Automated Internal Revenue Processing System: A Panacea For Financial Problems In Kogi State.

Sani Felix Ayegba
Department of Computer Science, Federal Polytechnic Idah
felixsani@yahoo.com

Abstract

The provision of social assets and services to the people by the State government cannot be achieved without revenue. It is therefore expedient that state governments are encouraged to expand their internally generated revenue bases to aid planning and execution of social infrastructure. Kogi State Board of Internal Revenue is responsible for the collection and management of internal revenue which is the financial backbone of the State. Information about the present method of revenue collection and management by the Board was gathered through interviews, group discussions, direct observation and document study. From the information gathered a number of problems inherent in the present method of operations were extracted. These problems include: delay in the remittance of collected revenue to the State treasury due to the huge computation involved in bringing together all revenues collected from thirty Area offices within the State, diversion of the revenue collected into private pockets by staff of the Board, difficulty in identifying and locating tax evaders for necessary legal and prohibitive actions to be taken against them, computational errors, high level of redundancy and inconsistencies in record, low level of data security, inability to quickly and accurately retrieve and assemble relevant data for prompt decision making. This research is undertaken to proffer solutions to the problems identified in the revenue collection and management in order to provide Kogi State a sound financial base. A combination of Structured Systems Analysis and Design Methodology(SSADM) and Object Oriented Analysis and Design Methodology (OOADM) was deployed to develop a feature rich software program called Computerized Internally Generated Revenue Processing System(CIGRPS). The application was developed using MySQL database platform as backend and Visual Basic 6.0 as front end. The implementation of the application resulted in the elimination of the identified problems.

Keywords: Revenue, internally generated revenue, social assets and services, board of internal revenue.

Introduction

It is the responsibility of the State Government to provide public good also known as collective good and execute developmental projects that would improve the standard of living of her citizenry as well as meet its recurrent expenditure.

The first economist to develop the theory of public goods is Paul Samuelson. In his work, "The Pure Theory of Public Expenditure", he defined a public good or collective good as "…(goods) which all enjoy in common in the sense that each individual consumption of such a good leads to no subtractions from any other individual's consumption of that good…". This property has become known as non-rivalry [1]. Public goods are defined in terms of their economic rather than their administrative, physical, normative or financing characteristics [2]. Two key characteristics of public goods has been identified namely, non-excludability and non-rivalry. Other characteristics are non-rejectability, indivisibility and inexhaustibility [3].

The discharge of these duties by the government requires a lot of fund. State government get fund from two sources: Internally generated revenue and statutory allocation from Federal government. Revenue is defined as a general term for all monetary receipts accruing from both tax and non tax sources [4]. Revenue from tax and non-tax sources as well as fees, grants and contributions constitute the live wire of the State government. Taxation is the system of imposing compulsory levy on all income, goods, services and properties of individuals, partnership, trustees, executorships and company by government [5]. Kogi State source fund internally by imposing various form of tax on the tax object which could be individuals or corporate entities. The increasing cost of running government revenue has left various states governments in Nigeria with formulating strategies to improve revenue base [6]. Over the years Kogi State has made tremendous effort towards enhancing her internally generated revenue but the efforts have ended up in absolute failure, there is not much to justify the colossal amounts generated. There are three main ways: exemptions, cheating and underrating through which revenue is eroded [7]. The focus of this paper is to identify the leakages in the revenue collection, processing and management and devise the means by which they can be plucked. The Board of Internal Revenue is the government agency that performs the functions of collecting taxes and enforcing the laws of internal revenue.

Statement of Problem

The current method of revenue collection, processing and management at the Board of Internal Revenue is completely manual. There are many problems inherent in the current method. They include:

i. **Diversion of generated revenue into private pockets**. A reasonable percentage of the revenue generated is diverted by the staff into their private pockets.

ii. **Delay in the remittance of the generated revenue to the State treasury** as a result of the huge computation involved in bringing together all revenues collected from the 30 Area offices in the State. This makes it difficult for the State Government to respond to the need of her citizens as and when necessary.

iii. **Difficulty in identifying and locating those who evade tax** for necessary legal and prohibitive actions to be taken against them.

iv. **Error in the computation of PAYE for civil servants** and Direct Assessment tax for the self-employed citizens.

v. **Breach of established procedures** by staff of the Board for the purpose of perpetrating fraud.

Objectives of Study

. The objectives include:

- To review the manually dominated internal revenue processing system currently in use at the Board of internal Revenue with a view to discover problems areas.
- To design a software application module that will accomplish the following:
  - Prepare monthly statement of account from various revenue sources.
  - Automatically calculate total revenue from different revenue sources within an Area office and forward the total to head office.
  - Prepare yearly statement of account and reconciliation.
  - Produce scheduled monthly report on State revenue
  - Ensure adherence to established procedure

Significance of the Study

Over the years Kogi State has made tremendous effort towards enhancing her internally generated revenue but the efforts have ended up in absolute failure because the revenue generated, instead of getting to the State Government purse goes into private pockets. Against this background if government must increase her source of revenue and ensure that the sourced revenue enters the State Government purse, then there is no alternative to embracing the automated internally generated revenue processing system. Automation is the best option for eliminating all the leakages in the revenue collection and management process

If the automated solution which is the goal of this research effort is ignored, the internal revenue generation capacity of the State will continue to be poor, the State will be financially incapacitated, bankruptcy, unemployment, hunger, starvation and other social vices with their attendant consequences will be the end result, and the State may eventually collapse.

