

**INVESTIGATING THE CHALLENGES IN REVENUE
COLLECTION PROCESS AND THE DEVELOPMENT OF A
COMPUTERISED SOLUTION:** The case study of AMA property rate
collection.

By

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DECLARATION

I hereby declare that this submission is my own work towards MPhil Information Technology and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

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DEDICATION

I dedicate the work to my parents, Miss Rose Birago and Mr Amidu Tahiru and my lovely husband Mr. Julius Arthur. Thank you all for your support, love and care. You have been a great source of inspiration to me. God bless you all.

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ABSTRACT

The paper focused on the challenges that exist on the process of revenue collection in the Accra Metropolitan Assembly. Like all metropolitan and municipal authorities, the AMA faces several challenges ranging for the efficient provision of service to revenue collection.

The study attempt to eliminate or reduce to minimum the challenges in the process of revenue collection, the problems associated with revenue administration, the tax base coverage and challenges in identifying property owners. Other objectives are to proposed and design a database solution for effective management of property ownership and revenue collection and also to propose a network solution for connecting the assembly's and the land sector agencies.

The study used the interpretative case study approach to obtain study individuals in their natural settings and also obtain deeper understanding of the event. Data was obtained from written narrative, observation and semi structured interviews of 20 participants.

In this study the researcher investigated the challenges associated with the collection of property rate in the AMA. It was discovered that revenue trend has not been stable in revenue collection. It was discovered that the AMA does not have a full or comprehensive register of all taxable activities or levies in their jurisdiction. There exist no system to track invoices and payments. Data on services, facilities, levies etc. are handled manually and consequently subject to fraud, abuse and significant revenue loss.

The research therefore recommends ways of minimising the revenue leakage associated with property rate administration by the AMA; The proposed database system for collecting property rate stores detailed information of individual customer's and their

property (land and building), these details would be stored with land or property coordinates from Google map for easy site identification. The system is designed to generate invoices and send it via mail to the appropriate customers and also keep payment records as well as summary reports of all services.

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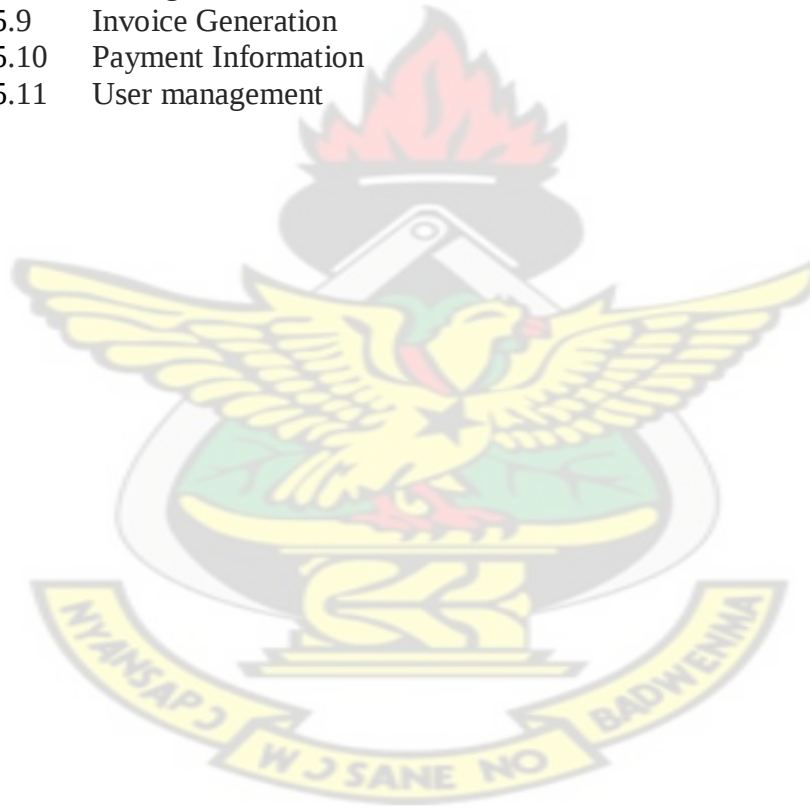
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LIST OF ABBREVIATION



MMDA's:	The Municipal, Metropolitan and Districts Assemblies
AMA:	Accra Metropolitan Assembly
ICT:	Information Communication Technology
UNDP:	United Nations Development Programme
NGO:	Non Governmental Organization
DACF:	The District Assemblies' Common Fund
IGF:	Internally-Generated Funds
DA:	District Assembly
BOP:	Business Operating Permit
GDP:	Gross Domestic Product
NCA:	National Communication Authority
CTO:	Commonwealth Telecommunication Organization
LA:	Local Authority
CICs:	Community Information Centers
ICTD:	ICT for accelerated Development
LC:	Lands Commission
LEKMA:	Ledzokuku-Krowor Municipal Assembly
UMLIS:	Urban Management and Land Information System
WAN:	Wide Area Network
VPN:	Virtual Private Network
AOSL:	Administration of Stool Land
TCPD:	Town and Country Planning Department

PRAS:	Property Rate Administration system
L2TP:	Layer two tunneling protocol
PPTP:	Point to point tunneling protocol
IPSec:	Internet protocol security
SSTP:	Secure socket tunneling protocol
ATM:	Asynchronous transfer mode



CHAPTER 1

INTRODUCTION

1.1 *Background to the study*

The local assemblies play a vital role in the economic development in the country. Most of these authorities depend or rely on manual file based information storage with little or no means of obtaining feedback from the public. Due to the manual nature of information storage not more than one person can access data at the same time and this makes it impossible for information sharing within or outside the assemblies. These Local Authorities are faced with challenges of collection, storage and dissemination of information.

However, information Communication Technology facilitates the creation of dynamic base of information and communication capacity in perspective needs and interest of various public sectors. The availability of ICT training, internet, email access services is limited at the public sectors in Ghana. An overview of the local authorities reveals a high demand for information services for their processes. The file based information storage used by most local authorities is often not up to date and not properly structured.

The revenue service and the local authorities are not collecting all revenue due from companies and individuals in Ghana. Revenue is lost because there are no proper ICT systems in place, to assist in identification of properties and their owners, to keep up to date record on tax rolls, to verify payment done by property owners. Due to the manual process involve in the revenue collection, management does not detect all short paid, mispricing and unpaid items.

Ghana has been implementing a local government decentralization program with the objective of promoting grass root democracy and ensuring that local government services and development programs are informed by and reflect local needs. The Municipal, Metropolitan and Districts Assemblies (MMDA's) were established to meet this objective. For the decentralization program to be successful, these assemblies must operate as an autonomous institution and have adequate funds to cater for their operations. The central Government funds cannot meet the needs of the Assemblies and therefore the need to mobilize revenue for their own operation but the issue here is the assemblies revenue collection processes are mainly manual, which is cumbersome, less efficient and fraught with fraud.

The decentralization process granted the District Assemblies the following functions according to (Act 2008):

- a. The formulation and execution of plans, programs and strategies for the effective mobilization of the resources necessary for the overall development of the district.
- b. The levying and collection of taxes, rates, duties and fees.

Major revenue sources of the assemblies include:

- a. Basic rate – Fixed rate levied on adult population
- b. Property rate – levied on immovable properties(annually)
- c. License – charged on economic activities in the district
- d. Fees – charged on tolls, lorry park etc.

The assemblies work in collaboration with the Lands Valuation Board on rates collection related to landed properties. The Lands valuation board, a division of the Lands Commission (Act 2008) is responsible for:

- a. Inventory of state acquired Lands
- b. Revaluation of properties within the District Assemblies.
- c. Preparation and maintenance of valuation list for rating purposes.

The effects of poor monitoring and enforcement are reflected in the performance of revenue collection. Presently, the assembly collects about 70% of their total estimated revenue. This implies that about 30% of estimated revenues are bad liability at the end of the fiscal year (dormaa.ghanadistricts.gov.gh).

1.2 Motivation

Despite the decentralization of the district assemblies operations and their function to collect taxes, rates, duties and fees, they still face a number of problems. The process of collecting revenue is mainly manual and cumbersome, inefficient and prone to fraud. The assembly has limited data on properties and their owners, defaulting property owners, and proper payment record.

It is anticipated that the introduction of an ICT system for the local assemblies will help manage revenue collection properly. Building a database for the district assemblies to capture all land registration document and permits issued at the land valuation board will enable the assembly have access to primary information on all properties and their owners in the country. In this way there will be a synergy and network between the land sector and the assembly, which will aid in easy

information sharing. This will ensure accurate billing, monitoring and control of the revenue collection process and also guarantee that revenue is not lost.

This research acknowledges the fact that there are other ICT research priorities in Ghana. However, this study is intended to explore how ICT system can help manage the collection of property rate in the Accra Metropolitan Assembly. The Public sector is faced with the issue of revenue leakage from the, land sector agencies through to the local authorities who are in charge of rate collection; this is because most of the operations in the assemblies are manually based and therefore there is limited control, no transparency and no accountability. This limitation has resulted in unpaid land rates and bills, and also led to exploitation of consumers by some officials. It has further attracted corrupt practices as officials (rate collectors) and consumers conspire to distort bills and other fees that need to be settled.

In most operations humans serve as an interface between the business entities and customers, and these human resources are responsible for revenue collection, facilitation of mispricing, inappropriate accountability and the wrong invoicing; in this view this study assumes that replacing humans with computer systems would be a better solution to revenue management.

1.3 Aims and Objectives

The main objectives of this research include the following:

1. To eliminate or reduce to minimum revenue leakage in the process of revenue collection.

1.4 Specific Objectives

1. To investigate the problems associated with administration of revenue collection.
2. To investigate the tax base coverage area and the challenges in identifying property owners.
3. To propose and develop database solution for effective management of property ownership and revenue collection.
4. To propose a Network solution for improved synergy between the assemblies and land sector agencies.

1.5 Research Question

1. How can ICT system be used to curb revenue leakage in AMA's property rate collection process?
2. What benefit(s) can be derived from the use of ICT system in revenue collection?

1.6 Structure of the paper

This study has been organized in six chapters, chapter one introduces the work and provides what motivated me to undertake this research, the aims & objectives of the research, research questions, and structure of thesis. Chapter two reviewed relevant literature from different sources on the issue being investigated into. In chapter three the research methodology adopted for the study is being discussed. The chapter four highlights on the functions and implementation of the proposed database system. Chapter five highlights on the research data collection and the analysis and discussions made. The major findings recommendations and conclusion for the entire study will be presented in chapter six.

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CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter is designed to review literature on the relevant concepts and theories relating to the research. This chapter provides a theoretical structure of the research highlighting on the vital and relevant definitions, explanations and concepts. Among these concepts and issues are the overview of revenue leakage and the concept of decentralization and local Governance. The formation of local Government and their function according to the constitution, the sources of revenue collection by the local authorities and the problems associated with this system is also highlighted in the chapter. Also, the ICT infrastructure Ghana is considered as well as the use of ICT in revenue generation in other Countries.

Revenue is the income generated from individuals and Companies in a Country through the payment of royalties and or fees. Revenue (2012). Therefore, revenue loss (leakage) can be defined as the loss of revenue to a company or country which is as a result of corrupt practices in the revenue process. As explained by Jargon-buster, revenue leakage is the difference between the revenue a customer is entitled to pay and the actual revenue received or recorded in the revenue books. Revenue Leakage (2012).

Some of the leakages identified in the local assemblies include issue of wrong bills, difficulties in locating default customers, mispricing, agents conniving with customers to default payments. The revenue collection process is mainly manual which is time consuming, inefficient and prone to fraud. Also, local assembly has limited data on properties and their owners, defaulting property owners, and payment records.

2.1 Decentralization and Local Governance

Decentralization is a governing system where power (in the form of political, fiscal and administrative) is transferred from the central government to the lower levels in an administrative and territorial hierarchy. Alam and Koranteng (2010). Though the concept of decentralization is seen as a multifaceted concept, Dr. Munawwar Alam, (Commonwealth Secretariat) explains it in simple terms as an arrangement or system that comprises the central power and sub state establishment and the leaders in those communities. Darison (2011) cited Fass and Desloovere (2003), on the concept of decentralization as “any act in which a central government formally cedes powers to actors and institutions at lower levels in a political administrative and territorial hierarchy. This implies that decentralization is the mechanism for bringing government closer to the governed and helps to improve public administration by empowering local authorities to be the planning and decision making bodies thus enhancing government capacity to achieve local participation”.

Others term decentralization as the redistribution of authority for decision making to the lower level of management. Supporting the definition of decentralization in management view, according to Fayol “Everything that goes to increase the importance of the subordinates’ role is called Decentralization”. Reddy and Tripathi (2007).

Deducing from all the above definitions and explanation of the concept of decentralization, decentralization can be viewed as the transfer of power of authority and resources away from the central location or government to the sub state or local indigenes to foster local governance and local development.

