LIS) and cadastral information system (CIS) has been playing a leading role in the development of cadastral and land administration in Nigeria. The need to develop a web linked with the network of the processes in the land registration arises from the fact that people relationship to land has a very dynamic nature. The delay in time and process of land registration couple with the corruption in land related activities has called for the urgent intervention of all the stakeholders in land administration. In this study, an online network of the processes involved in the land registration was done having investigated the quickest way to solve the problem. A web was designed so that an applicants can check the status of their application online. A more secured cadastral plan must be submitted as one of the documents needed for the application for certificate, the (C of O). The benefits of this system to all stakeholders in land administration in the study area were also discussed.

Keywords: Land Administration, Land Registration, Land Adjudication, Hybrid, Dynamic Web

1. Introduction

One of the prime motivation for this work arise from need to manage our natural resources (the Land) to develop a formal approach that can used to address the issues arises from complex situation in Land administration and management. The ability to track the changes as it is applied to land all over the years has always been our motivation too. Also, the need to discuss land registration arises from the fact that people relationship to land has a very dynamic nature. The need to build a flexible system that will be able to handle complexity arising from land administration such as land registration, titling and management. The design required to represent the real word situation and in land registration with insert, delete and updating operations. Data acquisition, database technologies, Global Positioning System (GPS) and Global Navigation Satellite System (GNSS) are new technologies that opened the new perspectives and solutions to this demands which must be delivered also in Land Administration Domain Model (LADM) [1, 2].

The land registration is a nonrepresentational term used to refer to records, documents, and acts that used to ascertain the ownership [3]. It launches the presentation and the quality of right in real estate being taken from seller to buyer. The title documents can be a certificate, a conveyance registered, or Deed of Assignment. Security of title to land is very important because it is usually and extremely difficult to get investment funds and scheme capital without it [4] agreed that poor land registration and administration is an impediment to the growth of an economy of any country. The benefits of good land title registration and administration were also enumerated by them. Land registration gives possible quick and sure process for creating and obtaining mortgages. All modern

*Author for correspondence

constitutions accept and foster private rights and ownership of land.

However, these benefits have been a mirage in the case of most owners in the study area. The land registration problems started from some requirements of Land Use Act of 1978, that is, the act used for regulating the administration of land and cadastral system. Application for consent by the provision as mentioned above of Land Use Act has always been subject to administrative bureaucracy that leads to time delay in concluding the processing because of the web of movement of files from one office table to the other [5]. The process also leads to financial exploitation making the processing cost intensive. The process of getting a C of O is costly and takes time in spite of efforts to reduce the period of production. The surveyor is involved in getting the data and looking after the datasets to keep them safe are, he is responsible for the production of the survey plan required to be attached to the legal instrument for registration of titles are not legally secured enough [6]. Furthermore, the bureaucratic procedure involves in consent processing makes it impossible to be concluded until about 3 to 5 years from the date of application. In [7], it costs about 1.5% of property value as title registration charges and less than a day to conclude land registration in Canada, in Ghana it is about 2% of the assessed value and takes about 3 months. World Bank is of the opinion that it should not take more than 13 stages and about 82 days to get title registered in Nigeria instead of 35 stages and 3 to 5 years. This World Bank research analysis and conclusion placed Nigerian as the least favourable nation to transact property business in the sub-Sahara Africa [8].

Having considered land acquisition, compensation and resettlement in developing economies [9] attributed the problem to the lack of sincerity on the side of government. In systematic land titling and registration, [10] suggested the use of modern survey equipment to carry out boundaries demarcation. It the reasonable to say that the effective land titling as panacea for sustainable land reform in the study area. [5] discovered that the problem of sporadic land titling and registration is that the procedures involved in the entire process is too much (35 processes instead of 13 as recommended by the World Bank). [11, 8, 3, 6] and other available literature wrote on the various problems emanating from sporadic and systematic land titling without no practical solution to solve them.

This scenario needs to be reversed; changes can be internally aggravated or externally provoked. The change can be an unexpected departure from what we know; changes can be anticipated or dramatic. Change can also be a constant action, and it is always called for when there is ineffectiveness and inefficiency in actions, systems and programs. In all these cases, the ultimate nature of change is a movement from the current state through an evolution of a state to a future state. It is therefore necessary to formulate and propose a better way of registering the title to land to encourage a proper use of Land, limit the rate at which people violate Land policies and to enhance a proper transaction in Land.

