

The Relevance and Application of ICT in Estate Surveying and Valuation in Ogun State

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Abstract – Estate Surveying and Valuation is one of the professions in the built environment that requires the use and application of Information and Communication Technology (ICT) in the various areas of its practice. Such ICT devices and applications include computers, networks, hardware, software, satellite and so on. This paper sets to examine the extent to which Estate Surveyors and Valuers apply ICT in performing their professional tasks so as to assess its contribution to their practice. A 5-point Likert scale structured questionnaire was administered to Estate Surveyors and Valuers both in the public and private practice in Ogun State. Relative Importance Index (RII) was used to analyse the data obtained from the survey. The study shows that the estate surveyors and valuers are aware of the existence of the various ICT applications and devices but have not been using them effectively to promote their practice. They however, ascribed their inability to use it to poor level of training. The study concluded that there is need for improvement in the curriculum of various educational and professional institutions involved in the training of Estate Management Students across the country. Regular in-training on the use of ICT applications and devices was also suggested as a means of improving the ICT knowledge of the Estate Surveyors and Valuers.

Key Words: *ICT, Estate Surveying and Valuation, Ogun State*

I INTRODUCTION

The profession of estate surveying and valuation was given the official recognition in Nigeria in 1974 via Decree No. 24. The Decree defines the Profession of Estate Surveying and Valuation as those engaging in the arts, science and practice of:-

- Determining the value of all description of property, and of the various interests therein.
- Managing and developing estate; and other business concerned with the management of landed property

- Securing the optimal use of land and its associated resources to meet social and economic needs.
- Determining the structure and condition of buildings and their services and advising on their maintenance, alteration and improvement.
- Determining the economic use of the resources by means of financial appraisal for the building industry
- Selling (whether by auction or otherwise), buying or letting as agent, real or personal property or any interest therein.

It is therefore common to see estate surveyors and valuers providing professional service in the areas of property valuation, property management, property rating and taxation, building construction, property development, building maintenance, facilities management, land titling and recording, land use and management and so on. However, if the members of the profession are to perform creditably in performing the above stated functions, it has to react and respond to the different issues emanating from global phenomenon such as globalization, commercialisation, Information and Communication Technology (ICT) to mention but a few []. ICT is described as shorthand for the computers, software, networks, satellite links and related system that allows people to access, analyse, create, exchange and use data electronically [1]. Its importance is overwhelming and its usage increasing daily. Today's world is a world of information explosion. This information explosion is taking place in such a fast speed that even a literate person is feeling as if he or she is illiterate being not able to cope up with such an information explosion. [2].

According to [3], ICT has built long term skills and research expertise knowledge for the undergraduate and post-graduate education, academics and researchers. The Authors opined further that many companies have now relied solely on ICT to advertise their products, place classified on-line service and create job opportunities platform. Modern society is characterized by sudden

growth and development of information and communication technology (ICT) resulting in large dependence of the society, in a wider sense, on the individual knowledge and competence of a person in the IT area.

This implies that any professional that wants to move along with the demands of the globalised world should as a matter of fact get himself armed with various tools of ICT. This paper is a review of literature and experience pertaining to the use of information and communication technologies (ICTs) in the practice of Estate Surveying and Valuation. To facilitate the analysis, previous studies relating to the subject matter were identified to form the basis for preparing questionnaires. It focuses on the relevance and constraints that influence the use of information and communication technologies as tools to expand and improve the practice of estate surveying and valuation. The paper showcases the current status, existing trends and possible ways to overcome identified barriers.

II. LITERATURES

Information and Communication Technology (ICT)

Information and Communication Technology (ICT) stand for information and communication technologies and is defined, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." "It implies the technology which consists of electronic devices and associated human interactive materials that enable the user to employ them for a wide range of uses. These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. ICT is that technology which uses the information to meet human need or purposes including processing and exchanging. [4] opined that ICT has brought the world closer together by improving the dissemination of knowledge, accelerating research, stimulating innovation and facilitating collaboration. Development from the First World Countries suggests that ICT as a sector is capable of contributing immensely to the national GDP of a nation and thereby caused an improvement in the market competitiveness of the nation's products and services. [5]. ICT are important to for sustainable development particularly in the developing countries. It is one of the technological discovery that have influenced our lives and this trends will continue until the end of the first half of the century, when other major technological breakthroughs in the area of new materials, biotechnology, or energy, may provide new ways of living [6].

