ST. MARY'S UNIVERSITY COLLEGE

BUSINESS FACULTY

DEPARTMENT OF MANAGEMENT

AN ASSESSMENT OF INVENTORY MANAGEMENT PRACTICE IN ALEMGENET TRADE AND INDUSTRY PLC

BY:

ALEMAT FITSUM

JUNE 2010

SMUC

ADDIS ABABA

AN ASSESSMENT OF INVENTORY MANAGEMENT PRACTCE IN ALEMGENET TRADE AND INDUSTRY PLC

BY:

ALEMAT FITSUM

A SENIOR ESSAY SUBMITTED

TO THE DEPARTMENT OF MANAGEMENT

BUSINESS FACULTY

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IN PARTIAL FULFILLMENT OF THE REQUIRMENTS

FOR THE DEGREE OF BACHELOR OF ARTS IN

MANAGEMENT

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APPROVED BY THE COMMITTEE OF EXAMINERS

Department head

_____   _____

Advisor   **Signature**

_____   _____

Internal Examiner   **Signature**

_____   _____

External Examiner   **Signature**

_____   _____

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First of all I would like to thank my advisor, Ato Abate Lakew, for his unreserved advice, guidance, encouragement and assistance to develop and finalize this study in a proper manner. Secondary my special heartfelt gratitude goes to my family for their material and moral support.

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ST. MARY'S UNIVERSITY COLLEGE

MANAGMENT DEPARTMENT

QUESTIONNAIRES

Questionnaire prepared to Alemgenet Trade and Industry plc. <u>Employees</u>

The questionnaire is prepared by a student of St. Mary's university college as a requirement for partial fulfillment of the requirements for the degree of BA in management. Hence the data from this enquiry will be used to PLC. The researcher would very much appreciate your genuine answers to the following questions. All information furnished is safeguarded with strict confidentiality.

Personal profile

1.1 sex   Male   ☐
             Female ☐

1.2 Educational level
     a) Grade 12 complete   ☐
     b) Certificate holder   ☐
     c) Diploma holder   ☐
     d) 1st degree holder   ☐
     e) Above 1st degree   ☐

1.3 Please specify your position in the organization.

1.4 Which type of inventory method does the company use?

     a. Weighted average method   ☐

     b. FIFO method   ☐

                                   ☐

c. LIFO method

If any, specify _____

1.5 What are the procedures the stores/finance   management should follow to record the inventory?

a. By bin card   ☐
b. By stock card ☐

1.6 What are the company uses for processing the item products produce in your company?
(you can have more than one answer)

a. Raw material   ☐

b. Semi finished goods ☐

c. Finished goods   ☐

1.7 Are requisitions for additional supplies based on the required review of minimum stock & recorder levels?

.Yes ☐   partial done ☐   No ☐

If no, why? _____

1.8 Are stock records regularly received against actual physical existence?

Yes ☐   No ☐

If no, why? _____

1.9   Are there procedures insure that items or goods can issue from stock only by authorized employees?

Yes ☐   No ☐

If no, why?_____

1.10 Are stocks subject to physical verification/counts/?

a) On a continuous basis?   Yes ☐   No ☐
b) Periodic counts during month and year?   Yes ☐   No ☐
c) At the end of physical year only?   Yes ☐   No ☐

If no, why? _____

1.11 What type of inventory system your organization will use to determine the ordering time and the quantity needed?

a) Fixed quantity system   ☐
b) Fixed period system   ☐
c) Just in time   ☐
d) Material requirement planning ☐

1.12 Are there adequate physical controls to ensure that high value, fast moving and   essential item are more protected than other stock items?

Yes ☐   partial done ☐   No ☐

If no, why? _____

1.13 What are the problems in the organization specially in the store?

_____

_____

1.14 What are the major products produce in your company?

_____

_____

Thank you for your response

ST. MARY'S UNIVERSITY COLLEGE

MANAGMENT DEPARTMENT

INTERVIEW QUESTIONS

1. How much is the annual inventory carrying cost?
2. How does the organization administer obsolete inventories?
3. Is there wastage of materials in the store? How much is it?
4. What weaknesses are observed in the controlling system?