The final breakdown in land registration system in the study area is to introduce a structure for transparency; set service standards, and improve to systems and processes, make effective use of information technology and communications; and also being effective, efficient and computerization of the processes according to now a day's standard. Therefore, this study employed an online network of the processes involved in the land registration system having investigated the need and the necessity to create and develop a hybrid system. However, the hybrid system suitable for used for both the sporadic and systematic methods of the land registration system.

In this study; Section 1 is the introduction and statement of the main problem of land registration in the study area. Section 2 relates all the efforts of the government in the study area to develop a framework of the cadastral system with a view to developing land market for the country in the land reform agenda. Section 3 is the questionnaire surveys and the analysis of the view of internal and external stake holders in land administration system on the need and improvement in cadastral system in Nigeria. Section 4 is the design and the development of land registration processes for making effective use of information technology and communications, as well efficient and computerization of the processes that are always available on the net with up to date database. Section 5 is the results and discussions; Section 6 is the conclusion.

2.0 Land Reform in Nigeria

The lacks and failure in the implementation of Land used Act of 1978 (LUA) led to campaigning for the review by many stakeholders. In an effort to develop the land administration and cadastral system in Nigeria, the Nigeria Federal government inaugurated a Presidential Technical Committee (PTC) on April 2nd, 2009. To start the reform of all land tenure situation to address the numerous problems originating from Land Use Act of 1978. The reform prepared to correct this and provide registrable titles to all land owners in the country by reviewing land laws to ensure equitable use of the land assets for economic development [12].

Land reform in Nigeria is a landmark in the upgrading, growth and execution of the cadastral and Land administration system. The (PTC) was charged to make a design for the improvement of the existing technical and institutional, administrative and legal structure of the cadastral and land administration system to develop land for money for the nation. To ensure effectiveness in our national cadastral system, the government has created a computerization program for all lands given by the government under the Federal Land Information System (FELIS). Similar computerization projects have also been established by the authorities of the Federal Capital Territory (Abuja). Also the governments of other states of the federation for records of lands allocated to their territories [13]. National Technical Development Forum (NTDF) on Land administration was inaugurated to facilitate the harmonization of the land administration system and practices nationwide.

Consequently, the attribute of the land and building, land use, the information relating to the meaning of land and property. Legal, information relating to ownership, rights, restrictions and responsibilities that are related to Land Administration Domain Model (LADM) will be taking care. Therefore, PTC will establish a National Depository for title holdings in all states of Nigeria, the Federal Capital Territory and create an instrument for land valuation in both urban and rural areas in Nigeria. This will be the data bank for multipurpose cadastral in each state and the whole country. In another word, each state in the federation will be able to communicate with each other and the federal capital since the whole country operates the same land administration system.

3.0 The Questionnaire Survey

A questionnaire survey was undertaken to evaluate the combined awareness of personnel from various government Authorities and Ministry of lands and Urban Development in Nigeria. The questions are concerned about land administration, physical and urban planning, Land Surveyors in the states offices and the Federal Capital Development Authority (FCDA), Surveyors Council of Nigeria (SURCON).

Questions were asked from the respondents about their knowledge on the automated land registrations that involved the use of computer and internet particularly for the processes of land registration. The opinions of the respondents were requested on the current problem related with Nigerian land registration system and how it can be improved. The answers gotten from the questionnaire were used to appraise the significance and position of these issues from the view point of different stakeholders. Also in the evaluation of their views, recommendations and questions, changes if necessary those that needed in the land administration system that will facilitate good land law and cadastral system. The respondents selected were based on their experience in the area of lands and land administration, cadastral system and physical planning who were directly or indirectly involved in the land management and ownership properties. In this sense, questionnaires were distributed out to the six geo-political zones of the federation and the federal capital, Abuja. The questionnaires were distributed within the governmental intuitions and the Ministries concerned with land and land administration system as an internal and external users.