ICT and Professionalism

Globalization and technological changes have created a new global economy powered by technology, fueled by information and driven by knowledge. The emergence of this new global economy has serious implications for the

nature and purpose of professional practice. As the access to information continues to grow rapidly, professionals cannot be contented with the limited knowledge acquired in a fixed period of time. They have to become compatible to the ever expanding knowledge and also be equipped with the technology to deal with this knowledge. Information and communication technologies (ICTs) — which include radio and television, as well as newer digital technologies such as computers and the Internet — have been proven as potentially powerful tools for improved professional conduct and practice [7]. When used appropriately, different ICTs can help expand access to real estate profession, strengthen the relevance of estate surveying and valuation profession to the increasingly digital workplace, and raise quality by helping estate surveying and valuation into an active process connected to real life. [8]

ICT Tools and Software in Estate Surveying and Valuation Profession

There are various ICT applications and softwares that are useful in the day to day running of estate surveying and valuation. This ranges from the common applications and tools such as computer, telephone, laptop, tablets, modem, Microsoft packages such as word, excel, access, power point, corel draw, groove, and so on. Few of the software directly related to estate surveying and valuation are described below:

A. Argu Valuation –DCF

For over 20 years, ARGUS Valuation DCF has empowered appraisers, brokers, developers, managers, investors, lenders and other real estate professionals to make better and more informed decisions. Using a lease by lease approach to building cash flows and valuations, it help in building property models which have greater precision and clarity and therefore enables the clients to spend more of their valuable time building fortunes, not spreadsheets. Its key benefits to practitioners in real estate are that it make data more accessible and valuable, enables forecast of property cash flows with precision and assist to know the risk of property and portfolio. It is therefore a good tool for property and portfolio cash flow models, forecast investment values and returns, debt and partnership financing structures, support for global leasing methods, MS Excel import and export, and detailed property and tenant reports

B. Corporate Real Estate Management:

This software for the real estate industry is use for clients' data, tracks interactions and automates workflows. It increases the efficiency and enables buying and selling agents to close more deals, faster. For instance, a homebuyer can fill out form online requesting to see a property listed on the Agent's website, if the agent is using CRM, a signal will show up in the user dashboard for the agent and then automatically convert

the form data into a contact profile for that buyer. A property manager may at the same time be automatically alerted that an agent opened a new deal. Some of the benefits to the real estate profession are: enhance visibility with consistent, reliable data across all corporate real estate functions, reduce application, infrastructure support and maintenance costs by replacing disparate systems with a single integrated system on a standard platform, decrease vacancy rates, strengthen project schedule and budget performance and improve personnel efficiencies through automation of manual and duplicate processes.

C. *Database Management Software*

This is any software that is designed for creating databases and managing the information stored in them. Database software tools are primarily used for storing, modifying, extracting, and searching for information within a database. Database software is used for a number of reasons in any industry - from keeping the bookkeeping on task, compiling client lists to running the online Web site. Because they have so many uses, there are dozens of database software programs available. The options have gone beyond Oracle or Microsoft Access to encompass FileMaker, Avanquest and Delicious Monster Software for options tailored to a variety of needs. Some of the more popular database software applications include desktop solutions like Microsoft Access and FileMaker Pro and server solutions like MySQL, Microsoft SQL Server and Oracle.

D. *Eva Property.com*

This is a cloud-based property-management system that centers all the estate business in one system and makes it accessible anytime, anywhere, from any device. It is a user-friendly, easy-to-use, fully interactive experience that efficiently manages all business functions for world-class professional property management in one system accessible anywhere the property manager is connected to the internet. It is described according to [9] as a property management software which offers iPhone simplicity in design and function coupled with high-powered applications that offers the multi-tasking functionality at the touch of a button or a click of a mouse. EvaProperty provides the user with a free customizable marketing website where you can list all your available properties, units and rentals, plus schedule showings and take rental applications online. The website takes minutes to launch and potential renters can view and tour all available properties within the company's portfolio. Within minutes, the interior and exterior images of properties can be uploaded and list detailed features and benefits of the available properties so interested renters can make an informed decision.