APPENDIX

DECLARATION

I, The undersigned, declare that this senior essay/project/ is my original work, prepared under the guidance of Mr. Abate Lakew. All sources of materials used for the manuscript have been properly acknowledged.

Name: - <u>Alemat fitsum</u>

Signature: - _____

Place of submission: - <u>St. Mary's University College.</u>

Date of submission: - <u>June.21, 2010</u>

ADVISOR'S APPROVAL

This senior research paper has been submitted to the department of management in partial fulfillment for the requirements of BA degree in management with my approval as the university college advisor.

Name: - <u>Abate Lakew</u>

Signature: - _____

Date:-_____

CHAPTER ONE

INTRODUCTION

1.1   Background of The Study

Inventories are stock of materials of any kind stored for future use, mainly in the production process. Thus, today's inventory is tomorrow's production. However, semi-finished goods awaiting use in the next process or finished goods awaiting release for sale are also included in the broad category of inventories, which are nothing but idle resources. Therefore, inventories are materials or resources of any kind having some economic value, either waiting conversion or use in future (Datta, 2003:193).

On the other hand Inventories consist of raw materials, component parts, supplies or finished assemblies etc, which are purchased from outside sources and the good manufactured in the enterprise itself. In simple words, "inventories" refers to stocks held by the firm. When the demand for commodities increases, the inventory level decreases, while with the replenishment; the inventory level increases. However changes in the demand for a commodity are not under the control of the firm, but the amount and time of replenishment is controllable (Sharma, 1999:509).

However, inventory management differs from firm to firm in terms of the firm size, nature of production and operating level.

Therefore, managers are framed to solve such problems because the overall business activity by itself is full of uncertainties. So, careful management and skill always helps to take immediate action before the arisen problem affects the internal and external users and of the organization figure. So the above mentioned facts are the base to undertake this research.

1.2 Background of the Organization

Alemgenet Trade & Industry PLC was established as a joint venture on March 2007. The head office of the firm is located in Lafto Sub city industry zone. The company plan is to produce plastic construction material such as plastic pipe, PPR, Plastic wall mat, PVC door, PVC window and Plastic Tiles.

Currently, the enterprise has 135 employees and 17machinery. The working hour of the employees is regularly 8 hrs shifts and when it is necessary to meet production requirement overtime work was conducted.

The company begins this type of business to solve the countries high demand of finished goods. As we know Ethiopia is one of the developing countries in the world, as a result of current construction activity is very high.

1.3 Statement of the Problem

Most organizations do not give the required level of attention to the importance and relevance of inventory management. However, a good and scientific inventory management helps the firm to gain economies in purchasing beyond current requirements.

When we come to our research the company has Poor inventory management result in high order cancellation, excessive machine down time due to materials shortages, periodic lack of adequate storage space. In addition to storing problems, meaning that some store materials are not shelved and item tags are not properly coded. Due to these problems raw materials are not in a condition that enables inventory count. And the total amount of inventory rises faster than the growth of sales, stock outs of items occur, causing interruptions in production, there is too much quantity in stock for some items and too little for others. And items are missing or misplaced and scrapped.

In addition, the need for proper integration of inventory management practice among different units of operation is said to be the most ignored aspect in most organization. So in considering of the above problems the researcher tries to answer the following basic questions.

1.4 Research Questions

- What type of inventory system the company used?
- What are the factors that affect the inventory management practice of the company?
- What does the inventory management procedures of the company look like?
- Does annual inventory physical count take place as scheduled?

1.5 Objective of the Study

1.5.1. General Objective

The general objective of the study is to assess inventory management practice of Alemgenet trade & industry plc.

1.5.2. Specific Objectives

The specific objectives of the study are specified here under:

- To identify the existing inventory system of the organization.
- To find out the factors that affects the inventory management practice of the company.
- To identify the firm's procedures in managing the inventory.
- To check whether the annual inventory physical count takes place scheduled?