Table 1. Table of Geo-Political Zones

S/No	Geo-political Zone	Name of city used
1	South West Zone **(S/W)**	Akure (Ondo State)
2	South East Zone **(S/E)**	Enugu (Enugu State)
3	North Central Zone **(N/C**	Ilorin (Kwara State)
4	North West Zone **(N/W)**	Sokoto (Sokoto State)
5	North East Zone **(N/E)**	Bauchi (Bauchi State)
6	South South Zone **(S/S)**	Portharcourt (River)
7.	Abuja **(FCDA)**	Abuja (FCT)

The questionnaire consists of two sections, section A is general questions aimed at gathering information about the establishment and ministries. Section B, aimed at collecting information and the views of the respondents concerning land registration and other better option if available. The questionnaires that were distributed within the six geo-political zones and the Federal Capital Abuja (83.9%) were returned, (77.7%) were valid for use.

All the respondents agreed (100%) that there can be improvement in the cadastral plan used for the purpose of land registration. It can be made more secured by making some attributes to appear together with the cadastral plans. The table below shows the statistical evaluation of the method preferred by respondents in all the six geo-political zones for their land registration.

Table 2. The statistical evaluation of the method preferred in each Zone.

		Sporadic		Both		Systematic			
S/N	Zones	Yes	%	Yes	%	Yes	%	Valid	%
1	**S/W**	2	2%	14	10.8%	3	3%	19	14.6 %
2	**S/E**	3	3%	13	10.1%	1	1%	17	13.1 %
3	**N/C**	1	1%	14	11.5%	2	2%	18	14.5 %
4	**N/W**	1	1%	08	6.6 %	3	3%	13	09.2 %
5	**N/E**	2	2%	10	8.0 %	2	2%	14	10.8 %
6	**S/S**	1	1%	15	11.5%	1	1%	15	11.5 %
7	**FCDA**	0	0%	5	4.0 %	0	0%	5	4.0%
	Total/ %	**10**	**9.9 %**	**79**	**78.2%**	**12**	**11.9 %**	**101**	**77.7 %**

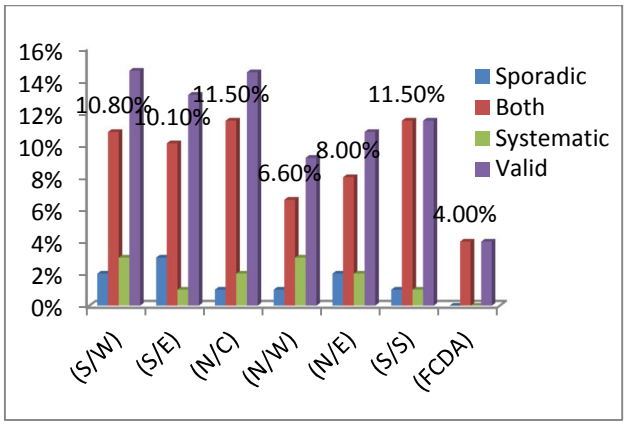


Figure 1. Histogram of the method of land registration preferred in each Zone

Table 3. The statistical evaluation of the method to be adopted

1	**Sporadic**	**9.9%**
2	**Systematic**	**11.9%**
3	**Both**	**78.2%**

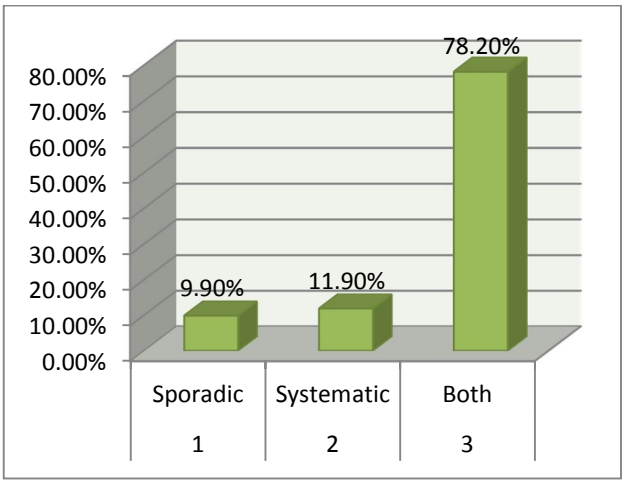


Figure 2. Histogram of the method of land registration to be adopted.

The results from the above table shows that 9.9% of the respondents prefer sporadic land registration, 78.2% prefer both sporadic and systematic land registration while 11.9% prefer systematic. (Meaning; land owner to decide on the best one). 62.9% are familiar with online delivery of cadastral and land registration information system but 37.1% were not use to it. The data from the questionnaires were expressed as percentages to make the findings more meaningful.