E. *Apartment managerXP*

This also cloud-based property-management system that centers all the estate business in one system, accessible anytime, anywhere, from any device. It is lease

based management software that manages both landlord and tenant. It provides an effective way to track real estate for critical financial and reporting needs. It has many features that enable the manager to update information dynamically and also allow owners and property managers to adapt to a wide range of contingencies that occur in managing property. It integrates with the General Accounting, Accounts Receivable, and Accounts Payable system. Some of the Primary Features are: Recurring and manual tenant billing, Process receipts, Calculate security deposits, Report and calculate sales overage billing, Pass on expenses to tenants by prorata share, Escalate lease amounts, Allow for holdovers, Process revenue fees, Assess fees and interest, Create rent projections. Its uses have been acknowledged successful. [10]

Challenges Facing Estate Surveying and Valuation Profession in Nigeria in the use of ICT Tools

There are numerous challenges facing the practice of estate surveying and valuation in Nigeria. Studies such as [11], [12] and [13] have identified various challenges facing the practice of estate surveying and valuation in Nigeria. According to [13], "these include lack of partnership (practice has been a form of one-man show); competition from quacks are rampant; threat from certain laws: Economic and Financial Crime Commission (EFCC), and Money Laundering Act, Lagos State Land Use Charge Law 2001, and Lagos State Estate Agency Law 2007. Others are digital divides and variances in opinions of values; low staff salaries and lack of retirement benefits; lack of training and retraining of estate surveyors; and non-implementation of valuation standards, "topping up" of rent/price, "gazumping" and gazundering".

Digital divides is described as a challenge, which is lack of critical drive and strategies to harness the full potential of ICT for the socio-economic development of the country; and that high subscription and infrastructure costs in addition to poor quality of service and epileptic network connections by service providers; have become major hindrances to the use of ICT in education, research and development as well as its application to real estate surveying and valuation practice in Nigeria.[2] This divide according to [13] cut across both the practitioners and academia in estate surveying and valuation profession. Previous studies such as [14], [15] and [16] had also identified the effects of this divides as causing valuation inaccuracy, irrationality and inconsistency in Nigeria. A brief check on the academic curriculum of Polytechnics and Universities offering estate management shows that computer science are only offered for maximum of one semester for the university graduates and two semesters for the polytechnic students (one each in ND and HND programmes). The detailed contents of the courses even show more of ICT appreciation than application thereby making it difficult for the students to use ICT tools and applications when eventually

graduated. On the relevance of ICT on public real estate practice, [17], opined that the introduction of a computerised national land information system, for example, impacts on the roles of professionals involved in real estate conveyancing, reveals information about land ownership that certain groups may prefer to remain secret, and requires government to devote limited resources to changes in legislation. He further submitted that ICTs in particular provide the opportunity for radical innovation in industries where information processing and knowledge management are core, such as the real estate sector.

As one of the way forwards to enhance the practice of estate surveying and valuation profession in Nigeria, [18] suggested that the Nigerian Institution of Estate Surveyors and Valuers and Estate Surveyors and Valuers Registration Board of Nigeria in partnership with Universities offering estate management courses in Nigeria, need to ensure the running of designated specialist courses in the valuation of specialized buildings, plant and machinery valuation as well as the use of ICT in real estate activities. These evidences therefore suggest the need for a specific study on the application and relevance of ICT on the practice of estate surveying and valuation, hence this present study.