1.6 Significance of the Study

Every study has to have a role to play for improvement and modernization. Based on this fact this study has the following significances.

- It helps the firm to see its inventory management as to design appropriate strategy.

- It helps the firm to take measures on the existing factors that affect the inventory management of the firm.

- It gives way for other researchers who want to make further investigation in the area and to conduct detailed research on the problems.

- It helps students or researcher to get experience so as to carry out other research works for the future.

1.7 Scope (Delimitation) of the Study

Due to time and money constraints the study is limited to assessing the company's raw materials, semi-finished and finished goods inventory management practice of Alemgenet trade and industry Plc located in Addis Ababa , even though it's activities are interrelated with store, purchasing and finance.

1.8   Limitation of the Study

The researcher faced problems when doing this senior research paper. Problems like time constraints, lack of enough finance like questionnaires paper distributed, lack of getting detailed information from the company and willingness of concerned party which is found in the organization was another limitation of the work.

1.9   Research Design and Methodology

1.9.1. Research Design

The descriptive research method was employed with an assumption that it helps to describe the inventory management practice of the company under study.

1.9.2. Population and Sampling Technique

1.9.2.1   Population- there is 135 employees in the company who have been working in deferent sections that are finance, store, purchasing, sales and administration (human resource) departments. Out of 135 employees 52(38.52%) were taken as a sample. The distribution of the sample across department is indicated below.

"52/135*100=38.52%"

1.9.2.2 Sampling Technique

The sampling technique in the study was probability sampling specifically random sampling technique.

1.9.3 Types of Data collected

In order to address the stated research questions   and objectives, both primary and secondary data were collected.

1.9.4   Methods of data Collection

For the primary data collection purpose, the student researcher used questionnaire and interview. The Secondary data were also collected from the organization documents, books and related literature with the study.

1.9.5. Data Analysis Method

Collected data were analyzed using simple statistical methods particularly tabulations and percentages. In addition to this, data collected through interview and open ended question of the questionnaire were analyzed qualitatively.

1.10 Organization of the Study

The study is organized in to four major chapters. The first chapter deals with introduction which encompasses problem and its approach (methodology), the second and third chapters addressed review of

related literature and data analysis and interpretation respectively. The last chapter ,that is chapter four contained summary, conclusion and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITRATURE

2.1 DEFINITIONS OF INVENTORY

The term inventory has been defined by several authors at different times. According to (Sharma, 1999: 509 and DATTA, 2003) inventory is defined as follows:-

- Inventory is a detailed list of movable goods.
- Inventory is a physical stock of items that a business or production enterprise keeps in hand for efficient running of affairs or its production.
- Inventory is the quantity of goods, raw materials or other resources that are idle at any given point of time. (Ibid:509)

Inventories consist of raw materials, component parts, supplies or finished assembles etc. which are purchased from an outside source and the goods manufactured in the enterprise itself. In simple words "inventories" refers to stocks held by the firm (Ibid: 509)

Inventories are stock of materials of any kind stored for future use, mainly in the production process. Thus, today's inventory is tomorrow's production. However, semi-finished goods awaiting use in the next process or finished goods awaiting release for sale are also included in the broad category of inventories, which are nothing but idle resources. Therefore, inventories are materials or resources of any

kind having some economic value, either waiting conversion or use in future (DATTA, 2003:193).

Inventory management system: - is the main activity for most business, specially for manufacturing and merchandising business but when we come to the concept of merchandising company .inventory management is come wide business at least in every manufacturing company there are three types of inventory this make managing inventory investment hard and difficult these are Raw material management, work in process management and Finished goods management (Bhat, 2003:566).

2.2. Inventory Vs Stores

Stores: - is a building where materials and goods are kept and preserved. The word "stores" refers to the place where all kinds of material and goods are held in stock and storage or storekeeping is defined as the act of storing the goods. The word "stores" is sometimes used to refer to anything which is stored (Bhat.k, 2003:526).