2.1.1 Types of Decentralization

There are different types or forms of decentralization and Hans Bjorn Oslen (2007) identifies the following three (3) types:

Political Decentralization: Is where the power for decision making is vested in district councils and state level bodies; in this way they can hire their own administrative personnel and can also dismiss them when they are not performing, with little or no assistance from the central authority.

Fiscal Decentralization: This is where local or District councils are equipped with the necessary resources to enable them take up their responsibilities and functions properly. These resources include fund allocation in the form of local taxation, revenue collection and fees as agreed on with the central authorities. Fiscal Decentralization goes a long way to support the developmental projects in the local district that have been on wait for the central government to undertake it.

Administrative Decentralization: This is a type of decentralization where administrative duties like decision making, resource allocation and the task of some public services is transferred to the lower levels of government, agencies and other central government field offices.

When local Government obtain full responsibility to hire, pay and dismiss personnel and also assign task, that form of Administrative decentralization is known as Devolution.

Deconcentration on the other hand as cited in (Antwi - Boasiako, 2010, p.170), (Assibey, 2000) is a power sharing approach where responsibilities are transferred

from a central state to a local or regional unit. In this case local unit is accountable to the central government.

Delegation is also a form of Administrative decentralization where there is the transfer of decision making responsibilities and services from the Central Government to specialized organization that are not wholly controlled by the Government (Antwi –Boasiako, 2010 & Ayee, 2000).

2.1.2 Local Governance

Governance can be defined as the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the institutions that govern economic and social interactions among them. Local governance can be seen as a form of public administration which commonly exist as the lowest level of government within a given state (Wiki). Local Governance describes the process of public administration which include decision making, resource allocation and service delivery at the local levels (UNDP, 2004). It involves other key actors such as the mayors, local councils, NGO's and business associations, also other formal and informal institutions such as municipal administration, council and also rules and regulation and available resources such as human resources and funds. Local Government is the lowest tier of Government. It is closest to citizens and the community and therefore known as local (Alam and Nickson, 2006). The domain of local councils encompasses, supporting the creation of an enabling environment where multi-stakeholders, processes- including public and private sector, as well as

civil society to foster effective local development, help battle corruption ,target policies and intervention to local taste and customs.

The 1992 constitution 240(1) enforces Ghana to have a system of local Government and administration which shall as far as practicable be decentralized. The constitution provides that a District Assembly is the highest political authority in the district, and that the District Assembly has deliberative, legislative and executive powers. Article 241(1) further state that for the purpose of local government, Ghana shall be deemed to have been divided into districts in existence immediately before the coming into force of this constitution. An area can be declared as a district and assign a name to the district by the President.

The local government Act 1993 describes the composition, powers and duties of the district assemblies. The act provides that, there are three kinds of districts namely Districts, Municipal and Metropolitan. The Assembly is considered the highest political authority in each of the district: and we have the District Assembly, Municipal Assembly or a Metropolitan Assembly. The composition of these assemblies is in relation to the population size as follows:

- ✓ District Assemblies in districts with a minimum population of 75,000 people;
- ✓ Municipal Assemblies in districts with a minimum population of 95,000 people; and
- ✓ Metropolitan Assemblies in districts with a minimum population of 250,000 people.

2.2 Main Source of Revenue for Accra Metropolitan Assembly (AMA).

The Local Government Act 1993 462 (section 10 sub sections 1, 2, 3, 4 and 5) authorize the Assemblies to carry out the legislative, deliberative and executive functions of Government. The following are the functions of the Accra Metropolitan Assembly as are outlined in the Legislative Instrument (L.I. 1500):

- ☐ Provision of a sound sanitary and healthy environment;
- ☐ Provision of educational infrastructure for first and second cycle schools;
- ☐ Provision of markets and lorry parks within the Metropolis;
- ☐ The planning and development control of all infrastructure within Accra;
- ☐ Activities bordering on the maintenance of peace and security within the Metropolis;
- ☐ Provision of public safety and comfort;

For the Assembly to be able to perform the above-mentioned core functions effectively and efficiently would therefore require funding. The Assembly therefore is supported by funds generated through various sources. The 1992 Constitution provides that each local government shall be granted a sound financial base with adequate and reliable source of revenue (1992 Constitution, Article 240 (2C)). The Local Government Act 1993 (Act 462) entitles the Assemblies as rating authorities and empowers them to levy rates and taxes to generate funds to finance either partly or in whole the expenses by the Assembly (Art 462, section 94).

The main source of revenue provided:

District authorities have three sources of revenue namely: The District Assemblies' Common Fund (DACF), Ceded revenue and own revenue raised through local taxation (Crawford, 2004). On the other hand a market assessment report (2008) prepared by the metro planning coordinating unit indicate the following as the four main sources of revenue for Accra Metropolitan Assembly though no reference was cited:

- a. Central Government transfers, including the District Assemblies' common fund, salaries of assembly workers and HIPC Relief Fund disbursements;
- b. Internally-generated funds (IGF);
- c. Loans and grants;
- d. Private sector funding.

Constitutionally, the DACF is the main source of revenue from central Government to the district assemblies to enable them gain a form of financial independence; though it is not sufficient given the broad range of responsibilities devolved to the district authorities (Crawford, 2004).

Ceded revenue refers to revenue received from a number of lesser tax fields that the central government has ceded to the District Assemblies. Ceded revenue is derived from selected revenue sources listed below which hitherto were tapped by the central government through the Internal Revenue Service, but which central government has “ceded” to the DA's , in pursuit of decentralization. The ceded revenue is centrally collected by the Internal Revenue Service and the total ceded

revenue collected for a year is transferred to the Ministry of Local Government which shares it among the DA's using a formula approved annually by the Cabinet.

The following list other revenues for the Local authorizes and the statutory act that supports them:

- The sources are entertainment duty under the Entertainments Duty Act 1962, (Act 150),
- Casino revenue under the Casino Revenue Tax Decree, 1973 (NRCD 200),
- Betting tax under the Betting Tax Act, 1965 (Act 268),
- Gambling tax under the Gambling Machines Decree, 1973 (NRCD 1974),
- Income Tax (Registration of Trade, Business, Profession or Vocation) Law, 1986 (PNDCL 156). Others are income tax payable by specified categories of self-employed persons in the informal sector, daily transport tax under the Income Tax (Amendment) Law, 1987 (PNDCL177) and
- Advertisement tax under the Advertisement Tax Decree, 1976 (SMCD 50).

The traditional sources of internally-generated revenue are derived from five main areas, namely rates, fees, licenses (business operating permit (BOP) fees), rents and trading services. Rates, (especially property rates), licenses, fees and trading services (Market assessment report, 2008). However, such local taxation are limited as (Crawford, 2004) cited Nkrumah (2000; 61) because the 'more lucrative' tax fields such as the (income tax, import and export duties) all belongs to the central

government while the lower yielding taxes like rates and market tolls are assigned to the local authorities.

2.3 Property Rate Administration

Alan F Macdonald, a real estate agent in Edmonton, Alberta defines property tax as a charge on real estate that is collected each year by municipal or county. He further explains that property tax rate can differ based on location of the property, the value of the property and the improvement made to the property. Though property taxes are regarded as an efficient and equitable means raising revenue, it is noted as one of the largely untapped revenue potential in many countries (Norregaard, 2013). In contrast, it was argued that almost all local government worldwide rely, at least to some extent on property taxation to pay for local services (Slack, 2010). The property tax is perceived as an important tax because its fair and difficult to evade, and it provides local autonomy and accountability (Bird R.M., 2001 & Slack, 2010) however Slack argued that its contribution to a country's Gross Domestic Product (GDP) rarely exceed 3% in any country and are sometimes lesser than that. On the contrary Slack outline a number of points that makes property tax, a good tax for local Government.

1. Properties are immovable, even when ownership changed, the property is still taxed under property rate. Property cannot be shifted or moved from a particular place. It is therefore easier to levy and collect than other movable taxes and thus provides potential to raise significant revenue.

2. Tax is levied by local government and this ensures the local authority function is active. To some extent tax cannot be levied by senior level government. The extent to which local government have exclusive rights on the property tax contributes to its role in promoting local authority.
3. The property tax is a highly visible tax. This rate is not deducted as source as with other forms of taxes like the income tax. The tax payer gets to know the tax component by the yearly bill and make payment directly. People know how much property tax they pay, and they usually pay this amount in one lump sum. As a result taxpayers tend to be much more aware of the property taxes they pay. Tax payers also tend to witness the public services such as roads, recreational centers and cabbage collection that the tax is used to finance.

2.4 Problems with Property rate collection in local Assemblies.

The legal framework confirm that the Assemblies would be the highest form of authority in every district and therefore they are entitled to collect revenue, rates and fees in addition to other funds from central Government to enable them undertake developmental project in their jurisdiction. Though the assemblies collect revenues which contribute their internally generated funds, it is clear that the amount realize from such exercise is not enough to cater for their developmental projects and therefore there is always pressure on the central Government to support the assemblies in their local developmental project. The revenue yield of the property tax in developing countries is very low (Bahl and Wallace,

2008).According to Bahl and Martinez-Vazquez, 2008, a collection rate of 50 percent is usual in developing countries.

The low collection or mobilization of property rates are identified as follows:

i. Weak /Poor Administration

A local government revenue system is complicated and non transparent, costly to administer and also facilitates corruption and mismanagement (Bardhan & Mookherjee, 2002). Not only does property tax mobilization faces higher administration cost but also seems to be politically costly; disgruntled property owners results in the intervention from politicians in their constituents (Enemus, 2000, Karin Millet) when they are faced with the enforcement mechanism of getting their rates paid. There is shortage of well trained and qualified personnel which suppose to serve as tool for collection of taxes and rates at the local level, even the few available are not properly trained in efficient budgetary and financial management systems (Adedokum).

ii. Poor Enforcement Mechanism

To date, local assemblies rely on individual persuasion to mobilize revenues rather than utilizing the various enforcement mechanisms available in the local Government Act (Mark Fosu, 2012). The lack of punitive measures is making people indifferent to the payment of taxes in Ghana and thus making the government lose revenue. Recently, a popular actor in the United States of America, Wesley Snipes, was sentenced to a three-year jail sentence in a federal

prison in Pennsylvania for failing to pay taxes. How many Ghanaians have faced the rigors of the law for tax evasion? (www.tighana.org).

iii. Tax Coverage Area

The Local Government tax revenue registers on taxable objects, properties and business seems incomplete and outdated. In other parts the assemblies' property tax register is non-existent and must be created for the first time. The registers on records at the previously rated areas may be incomplete and there is the need for an update. (Kelly et al (ibid), Mark Fosu (2012)). In Malawi, local registers contain only information on the few smaller business being licensed by the assemblies and information on any large business is contained in the business register at the ministry of industry and Commerce (Schroeder, et al, 1998).

iv. Difficulty in Identifying Property owners

In the absence of clear Cadastral systems and regular street patterns, named streets and numbered houses, property bills are not delivered and penalties are not enforceable. Collection is often poor and many bills go unpaid because taxpayers are not identified or they resist payment because their housing conditions are too poor or some urban basic needs are not provided in their areas (Odd-Nelge Fjeldstad, 2012). In Kampala as also seen as a phenomenon in other African countries, poor or non payments of revenue or property tax by owners due to high mobility of persons, frequent property sales/exchanges and inadequate registration of titles (McCluskey, et al, 2003).

v. Lack of Skilled Technical Staff

Corruption, as defined as the abuse of entrusted power for private gain, is allegedly deeply rooted among some of the tax officials. (www.tighana.org). Even though the law requires that valuations be carried out every five years, many properties are not taxed at all and many newly renovated building have not been revalued. Systems of recording and valuing properties are seriously deficient. This is partly because the skilled technical staff needed to organize and supervise valuation work is in short supply (Odd-Helge Fjeldstad, 2012).

2.5 ICT Infrastructure in Ghana

Ghana adopted ICT into its development agenda in the nation's policy in 2003, after attempting several times to do so. This policy is to help guide the implementation and use of ICTs in the country. In the west-Africa sub-region, Ghana can boast of faster advancement in the areas of telecommunication than most countries. It is reported that Ghana is likely to achieve a teledensity of 50%, well ahead of the targets for the United Nations (UN) Millennium Development Goal. However when compared with other Africa countries such as South Africa, Ghana lacks behind in terms of the development of infrastructure, accessibility and the use of ICTs. Ghana achieved a teledensity of 25% target set by the government at the end of 2006. Additional statistics released by the National Communication Authority, indicates that the figure increased by a rate of 27% at the end of the second quarter

of 2007 (Report by Major (rtd) John Tandoh, the former Director General of the NCA).

The most recent projects undertaken by the NCA is the development of a five year strategic plan to ensure effective market competition, streamline spectrum regulation, improve consumer relation and also accelerate broadband communication in Ghana. The project was completed by the assistance of Commonwealth Telecommunication Organization (CTO). The CTO confirmed that Ghana's ICT sector has witnessed over the last decade a mobile penetration rate moving from 0.67 % to 81% (www.ghanabusinessnews.com). Other projects undertaken by the Government to achieve the deployment of ICTs, to reduce bandwidth cost and facilitate easy access especially to the internet is the construction of the national fibre optic backbone in Ghana. The construction of the fibre optic will help reduce call drops in relation to telecommunication and also aid in the speedy deployment of over 200 community Information Centres (CICs) by Government in partnership with UNDP supported that operationalisation of the CIS's and facilitated the training delivery at 40 for the centers located at the district capitals, which represent the Government's authority at the local level (Dr. Benjamin Aggrey Ntim, former Minister of Communication, World Telecom and Information Society Day, 2007).

