# DESIGN AND IMPLEMENTATION

**OF ELECTRONIC POINT OF SALE AND INVENTORY**

**SYSTEM FOR GLACEO TECHNOLOGIES NIGERIA LIMITED ONITSHA, ANAMBRA STATE.**

**BY**

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**(ESUT/2011/108223)**

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**23th May, 2016**

**CERTIFICATION PAGE**

This is to certify that this project research work from the Department of Computer and Information Science, Enugu State University of Science and Technology, Enugu State was solely and entirely carried out by Azolukwam Nelson Nestor with registration number ESUT/2011/108223

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**DEDICATION**

I dedicate this work to God Almighty, for his sufficient blessings upon my family and for guiding me through the actualization of this project. And to my family for their support and encouragement**.**

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I am most grateful to the Almighty God who has been my most gracious guardian and source of strength throughout this thesis.

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**ABSTRACT**

The global community especially the technologically advanced world is striving to attain what has been the global information age. It is an age that is envisaged to go beyond the use of computers as a mere tool for fast information processing, rather they will also become medium for processing and transferring such information from one location to another at equal fast rate. As a result, it’s appalling that sales in developing country like Nigeria have not been able to benefit much from this revolutionized age of Information technology especially in the area of a computerized Point Of Sales and Inventories. A computerized point of sale and inventories system is a computer program which takes the best out of a manual system and electronic cash registers features. An electronic point of sale gives you the ability to store client and supplier records, create quotations which can be later converted to invoices or cash sales, keep track and categorize your inventory in an easy way and generate reports not just by a click of a button but also at any point in time. With today's high performance computers and large storage devices one can easily run his/her business on an office computer (depending on the size of the business).

Table of Contents

Title page.................................................................................................................i

Certification.............................................................................................................ii

Dedication...............................................................................................................iii

Acknowledgement..................................................................................................iv

Abstract...................................................................................................................v

Table of contents....................................................................................................vi

List of figures………………………………………………………………………………….……………..x

**CHAPTER ONE: INTRODUCTION**

* 1. Background of study.......................................................................................1
	2. Statement of problem....................................................................................2
	3. Objectives of study.........................................................................................4
	4. Significance of the project..............................................................................5
	5. Project scope..................................................................................................6
	6. Constraints.....................................................................................................7
	7. Project report organization............................................................................8
	8. Definition of terms.........................................................................................9

**CHAPTER TWO: LITERATURE REVIEW**

* 1. Concept of point of sale...............................................................................12
	2. Concept of inventory management..............................................................14
		1. Reason for keeping stock...................................................................15
		2. Terms used in dealing with point of sale and inventory....................17
		3. Cost associated with point of sale and inventory..............................18
	3. History of sales technology..........................................................................18
	4. History of early point of sale systems...........................................................20
	5. History of point of sale software application...............................................22
	6. Benefits of point of sale and inventory system...........................................24

**CHAPTER THREE: SYSTEM ANALYSIS AND INVESTIGATION**

* 1. Introduction..................................................................................................27
	2. Method of data collection............................................................................28
		1. Primary source ..................................................................................28
		2. Secondary source ..............................................................................31
	3. The existing system......................................................................................31
	4. Organizational structure...............................................................................32
	5. Input analysis................................................................................................35
	6. Process analysis............................................................................................40
	7. Output analysis.............................................................................................40
	8. Problems of the existing system...................................................................41
	9. Justification for the proposed system.........................................................42

**CHAPTER FOUR: SYSTEM DESIGN, IMPLEMENTATION AND TESTING**

* 1. Design standard............................................................................................45
		1. Choice of development tools.............................................................45
		2. Technology used................................................................................47
		3. System architecture...........................................................................49
		4. Database design.................................................................................51
	2. Scope of design.............................................................................................68
	3. Data specification.........................................................................................69
		1. Input specification………………………………………….................................69
		2. Output specification...........................................................................69
	4. System flowchart..........................................................................................71
	5. System requirement.....................................................................................72
		1. Hardware requirement......................................................................72
		2. Software requirement.......................................................................73
	6. Program flowchart........................................................................................74

**CHAPTER FIVE: SUMMARY, RECOMMENDATION AND CONCLUSION**

* 1. Summary......................................................................................................78
	2. Recommendation.........................................................................................80
	3. Conclusion....................................................................................................81

References..............................................................................................................82

Appendix A – SAMPLE FORM.................................................................................83

Appendix B – SOURCE CODE...................................................................................91

Appendix C – REPORTS.........................................................................................113

Appendix D – USER GUIDE....................................................................................116

List of Figures

* 1. Organizational structure...............................................................................35
	2. Employee registration form……………………………………………………………………37
	3. Product entering form……………………………………………………………………………38
	4. Customer registration form……………………………………………………………………38
	5. Product category entering form………………………………………………………………39
	6. Product manufacturer entering form…………………………………………………….39
	7. Point of sale form………………………………………………………………………………….39