Stores means all those articles which are kept in stores while inventory comprise stores as well as materials in transit, materials in process, finished products and stock lying at company's show rooms and distribution centers which have not been sold out. The words

inventory and stores are sometimes confused, there must therefore be clearly understood (Sharma, 1999:509)

2.3 Types of Inventory

According to Bhat.A (2003:568), there are four basic inventory.

1. **Production Inventories**: raw materials, parts and components which become part of the firm's finished product in the production process.
2. **MRO Inventories**: - maintenance, repair, and operating supplies which are consumed in the production process, but which do not become part of the product. (E.g. lubricants, grease, cotton waste, spare parts).
3. **In process Inventories:-** also known as "work-in-process" or work-in-progress or semi-finished goods inventories-this are parts or sub assemblies found at various stages in the production process.
4. **Finished Goods Inventories:-** completed products kept in stores ready for shipment .

2.4 Functions of Inventories

The most important functions of inventory are:-

- To meet anticipated demand.
- To smooth production requirements.
- To decouple components of the production-distribution system.

- To protect against stock outs.
- To take advantage of order cycles.
- To take advantage of quantity discounts.
- To hedge against price increases.

2.5 Inventory Costs

Inventories cost money. The cost factor must be considered while taking any decision regarding inventories

There are two types of costs associated with inventory namely:-

1. Costs associated with the purchase of inventory items i.e. cost of materials purchased.
2. Costs on materials consisting of three basic costs namely; Ordering cost, carrying or holding cost and shortage costs.

I. Ordering Costs: - are expressed as rupees per order and are independent of the order size. It is per year varying with the numbers of orders placed in a year. Costs incurred each time an order is made can include requisition costs, purchase orders, transportation and shipping, receiving, inspection, handling and placing in storage, accounting, bills payment and auditing costs.

II. Carrying or Holding Costs: - Are expressed as rupees per unit of item held in inventory per time period such as a month or year. Alternately, carrying costs are sometimes expressed as a percentage of

the value per year. It includes the direct storage costs such as rent, lighting, security, refrigeration, record keeping, interest on capital tied up in holding the inventory.

Costs connected directly with materials and financial costs

- Obsolescence.
- Deterioration.
- Pilferage
- Taxes
- Insurance

III. Shortage Costs: - Also referred as stock-out costs, occur when customer demand cannot be met because of insufficient inventory on hand (Ibid)

2.6 Inventory management

Inventory management involves the development and administration of polices, system and procedure, which will minimizes total cost to inventory decisions and related functions such as customer service requirements production scheduling, purchasing and traffic. Viewed in that perspective, inventory management is broad in scope and affects a great number of activities in an organization. Because of these numerous interrelationships, inventory management stress the need for integrated information flow and decision making, as it is related to inventory policies and overall systems (Aswathappa and Bhat , 2005:527).

2.7 Objectives of Inventory management

Inventory management has two main concerns: one is the level of customer service. That is, to have the right goods in sufficient quantities, in the right place, at right time. The other is the cost of ordering and carrying inventories.

The overall objective of inventory management is to achieve satisfactory levels of customer service while keeping inventory costs within reasonable bounds. That is, to minimize cost by using different technique to avoid different interruption in the organizations systems.

2.8 Benefits of Inventory Management and Control

Proper management and control of inventories will result in the following benefit to an organization (Aswathappa and Bhat, 2005:527).

Inventory control ensures an adequate supply of materials and stores, minimum stock outs and shortages and avoids costly interruptions in operations.

It keeps down investment in inventories, inventory carrying costs and obsolescence losses to the inventory.

It facilitates purchasing economies through the measurement of requirements on the basis of recorded experience.

It eliminates duplication in ordering or in replenishing stocks by centralizing the source from which purchase requisition emanate.

It permits a better utilization of available stocks by facilitating inter – department transfers with in a company.

It provides a check against the loss of materials through carelessness or pilferage.