2.5.1 ICT Policy in Ghana

The ICT in Ghana faces a number of challenges such as inadequate infrastructure and devices, lack of connectivity and skills. In view of these challenges the

Government developed the national ICT for accelerated Development (ICTD) policy document in 2003 to guide the implementation of developmental programme with ICT as the facilitator.

a. Phase One (The Framework Document): The first phase of the policy concentrates on the development of an integrated ICT- led socio- economic development framework for Ghana. The first phase is therefore geared towards the development of a framework which captures and encompasses all spheres of development

b. Phase Two (The Policy Document): This phase of the process concentrates on the development of an Integrated ICT-led socio-economic development policy and strategies for Ghana. The development of the ICT policy on socio-economic growth is within the framework of the phase one. Also, this phase provides strategies of realizing the policy formulated.

c. Phase Three (The plan): This final phase of the process is devoted to the development of a plan guided by the policy commitments detailed in the policy document. The preparation of the plan is informed by the policies, strategies and the framework established by the phase one and two.

2.6 Strategies for effective IGFs

To generate enough IGFs, Korkor (2003) suggests the following strategies to MMDAs;

- Public education on payment of rates, fees, licenses, etc by corporate bodies, traders, property owners etc.
- Revaluation of immoveable properties to reflect the true earns values of such properties.
- Introduction of new business operating permits.
- Engagement of private revenue collectors.
- Use of task force and the police to enforce payment of fees, licenses, etc.

2.7 **Benefits of IT in revenue collection the case of Turkey**

Electronic taxation is a new form of tax payment that does not require going to the tax authorities and tax payment is through information and communication technology. It is a new electronic government application and a new perspective for public service. In this study, e-taxation has been defined as a new technology based system that does not necessitate for tax payers to go to tax authorities to pay their taxes due. System is composed of turning in tax declaration forms that defines tax owned to tax authorities in an electronic format and pay taxes due via electronic environments based on Internet through interactive bank accounts or by ATM bank machines. E-taxation is called to collect taxes due by tax authorities in electronic environments via electronic declaration and electronic payment methods. In Turkey, most of tax payers declare their taxes due in electronic environments and pay their taxes by going to the bank or via Internet based interactive bank accounts. Electronic tax payment is first coined in US and implemented in this country. However, the purpose of the tax strategy in Turkey is to simplify tax laws and

regulations and to harmonize tax law with European Union law. (Ozgen and Turan, 2007).

2.7.1 Usefulness of E-Taxation

The development and utilization of modern technology in revenue mobilization has become a critical feature of every country particularly developing countries. This is as a result of the numerous usefulness modern technology offers in the development of municipalities. The following are the major usefulness Turkey is enjoying from the adoption of E- Taxation in the operation and management of municipalities.

Cost Saving Opportunities: The e-taxation saves the cost and enhances the operations of the municipalities. The adoption of the system in Turkey saved the country \$23.1 million dollars as the system presented a platform for few workers to be employed with optimum efficiency.

Saves Time: Another usefulness of e-taxation is time saving. In Turkey the new system of municipal management offers great deal of effective management as the system is employed to perform a multiple tasks within a limited timeframe.

E-Taxation also brings about efficiency and effectiveness in the declaration and subsequent payment of tax due. The situation in Turkey indicated that the new system offers a frame work for all tax payers to be tracked. The ultimate of all of these is that more revenue is generated.

2.8 The Case Study of Lithuanian property registration system

In 1992, a computer based land parcels registration system – the Temporary Register of Land Cadastre – was developed and implemented. In 1997, the Law on Real Property Register established the State Land Cadastre and Register, which became the State Enterprise Centre of Registers in 2003. The Centre of Registers accepts documents that are necessary to register real property, register the rights associated with that property, issue documents concerning ownership of real property among other duties. By 1998 a fully computerized real property registration system that linked land parcels, buildings, and the cadastre geographical information system into one unified system was developed and implemented.

2.8.1 Benefits

Currently, the Lithuanian real property cadastre and register system is:

Unified: Information about real properties, as well as rights and values, is accumulated in a single institution and a single system;

Centralized: There is a central data bank for the entire country, and only data from the central data bank have legal status;

Digitalized: Cadastre and legal data, including graphical and descriptive information, cover the whole country and only this digital data have legal force and can provide data services, or e-services, on line;

Multipurpose: in that it is used for ownership rights guaranty, taxation, valuation and market investigation; and Self financing, full cost recovery from fees for

services rendered paid by clients. (Aleksiene and Bagdonavicius, p. 416, Connolly and Bell).

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CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the methodology employed to collect data and achieve the objective of the study. The chapter therefore highlights on the research methodology and the associated methods, population, sampling method, data

collection procedure, as well as the Ethical Issues that the researcher needs to be careful of in the process of the research.

3.1 Research Methodology

Research Methodology is a systematic way of solving the research problem. It can be defined as the science of studying how research is to be carried out; that is the step by step approach by which researchers go about their work of describing, explaining and predicting phenomena. It can also be defined in simple terms as the study of methods by which knowledge is gained; its aim is to give the work plan of the research (S. Rajasekar, School of Physics, Bharathidasan University, Tiruchirapalli).

The research methodology used for a study can be classified by means of the purpose for which the research is conducted (Cooper and Schindler, 2006).

3.2 Qualitative and Quantitative Research Method

Research methods are generalized and established ways of approaching research questions (www.ehow.com). There are several research methods, such as action research, qualitative research method (Interviews, focus groups and observation) and quantitative research method (questionnaire, survey and experiment) (Somarathne, 2010).

For the purpose of the study qualitative and quantitative research would be defined. According to Dr Catherine Dawson, quantitative research generates statistics through the use of large scale survey research, using methods such as

questionnaire or structured interviews. It also describes and interprets events by measurements and amounts. It involves the use and collection of variety of empirical data such as case study, interviews etc. According to Patton (2005), qualitative research analyses data from direct fieldwork observations, in-depth, open-ended interviews and written documents.

The research design uses naturalistic approach to interpret the subject matter; events are studied and interpreted in terms of the meaning people bring to them. Another definition of Qualitative research states that, it “any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification” (Strauss and Corbin, 1990, p. 17& Sanders, 1997). Qualitative research explores attitudes, behavior and experiences through such methods as interviews or focus groups (Dawson, 2002, p 14).

Hence, the research methodology suitable for the study has been assessed to be qualitative because the subject under research is of social nature and there is the need to obtain an in depth opinion from participant through methods such as interviews or focus group. Considering the nature of the research, qualitative research is appropriate in gaining understanding in the research environment. The use of qualitative approach in a study brings the researcher closer to reality thus, there is close interactions between researcher and respondent (Sarantakos, 1998). Strauss and Corbin ([1990](#)) as cited in Sanders (1997) claim that qualitative methods can be used to better understand any phenomenon about which little is yet known.

3.3 Qualitative Research paradigm

Qualitative and Quantitative research methods involve very different paradigms or assumptions about how research should be conducted and the role of the researcher. Therefore, when we evaluate qualitative research, we need to know about these assumptions. They are Positivist, Interpretive and Critical.

They are explained by (Merriam, S. B., et al, 2002), San Francisco, CA: Jossey-Bass as follows:

Critical qualitative research: the main aim of this type of research is to achieve a goal by empowering individuals and enable change by revealing and criticizing social, cultural and psychological issues pertaining to current contexts. The analysis is critical for methods like participatory action research which uses critique as the basis for collection action. Following the argument another author explained broadly that “Critical researchers” assume that social reality is historically constituted and that it is produced and reproduced by people. Although people can consciously act to change their social and economic circumstances, critical researchers recognize that their ability to do so is constrained by various forms of social, cultural and political domination” (Myers, M. D. & Somarathne , 2010).

Interpretative research: is used in situations where researchers’ are interested in how people make meanings out of situations or phenomena. It uses inductive study strategy, collecting data from interviews, observations or document analysis. According to Boland, R as cited in Somarathne (2010), “Interpretive researchers start out with the assumption that access to reality (given or socially constructed) is only through social constructions such as language, consciousness and shared

meanings. The philosophical base of interpretive research is hermeneutics and phenomenology”.

Positivist qualitative research approach is based on the knowledge gained from the researcher’s observable experience but not from any introspection or intuition. Positivist research generally describes by the measurable properties and it does not depend on researcher and his/her instrument. It is generally test theory. It can be evidence of hypothesis testing, observation from sample population and countable measure of variables (Orlikowski, 1991 & Somarathne, 2010).

3.4 Common Methods used in Qualitative Research

There are various research methods in qualitative research such as the action research which uses practical or experiment to solve problem. It is appropriate for researcher’s whose study is based on “how to” (Somarathne, 2010). Ethnography research require the researcher to spend more time on the field and be part of or immense him /herself in the lines of the people they study and also seek to place the phenomena in their social and cultural context. (Somarathne, 2010). Its emphasis is on describing and interpreting cultural behaviour (Dawson.p.17). Grounded Theory emphasis is on generation of theory which is grounded in the data. There is no formulation and testing of hypothesis, thus the theory emerged from the data(Dawson, p19).Case study research according to Baster is simply conducting research on a single individual or a situation .This approach enable the researcher to assume how and why type of questions. Baxter, (2008).According to Nachmias (1992) definition as cited in Darison (2012), case study approach entails

an observation of a single group or event at a single point in time, usually subsequent to some phenomenon that allegedly produced change, for instance a community, after an urban renewal programme (Nachmias, 1992 & Darison 2012).

In view of the context of this study the Interpretative case study approach is adopted to bring out understanding of a complex issue and also extend experience or strength to what is already known through previous research (Spring, 1997). Interpretative case study was adopted to obtain understanding of words from an individual perspective since the research focused on a specific phenomenon. Yin defines case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1984, p. 23, spring1997). This work investigates the challenges of revenue collection process in the Accra Metropolitan Assembly and whether ICT will help eliminate revenue leakage in the process. A single case is adopted for this study to explore and gain an initial, in-depth understanding of what method is used in revenue collection, the challenges associated with the method and evaluate how ICT can be used as tool to remedy the challenge. In line with this McMillan and Schumacher (1997) also stated that case studies can provide a detailed description and analysis of processes or themes voiced by participants in a particular situation. Case studies, adopts an interpretive approach to data, studies 'things' within their context and considers the subjective meanings that people bring to their situation.

The case study approach is an explanatory method which makes it easy to ask and seek answers for the necessary 'how', 'when' and 'why' questions associated with the study. Again, the intimacy of fieldwork relationships associated with case studies can be the greatest advantage (David and Sutton, 2004, Darison 2012). Given the sensitive nature of the topic as well as the in-depth data the researcher is interested the best way to gather this kind of data is directly from the population who are interested and associated with the phenomena.

3.5 Data Collection Tools

The study involved two levels of data collection. These include the management of Accra Metropolitan assembly and Lands Valuation (Rating division).

The data collection instruments that were employed for the study include the use of semi structured institutional questionnaires, observation, interviews, and pocket notebook. These tools were employed to facilitate the data collection process as and when the use of any one of them became necessary. These tools were employed to ensure a complete assessment and understanding of the phenomenon under investigation.

The semi structured interviews allow the researcher to construct a series of open ended questions to identify the challenges or problems in revenue collection and how effective the introduction or application of ICT can eliminate or reduce revenue leakage. The researcher resorted to this type of interview because it enable her to probe the interviewee to elaborate more on issues discussed in order to obtain more information .

Face –to-face interview was used to establish rapport with potential participant in order to gain their cooperation. This method was used to gain information from the AMA budget, financial and MIS department about available information and documentation of properties in the metropolis. This method became necessary because it enables the researcher to obtain clarification to ambiguous answers and follow-up on information when appropriate.

Observation aid the researcher to obtained good description of the functions of both institutions (AMA and LC).Information was gathered from the composite budget of the AMA and block directorate of the rating division under the land valuation division in the Lands Commission. Drawing understanding from this, Observation can lead to deeper understandings than interviews alone, because it provides knowledge of the context in which events occur, and may enable the researcher to see things that participants themselves are not aware of, or that they are unwilling to discuss ([Patton, 1990](#), Sander, 1997).

3.6 Research Population

The target population is the management and staff of Accra Metropolitan Assembly and Lands Commission. A sample of 20 staff members were purposively selected from each institute. A cross section of property owners were randomly selected for this exercise. The staff of AMA comprised of Budget Office, Metropolitan Finance Office and Internal Audit Unit, MIS Department and the divisions of the Lands Commission comprise of the Land Valuation unit and the land registry.