4.0 Land Registration Processes and Web Designed

Land is a natural resource that is commonly, effectively used and replaced when the legitimate rights to land are documented. Developing a land registration system entails a broad description and clarification of why land registration is necessary[14]. In designing and developing a land registration system, the most challenging issue is the timing-at what point in the designing and the development process should one focus on establishing a formal land registration system. Most professionals would agree with me that some type of title registration is a necessary element for developing market economy for individual as well as a nation. In handling the issues of when or whether to establish a land registration system, all the stakeholders should understand the pre and post conditions for a land registration system, its advantages and disadvantages of such a system. The possible sources of opposition to a new or improved land registration system should also be considered. Land registration is a systems by which matters concerning ownership and all or other rights (RRR) right, restriction and responsibility in land can be recorded with a government agency and department to provide evidence of title to facilitate transactions and to prevent unlawful disposal of lands. The statistics recorded and the security provided will vary by jurisdiction. It is tantamount to land titling in which an individuals and families are given an official right for land which they have earlier occupied unceremoniously or used on the basis of customary tenure. This offers official titles and increases security of tenure, supports the growth of the markets in land, and allows better access to credit by using registered land as a collateral.

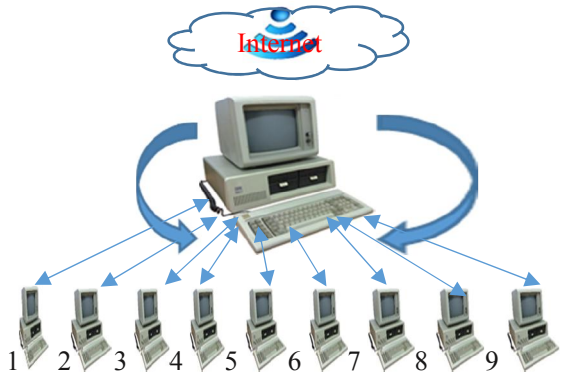


Figure 3. Frame work for hybrid process in Land Registration in Nigeria stages 1-9

Hybrid system is a system of land registration developed for clearness and set provision for morals standards. It is an improved to structures and procedures, secure financing, establish audits and make effective use of information technology and communications. It is more positive experience as well as being effective, efficient and computerization of the processes according to modern standard in line with word bank recommendations. The processes and stages involved are shown in the table 4 below.

Table 4. Processes and stages of Land registration recommended

Stages	Processes
1	At this first stage, the Scheme Officer (SO) collects and check the application for the Certificate of Occupancy (C of O), from the applicant and signs off on the file which is forwarded to the Executive Sectary Land Use Allocation Committee (ES LUAC) - **5 Days**
2	ES LUAC carried out proper checking of the application and approves the processing and signs letter of allocation, the file then sent to the Senior Special

	Assistant (SSA)to His Excellency, Lands (SSA Lands) - **5 Days**
3	Scheme Officer gets the digitized survey plan from the Surveyor General– **5 Days**
4	The SSA vets the entire file and sent with a memo letter to the Permanent Secretary (PS) Lands Bureau (PS Lands) - **3 Days**
5	The PS, Lands sends the file to the Governor after signing off the memo - **3 Days**
6	The Governor approves file and signed the C of O – **3 Days**
7	After the approval and signing of the C of O by the Governor, the file is sent to the Deputy Registrar for further processing - **2 Days**
8	The file is sent to Registrar of Titles for final registration from the Deputy Registrar for further, signs off and sends it to the final stage- **2 Days**
9	The registration of the title is done by the Registrar of Titles and request for printing of the C of O and it will be signed and ready for collection- **2 Days**

The whole processes are designed to be completed in 30 days in line with word bank recommendation [15, 16].
The documents that needed to be attached with the application is uploaded on the net for processing of C of O in the study. The documents are varies from state to state but in all cases the documents must include the following as shown in the table 5 below.