It facilitates cost accounting activates by providing a means for allocating material costs to products, departments or other operating activities.

It enables the management to make cost and consumption comparisons between operations and periods.

It serves as means for the location and disposition of inactive and obsolete items of stores.

Perpetual inventory values provide a consistent and reliable basis for preparing financial statements (Ibid).

2.9 Effects of Poor Inventory Management

According to (Sharma, 1999:511) have many effects of poor inventory management there are:-

- The total amount of inventory rises faster than the growth of sales.
- Stock outs of items occur, causing interruptions in production or delayed deliveries to customers.
- There is too much quantity in stock for some items and too little for others.

- Items are missing or misplaced and spoilage and obsolescence rates are too high.

- High rate of order cancellation

- Excessive machine downtime due to material shortages

- Periodic lack of adequate storage space

- Continuous growing inventory quantities

2.10. Inventory Control

Inventory control is the means by which material of the correct quantity and quality is made available as and when required with due regard to economy is storage and ordering costs, and working capital. It may also be defined as, "the systematic location, storage and recording of goods in such a way that desired degree of service can be made to the operating shops at minimum ultimate cost" (Sharma,1999 :512).

2.10.1. Function of Inventory Control

According to Sharma (1999:512), the following are the most important functions of Inventory control:

- To run the stores effectively.

- To ensure timely availability of material and avoid build up of stock levels.

- Technical responsibility for the state of materials.

- Stock control system

- Maintenance of specified raw materials

- Protecting the inventory from losses due to improper handling

- Pricing all materials supplied to the shops so as to estimate material cost.

2.10.2. The need of Inventory Control

The necessity of inventory control is to maintain a reserve (store) of goods that will ensure manufacturing according to a production plan based on sales requirement and the lowest possible ultimate cost. To promote smooth factory operation and to prevent planning up of stock or idle machine time, proper material must be on hand when it is wanted. Proper inventory control can reduce such losses to a great extent (Ibid).

2.10.3. Advantages of Inventory Control

- It creates buffer between input and output

- It ensures against delays in deliveries

- It allows for possible increase in out put

- It ensures against scarcity of materials in the market

- It allows advantage of quantity discounts.

- It utilizes the benefit of price fluctuations

2.11. Inventory Valuations

Inventory valuations included:-

- First in first out(FIFO)
- Last in first out(LIFO)
- Weighted Average Cost method

2.11.1. First in First out (FIFO)

This method assumes that the oldest stock is therefore; whatever is received first is consumed first. Hence, this method ensures that the materials are issued at actual cost and stocks are valued as per the latest price paid. The limitations are that the process becomes cumbersome when too many change in price levels occur (Bhat, 2003:540).

2.11.2. Last in First out (LIFO)

This method assumes that the materials coming in last are issued first. The advantage of this method is that production is changed at the latest price, reflecting market conditions, if materials are received recently. Hence, pricing changing decisions can be taken realistically under the LIFO system, in a period of rising prices, latest prices are changed to the issues, thereby leading to lower reported profits and savings in taxes, when the price levels are fluctuating, LIFO tends to minimize unrealized gains or losses inventory. But LIFO system has the same limitations as in that of FIFO system (Ibid: 540).

2.11.3. Weighted Average Cost Method

In this method the issues to the production departments are spilt into equal batches from each shipment at stock. It is a realistic method as it reflects the price levels resulting in stabilization of cost figures. The rate is calculated by dividing the total cost by the number of items and this rate is applied to issues in production. As more purchases are made, a new average rate is calculated and this new rate is applied to the subsequent issues (Ibid: 542).

2.12. Inventory Counting Systems

According to A.K Datta (2003), there are two basic Inventory counting systems

1. Periodic System and

2. Perpetual system

2.12.1 Periodic System

It is a physical count or items in inventory made at periodic intervals (weekly, monthly) in order to decide how much to order or each item.

2.12.1.1. Advantage of Periodic System

- Orders for many items occur at the same time, which result in economies, in processing and shipping orders.