III. RESEARCH METHODOLOGY

The object of this empirical study is to investigate the relevance and application of ICT on in estate surveying and valuation profession. The coverage was Ogun State. The focus on Ogun State is justifiable because of its emerging real estate markets requiring the services of Estate Surveyors and Valuers both in the private and public sectors. Moreover, Ogun State is an ideal study area because of its proximity to Lagos State which is the business centre of Nigeria. This state also has several industries, corporations and private individuals that require the services been rendered by estate surveying and valuation profession. The state should therefore provide an excellent study area for fulfilling the objective of this study. The adopted population (sample frame) of estate surveyors in Ogun State was 77 as contained in the state list of members in financial standing with designations (2014/2015) of the Ogun state branch of the Nigerian Institution of Estate Surveyors and Valuers. The whole of the sample frame (100%) was considered appropriate for the study. 24 of the responses received were duly completed and therefore considered for the analysis. This represents a response rate of above 31% which is good enough for reliable and valid conclusion. The data collection instrument employed was the self-administered questionnaire. Data collected were analyzed using descriptive statistics (frequency counts and Likert scales). Data was collected early in 2015.

IV. FINDINGS AND DISCUSSIONS

TABLE 1: CHARACTERISTICS OF THE RESPONDENTS AND THEIR ORGANISATIONS

Type of Establishment	Frequency	Percentage
Government Establishment	16	67
Private Practice	8	33
Total	24	100
Highest Educational Qualifications	Frequency	Percentage
M.Sc/MBA	7	29
B.Sc	5	21
HND	12	50
Total	24	100
Professional Qualifications	Frequency	Percentage
Associate	11	46
Graduate/Probationer	13	54
Total	24	100
Positions	Frequency	Percentage
Principal Partner	5	21
Branch Manager	2	8
Head of Department	1	4
Estate Surveyor	4	17
Land Officer	5	21
Higher Estate Officer	7	29
Total	24	100
Years of Experience	Frequency	Percentage
1-5	10	42
6-10	9	37
11-15	2	8
21 and above	3	13
Total	24	100

Table 1 summarizes real estate organisation of the respondents into two major clarifications. 67% of the respondents are working with public establishments such as Bureau of Lands and Survey, Housing Corporation, Ogun State Property and Investment Corporation, and Ministry of Housing. The remaining 33% of the respondents were engaged with private estate firms. These are firms who are recognised by the Nigerian Institution of Estate Surveyors and Valuers. This result conforms to the popular saying that Abeokuta is populated by Civil Servants [19].

Table 1 further reveals that 29% of the respondents held M.Sc/MBA, 21% held B. Sc while 50% held HND. Therefore, it can be inferred that majority of the respondents, in the study area, have the required academic qualifications for working in estate surveying and valuation organisations.

Table 1 also shows that 46% of the respondents held associate membership of professional institution of estate surveying and valuation profession while 54% were graduate/probationer members. This is an indication that a fair number of Estate Surveyors in the study area are professionally qualified.

The table further shows that 21% of the respondents are Principal Partners, 8% are Branch Managers, 4% Head of Departments, 17% are Estate Surveyors, while

Land Officers and Estate Officers are 21% and 29% respectively. This is a direct reflection of characteristics Sole Proprietorship of private estate firms and bottom-heavy of staff strength of public organisations in Nigeria

It is also reveals that 42% of the respondents have been in operation between 1 and 5 years. 37% have spent between 6 and 10 years. Only 8% have spent between 11 and 15 years. Others representing 13% have spent 21 years and above. This is in consonance with positions of the respondents as revealed in table 4 above where majority of the respondents are of middle and lower cadres.

TABLE 2: FAMILIARITY WITH ICT

Level of Familiarity	Frequency	Percentage
Very Familiar	11	46
Fairly Familiar	13	54
Total	24	100

Table 2 revealed that 46% of the respondents are very familiar with ICT while 54% are fairly familiar. This simply implies that the responses obtained from respondents can be relied upon in achieving the aim and objective of this study.

TABLE 3: LEVEL OF ICT TRAINING

Level of ICT Training	Frequency	Percentage
ICT Trained	17	71
Non-ICT Trained	6	25
No Response	1	4
Total	24	100

TABLE 4: DURATION OF ICT TRAINING

Duration of Training	Frequency	Percentage
Less than One Month	2	8
Up to Three Months	9	38
Up to Six Months	2	8
One Year	1	4
More than one year	3	13
No Response	7	29
Total	24	100

TABLE 5: FAMILIARITY WITH ICT TOOLS

Level of Familiarity	Frequency	Percentage
Familiar with ICT tools	22	92
No Response	2	8
Total	24	100

Table 3 gives a clear indication that majority of the respondents received one form of ICT training or other. This is 71%. 25% are non-ICT trained. Only 4% (one respondent) did not respond though they are all familiar with ICT.