4.1. Three tiers system architecture…………………………………………………………..…49

4.2. System architecture diagram…………………………………………………………………51

4.3. Description of major identified entities (Connolly, 2005, p.444)……………54

4.4. Description other identified entities……………………………………………………..54

4.5. UML diagram representing entities relationship……………………………………..56

4.6. Database bank table………………………………………………………………………………..58

4.7. Database category table. ………………………………………………………………………..59

4.8. Database color table………………………………………………………………………………..59

4.9. Database config table………………………………………………………………………………60

4.10. Database customer table…………………………………………………………………………62

4.11. Database employee table. ………………………………………………………………………62

4.12. Database states table……………..……………………………………………………………….62

4.13. Database LGA table……………..…………………………………………………………….…….62

4.14. Database Employee password archive table……………………………………….……63

4.15. Database manufacturer table…………………………………………………………………..63

4.16. Database operating system table……………………………………………………………..63

4.17. Database product table…………………………………………………………………………….64

4.18. Database question table…………………………….…………………………………………….65

4.19. Database sales table……………………………….….…………………………………………….65

4.20. Database return table…………………………….….…………………………………………….66

4.21. Database user role table…………………………….…………………………………………….67

4.22. Database voucher table………………………….….…………………………………………….67

4.23. System flowchart…………..…………………….….…………………………………………….71

4.24. Proposed system sales flowchart………….….…………………………………………….71

4.25. Proposed system login flowchart………….….…………………………………………….76

4.26. Proposed system search flowchart………….….……………………………………………77

**CHAPTER ONE**

**INTRODUCTION**

* 1. **BACKGROUND OF STUDY**

According to Wikipedia Computer technology has brought about many changes in the way we live in this present society, which has affected and reflected not only on an individual itself, but also organizations and society. With the advancing growth in technology since the early computers made in 1946 we have seen a quantum leap in changes made that has affected us both in our present lives and future to come. In the earlier years, when computer technology was still infancy, people relied on telegraph, adding machines, rolodexes, telephone, and ledgers for calculations, communications and record keeping. Although these forms in their own way were effective, some aspect, for example post and telegraph proved to be sometimes unreliable with time delays in receiving information, or in the case of the telephone, where people were not able to see expressions or reactions of the individual they are talking to or some cases were misled to pass on information to individuals pretending to be persons they wish to talk to.

With the ability of word processing, computing databases, and solving complex mathematical problems, today, the computer can be used to transfer funds from one bank to another, to predict tomorrow’s weather, mail a friend thousands of kilometers away from you or even across the globe, to guide a space craft, to store vast information, to monitor patient’s health condition and drug prescription, and to structure and manage a business, especially sales business.

 Computers have become an integral part of human life, their applications ranges from personal communications and domestic activities to business transactions and state crafting.

* 1. **STATEMENT OF PROBLEM**

In today’s fast paced society, it’s very hard to be competitive without using cutting-edge technology available in market. After years of business, the data has grown much for GLACEO Technologies Nigeria Limited. It is becoming a challenge for GLACEO Technologies Nigeria Limited to manage that data in an effective way and as well become more productive in transaction processing; GLACEO Technologies Nigeria Limited needs a solution which can facilitate their current processes with use of technology and software. With increased amount of transactions, it is becoming difficult for GLACEO Technologies Nigeria Limited to manage transactions in effective and efficient manner. It is very hard to go through all paper work and backtracking transactions. If there is any complain or review of any transaction, it takes large amount of effort and time to backtrack and fix the problem. This results in loss of resources, increased time, and low output.

All transactions are managed using different papers; all information regarding one transaction is stored in one physical file. This file contains all the documents related to that particular transaction. Once a transaction is performed, a unique number is assigned to that transaction/file.

Some of financial details regarding transactions are managed in an Excel sheet. This means a lot of manual work, which leads to the loss of control over operations. Due to higher workloads and more errors, delay in the whole process is experienced on daily basis. No database exists and thus poor ability in picking out statistics on for example the existing product stock is inevitable.

Therefore, there is a need of a point of sale and inventory management system, providing an effective and efficient record keeping, along with an easy document management system and shunning manual system which is quite tedious, time consuming and less efficient and accurate in comparison to the computerized system. There exist no ready-made systems that can meet all of GLACEO business needs as requirements are unique and complex which makes use of third party tailored systems difficult to implement.

**Summary of old system problems:**

1. Time consuming

2. Less accurate

3. Less efficient

4. Lot of paper work

5. Slow data processing

6. Not user friendly

7. Difficult to keep old records

* 1. **OBJECTIVES OF STUDY**

The idea of this thesis is to study the GLACEO’s current working and propose a solution in order to digitalize their current processes and overcome the current issues which are being faced daily due to lack of computerized solution. This need of digitalization of their current processes related to transaction handling will help the company in forecasting their business growth.