3.7 Sampling Technique

In carrying out the study, the purposive sampling method was employed in the selection of the of the 12 staff from the Accra Metropolitan Assembly and 8 staff from the Lands commission(valuation division).Purposeful sampling seeks information-rich cases which can be studied in depth ([Patton, 1990](#), Sander, 1917).The Accra Metropolitan Assembly was selected for the study due to the evidence of the usage of the ICT system in revenue collection. The Lands commission was also selected due to the data obtained by the valuation unit which is turn to be necessary for the assembly's revenue collection. The purposive sampling technique was used to sample the officers that were interviewed at the assembly and the Lands commission.

3.8 Sources of Data

Both primary and secondary data were used for the study. Relevant literature was reviewed from secondary sources to obtain an in-depth understanding of the subject being researched and also to find out about the views, arguments and conclusions raised by different people on the subject under investigation. The secondary sources of data which include journals, publications, articles and the internet were used to provide a deeper understanding of the key concepts, and efforts in how IT can be used in the assembly's revenue collection process.

3.9 Ethical Issues

As this study required the participation of human respondents, certain ethical issues were addressed. The consideration of these ethical issues was necessary for the purpose of ensuring the privacy as well as the safety of the participants. Among the significant ethical issues that were considered in the research process include consent and confidentiality. In order to secure the consent of the selected participants, the researcher relayed all important details of the study, including its aim and purpose. By explaining these important details, the respondents were able to understand the importance of their role in the completion of the research. The respondents were also advised that they could withdraw from the study even during the process. With this, the participants were not forced to participate in the research. The confidentiality of the participants was also ensured by not disclosing their names or personal information in the research. Only relevant details that helped in answering the research questions were included.

CHAPTER FOUR

PROFILE OF THE STUDY AREA, ANALYSIS AND INTERPRETATION OF DATA

4.1 Study Area Profile

This chapter presents the profile of the study area encompassing issues of physical characteristics, population characteristics and also demographic features. As well as analysis and interpretation of the data collected.

4.2 Description of the study area

The Capital of the Metropolis is Accra. It is to be noted that Accra is both the regional capital of the Greater Accra Region and the national capital of the Republic of Ghana. Accra Metropolitan Assembly covers an area of

173sqkm. The Metropolis is located on Longitude (05°35'N) and on Latitude (00°06'W). The Metropolis is bounded on the East by the Ledzokuku-Krowo Municipal Assembly, on the South by the Gulf of Guinea, on the West by Ga South Municipal Assembly and on North by the Ga West Municipal Assembly.

4.3 Establishment

The first attempt to set up a town council dates back to 1859 under an Ordinance, which was repealed in January 1861. In 1898, however, the Accra Town Council was formally established under the Town Council Ordinance of 1894. In 1943, the Accra Council was established under the Accra Town Council Ordinance of the same year. In 1944, a new constitution came into being after the Accra Town Council had existed for 46 years with an elected membership of Seventy-Five (75) appointed by the Government and two by the Ga Native Authority. Like all the District Assemblies, the Accra Metropolitan Assembly (AMA) was established by the local Government Act, 1993, (Act 462) and Legislative Instrument 1615 which also established the six (6) sub- Metropolitan District Councils. The L.I 1718, subsequently, increased the sub metropolitan District Council to Thirteen (13). Following the creation of the Ledzokuku-Krowor Municipal Assembly (LEKMA) in 2008, AMA now operates under a new L.I 1926 which also reduces the Thirteen (13) sub-metros to eleven (11). These are Ablekuma Central, Ablekuma North, Ablekuma South, Ashiedu Keteke, Ayawaso Central, Ayawaso East , Ayawaso West, La, Okaikoi North, Okaikoi South and Osu Klottey. The General Assembly has a membership of 140 comprising of 86 elected Members, 42 Government Appointees, 11 Members of Parliament and one Metro Chief Executive.

4.4 Population (Structure)

The 2011 estimated population of Accra, pending the result of the 2010 population and Housing Census (PHC) is 4.5million including daily influx population of 1 million who commute to the City for various socio-economic activities, which most of them are non-existent thereby resorting to social vices and economic crimes. The gross population density for Accra Metropolitan area was 82.33 persons per hectare in 2000 compared to 6.23/ha in 1970. This is currently estimated to be 25.73/ha in 2010 and is to increase to 292.50/ha by the end of the plan. This will put pressure on the existing facilities and will demand for direct efforts to meet the needs of the populace. Accra's population like that of other urban centre's is a very youthful with 56% of the population under the age of 24years. It will be realized from the age-sex ratio that 51% of the population are females and the rest 49% males. This gives a sex ratio of 1:1.04 males to females. The dominance of females over males is reflection of the nationwide trend where the estimated ratio is 1:1.03. The need to target women in any development programme in the Metropolis can therefore not be overemphasized. The dependency ratio has been calculated to be approximately 60%. It follows that 60% of residents of Accra rely on the other 40% for their livelihood.

4.5 Analysis of Field Data

Having established the theoretical background and methodology adopted for the study as well as the study area profile, the purpose of this chapter is to narrow the discussion down by analyzing the empirical data from the study area and investigate if the theoretical issues discussed in the preceding chapter pertaining to challenges in local government revenue collection exist in the Accra Metropolitan Assembly. This chapter thus seeks to analyze the data obtained from the field survey and interviews conducted in the research area.

4.5.1 Main Sources of Revenue for Accra Metropolitan Assembly

In response to a question asked about the main source of IGFS of AMA all respondents listed the following:

- Rate
- Land
- Fees and fine
- Rent
- Licenses
- Miscellaneous

In relation to how the above contribute to the IGF the following data was obtained from the directorate of budget provided the revenue statistics shown in the Table 4.1

TABLE 4.1 – Revenue statistics from budget office

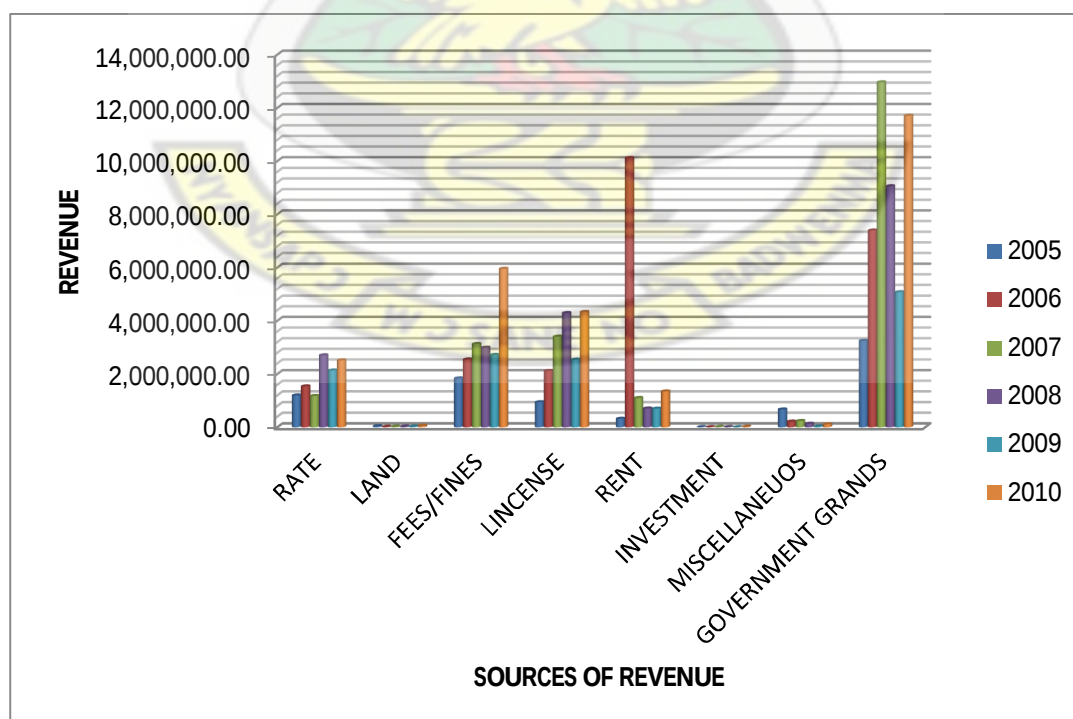
	2005	2006	2007	2008	2009	2010
RATE	1,194,603.90	1,535,100.19	1,174,484.13	2,701,497.26	2,131,138.62	2,512,990.91
LAND	38,009.74	15,159	22,885.92	24,700.73	26,164.00	54,324
FEES/FINES	1,833,912.04	2,545,379.87	3,128,134.06	2,987,479.91	2,716,386.55	5,952,299.40

Source: Field Survey, July, 2013

LINCENSE	939,018.91	2,113,691.73	3,402,988.78	4,288,814.66	2,539,116.12	4,330,034.37
RENT	318454.14	10116034	1,097,141.70	703,123.60	697,678.28	1,343,962.32
INVESTMENT	3,228.22	3,044.07	12,083.68	5,421.74	-	18,389.06
MISCELLANEUOS	666,098.47	210,883.59	234,529.32	130,822.31	29,085.33	109,430.97
GOVERNMENT GRANDS	3,244,125.46	7,389,736.87	12,959,379.9	9,053,942.95	5,072,291.66	11,702,451.91

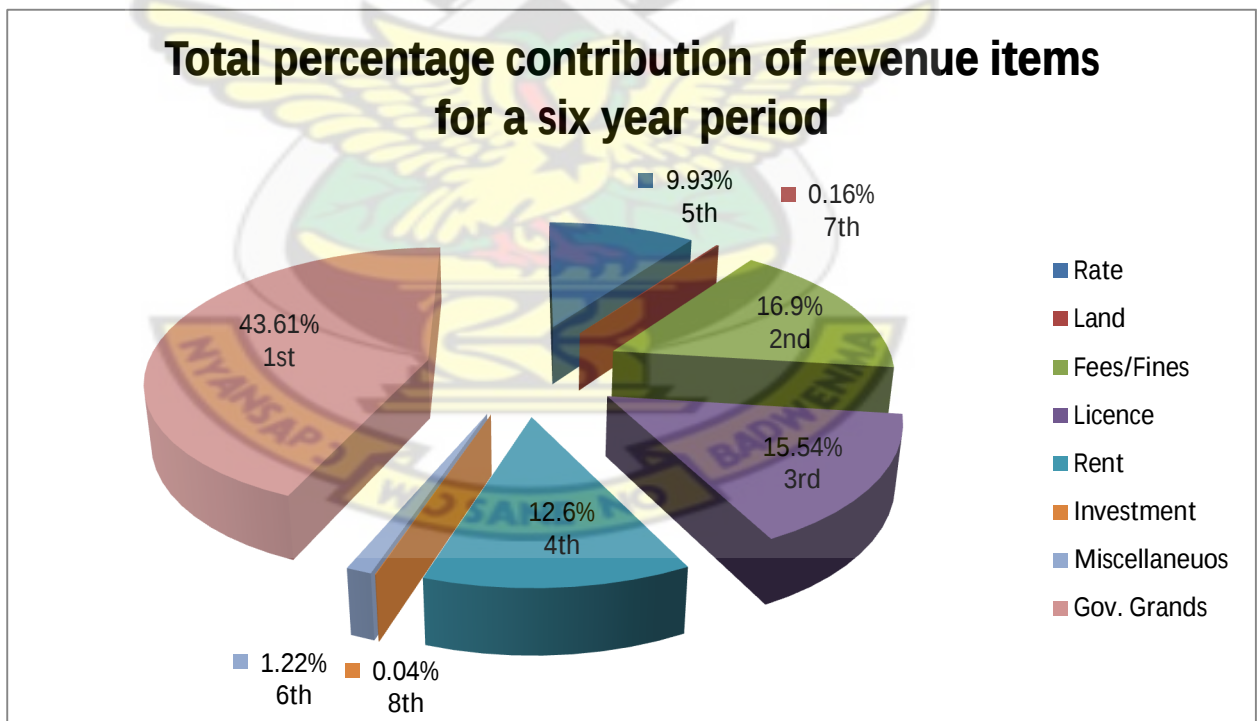
From figure 4.1 and 4.2 below, it can be observed that grants from Government represent the highest source of revenue, it represent 43.61% of the total revenue generated for the six year period, this is followed by Fees and fines (16.9%). The third source of revenue contribution with 15.54% is revenues generated from license, while revenue generated from rents represent 12.6%. Rates represents the fifth with 9.93%, the sixth is miscellaneous with a contribution of 1.22%. The seventh and eighth are land and investment and with 0.16% and 0.04 % respectively.

Figure 4.1 -Revenue statistics from budget office



Source: Field Survey, July, 2013

Figure 4.2 – Ranking of the revenue items.



Source: Field Survey, July, 2013

The study of the main revenue component of the Accra Metropolitan Assembly indicated

that taxes in the form of rates and nontax such fines, lands, rents, investment among others contribute 59.1% and 40.9% respectively of the internally generated revenue of the assembly. The survey made it clear that even though there are several revenue instruments available to the Accra Metropolitan Area, the assemblies greatly depend on grants from the central government and this contribute about 63% of the total revenue of the assembly.