Table 5 shows that 92% of the respondents are familiar generally with ICT tools while 8% are not familiar

TABLE 6: CONVERSANT WITH THE USE OF REAL ESTATE SOFTWARES

The Real estate soft wares	5	4	3	2	1	Total	Ranking
MS Excel	85	12	3	2	2	104	1 st
GIS	55	28	-	6	2	91	2 nd
AutoCAD	30	44	3	4	1	82	3 rd
Data Base Management (DBM)	25	40	6	4	4	79	4 th
Corel Draw	35	24	6	6	4	75	5 th
MS Access	25	16	6	8	8	63	6 th
CRM (Corporate Real Estate Management)	20	20	6	6	8	60	7 th
Argus Valuation- DCF	5	32	3	12	6	58	8 th
Eva Property.com	-	8	12	6	13	39	9 th
Apartment ManagerXP	-	4	9	8	13	34	10 th

TABLE 7: THE USE OF SOFTWARE IN ESTATE SURVEYING AND VALUATION PROFESSION

The Real Estate Software	Office Admin	Property Mgt.	Agency	Valuation	Drawing of Sketches	DCF Calculation	GIS for Valuation Location Details	Total	Rankings
CRM (Corporate Real Estate Management)	3	7	2	1	0	0	0	13	8 th
MS Access	4	3	5	4	0	2	0	18	6 th
MS Excel	12	6	4	7	0	6	0	35	1 st
Argus Valuation- DCF	0	1	0	2	0	6	0	9	10 th
Corel Draw	6	0	1	2	10	1	0	20	4 th
GIS	5	0	1	0	0	0	12	18	6 th
AutoCAD	1	0	2	1	13	0	3	20	4 th
Power Point	9	5	4	4	0	0	0	22	3 rd
Data Base Management (DBM)	9	7	4	2	0	1	1	24	2 nd
Eva Property.com	2	3	2	0	0	0	0	7	11 th
Apartment ManagerXP	1	8	4	0	0	0	0	13	8 th
Total	52	40	29	23	23	16	14		
Ranking	1st	2nd	3rd	4th	4th	5th	6th		

TABLE 8: INDICATORS OF POSITIVE EFFECTS OF THE ADAPTATION AND USE OF ICT ON ESTATE SURVEYING AND VALUATION BY ESTATE FIRMS/ORGANISATIONS

S/N	The Indicators	SA=5	A=4	N=3	D=2	SD=1	Total	Ranking
1	Saves Time	110	8	0	0	0	118	1 st
2	Makes Job Easier	95	20	0	0	0	115	2 nd
3	Makes Information Transfer Easier	95	20	0	0	0	115	2 nd
4	Helps Document Presentation	95	20	0	0	0	115	2 nd
5	Enhances Accuracy	80	32	0	0	0	112	5 th
6	Increases Productivity	70	28	9	0	0	107	6 th
7	Attracts More Clients	65	32	6	2	0	105	7 th
8	Better Image	60	36	9	0	0	105	7 th
9	Eliminates the importance of Distance	70	24	9	0	1	104	9 th
10	Enhances Management's Decision	60	28	9	4	0	101	10 th
11	Increases Competition Among Estate Surveyors and Valuers	60	24	3	10	0	97	11 th
12	Creates More Opportunities	60	24	3	2	0	89	12 th

Table 6 shows the ranking of the respondents as to their conversance with the use of Real Estate ICT related tools. The result reveals that the tools which are common and are applicable to other professions ranked between 1st to 5th positions. Ms Access ranked 6th. Those that are specific related to estate surveying and valuation profession ranked from 7th to 10th positions. This is an indication that majority of the respondents have not been using the related ICT tools in their respective practices.