2.12.1.2. Disadvantage of Periodic System

- Lack of control between reviews.
- The need to protect against shortages between review periods by carrying extra stock.
- The need to make a decision on order quantities at each review.

2.12.2. Perpetual Inventory System

It is a system that keeps track of removals from inventory continuously, thus monitoring current levels of each item.

2.12.2.1. Advantage of Perpetual System

- Control is provided by the continuous monitoring of inventory with drawls.

- Management can justify an economic order size (the fixed order quantity).

2.12.2.2. Disadvantage of Perpetual System

- It adds cost of record keeping A physical count of inventories must still be performed periodically to verify records because of errors, pilferage, spoilage and other factors that can reduce the effective amount of inventory.

2.13 Inventory System

According to Bhat (2003:572), an inventory system provides the organizational structure and the operating policies for maintaining and controlling of goods to be inventoried. The system is responsible for ordering and receipt of goods, timing the order placement and keeping track or what has been ordered, how much and from whom.

There are three general approaches to inventory system.

2.13.1. Fixed Order Quantity System or "Q" System

In this, a fixed quantity of materials is ordered whenever the stock on hand reaches the re-order point. The fixed quantity of material ordered each time, is nothing but the economic order quantity (EOQ). When the new consignment arrives, the total stock (existing plus new arrival shall be within the maximum and the minimum limits.

2.13.1.1. Advantages of Fixed Order Quantity System

- Each material can be procured in the most economical quantity
- Purchasing and inventory control personnel, automatically devote attention to the items that are needed only when required.
- Positive control can easily be exerted to maintain total inventory investment at the desired level simply by manipulating the planned maximum and minimum values.

2.13.1.2. Disadvantages of Fixed Order Quantity System.

The orders are raised at irregular intervals which may not be convenient to the suppliers.

The systems assume stable usage and define lead time. When these change significantly, a new order quantity and a new order point should be fixed, which is quite cumbersome.

2.13.2. Fixed –Order Period System or "P" System

In this the stock position of each item of material is regularly reviewed. When the stock level of a given item is not sufficient to sustain the production operation until the next scheduled review an order is placed replenishing the supply. The frequency of reviews varies from firm to firm. It also varies among materials with in the same firm, depending up on the importance of the material specific production schedules, market conditions and so forth. Order quantities, likewise, vary for different materials.

In addition, some buffer stock would also be necessary to take care of any increased consumption or increase in lead time.

2.13.2.1. Advantages of Fixed Order Period "P" System

- The ordering and inventory costs are low.
- The ordering cost is considerably reduced, though follow-up work for each delivery may be necessary.

- The suppliers will also offer attractive discounts as sales are guaranteed.
- The system works well for material which exhibition irregular or seasonal usage and whose purchase must be planned in advance on the basis or sales estimates.

2.13.2.2. Disadvantages of Fixed Order Period "P" System

- It compels a periodic review of all items this in itself makes the system somewhat inefficient.
- The system demands the establishment of rather inflexible order quantities in the interest of administrative efficiency.
- The periodic review system tends to peach the purchasing work around the review dates.

2.13.3. Just in Time (JIT) Inventory Control System

The just in time inventory control system simply implies that the firm should maintain a minimal level of inventory and rely on suppliers to provide parts and components Just in time to meet its assembly requirements. This may be contrasted with the traditional inventory management system which calls for maintaining a healthy level of safety stock to provide a reasonable protection against uncertainties of consumption and supply the traditional system may be referred to as a "Just in case" system.

The just in time inventory system, while conceptually very appealing, is production and management system. It requires inter alias.

- ❖ A strong and dependable relationship with suppliers who are geographically not very remote from the manufacturing facility.
- ❖ A reliable transportation system and
- ❖ An easy physical access in the form of enough doors and conveniently located docks and storage areas to dovetail incoming supplies of the need of assembly line.

2.13.4. Quantity Standards to Control Inventory

The author and N.Kumar (2002:247), there are five important quantity standards used as tools to control inventory. These are as follows:

1. **The Maximum Stores:** This term is applied to designate the upper limit of the inventory and represents and largest quantity which in the interest f economy should generally be kept in stores.