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4.5.1.1 Rate

The survey conducted indicates that rate is one of the most significant sources of revenue for local government in the Accra Metropolitan Area. It is considered as the second highest in the assemblies' revenue mobilization. This revenue item contributes one of the highest percentages to the internally generated revenue in the metropolis of Accra. Rates comprises basic rates (plus arrears), property rates (residential, commercial, industrial among others). Each of these types attracts different rate impost. Due to the existence of manufacturing, commercial, industrial and residential facilities in the metropolis, rates particularly property rates are of great importance to the metropolis. Rates have been contributing between 12% and 48% of the internally generated revenue of the Accra metropolis from 2006 to 2011.

4.5.1.2 Rents

This type of local revenue source is generated from immovable assets own by the Accra Metropolitan Assembly and it constitutes one of the several non tax sources of revenue. Rents generate a substantial percentage to the internally generated revenue of the Assembly. In 2009 and 2010, rents recorded an amount of

GH¢697,678.28 and GH¢1,343,962.32. Staff quarters, Government quarters, Hiring of Council Chamber and Guest Houses constitute revenues from this source.

4.5.1.3 Fees and Fines

This is one of the major non tax revenue sources of the Accra Metropolitan Assembly. Market tolls forms the nucleus of this revenue source and this is due to a number of factors which include the following;

The level of investment especially capital investment made in the construction of the markets. The high cost of building materials used in the construction of the market stalls and stores calls for a higher imposition of tolls on traders. In addition, these markets are better serviced and are safe increasing commercial activities in the metropolis. Marketing activities in the Accra metropolis run on daily basis therefore serving as a major source of revenue for the assembly. The Makola, Agbobloshie and other markets contribute immensely to local revenue in the form of fees and fines amount charged and method of collection. Another important factor that influence the fees charged from market tolls is the rate charged in the markets and stalls and stores rentals as well as the method of collection. It was realized from the survey that the method employed in the collection of the revenue is inefficient thus leading to loss of revenue. Other sources of fees and fines include Lorry Park and entry fees, court fines/spot fines, slaughter house fee, on- street parking, slot latrine fees, cemetery burial permit, sanitation and environmental fees and waste disposal fees.

4.5.1.4 Licenses

Licenses constitute a major component of the non tax revenue sources and are charged on operating businesses and industries. Licenses have the following to be its major sources artisan license, store license, chop bar and restaurants licenses, registration of contractors and printing press. In addition, metro weekly lotto, legal practitioners, registration of businesses premises, private and commercial vehicle registration among others form part of the sources of licenses in the Accra metropolis.

4.5.1.5 Lands

This revenue item contributes a significant proportion to the internally generated revenue of the Accra Metropolis. Through the survey conducted, lands contribution to the total receipts is not encouraging and unstable. This revenue item comprises revenue generated from the sale of stool lands, issuance of building permits, land transfer, sand winning operations and quarrying activities. From the study, it was known the principal factor accounting for the low performance of land was the increasing prices of land in and around the metropolis.

4.5.1.6 Investment

Investment, being one of the non tax revenue, contributes the least percentage of revenue to the internally generated fund by the Accra Metropolitan Assembly. Items under this source of revenue include treasury bills of the assembly, interest on fixed deposit and savings, interest on traditional accounts of the assembly among others. The dependency of this type of revenue source on the level of patronage of the assembly's assets makes it very unstable.

4.5.1.7 Miscellaneous

Miscellaneous was also identified to be one of the revenue sources of the Accra Metropolitan Assembly. Miscellaneous include items which cannot be categorized under any of the major revenue sources. Sale of tender forms, unserviceable vehicle, unclaimed salaries and unspecified receipts such as donations are among the items that constitute the assembly's miscellaneous revenue item.

4.5.2 Property Rate Administration

This section of the interview discuss what property rate is, the legal base for it collection and who is supposed to pay and which properties are exempted.

Property rate is one of the major revenue source identified by the AMA. Property tax according to the staff and mgt of AMA is defined as a percentage of the rateable value (disposable value) of the property charged by the assembly. This rate is levied on every property within the area of jurisdiction of the assembly; in accordance with section 90 of Act 462, 1993 which mandates the local authorities to collect these taxes from the general public. The AMA leases with the rating division of the land valuation to determine the rates of properties; thus is done by using the rateable value determined by land valuation division and a percentage determined by the assembly.

There are six principal sources of taxable properties that the AMA generates rate from. These are commercial, residential, industrial, manufacturing and unassessed structures. Each of these categories has different tax impost based on the subdivisions. The AMA has classified the land use into zones and rate imposts are levied or determined based on the zones. For instance, zone A is assumed to be for

first class residential area and owned by the higher income group and thus they can afford to settle their rates.

The AMA issues and delivered bills to the property owners manually, by the use of revenue collectors, others too are sent through post. The assembly indicated that there are some challenges which cause untimely delivery of bills and delay payments of rate from the property owners.

With regards to the payment of rates the assembly has collaborated with some banks such as in Access and NIB for the collection of property rates. Companies, firms and individuals can pay directly into AMA's account, the bank and the assembly will be notified by the bank. The assembly indicated that this form of payment has been successful and less fraudulent since information about payment is received and recorded by the finance department. Bills can also be settled at the finance office of the AMA. There is also the use of revenue collectors who move from house to house to collect these rates from property owners.

The assembly also made it known that Government institution such as such as CSIR, GWC, Public schools are exempted from paying property rate. The exemption is not limited to Government agencies, churches and NGO's also enjoy these exemption; this the assembly indicated affect the tax rate coverage.

4.5.3 What are the revenue collection methods adopted by the assembly?

The Accra Metropolitan identified three methods or strategies for their revenue recovery. They are:

- By Direct house to house collection; this where revenue collectors are sent out various homes to collect rates due their clients. The Assembly has realized

losses in the revenue that are generated via this method. Some of the revenue collectors are staff of AMA and others are agencies that have been employed to collect revenue for the assembly.

- By Bank payment: the assembly has liaised with some banks like the Access bank and Trust bank where monies can be deposited in to the Assemblies bank account. With this client can walk in and make payment with invoices they have obtained from AMA.
- Use of handheld devices: A Point of Sale device is being used to collect revenue by the Accra Metropolitan assembly. However it is limited to the collection of market fees.

4.5.4 What are the Challenges and constraint to property rate collection?

When participants were asked about the challenges they encounter in the revenue collection process. The following responses were gathered:

Difficulty in identifying properties and their owners

The study discovered that due to inadequate ownership information from the land commission is on registered properties, it becomes difficult identify properties; It lacks personal identification numbers and sometimes the owner's full name and address are not complete. There are instances where owners refused to pay bills because their ownership information is not correct for instance a misspelled name. Also, there are cases where the legitimate owner of the property is deceased and the new owner or successor had not been reported.

- **Unauthorized Building**

The study unearthed that there are numerous building within the AMA's jurisdiction that are built outside the boundaries of a parcel. This may be due to the fact that the parcel was not surveyed or the building does not have permit. Unauthorized building is considered one of the major problems in Ghana. This in a way decreases the revenue obtained from permit fees and property rates

- **Non Update Valuation Roll**

The valuation roll prepared by the rating unit at the lands valuation division, contain information about properties and their values. What the metropolis has realized is that not all rateable buildings are valued .This can be as a result of an oversight by the land sector agency during the valuation process or sometimes there are new building that had not been updated in the property register and therefore not valued. These errors attributes to the revenue loss from property rates.

- **Use of manual procedures and minimum controls**

The study pointed out that the computerised system at the Metropolis is independent or autonomous in nature. In this sense data is not shared or linked to other divisions that need or depend on this information. Property rate are printed and distributed manually to owners, some payments are carried out the manually at the sub metro offices and later recorded or transferred in the billing and payment system at the head office. This gives rise to the misappropriation of funds since it's difficult to map payment against invoices and the agent who received it.

- Fraudulent practices on the part of the revenue collectors and the difficulty in obtaining the needed data.
- Relying on land valuation division for valuation rolls which is not forth coming.

- Inadequate street naming and house numbering

4.5.5 Property Register

The AMA has a property register in existence which contains properties in the Assemblies jurisdiction. The property register comes in both electronic and manual form. It was discovered that the property register is updated as and when the new valuation rolls are added and when the monitoring team discover new structures within the AMA's jurisdiction. According to the Assembly valuations are suppose to be conducted every five (5) years, but this has not been effective due to financial constraint. The study discovered that information on updated valuation rolls are submitted manually or electronically to the AMA upon request.

4.5.6 Bill distribution

How does the assembly distribute bills (property rate bill) to the public?

The Assembly indicated that bills for property rate are distributed to the public through the revenue collection agents. Bills are distributed manually through the revenue agents, by post and through electronic mail.

4.5.7 Estimation of Revenue Generation

How does the assembly estimate its total revenue generation from property rate?

The study discovered that revenue forecast is done using the actual figures from the previous year and the supplementary list of property that has been valued.

4.5.8 How to achieve high revenue through property rate

In your own view, what do you think the assembly can do to achieve high revenue through property rate?

The management of AMA indicated that most of the inefficiencies in revenue mobilization are due to non availability and delay in obtaining the needed information from other institution. Therefore, they suggest that having control over the assessment and valuation of properties would assist them put together a complete register and effectively manage their revenue.

4.5.9 Physical Infrastructure

This section presents information on the use of Information and Communication Technology as a tool in revenue collection in the Accra metropolis. And, also the physical infrastructure available to facilitate the use of Information and Communication Technology on local revenue collection effectively.

For the past Six (6) years the AMA has made conscious efforts of enhancing its revenue collection by introducing information technology. In view of this the assembly has acquire a number of computers and accessories to enable them effectively discharge their duties, there is ICT department that manages the computerization, networking and maintenance of the systems in the assembly. There are experts working in the ICT department, some field workers and revenue collectors have been trained in the use of ICT in gathering and imputing data in the computer.

In the assembly's efforts to depart from manual ways of doing things, they adapted the use of some software for the Revenue, Accounts and the Budget departments for the efficient and effective collection, storing and reporting of information.

The AMA initiated the UMLIS project under a contract with the Swedish Government in 2009. The overall objective of UMLIS is a more efficient collection of property rates and other fees, and AMA has made UMLIS its main strategy for revenue mobilization though the system is not completed.

4.5.10 ICT tools used in revenue collection

The study unearthed that the AMA has adapted the use of ICT partially in their revenue collection process. The assembly has introduced the use of a handheld Point of sale device for the collection of market revenue. The study discovered that this ICT tool has increase the assembly's market revenue significantly from the time it was implemented. The AMA is planning to adapt this form of payment method for the other revenue source as at the time the study was conducted the handheld machines were only used for collecting market revenue.

4.5.11 Availability of Internet and WAN access

Does the Assembly have internet access and a Wide Area Network in place?

AMA has a FOXPRO electronic database created which operates as standalone. The database is used mainly for record keeping and verification purposes. There is no application software to allow data generation and counter services centre's to

update or access it during the performance of their duties. There exist an internet services but there is no WAN or VPN connection.

4.5.12 Relationship between Lands valuation division and Metropolis

Land administration in Ghana is handled by four land sector agencies under the Ministry of Lands and Natural Resources namely: Lands Commission, Administration of Stool Land (AOSL), Town and Country Planning Department (TCPD) and Asantehene's Land Secretariat (which only handles the Ashanti region of Ghana and nearby areas). These agencies hold basic land information such as value, use, rights and plans of parcels. The Government of Ghana issued its Land Policy in 1999. The long term goal is to stimulate economic development, reduce poverty and promote social stability by improving security of land tenure, simplifying the process for accessing land and making it fair, transparent and efficient, developing the land market and fostering prudent land management. The goal will be achieved through a long-term (15-25 years) land administration program.

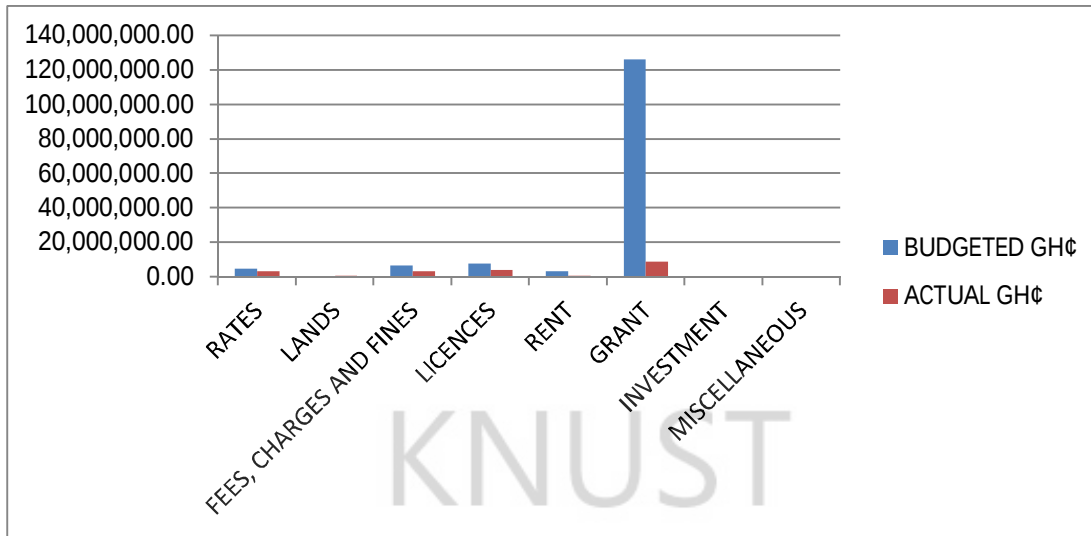
Effective operation of the local authorities depends on land information processed by the land sector agencies. The current land administration processes in Ghana are centralized at national and regional levels and therefore the information generated is difficult for the local authorities to obtain. All land processes manifest at local level within the jurisdiction of the assembly's where actual action (planning, implementation and management) takes place but collaboration between local authorities and the land sector agencies is weak and information that is needed about land is not always available at local level.