Analysis of the Present System

Weaknesses of the Present System

An interactive session was organized involving the Chairman of the Board of internal revenue and two staff of the board, one from the Personal Income Tax Department and the other from Vehicle Registration and licensing Department at the Igalamela/Odolu Local Government Area Office of the Kogi State Board of Internal Revenue to discuss the problems inherent in the current system of operation. From the discussion the following problems associated with the current system were extracted:

1. Inability to quickly and accurately produce a list of self employed citizens who evade tax for prompt action to be taken against them.
2. Inability to quickly and accurately produce a list of vehicle owners whose vehicle particulars and driving license are expired.
3. Error in the computation of PAYE, some employees are overtaxed, others are under taxed while some are mistakenly ignored.

4. Error in the computation of Direct tax for self employed citizens.
5. Computation of total revenue generated at the area office from the various revenue sources is always full of errors.
6. The computation of the total revenue from all the board of internal revenue within the state is always difficult, time consuming and prone to errors.
7. Staff of the board of internal revenue in charge of vehicle registration often charges vehicle owners an amount which is about 80% higher than the government approved rate. As a result vehicle owners run away from vehicle registration. The amount collected is always less than what is written on the receipt issued.
8. Lack of proper auditing standard. Staff can issue receipt without proper recording and keep the money in his/her pocket.
9. Because the current system is completely manual and records are kept in files, retrieval of records for proper assessment by the director of the board is a very tedious task. Assessment is therefore a neglected task giving the staff opportunity to do what the like.
10. Delay in the remittance of the generated internal revenue to the state treasury as a result of the huge computation involve in bringing together all revenues from the 30 area offices in the state. This makes it difficult for the state government to respond to her obligations to citizen as and when necessary.
11. Retrieval and assembly of relevant data for decision making takes a very long time.
12. Files on which data are recorded are easily mutilated and security of information is very low.
13. The absence of centralized repository for data makes the level of redundancy high. This in turn increases the level of inconsistencies. Records are not consistent across various units.

Data Flow Diagram of the Present System

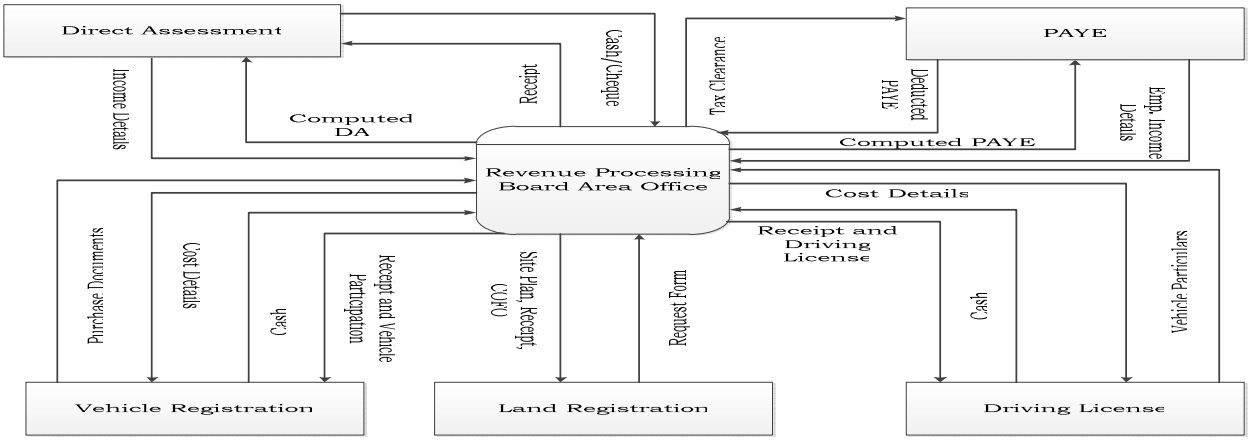

Fig.1: Data Flow Diagram of the Present System

Analysis of the Proposed System

The Proposed System

Having critically examined the existing system of operations of the Board of internal revenue with a view to discover problem areas, it became obvious that the development and deployment of a computerized revenue processing system is a matter of absolute necessity if all the leakages in the revenue collection and management processes must be plucked. The proposed system which I will call Computerized Internally Generated Revenue Processing System (CIGRPS) will consist of the following modules: Collection and Accounts, Personal Income Tax, Motor Vehicle Tax Authority, Land Registration. Details of the functions of each module are discussed in Chapter Four.