Table 7 shows a simple ranking of the use of the ICT tools by the respondents in various areas of their practice. The result shows that the use of ICT tools for Office Administration ranked 1st followed by Property Management, Agency and Valuation ranked 3rd and 4th respectively. The use for DCF calculation ranked 5th while GIS for location details ranked 6th. This is also an indication that more technical areas that require the use of

ICT tools that are specifically related to estate surveying and valuation profession are lagging behind.

Table 8 shows the ranking of the positive effects of the use of ICT tools in estate surveying and valuation profession. It shows that Time Saving ranked 1st. Making job easier, making transfer of information and helping document presentation occupies the 2nd positions. The fifth position was occupied by enhancement of accuracy. The table further reveals that increase in productivity of the respondents ranked 6th while attraction of more clients and better image ranked 7th each among the indicators measuring the positive effects of the use of ICT tools. Other indicators are: elimination of distance barrier (9th Position), enhancement of management's decisions (10th Position), increase in competition among estate surveyors and valuers (11th Position) and creation of more opportunities (12th Position)

TABLE 9: CHALLENGES WITH THE USE OF ICT TOOLS IN ESTATE SURVEYING AND VALUATION PROFESSION

Challenges	SA=5	A=4	N=3	D=2	SD=1	Total	Ranking
Inadequate training	75	24	6	2	0	107	1 st
Some are difficult to operate	45	52	3	2	0	102	2 nd
Some give inaccurate result	10	32	15	16	2	75	3 rd
Some are time consuming	15	24	9	14	3	65	4 th
High cost of acquisition	35	48	12	2	0	53	5 th

TABLE 10. SUGGESTIONS FOR ELIMINATING THE BARRIERS TO THE USE OF ICT TOOLS AND SOFTWARE

The Suggestions	SA=5	A=4	N=3	D=2	SD=1	Total	Ranking
Regular in-training on the use of ICT applications and tools.	80	28	3	0	0	111	1 st
Increase the length of period for ICT training in tertiary institution	60	40	3	0	1	103	2 nd
Encourage locally manufactured ICT tools and applications	50	32	9	4	1	96	3 rd

Table 9 presents the result of the challenges with the use in estate surveying and valuation profession in the study area. The table shows that inadequate training ranked 1st followed by difficulty in the use of some of the ICT tools.

Provision of inaccurate result ranked 3rd while time consuming and high cost of acquisition ranked 4th and 5th respectively.

The respondents were also asked questions on how to eliminate the challenges in the use of ICT tools for estate surveying and valuation practice the result which is presented in table 10. Table 10 shows that there is need for regular in-training for the respondents on the use of ICT applications and tools ranked 1st among the suggestions. Increase in the length of training period in tertiary institution ranked 2nd while the need to encourage locally manufactured ICT tools and applications ranked 3rd. One of the respondents also suggested the establishment of ICT Centres by NIESV for common benefit of members.

V CONCLUSION AND RECOMMENDATIONS

Estate Surveying and Valuation like other forms of built-up profession has a big challenge in today's fast-changing market environment of economic downturns, globalization and mergers and acquisitions, rebasing, and so on. The findings in this paper has revealed that the economic impact of using the right ICT tools, applications and software to manage real estate holdings can enhance the performance of Estate Surveyors and Valuers and ultimately result in a significant contribution to the growth and prosperity of the profession of estate surveying and valuation. Apart from the general and common ICT tools and software, the Real Estate Practitioners have to learn and embrace the use of ICT tools and software that are specific to real estate. The curriculum of the institutions providing both the academic and professional certification should be improved upon by expanding the number of training period on subject matter of ICT. ICT laboratories should be set up in estate management departments to enhance e-learning and therefore prepared the students ahead of the use of ICT tools when they start practicing. This will make the profession of estate surveying and valuation more efficient; make their job easier and faster.