4.5.13 How the challenges affect revenue generation in the Metropolis

Table 4.2 Revenue 2012

N	ITEMS	BUDGETED GH¢	ACTUAL GH¢	% ACTUAL
1	RATES	4,938,005.00	3,311,116.98	15.69
2	LANDS	400,000.00	604,219.43	2.9
3	FEES, CHARGES AND FINES	6,842,199.00	3,202,325.79	15.17
4	LICENCES	7,877,080.00	3,982,160.59	18.87
5	RENT	3,238,850.00	890,708.96	4.22
6	GRANT	126,107,467.00	8,927,510.87	42.3
7	INVESTMENT	76,500.00	9,051.00	0.04
8.	MISCELLANEOUS		179,386.59	0.85
	TOTAL	149,480,101.00	21,106,480.21	100

Figure 4.3 –Revenue as at June 2012



Source: Field survey, January, 2012

With the table 4.2 and figure 4.3 above the estimated budget for property rate for the AMA was GH¢4,938,005.00 in percentage terms it is 15.69 percent but the actual revenue released from the rate was GH¢3,311,116.98 which gives a variance of GH¢1,626,888.02. Though it appears as the second highest actual revenue collected by the assembly, the assembly is not able to attain its target revenue, in other words target are not met. The assembly relies mostly on grant which is GH¢8,927,510.87

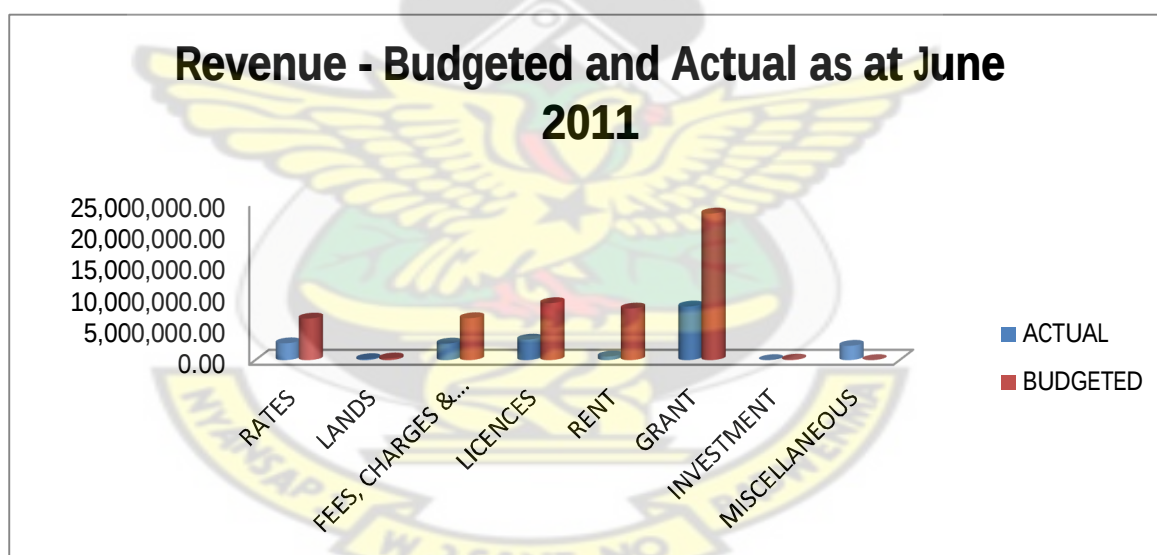
Table 4.3–Budgeted and Actual Revenue as at June 2011

NO	ITEM	2011 Revenue BUDGETED(GH¢)	ACTUAL(GH ¢)	ESTIMATED% ACTUAL
1	RATES	6,585,000.00	2,665,779.02	40.48
2	LANDS	270,000.00	156,529.19	57.97
3	FEES, CHARGES&FINES	6,641,340.00	2,627,805.98	39.57
4	LICENCES	9,023,960.00	3,250,277.16	36.01
5	RENT	8,172,230.00	569,511.98	8.97
6	GRANT	23,225,400.00	8,494,694.87	36.58

7	INVESTMENT	76,500.00	8,631.00	11.28
8.	MISCELLANEOUS	-	2,264,928.79	-
	TOTAL	53,994,430.00	20,038,157.99	37.11

Source: Field survey, July, 2012.

Figure 4.4 – Budgeted and Actual Revenue as at June 2011



Source: Field Survey, July, 2013.

With the table 4.2 and figure 4.3 above the estimated budget for property rate for the AMA was GH¢6,585,000.00 in percentage terms it is 40.48 percent but the actual revenue released from the rate was GH¢2,665,779.02 which gives a variance of GH¢3,919,220.98. Though it appears as the highest actual revenue collected by the

assembly, the assembly is not able to attain its target revenue, in other words targets are not met. The assembly relies mostly on grant which is GH¢8,494,694.87.

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CHAPTER FIVE

DESIGN AND IMPLEMENTATION

5.1 INTRODUCTION

This chapter presents the design and implementation of property rate administration system. The hierarchical chart shows the high level description of the various sub programs that will constitute the entire system. The database design depicts the backend database schema on which the application will run. The Network design shows the proposed network architecture, and finally the implementation of the prototype and the test result is showed.

5.2 HIERARCHICAL CHART OF PROPERTY RATE ADMINISTRATION SYSTEM

The hierarchical chart below shows the various modules that constitute the proposed property rate administration system.

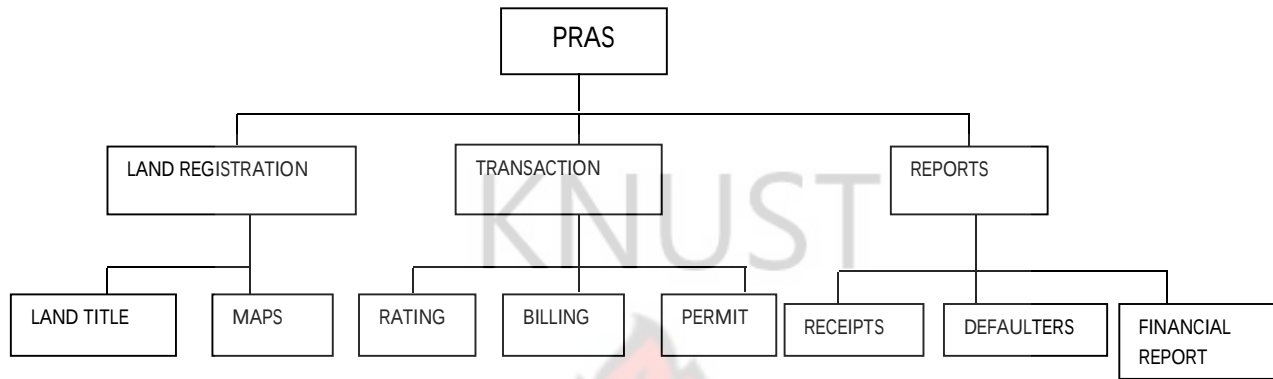


Fig.5.1 Hierarchical chart for PRAS

5.2.1 Registration

Lands and its improvement (buildings) would be registered with the detailed information about the owner. The coordinates from the google map will be stored with the owner's full name, email address, house number, and phone number. The land documents such as the site plan, indenture and title deeds will be attached to the applicant's details. The system assigns a unique account number for each owner and property that gets registered.

5.2.2 Transaction

Rating: The values obtained from the valuation of properties are populated into the database system. The form indicates the zone classification for the appropriate rate impost to be applied. Existing data on valued properties would be use for this exercise.

Billing: System generated invoices using the retable value and the rate impost will be created and send through mail to all registered persons or an account holder. The bills will indicate name of Payee, the unique account number, total amount to be paid and the billing period.

Permit: This module keeps tracks of all the building permits issued to registered land owners. With this the property register can be updated when new sites are completed.

Reports: This will give detailed summary about accumulated payments made on each account, outstanding payment and the revenue forecast for the fiscal year.

5.3 Database Design

Table 5.1 Database tables

The table below shows a summary of the proposed database tables. MySQL was considered an ideal database by the researcher because it is easy to use, and it has a solid data security layers that protect sensitive data from intruders, it is inexpensive (cost effective) and can be downloaded free from the mySQL website. It is also fast, scalable and has cross platform operability which makes it easy to install on any operating system.

Registration	
Landed	Land identity number
Cusid	Customer identity number
Longitude	Longitude
Latitude	Latitude

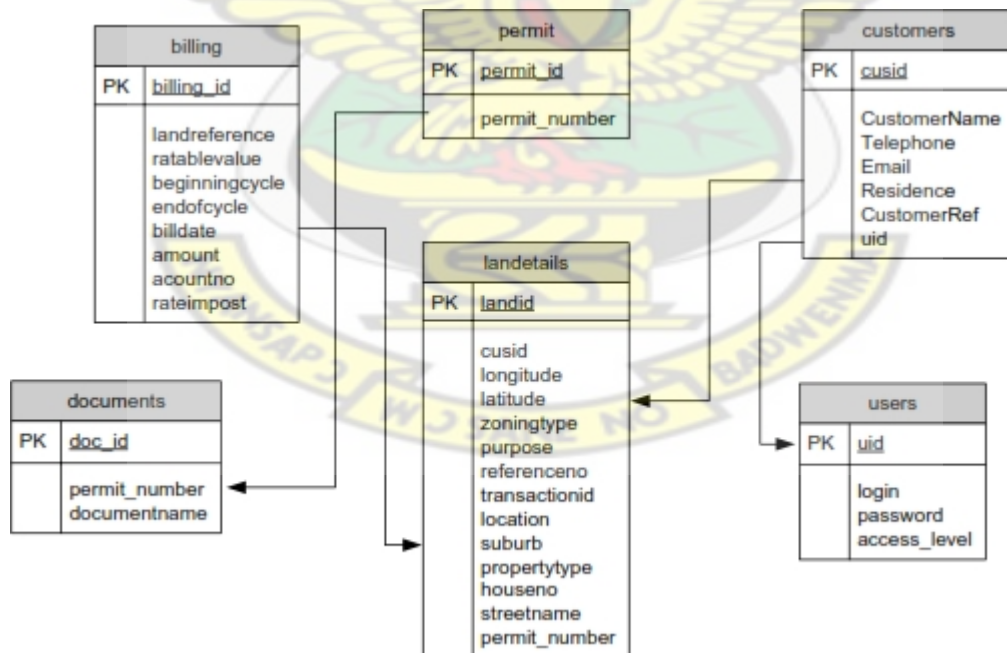
Zoning type	Zoning type
Purpose	Purpose of property
Reference no	Reference number
Transactionid	Transaction identity number
Location	Property's location
Suburb	Area or suburb name
Property type	Property type
House number	House number
Streetname	Street name
Customer	
CustomerName	Customer Name
Telephone	Customer Telephone number
Email	Customer email address
Residence	Customer residential address
Customerid	Customer identity number
Billing	
billing_id	Billing identity number
Landreference	Land reference number
Ratablevalue	Ratable value of property
Beginning cycle	Billing start date
End of cycle	Billing end date

Billdate	Invoice date
Amount	Amount due
Accountno	Property account number
Ateimpost	Rate impost(%)
Permit	
Permit_id	Permit identity number
Permit_number	Permit number
Document	
Doc_id	Document identity number
Permit_number	Permit number
Document name	Document name
Users	
Uid	User Identity number
Login	User name
Password	User password
Acess_level	User privilege

5.3.1 Database Design

This section presents the database model that determines the logical structure of the database. The researcher used the relational model which uses a table-based format to determine the way data can be stored, organized and manipulated. This model shows each table schema, its attributes and the relationships between the tables in the Property rate administration system.

Figure 5.2 Database Design for PRAS



5.4 Network Design

This section presents the proposed network solution for improved synergy between connecting the assembly's and the land sector agencies. The VPN connection is considered as a viable solution for the implementation. A VPN is a Virtual Private Network that uses public infrastructure (usually internet) to connect remote network or users (NetGear VPN Basics). It uses virtual connections routed through the internet from the business private network to the remote site or remote employee. This technology can be applied to both LAN and WLAN.