Benefits of the Proposed System

The effective deployment of this application has both tangible and intangible benefits. In fact, the tangible benefits cannot be quantified. Prominent among the benefits derivable from the deployment are:

1. Strict adherence to due process and established procedure. The collection and accounts department is the brain box of the board. The application allows this department to effectively coordinate the operation of other subordinate units by allowing the other units to carry out their own part of the transaction. For instance, the MVTA unit cannot update their record and issue Driving License or Vehicle Particulars unless the Collection and Account unit has certified that the customer has paid.
2. Diversion of generated revenue by the staff of the Board is eliminated as all payments will be made at the Bank.
3. One of the problems of the Board is that staff overcharges tax payers in certain situation. This application reduces this as government approved rate are entered into the database by only authorized staff and not subject to modification by revenue officers. The tax payer can see the approved rate.
4. The application makes it possible for the Board to quickly and accurately identify tax evaders for necessary prohibitive actions to be taken against them. This will enhance the revenue generation.
5. The application provides a centralized repository for data. This reduces the level of redundancy and inconsistency.
6. Reduction in cost: The cost of moving data from one unit to another or from one area office to another is greatly reduced as all data transfer occurs via the network.
7. The speed of retrieval and assembly of vital information is greatly increased. This facilitates decision making.
8. Security of data is enhanced.
9. Error in computation is greatly reduced.
10. One of the outstanding problems faced by the board is the tedious, time – consuming task of bringing together all revenues from the various area offices at the end of each month. This task is performed by the application within a split of seconds on the click of a button.

Indeed, the list of benefits is inexhaustible.

Systems Design

Systems design in the process of describing the new system. Systems design details system outputs, inputs and user interfaces, specifies hardware, software, database, data communication facilities, personnel and procedure components and shows how these components are related.

4.1 Objectives of the Design

The objectives of the design include:

- Design of software application module that will accept input from a distributed network of computing nodes payment to Kogi State Board of Internal Revenue
- Store such payment in a concurrently controlled distributed database.
- Prepare monthly statement of account from various revenue sources.
- Collate revenues from different revenue sources and Area offices to obtain total revenue generated in a given month.
- Prepare yearly statement of account and reconciliation.
- Produce scheduled monthly report on State revenue

The application will in addition to the above objectives achieve the following:

a. **Automate collation**: The collation of the revenues from the various area offices is one of the causes of delay in the remittance of fund generated to the State Treasury. This application eliminates this delay. The Collection and Accounts department in an Area Office will on the click of a button on the approved date generate the sum total of all revenues collected from the various revenue sources and upload this sum to the final account at the Head Office. At the Head Office, on the click of a button also, will generate the sum total of all revenues received from all the Area Offices. Operations which take days are now done in seconds.

b. **Ensure proper coordination and control.** High level of interdependence exists among the various units in an Area Office especially between a unit and the Collection and Accounts department which is the clearance centre. A transaction which is initiated in a unit must not end until clearance is obtained from the Collection and Accounts department. Most times there is a breach of procedure, staff in unit for ulterior motive begin and end a transaction. This application ensures that all operations are performed by those authorized to do them. The application achieves this by ensuring that certain features to be used by other units are only enabled when the Collection and Accounts department have completed their own part of the transaction.

(c) **Reduce cost/risk.** At the end of every month, revenue officers travel from the Area Offices to Head office at Lokoja to submit report on income generated for the month. This involves cost and risk. This application will

eliminate the need to travel to the head office as all necessary transactions are carried out over the network.