2. **The Minimum Stores:** this term is applied to designate the lower limit of the inventory and represents a reserve or margin of safety to be used in case of emergency. When requirements have been abnormal, it is intended that there must always be at least this quantity available in stores.

3. **The Standards Order:** It is the quantity to be purchased at any time. Repeat orders for a given product are always for this amount until this is revised.

4. **The Ordering Point:** This represents the quantity required to ensure against exhaustion of the supply during the interval between the placement of an order and delivery. When the balances fall to this level, it is an indication that a new purchase order must be placed.

5. **Lead Time:** The lead time is the time which takes the stock to reach from reorder point to minimum stock level. In other words, lead time is the time taken from the time the requisition for an item is raised till the supplies are received, inspected and taken into stock. Lead time involves requisitioning of material, enquiries, quotations, scrutiny, negotiations and approval, import formalities, in case of imported items, placing an order, time taken by supplier for making the goods ready, transportation, receipt of goods, inspection, taking the material into stock.

2.14 Inventory Control Techniques

There are number of techniques which play an important role in the inventory control program these techniques are very helpful in rationalization of inventory control approach and assist in formulation of inventory control policy.

Inventory control Technique is applied based on the principle that it is impossible to manage and control every item in inventory holdings in the same way and skill so as to meet the two broad objectives of inventory control. That is to reduce investment in inventories, and also to avoid stock-outs and shortages.

The philosophy behind inventory control technique is "put the efforts where results are worth putting the efforts". The importance of materials can be due its costs, its consumption value, its criticality its availability and consumption.

Here some of the common techniques used for Inventory control are being described:

2.14.1. VED Analysis

The items can be classified according to their use, consumption, values etc. VED analysis is done to consider essentiality of stocking spares. The basis is for this analysis is the criticality of items.

V- Stands for Vital items, without which production would come to halt.

E- Is for Essential items, without which dislocation of production work occurs.

D- Is for Desirable items. Remaining items which do not cause any immediate loss in production fall under this category.

2.14.2. SDE Analysis

This analysis is based on availability position of each item in this analysis,

S- refers to scarce items, which are in short supply and their availability is scare. This includes imported items.

D- Refers to Difficult items, which cannot be procured easily

E- Refers to Easily available items.

2.15 Economic Order Quantity (EOQ) Approach

The Economic order quantity "Q" is the quantity, which minimizes the sum of the acquisition cost and the inventory carrying cost that is the quantity related to the minimum 'variable costs? The Economic order quantity equation minimizes the total annual cost (Ibid, 2004:210)

2.15.1. Assumptions of EOQ

- Only one product is involved
- Annual demand requirements are known
- Demand is spread evenly throughout the year so that the demand rate is reasonably constant.
- Lead time does not vary
- Each order is received in a single delivery
- There are no quantity discounts.

2.15.1.1. Advantages of Using EOQ Formula

- The formula substitutes facts in place of judgment, personal bias is reduced and the quantity decisions are consistent and in line with the policy.
- The formula can be used with the help of a computer
- The formula can be used without any moderation under stable conditions.
- The mathematical method can be relied on more relieving the buyer of all the responsibilities with assurance of the correct decisions.

2.15.1.2. Disadvantage of the EOQ Formula

- Change in the unit price of the material or product is not considered.
- The formula does not reflect the price advantage of volume buying and quantity discounts.

CHAPTER THREE

3.1 Data Presentation Analysis and Interpretation

In this section a detailed analysis of the actual inventory management control processes are discussed. As to the data gathered through a documentary observation upon different arrivals and through the questionnaire point, the following head lines can best go with the subject under study. From the total number of employees (135) the selected employees are 60, but the actual respondents are 52.This is from administration, Finance, store, purchasing, sales and production by taking under consideration of their educational status and gender.

3.2 General characteristics of respondents

Table 1: General Characteristic of Respondents.