Table 5. Document to be attached with the application

S/NO	DOCUMENTS
1	Cadastral plan
2	Formal letter to LUAC
3	Passport photograph
4	Evidence of form payment
5	Land payment receipt
6	Application form/information form
7	Evidence of Tax payment

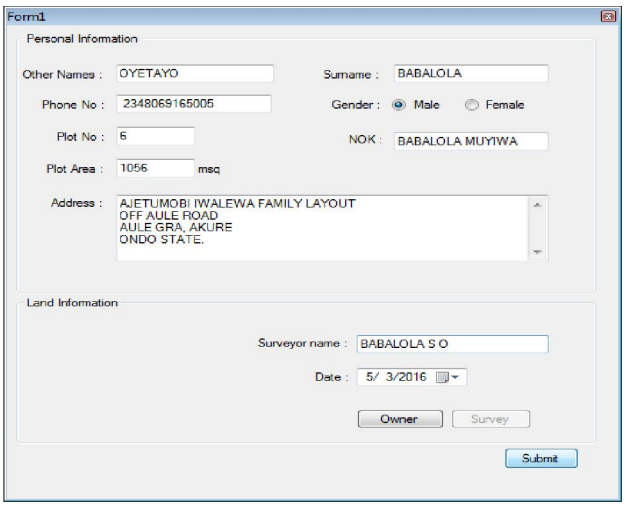


Figure 4. Hybrid Cadastral Plan Interface

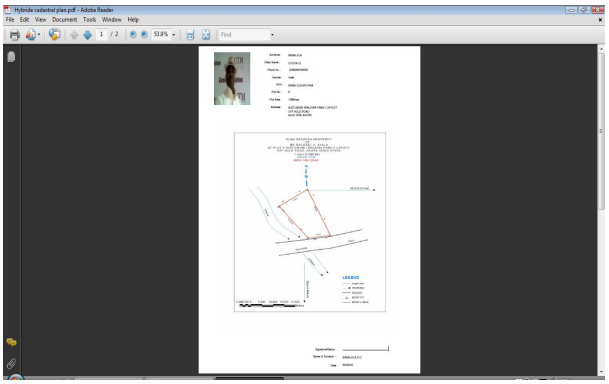
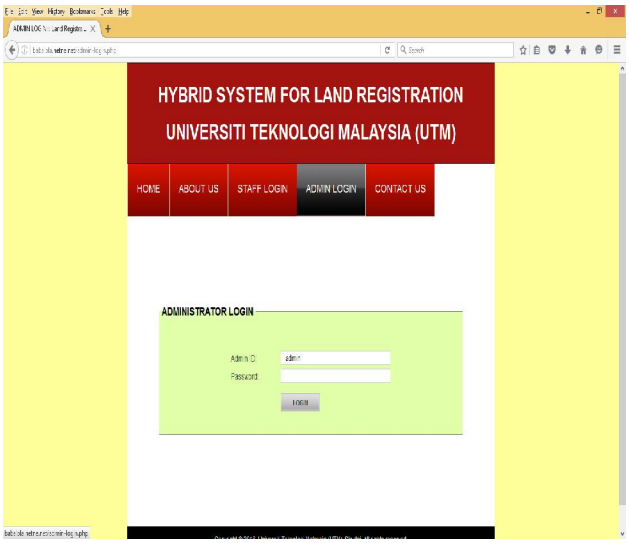


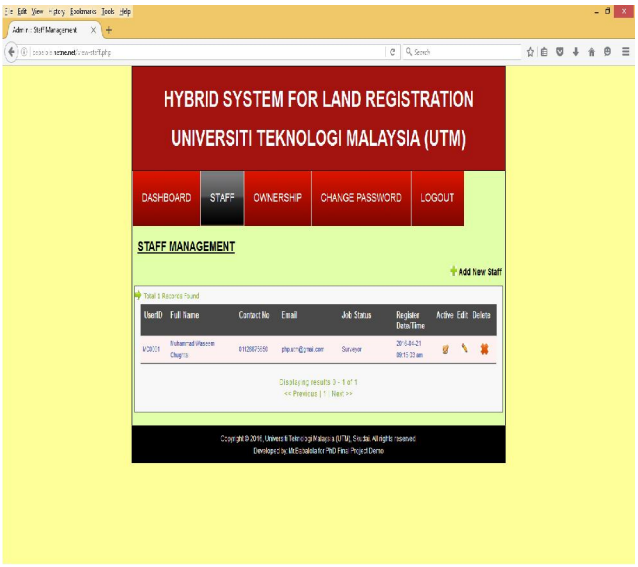
Figure 5. Hybrid Cadastral Plan

5.0 Results and Discussion

Figure 6A, below indicate the login for admin where records are created for the staffs and the ownership. There are 6 records created for the staffs while 8 are created for ownership as shown in figure 6B and 6C respectively. The most important field in the records of the ownership is the application number. It is designed to be automatically generated with the database. The application number is to be used by the applicant to check the status of their application online as the work is progressing.