REFERENCES

- [1] Omotilewa, O.O. (2009): Fundamentals of Management Information System: Issues and Concepts. Xpound Publishers Nigeria Enterprises, Abeoluta
- [2] Obayan, A. I. O. (2010). *The Role of Nigerian Universities in Bridging the Digital Divide in Design of Sustainable Buildings*. Paper delivered at the US-Nigeria International Workshop organized by The National Science Foundation (NSF), USA and the National Design Approaches to Sustainable Buildings held at the Idris A. AbdulKadir Auditorium, NUC, Abuja, November 29th to 2nd December 2010.
- [1] Adegbenro, N. A., Agunbiade, M.B., Gbadamosi, O.H. and Ajobiewe, J.O. (2015): Information and Communication Technology Imperatives in Environmental Development. Paper Presented at The 1st International Conference of the School of Environmental Studies. 20th 22nd, January.
- [2] Ho, D. (2007): Research, Innovation and Knowledge Management: the ICT Factor Submitted to UNESCO, July 20, 2007.
- [3] Kundishora, S. M. (2006): Partnership Framework for ICT Infrastructure Development In Africa. A Paper Presented at The World Congress on ICT Knowledge and Society. Seoul, July.
- [4] Ogbomo, M. O. and Ogbomo, E. S. (2008):
- [5] Importance of Information and Communication Technologies (ICTs) in Making a Healthy Information Society: A Case Study of Ethiopia East Local Government Area of Delta State, Nigeria. Library Philosophy and Practice.
- [6] Egila, M.M and Agbola, S.B (2011): The
- [7] relevance and application of information technology on physical planning practice. Available at <http://ssrn.com/abstract=2244209>. Accessed on 12th March, 2015.
- [8] Babawale, G. K. (2012): Paradigm Shift in Investment Property Valuation Theory and Practice: Nigerian Practitioners' Perspective. Mediterranean Journal of Social Sciences, Vol. 3 (3) September, Oracle (undated): JD Edwards EnterpriseOne Real Estate Management. Available at:
- [9] <http://www.oracle.com/us/products/applications/jd-edwards-enterpriseone/jde-re-management-pres-1737802.pdf>. Accessed on 12th March, 2015.
- [10] Property Managers for Property Managers (2014): Apartment ManagerXP Key Reports. Available at: <http://www.apartmentmanagerxp.com/resources/KEY-REPORTS.pdf>. Accessed on 12th March, 2015
- [11] Akomolede, K. (2006). *Estate Agency Practice In Nigeria*. Lagos: Bamboo Books
- [12] Oni, A. O. (2010). *Challenges Facing Estate Surveying and Valuation Profession on the Global Setting*. Paper delivered at the Education Seminar Organized by African Real Estate Society (West Africa Group) held at the Centre for Learning Resources, Covenant University, Ota, Nigeria on 26th to 28th July 2010.
- [13] [13] Oni, A. O and Adebayo, M. A. (2012): Challenges Facing Sustainable Real Estate Marketing and Practice in Emerging Economy: Case Study of Nigeria. International Journal of Marketing Studies Vol. 4, No. 1. p58
- [14] Ogunba, O. A. (1997). *A Study of Valuation and Pricing Methods in the Residential Property Market in Lagos Metropolis*. Unpublished M.Sc. Dissertation, Department of Estate Management, Obafemi Awolowo University, Ile-Ife, Nigeria.
- [15] Ogunba, O., and O. Ojo (2007). Resolving Reliability, Consistency and Rationality Problems of Professionally Prepared Valuations in Nigerian Practice. The Estate

Surveyors and Valuers. *Journal of the Nigerian Institution of Estate Surveyors and Valuers*, March, 2007.

- [16] Ogunba, O. A. and Iroham, C. O. (2010). A Search for Acceptable Margin of Valuation Error: A Case of Valuers and their Clients in Nigeria. *Sri Lankan Journal of Real Estate*, Vol. 4 (54 – 73).
- [17] Kirkwood, J. S. (2003): Urban real estate Information systems: the suppression of radical innovation.
- [18] Oloyede, S.A., Ayedun, C. A. and Ajibola, M.O. (2011): Issues facing the Estate Surveying and Valuation Profession in Nigeria. *Business Management Dynamics* Vol.1, No.2, August 2011, pp.54-60
- [19] Ibisola, Y and Agbato, S.E. (2010): A Study of the Emerging Rental Housing Market in Abeokuta, Ogun State. Paper Presented at the International Conference On Man, Technological Advancement And Sustainable Environment On 25th-27th October, 2010 At Francis Idibiye Auditorium, Federal University Of Technology, Akure, Nigeria