The VPN technology uses different methods for connecting individual sites. The site-to-site VPN allows multiple offices in fixed locations to establish secure connections with each other over a public network such as the internet. On the other hand the remote access VPN allows individual users with a remote computer network.

Some of the common protocols used by VPN for the safe transfer of data from one point to another are PPTP, L2TP/IPSec and SSTP.

The researcher proposed the L2TP/IPSec VPN technology. The L2TP allows multiprotocol traffic to be encrypted and then sent over any medium that supports point-to-point datagram delivery, such as IP or asynchronous transfer mode (ATM). In terms of security L2TP has no major vulnerabilities. It is considered the safest VPN protocol next to the OpenVPN and SSTP. L2TP is encrypted using the standardized IPSec protocol with 256bit encryption system.

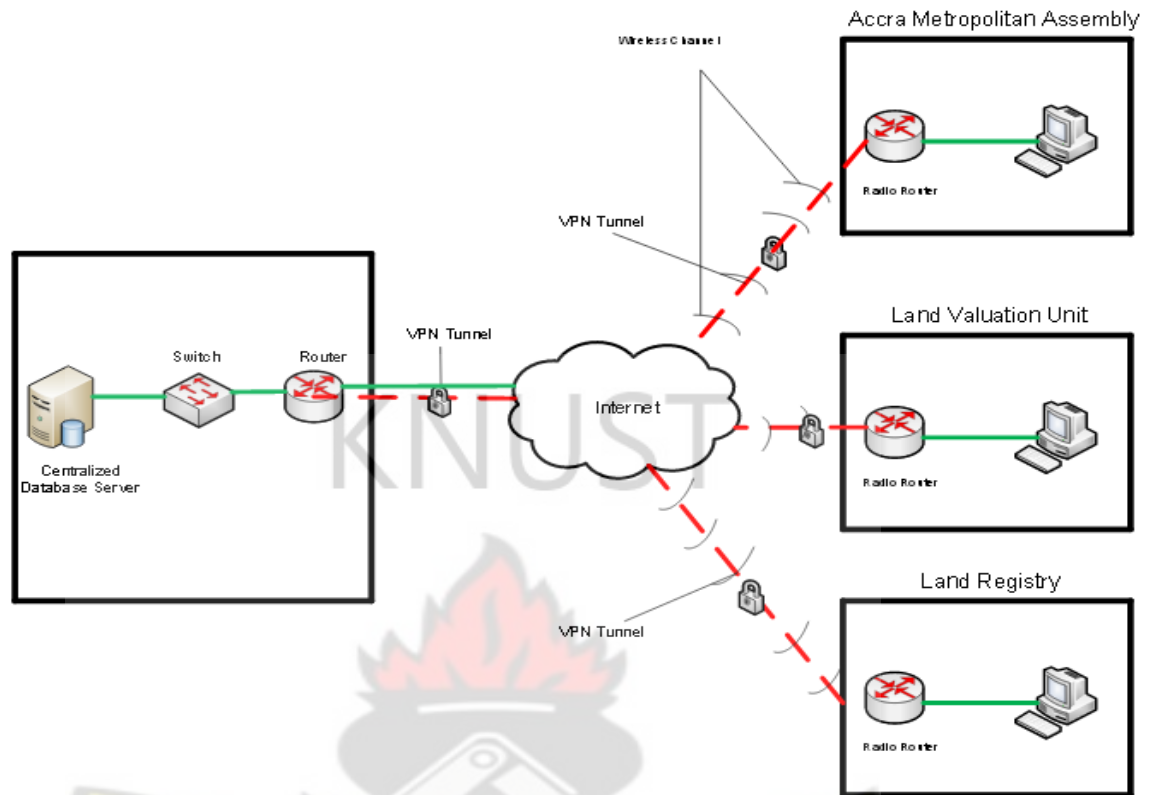


Figure 5.3 VPN tunnel

5.5 Screen shot of prototype Design

This section shows the print screen or interfaces and the system functionalities of the PRAS system.

PROPERTY RATE ADMINISTRATION SYSTEM	
Login	
Password	
Login	
All Rights Reserved.	

Figure 5.4 User login.

Figure 5.4 shows the user login interface which allows users access to the system.

The screenshot shows the 'PROPERTY RATE ADMINISTRATION SYSTEM' login page. It features a search bar with 'Ghana, Accra' and a 'Search' button. Below the search bar is a Google Map showing an aerial view of a building complex. To the right of the map is a 'Property Registration' form with two tabs: 'Customer' and 'Property Details'. The 'Property Details' tab is active, showing fields for 'Property type' (a dropdown menu with 'Select', 'Sales', 'Building', and 'Land' options), 'Longitude', 'Latitude', 'Zoning Type' (a dropdown menu with 'Zone A' selected), 'Usage' (a dropdown menu with 'Commercial' selected), 'Location', 'Suburb', 'House No.', and 'Street name'. A 'Submit' button is at the bottom of the form. The footer of the page reads 'All Rights Reserved.'

Figure 5.5 Property Registration

The screenshot shows the 'PROPERTY RATE ADMINISTRATION SYSTEM' customer and property information page. It features a 'Property Registration' section with four tabs: 'Customer', 'Land Details', 'Billing Form', and 'Payments'. The 'Customer' tab is active, displaying a table with customer information. The footer of the page reads 'All Rights Reserved.'

Customer Name:	akosua Antwi
Email	akosua@yahoo.com
Telephone	3243232432
Residential Address	as 32432543
Account Number	Akos/30/12/13

Figure 5.6 Customer and Property Information

Figures 5.5 and 5.6 indicate registration of land and landed properties. Both lands with improvements and those without improvements are registered. The details of customers or owners of the properties are also captured in the system. This interface would be available to the land and property registry.

PROPERTY RATE ADMINISTRATION SYSTEM				Logout
Show 10 entries				Search:
Customer Name	Telephone	Email	Residential Address	
Agartha Aduna	0283554455	agbesisamuel@gmail.com	SM junction	
Akosua Antwi	3243232432	akosua@yahoo.com	as 32432543	
Anas Ayi	12313123123	anas@yahoo.com	R4554354543	
Emmanuel Ansah	2132321312	ansah@yahoo.com	R 44654656	
Fati Tahiru	21324423453	tahiru@yahoo.com	R323455	
Fati tahiru	0244542225	fatia64@yahoo.com	E61	
Isaac Arthur	024452886	isaac@yahoo.com	E67	
Isaac Arthur	0244542225	fatia64@yahoo.com	Akwatia line	
Kofi Agyemang	123456	kofi@yahoo.com	E 61	
Kojo Afoakwa	021354687	kokjo@yahoo.com	Ravico ESt	

Showing 1 to 10 of 22 entries

First Previous 1 2 3 Next Last

All Rights Reserved.

Figure 5.7 Directory of Registered Customers and Properties

Figure 5.7 shows the detailed information of all customers or property owners and their corresponding properties in the system. This is the interface that will be available at the valuation unit.

PROPERTY RATE ADMINISTRATION SYSTEM	
Property Registration	
Customer	Land Details
Billing Form	Payments
Land Ref No:	
Ratable Value	
Rate Impost	
Amount	
Billing Date	
Account Number	Akos/30/12/13
Submit	

All Rights Reserved.

Figure 5.8 Billing Information

Figure 5.8 shows the information that makes up the invoice for a customer. Invoices are sent automatically to client. The finance and budget office will have access to this interface.

PROPERTY RATE ADMINISTRATION SYSTEM [Logout](#)

Accounts / Budget

Billing Form Payments Financial Report

Land Ref No:

Invoice

Customer: Isaac Arthur
Account No: Isaa/04/03/14
Bill Date: 06-Mar-2014
Invoice No: 72

Ratable Value	Rate Impost	Payment Charged	Areas
65000	10	GHs 6500	GHs 0
Total Amt Due: 6500			

▲ This bill is valid for a period of three months from the date of issue.
 ▲ 15% penalty will be attracted for late payment.
 ▲ Non-payment will lead to court action

Figure 5.9 Invoice Generation

Figure 5.9 shows the invoice generated for a customer. This Invoice will be generated by the accounts section and would be available to the cash office.

PROPERTY RATE ADMINISTRATION SYSTEM

Property Registration

Customer Land Details Billing Form Payments

Enter Invoice No:

Payment Information

Ratable Value	100000	Areas	
Rate Impost	10	Total Amt	450000

All Rights Reserved.

Figure 5.10 Payment Information

Figure 5.10 shows payment of customer bill with a system generated invoice number. This interface will be accessed by the cash office to receive payments

Figure 5.11 User management

Figure 5.11 shows the user management that controls the various users of the system. This interface captures details of the system users and assigns different access levels or privileges to them. Each user logs in and sees only the interface he/she needs to work on. For instance, the valuation will have access to the registered property when he or she logs in and then input the valuation details thus ratable value and the rate impost.

5.5.1 System Usability Testing

The application was tested to ensure that it meets the requirement for which it was designed for. A user acceptability test was conducted based on the systems functionality such as the system's ability to keep unified information that is accumulating property, customer and other information into a single system. Centralized information and multipurpose, thus keeping a centralized database and using the same system for land registry, permit guaranty, valuation and payment system.

5.6 Analysis of System testing

The system was tested with a focus group organized with 25 people .The AMA were represented by 15 people including revenue collectors,6 people from the lands commission(land registry and valuation division) and the 4 property owners. The system functionality was explained to them and they had the opportunity to enter data into the system and perform queries for their result. They were given questionnaires afterwards to administer.

5.6.1 Education Level

What is your highest level of education?

The study unearthed that 18 out of the 25 people had education up to the tertiary level, and the other 7 people have their education up to the secondary level and other professional courses. None of the participant had only basic education as the highest level of education.

5.6.2 Computer Literacy

Are you a computer literate?

When enquire about their ability to use the computer, majority 23 of the participants indicated that they know how to use it. The few (2) who were not computer literates happens to be those whose work does not depend on the use of computers like the rating officers, revenue collectors and some property owners. Their work is mostly collecting data on the field.

5.6.3 Access to Computer

Do you have access to computers for your work?

The study discovered that most institutions lack computers for their operations. Majority of the participant made it known that though they are computer literate; they don't have access to computers at their work place for their work. The AMA confirmed that they have limited number of computers for their staff especially in their sub metros which in a way hinders most ICT projects the assembly have in mind. The rating division of the LC was not an exception; they also faced the challenge of limited ICT infrastructure in their institution. The rating division can boast of only few computers which is kept at the head of valuations office.

5.6.4 Unified System

I think the system is unified.

This section was to find out from the participant the system's ability to keep data on properties, customers, user, invoices and payment in one system. 60% of the participant strongly agreed to the notion, 15% indicated agreed while the other 25% suggested they have no opinion.

5.6.5 Need for Training

I felt I will need to be trained before I can comfortably use the system.

Majority of the participant agreed that they need to be trained before they can comfortably use the system; their reason was that the system is new to them and therefore they will need training to familiarize themselves with the system.

5.6.6 Can the System Reduce Human Errors in Invoice Generation?

I think the system reduces the human errors associated with invoice generation and distribution.

Minority of the participant were of the view that the system would not be able to reduce errors their reason was that is the same humans or people that will work on the system. However, majority agreed that human error can be limited by the system, they were of the view that the system has different access levels for the users and with that each user will be responsible for what he does, and this will in turn serve as a control towards efficient work.

5.6.7 The System can aid AMA to Identify Properties and Their Owners.

I think this system can help the metropolis identify properties and their owners.

80% of the participant strongly agreed that the system can help the metropolis identify properties and their owners. They indicated that most of the institution in charge of land permit and tax collection deals with scattered data and if these data are shared and made available it would be easy to identify owners of properties. The other 20% also agreed to the notion.

5.6.8 Use of Online System or Manual System

I will prefer using this system to the manual base system.

The majority who are computer literate opted for the use of the system other than the manual systems while the few who were not computer literate opted for the manual base system. This suggests that those with education in computing are comfortable and ready to adapt to changes rather than those with little or no knowledge in computing.

5.6.9 Is the System Centralised and Multipurpose?

I found the system centralized and multipurpose.

50% of the participant strongly agreed that the system is centralized enough to keep all the needed information to reach the public for revenue; and also serves a multipurpose function of land and property registration, permits grant, billing and control under one umbrella. 35% agreed, 20% had no opinion and 15% disagree.

5.6.10 Efficient Collection of Revenue by AMA

I think with this system the metropolis would be able to collect property rate efficiently.