A



B

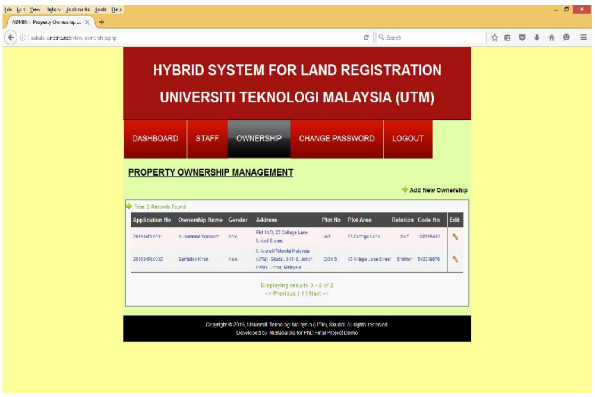


Figure 6. Login A for Admin to create records for B, Staff and C, ownership

Login for Staffs to Check uploaded documents and make comments. Meanwhile, the staffs have been notified on his phone and email once the documents has been uploaded or submitted to him by the main admin.

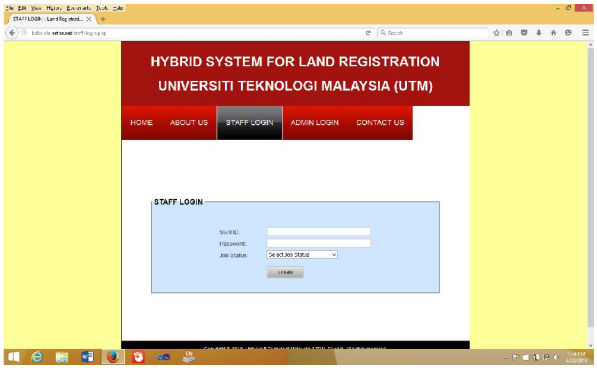


Figure 7. Login for Staffs

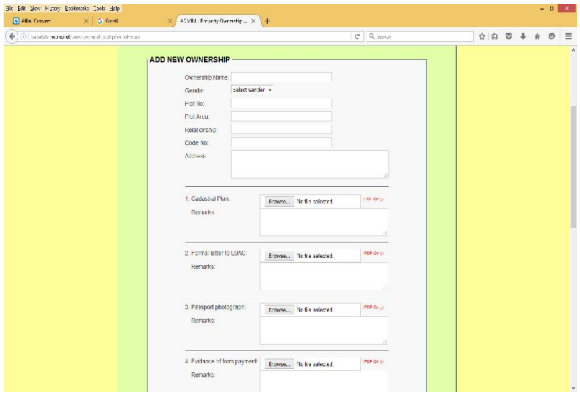


Figure 8. Document uploading

Having checked all the documents and make the necessary recommendations, stage 1 submit back to the Admin to make sure that the right thing has been done by stage 1. Stage 2 also received the uploaded documents and make the necessary comments and submit back to the Admin, these continue till the last staff where an applicant will be signed for the copy of C of O. On the system, green light indicate the process is ongoing, red indicator indicates the work over stayed or it is not done by the staff concerned within the limit of time while yellow indicator in the system means, the work has been done and it has passed to the next stage.

However, the applicants has the opportunity to check for the status of the application anywhere in the world by login through the ownership page using the application number automatically generated by the system. The database was designed to keep the records over the years for the validity of 99 years of the C of O when it may be renewed.

6.0 Conclusion

The land that is not titled is unacceptable as a confirmation or as an evidence to proof of an ownership and transfer of an interest. It does not has any economics value, although, there are a number of problems that are associated with the difficulty arising from land adjudication, registration and titling. Land used act of 1978 has been the source of major impediment to it. This study tried to encourage land title registration interest by providing modern technologies that are faster and acceptable with low rate and minimum delay. The merit of the of the hybrid cadastral plan produced in this study cannot be over emphasized because it provide security of ownership right on the survey plan produced for land registration processing. Also, the study has added an improvement to Cadastral survey mapping, and land registration practices in Nigerian Cadastre System.

Consequently, the next study will be on how the whole processes involved in land registration will be computerized in line with World Bank recommendation for the adoption of ISO 19152 standard (LADM) in the study area.

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