The Control Centre

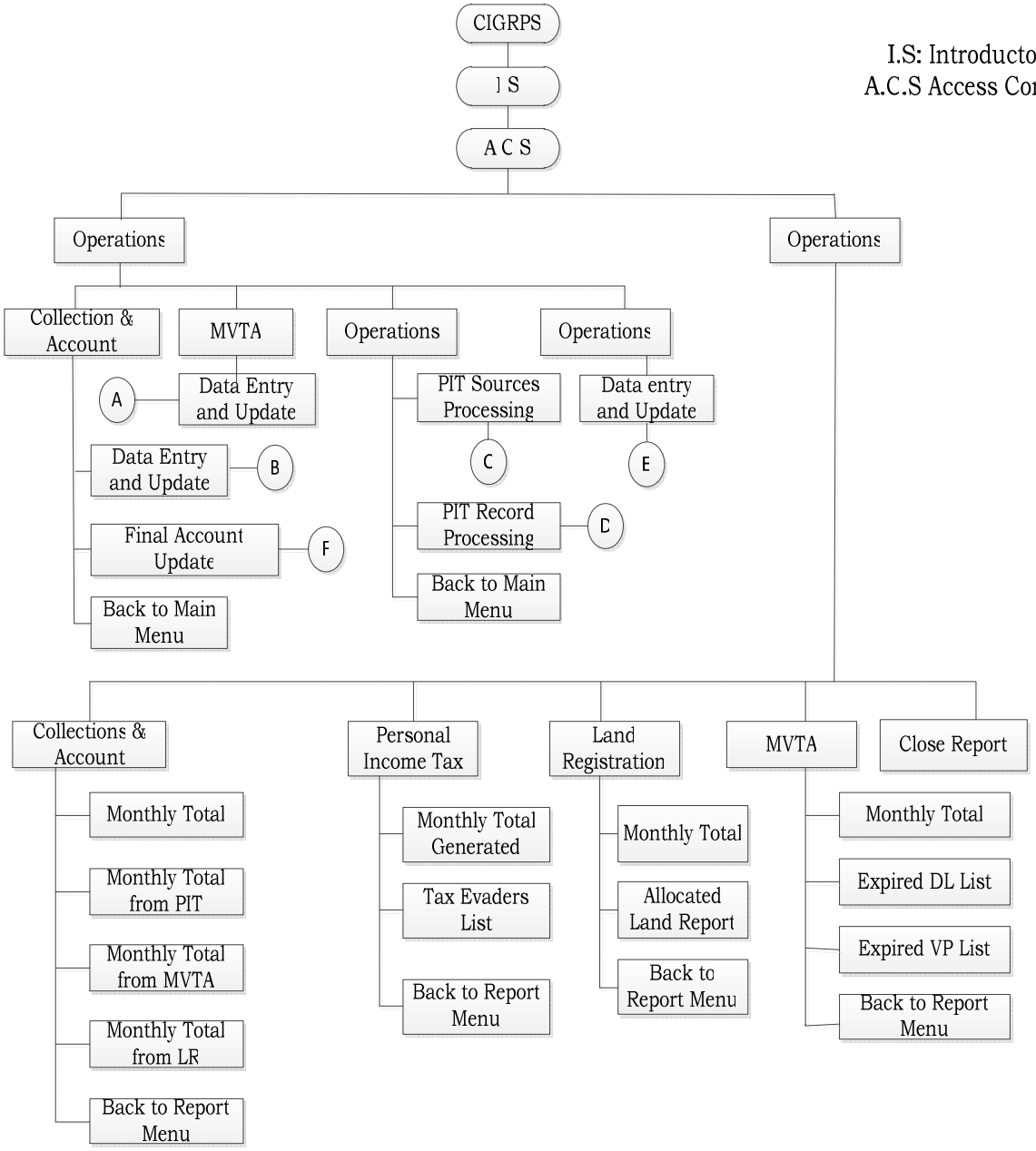

Fig. 2: The Control Center of the new Software

Over All Data Flow Diagram of the Proposed System

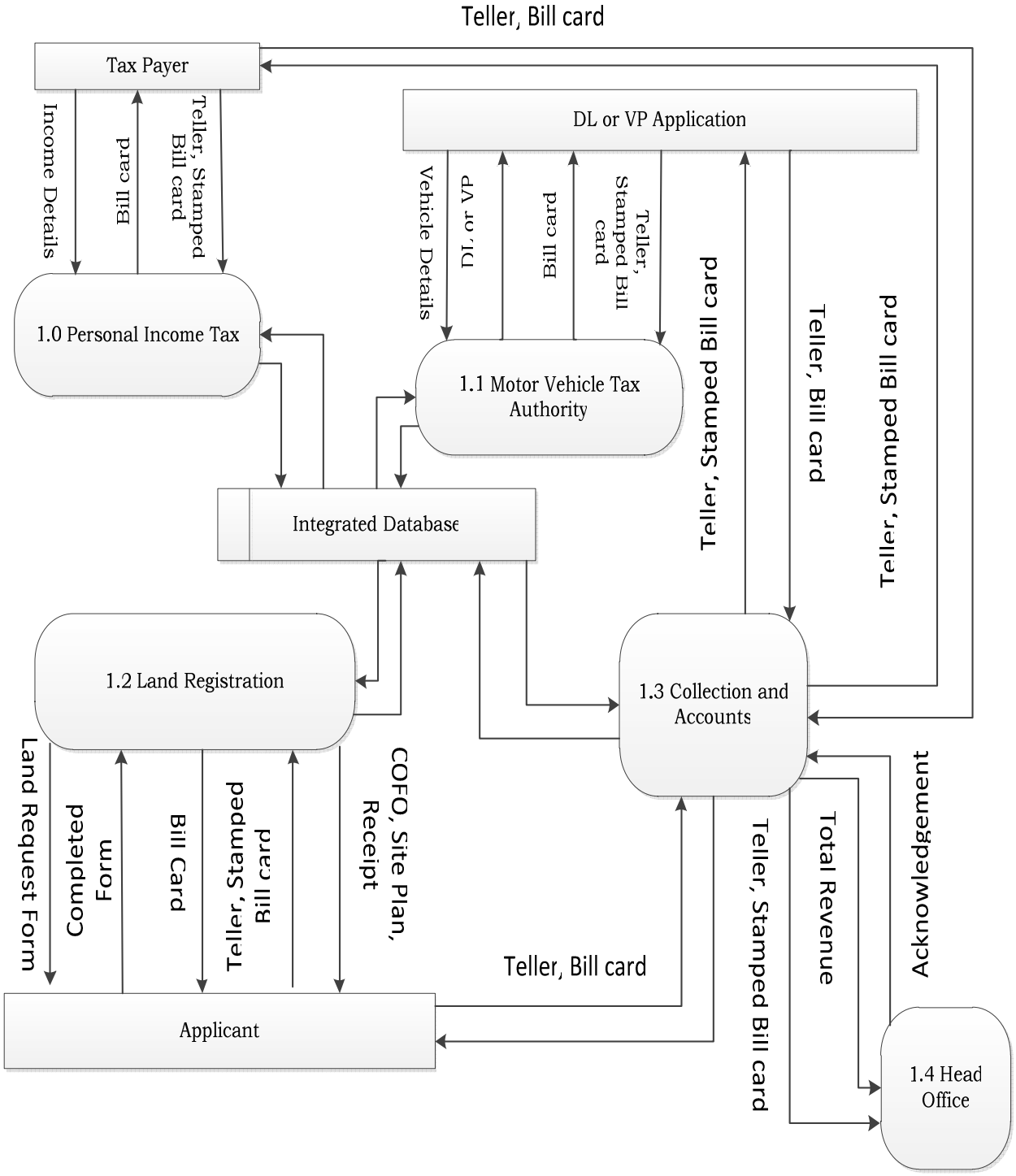

Fig. 3: Over All Data Flow Diagram of the Proposed System

Data Flow Diagram for Personal Income Tax

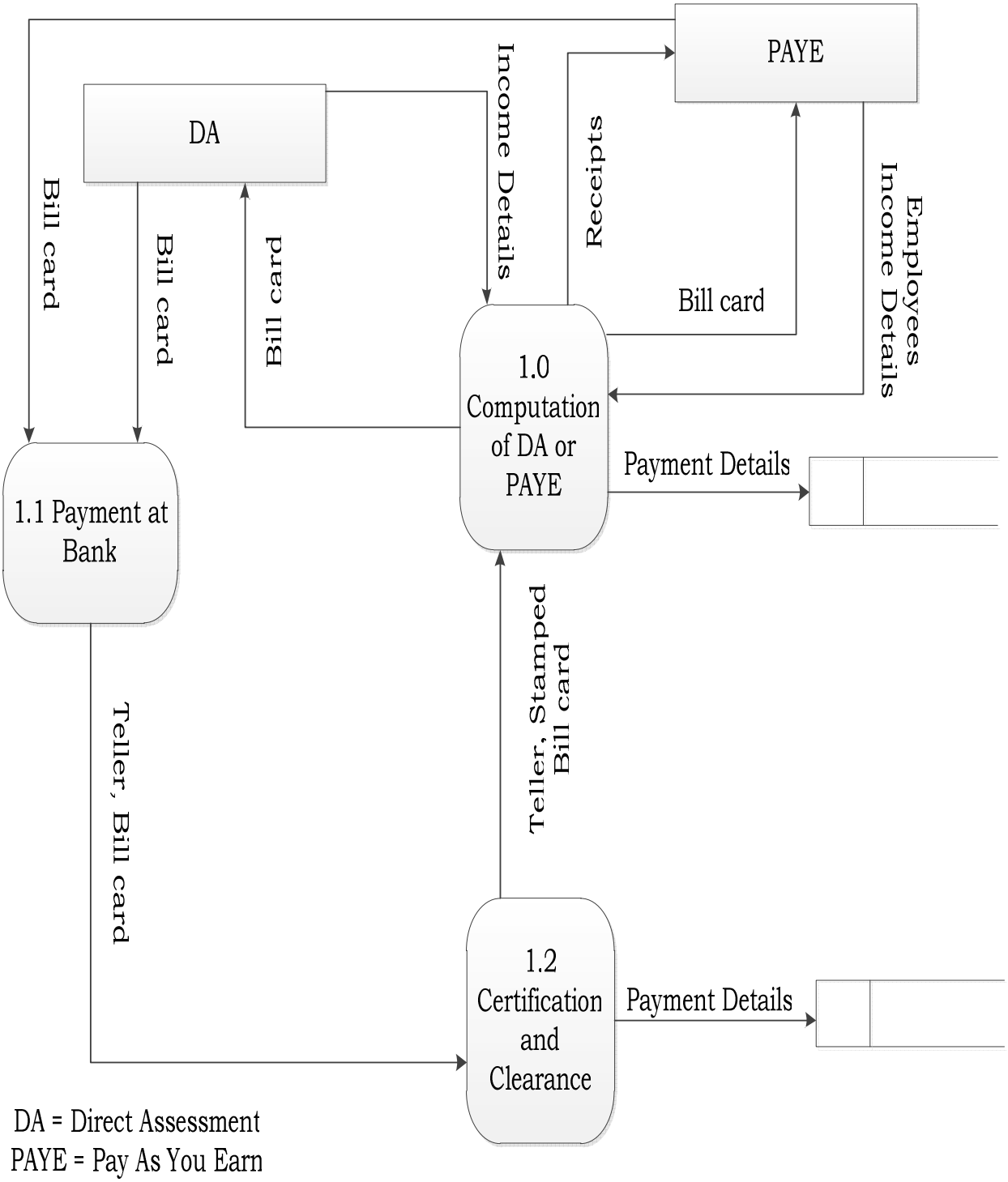

Fig.4: Data Flow Diagram for Personal Income Tax

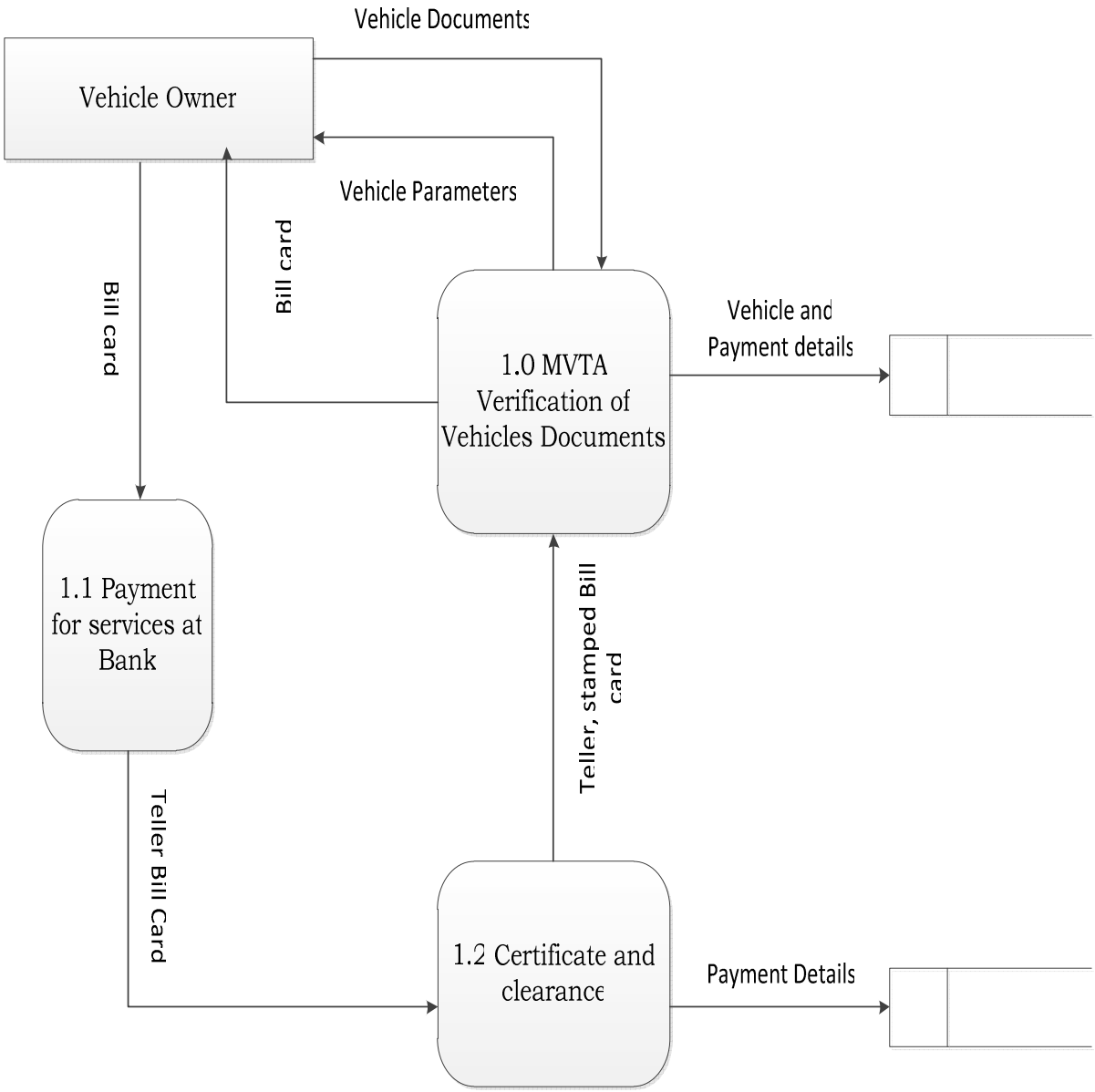

Fig. 5: DFD of Vehicle Registration

Data flow diagram for Land registration

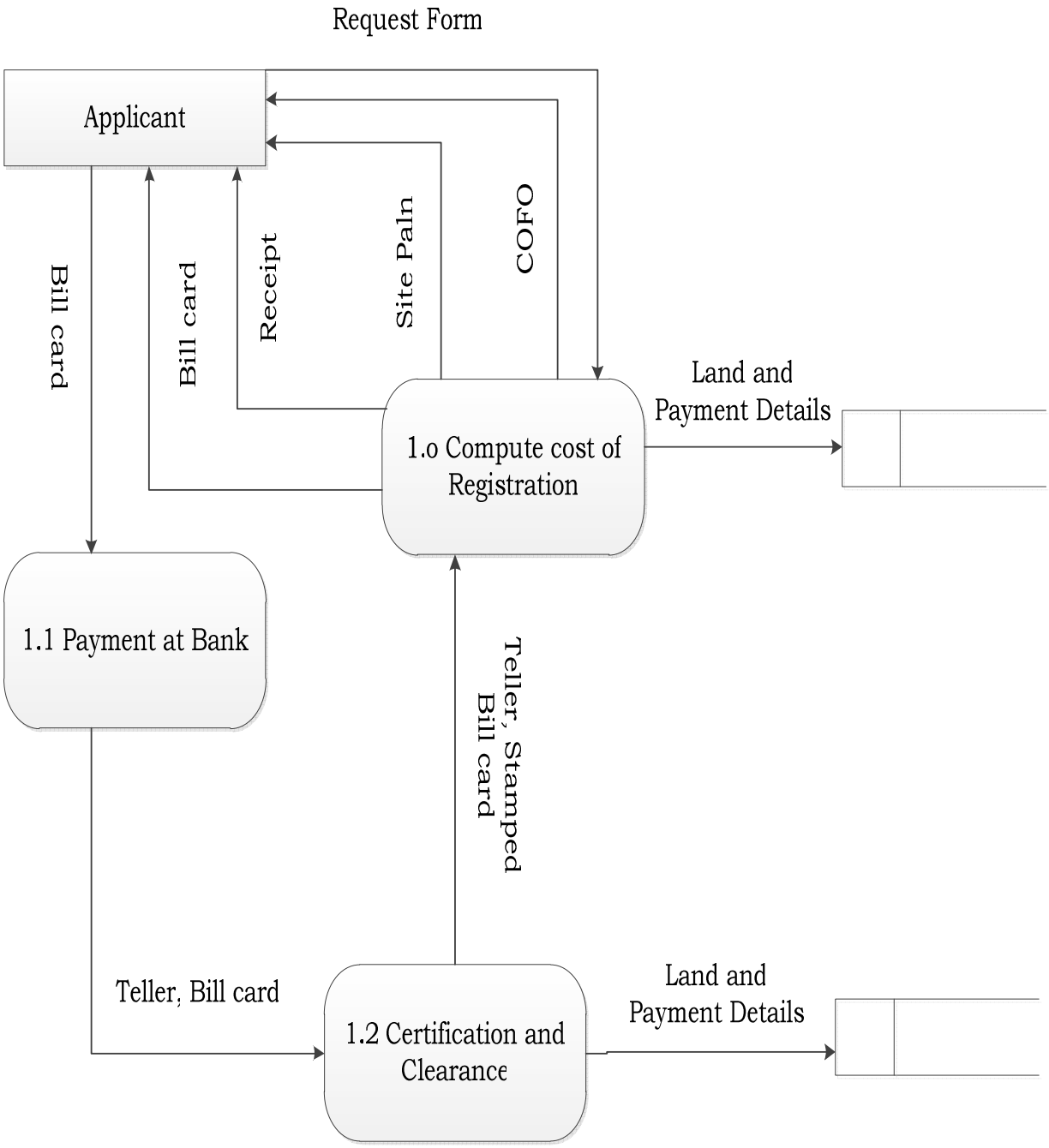

Fig 5: Data flow diagram for Land registration

Data flow diagram for Collection and Account

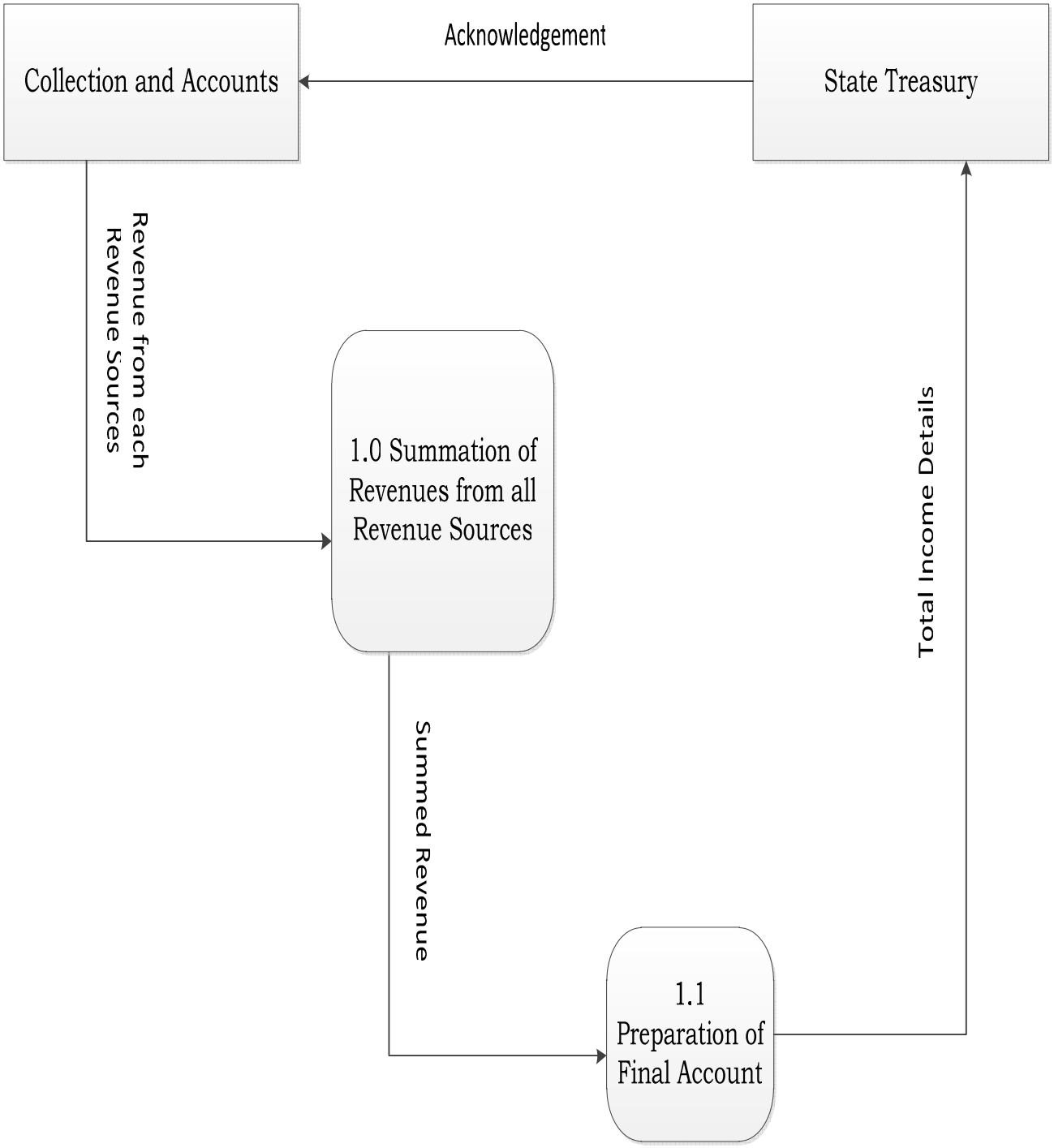