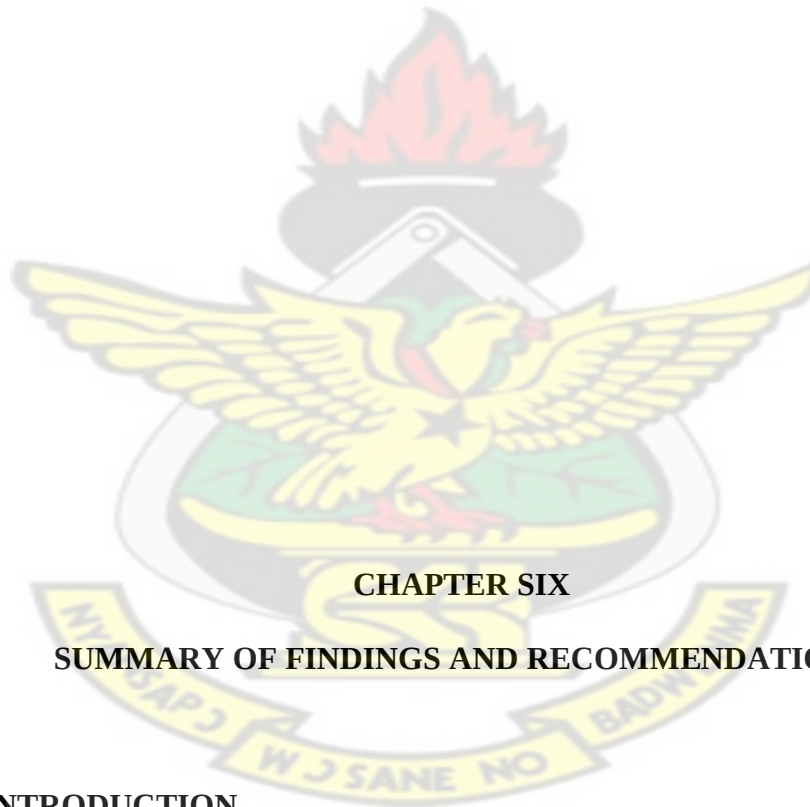
With this majority of the participants (19) strongly agreed that the system would help in the efficient collection of revenue. Two (2) of the participants agreed and with the other four, two had no opinion while the other two had disagree. The two (2) were of the view that the unavailability of ICT infrastructure is their biggest challenge and therefore they disagree.

5.6.11 System Rating

How will you rate the system?

Out of the 25 participants who were asked to rate the prototype, 22 rated it as “Very Good”, and 3 rated it “Good”. It is obvious that majority of the participant who find the system difficult to use still believe it is a good system, hence with training and education this group can also understand and be able to use the system without any difficulty.

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CHAPTER SIX

SUMMARY OF FINDINGS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter gives a summary of the findings of the study the conclusion drawn from the study and the recommendations made to address the issues raised.

6.2 SUMMARY OF FINDINGS

The study adopted the interpretative case study approach to investigate the challenges in property rate collection in the Accra Metropolitan Assembly. The study aims at minimizing revenue loss or revenue leakage associated the administration of property rates in the Metropolis. Accra Metropolitan Assembly was chosen for the study because of its readily available internet infrastructure that can be adopted in the areas of revenue collection to increase the internally generated revenue of the Metropolis. Particular attention was directed to the challenges involve in the property rate collection, the ICT system that can be used to minimize the loss of revenue, identify the revenue sources available and as well as the revenue performance. The study emphasized on the following objectives; to Investigate problems associated with administration of revenue collection, investigate the tax base coverage and the challenges in identifying property owners, to propose and develop database solution for the effective management of property ownership and revenue collection and finally to propose a network solution for improved synergy between connecting the assemblies and the land sector agencies.

Findings from the study indicated that the administration of property tax which forms about 40.48% of the IGF, is placed in the hands of the Accra Metropolitan Assembly, mandated by the local Government, section 90 of Act 462, 1993. They are responsible for the assessment, collection and accounting for other taxes, rates and licenses such as license, lands and rents etc in their jurisdiction. It was observed that these sources of revenue were found to be less administered and others were not administered at all by the AMA.

Based on the findings, the revenue base information is mostly incomplete, collections are usually low and enforcement is virtually non-existent.

From the study the tax base coverage for AMA is mostly inadequate for them to realize the projected revenues. This is as a result of un-updated tax registers coupled with exemption for some institutions such as churches, Government bungalows and institutions, Schools etc.

The study also revealed the challenges that impede the property tax administration in the AMA. These were identified as difficulty in identifying property and their owners due to incomplete owner information and lack of proper addressing system and nonexistence of maps, also unauthorized building due to constructions without permit from the AMA. Un-updated valuation rolls which the AMA depends on to collect property rate, some owners end up not paying anything because their information is not in the register. The use of manual procedure in obtaining data and collecting revenue in AMA is prone to fraud.

6.3 CONCLUSION

Although the government of Ghana has launched couple of policies for the effective and efficient use of ICT in public organizations, most of these sectors are engage in the use of manual processes or partial use of ICT. The situation in Accra Metropolitan Assembly is not an exception.

The Administration of property rate is a major challenge facing developing countries; in their effort to raise higher amount to constitute their IGF. In recent studies and in most Government assessment, on District assembly or the local authority it had been

noticed that the district assemblies are not able to raise enough revenue from property rates resulting in overdependence on the DACF.

Moreover, these issues can be related to lack of information sharing between the land sector agencies (registry and valuation unit) and the local authorities. It appears that there is no centralized database connecting the land registry and the land valuation division to assist them in developing the valuation list. Also, the local authorities who issue permits such as the building permit does not make use of the readily available information or database on the property owners information at the land registry. However, information to update the property register at the metropolis is not readily available. These processes of keeping autonomous information for each sector that have related job function or operations give rise to fraudulent activities which in a way encourage revenue leakage. For the district, there is the need for continuous monitoring and update of the tax register to widen the tax coverage, a computerized system for billing (invoicing and payment); thus a system that allow them to track all invoices sent and their recorded payment, provide summary reports on debtors and also projects revenue based on the assemblies client based. A further study with in-depth analysis on the success of a complete ICT usage in revenue collection in the Accra Metropolitan assembly is required.

6.4 RECOMMENDATION

Detailed information about property owners should be captured at the land registry division of the lands commission and also transfer of lands should be detailed and captured in a database which must also be readily available to other sectors that require information on landed properties.

An aerial photography should be carried out every five years in order to keep the map up to date; since this approach can be expensive an alternate approach can be regular field verification to observe unauthorized structures.

There should be a centralized database system connecting both the metropolis and sub metros for efficient management of revenue and its collection. There should also be the establishment of a wide Area Network (WAN) to enable the metropolis, sub metro and the land sector to share information, and also have access to up to date information. This will intend facilitate efficient revenue collection and reduce corruption.

Also, there is the need for public awareness of property rates based on the metropolis, municipal and district levels. The study unearthed that some property owners are not aware of their obligation to pay property rates. This issue can be mitigated with mass education and awareness campaign using electronic media and print. The use of television and radio to educate the public about the need of paying property rates and taxes and the significance of these rates to the development of our society and its contribution to the nation as a whole.

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APPENDIX I

KWAMENKRUMAHUNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

(ACADEMIC PURPOSE)

TOPIC: INVESTIGATING THE CHALLENGES IN REVENUE COLLECTION &
THE DEVELOPMENT OF A COMPUTERISED SOLUTION

CASE STUDY: ACCRA METROPOLITAN ASSEMBLY

QUESTIONNAIRE FOR ACCRA METROPOLITAN ASSEMBLY(Pre-Intervention)

1. What are the main sources of locally generated revenue at the metropolitan assembly?

.....
.....

2. What are the revenue collection methods adopted by the assembly?

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.....

3. What are the challenges and constraints to revenue collections?

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4. What is property rate?

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5. How is the rate calculated?

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6. Who is supposed to pay property rate?

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.....

7. What is the legal base for collecting property rate?

.....
.....

8. Does the assembly have a property register in existence?

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.....

9. In What form is the property register?

.....

10. How does the assembly distribute bills (property rate bill) to the public?
.....
.....
11. How does the assembly estimate its total revenue generation from property rate?
.....
.....
12. What is the revenue performance level of the assembly in relation to property tax collection?
.....
.....
.....
.....
13. In your own view, what do you think the assembly can do to achieve high revenue through property rate?
.....
...
14. Does the assembly use ICT to collect revenue?
.....
.....
15. Can you list some of the ICT tools that are used in the assembly?
.....
17. Are revenue collection officers trained in the use of ICT system?
.....
19. Does the Assembly have internet access and a Wide Area Network in place?
.....
20. What relationship exists between the assembly and the lands commission Authority?
.....
...

21. In what form does the assembly obtain its needed information from the lands Commission Authority?

.....
...

22. What are the challenges with the administration of property rate?

.....

23. What are some of the challenges in identifying properties and their owners?

.....

24. What properties are exempted from rate payment?

.....

25. How frequently is the tax register updated?

.....

25. How frequently is the valuation list updated?

.....

26. State other challenges in property rate collection or comments.

.....

26. How do these challenges affect revenue generation from property rates?

.....

APPENDIX II

KWAMENKRUMAHUNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

(ACADEMIC PURPOSE)

TOPIC: INVESTIGATING THE CHALLENGES IN REVENUE COLLECTION &
THE DEVELOPMENT OF A COMPUTERISED SOLUTION
CASE STUDY: ACCRA METROPOLITAN ASSEMBLY
QUESTIONNAIRE FOR ACCRA METROPOLITAN ASSEMBLY (Pro-Intervention)
(System Usability Test)

Usability Test

1. What is your highest level of education?
☐ Basic ☐ Secondary ☐ Tertiary ☐ Others
2. Are you a computer literate
☐ Yes ☐ No
3. Do you have access to computers for your work?
☐ Yes ☐ No
4. I think the system is unified.
☐ Strongly Agree ☐ Agree ☐ No Opinion ☐ Disagree ☐ Strongly Disagree
5. I felt I will need to be trained before I can comfortably use the system.
☐ Strongly Agree ☐ Agree ☐ No Opinion ☐ Disagree ☐ Strongly Disagree
6. I think the system reduces the human errors associate with invoice generation and distribution.
☐ Strongly Agree ☐ Agree ☐ No Opinion ☐ Disagree ☐ Strongly Disagree
7. I think this system can help the metropolis identify properties and their owners.
☐ Strongly Agree ☐ Agree ☐ No Opinion ☐ Disagree ☐ Strongly Disagree
8. I will prefer using this system to the manual base system.
☐ Strongly Agree ☐ Agree ☐ No Opinion ☐ Disagree ☐ Strongly Disagree

9. I found the system centralized and multipurpose.
☐ Strongly Agree ☐ Agree ☐ No Opinion ☐ Disagree ☐ Strongly Disagree

10. I think with this system the metropolis can estimate revenue from rates.
☐ Strongly Agree ☐ Agree ☐ No Opinion ☐ Disagree ☐ Strongly Disagree

11. How will you rate the system?
 1. Excellent 2. Very Good 3. Good 4. Average 5. Poor

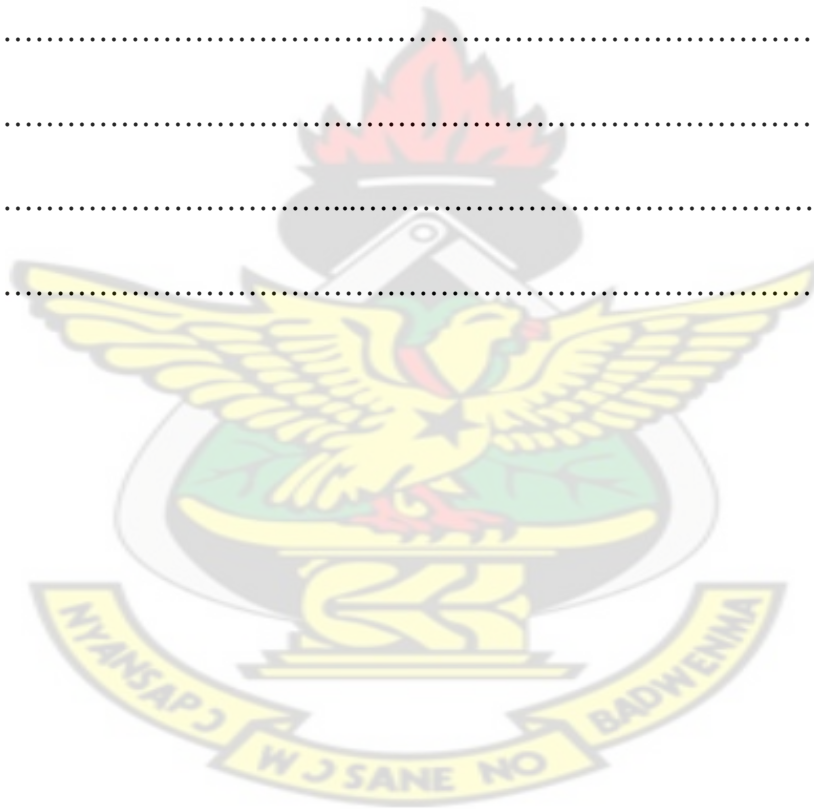
Your general comments on the system:

.....

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.....



APPENDIX III

Sample Responses to the Questionnaires for AMA.

The following pages contain sample responses of the questionnaires that were distributed to the management and staff of Accra Metropolitan Assembly.

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