**Specifically the objectives are:**

1. The main objective of this system is to keep records of the complete inventory.
2. Record and track stock on the basis of both quantity and value.
3. It improves cash flow, visibility, and decision making.
4. For warehouse management, you can track quantity and value of all your materials, perform physical inventory, and optimize your warehouse resources.
	1. **SIGNIFICANCE OF THE PROJECT**

This system is to provide user efficient working environment and more output can be generated through it. This system provides user friendly interface resulting in knowing each and every usability features of the system.

This system helps in tracking records so that past records can be verified through them and one can make decisions based on the past records. This system completes the work in a very less time resulting in less time consumption and high level of efficiency.

This system is developed in such a way that even a naive user can also operate the system easily. The calculations are made very quickly and the records are directly saved into databases and the databases can be maintained for a longer period of time. Each record can be retrieved and can be verified for the future transactions.

Also this system provides high level of security for data leaking as only administrators can access the database no changes can be made in it until it verifies the user login id and password.

* 1. **PROJECT SCOPE**

The scope of this project is to investigate and design a software solution which can facilitate GLACEO Technologies Nigeria Limited in performing their daily tasks, improving efficiency, and helping them to be more productive. This project will provide a solution through which GLACEO Technologies Nigeria Limited can easily manage, handle and generate all required information in their respective format when needed. It will help them to manage transaction details, financial data, and historical data and also in producing documents of different formats for different customers.

This solution will help GLACEO Technologies Nigeria Limited in reducing effort spent on managing sales. It will also provide them opportunity to explore possibility of generating documents, managing financial details and analyzing historical data with use of digitalized solution.

* 1. **CONSTRAINTS**

**The following constrains were identified:**

1. In case of downtime the communication shall not affect the user.
2. Continuous downtime shall not exceed a day.
3. All the payments are handled by the Bank, which is not the part of the system.
4. The system shall support at least 600 users simultaneously.
5. Data encryption shall be used for sensitive data sharing between user and the system.
6. It should be possible/easy to add new functionality into the system without affecting it.
7. The system shall be able to output report in various formats including a physical format.
8. The system shall be able to deliver information through SMS and email.
9. In case of new user registration or information change by users, the system shall send reports to relevant users in their preferred means.
10. Integration of online payments with the use of debit cards.
	1. **PROJECT REPORT ORGANIZATION**

This project thesis on “Design and Implementation Electronic Point of Sale and Inventory Management System” is organized from chapter one to chapter five.

Chapter one is the introduction which covers Background of study, Statement of Problem, Objectives of Study, Significant of the project, Project scope, Constraint, Project report organization, and Definition of terms.

Chapter two reviewed the literature emphasizing on the concept of Electronic point of sale and inventory system.

Chapter three analyzed the system explaining in details the definition of the problems, methods of data collection, interviewing, Observation, Evaluation of forms, program structure.

In chapter four, the system implementation, Justification of programming Language, system control, System Requirement, Software requirement and file conversion was discussed.

 Finally, chapter five summarized the system achievement, concluded the entire work and made necessary recommendations for further improvement on the system.

* 1. **DEFINITION OF TERMS**

**Computer:** An electronic device which is capable of receiving information (data) and performing a sequence of logical operations in accordance with a predetermined but variable set of procedural instructions (program) to produce a result in the form of information or signals.

**Inventory:** The entire stock of a business, including materials and finished product.

**System:** A set of things working together as a mechanism or interconnecting network.

**Stock:** A supply of goods or materials available for sale or use.

**Transaction:** The action of conducting business.

**Downtime:** Time during which a computer or other machine is out of action.

**Warehouse:** A large building where raw materials or manufactured goods may be stored.

**Employee:** A person employed for wages or salary.

**Customer:** A person who buys goods or services from a shop or business.

**Software:** Programs and other operating information used by a computer.

**Document:** A piece of written, printed, or electronic matter that provides information or evidence, or that serves as an official record.

**Receipt**: The action of receiving something or the fact of its being received.

**Technology:** The study of techniques of mobilizing resources such as information for accomplishing objectives that benefit man and his environment.

**Rolodex:** A type of desktop card index.

**Telephone:** A system for transmitting voices over a distance using wire or radio, by converting acoustic vibrations to electrical signals.

**Ledger:** A book or other collection of financial accounts.

**File:** A folder or box for keeping loose papers together and in order.

**Management:** The process of managing

**Data:** The quantities, characters, or symbols on which operations are performed by a computer.

**Database:** A structured set of data held in a computer.

**Design**: The purpose or planning that exists behind an action or object.

**Integration:** The action or process of integrating.

**Payment:** The action of paying or the process of being paid.

**SMS:** Short Message (or Messaging) Service, a system that enables mobile phone users to send and receive text messages.

**E-mail:** Messages sent electronically from one computer user to one or more recipients via a network.

**Network:** A group or system of interconnected people or things.

**Password:** A secret word or phrase used to gain admission or access to something.

**Application:** A program or piece of software designed to fulfil a particular purpose.

**Entity:** A thing with a distinct and independent existence.

**Voucher:** a small printed piece of paper that entitles the holder to a discount or that may be exchanged for goods or services.