Fig. 6: Data flow diagram for Collection and Account

Sample Outputs from Program

KOGI STATE BOARD OF INTERNAL REVENUE
PERSONAL INCOME TAX DEPARTMENT, IDAH
LIST OF TAX EVADERS
INCOME TYPE PAYE
MONTH ISSUED: 5-YEAR ISSUED: 2012

S/NO	BILL NUMBER	OWNER	ADDRESS	AMOUNT
1	1	OJONUGBA THOMPSON	NO 2 OMACHONU STREET,	5000
2	10	OKPANACHI BONI	NO 10 ANGWA, IDAH	5000
3	12	KOREDE ABIOLA	NO 13 AJAYI STREET, KABBA	5000
4	15	CHINEDU CLEMENT BENSON	NO 27 AROMEH STREET, AJAKA	5000
5	17	GODWIN MERCY	NO 15 MIKE ROAD, IDAH	5000
			Total	**25000**

KOGI STATE BOARD OF INTERNAL REVENUE
LAND REGISTRATION DEPARTMENT, IDAH
REPORT ON ALLOCATED LANDS
MONTH ISSUED: 6 -YEAR ISSUED: 2012

S/NO	DATE ISSUED COFO	LOCATION	SIZE
1	6/19/2009	4-5 ST. BARNABAS ROAD, KABBA	2 PLOT
2	6/9/2009	NO 18 SALAWU STREET, AJAKA	4 PLOT
3	6/20/2009	GRA B, IDAH	2 PLOT
4	6/13/2009	NO 19 LERAMA STREET, IBAJI	2 PLOT
5	6/22/2009	NO 47 ANGWA ROAD, IDAH	2 PLOT
6	6/12/2009	NO 40 ANGWA ROAD, IDAH	3 PLOT
7	6/30/2009	NO 40 ADENIYI ADEDEJI	4 PLOT

Fig. 7: Sample Outputs from the software

Conclusions

Computerized Internally Generated Revenue Processing System (CIGRPS) is a feature rich package designed to meet the performance, availability, recoverability, fast retrievability and security requirement of the mission critical operations of the Kogi State Board of Internal Revenue. The application was tested with respect to the problems identified with the existing system of operations of the Board and found to perform excellently. The deployment of this application will enhance the revenue generation capacity of the state, pluck all leakages in the revenue collection and management process and put the State in a better position to meet her obligation to citizens.

.

References

[1] Holcombe, R. G (1997). "A Theory of the Theory of Public Goods". IN: Review of Austrian Economics l.10 (1)1-22

[2] Bailey, S. J. (2002) Public sector economics: Theory, Policy and Practice. (2nd ed.). Hampshire: Palmgrave.

[3] Tapang A. T (2012) The impact of Revenue Base on Local Government Social Assets in Cross River State Nigeria: 1996 -2010. International Journal of Physical and Social Sciences. Volume 2 issue 3.

[4] Abubakar Halidu (1999) National Orientation Workshops For Local Government Councilors. Training Manual P. 8

[5] Yunusa, A.A (2003) Understanding the Principles of taxation in Nigeria, Jimpsy Color Prints, Kogi

[6] Kiabel.B.D and Nwokah, N.G (2009) Boosting Revenue Generation by Governments in Nigeria:The Tax Consultant Option Revisited, European Journal of Social Sciences, Vol. 8.

[7] Ibrahim A. (2010) An Assessment of Internally Generated Revenue in Sabon-Gari and Zaria Local Government Areas of Kaduna State.