Sex	No. of Respondents	Percentage (%)
Male	34	65.38%
Female	18	34.62%
Total	52	100
Educational status		
Grade 12 complete	11	21.15
Certificate holder	8	15.38
Diploma holder	18	34.61
1st degree holder	12	23.07
Above 1st degree	3	5.77
Total	52	100
Experience service		
6 months-below 1 year	15	28.84
1 year-2 years	20	38.46
Above 2 years	17	32.69
Total	52	100

Table 1, shows that from the total number of respondents 65.38 %(34) are male respondents and the rest which are 34.62 %(18) are female. This shows that the male respondents are almost two times the number of female respondents. On the other hand when we see the educational back ground of the respondent 34.61%(18) are diploma holders, 23.07%(12) are 1st degree holders respondents , 21.15% (11) are grade 12 complete , certificate holder respondents are 15.38% (8) and 5.77 % (3) are above 1st degree holders.

In relation to their experiences 38.46% (20) of the respondents have 1 year-2 years experience, 32.69%(17) are have an experience of above 2 years and the rest 28.84% (15) respondents spend with the organization for about 6 months-below 1 year.

3.3 Types of inventory method.

Table 2: Respondents response with consider to inventory method.

Which type of inventory method does the company use?	No. of respondents	Percentage %
Weighted average method	52	100
FIFO method	-	-
LIFO method	-	-
Total	52	100

From table 2, it can be seeing that the organization uses weighted average method because respondents were asked about the type of inventory method the company uses and 100% (52) of them answered that the company uses weighted average method.

Table 3: **The major products produce.**

What are the major products produce in this organization?	No.of Respondents	Percentage (%)
- Plastic pipe	52	100
- PPR	52	100
- Plastic Wall mat	52	100
- PVC door	52	100
- PVC window	52	100
- Plastic Tiles	52	100
Total	**52**	**100**

As we have seen from the above table 3, 52(100%) of respondents answered that, the major products produce by the organization are Plastic pipe, PPR, Plastic Wall mat, PVC door, PVC window and Plastic Tiles. This implies that the company products all items.

Table 4: Procedures of store and finance department to record the inventory.

What are the procedures that the stores and finance management used to record the inventory?	Respondents		
	Alternatives	**No.of respondents**	**Percentage (%)**
-Bin card for stores and stock card for finance	Yes	52	100
	No	-	-
Total		52	100

As shown above on table 4, that the inventory control procedure of the company is used bin card for store and stock card for finance. On this ground 52(100%) of respondents answered that the stores/finance management is using bin card and stock card to record the inventory.

Table 5: Quantity and Value of Stocks Maintained.

Description	Respondents		
	Alternatives	**No. of respondents**	**Percentage (%)**
- Are quantity stock cards maintained as an important part of the accounting system?	Yes	32	61.54%
	No	20	38.46%
Total		52	100

According to the result shown above 32 (61.54%) of the respondents answered "yes" and 20(38.46%) of the respondents answered "No" this implies that the value of inventories is maintained partially as an important part of the accounting system.

Table 6 : Stock records and actual physical existence of inventory.

Description	Respondents		
	Alternatives	Number	Percentage (%)
- Are stock recorded regularly against actual physical existence?	Yes	36	69.23%
	No	16	30.76%
Total		**52**	**100**

As shown above on table 6, 36(69.23 %) of the respondents answered that stocks are recorded regularly against actual physical existence and the rest 16(30.76 %) of the respondents answered the opposite. This indicates that cannot properly the stock recorded regularly against actual physical existence.

3.7 Stocks subject to physical verification /counts/.

To check the existence of inventory in the storage, Alemgenet Trade and Industry PLC establishes two coordinator committees for the physical count of the inventory. These committees are performing their obligation only at the end of fiscal year. These committees are named:

1. Head office physical inventory coordinator committee, and
2. Branch office yearly physical inventory coordinator committee

From the student researcher observation only forming such committees is not consistently following all the necessary procedures which will have effect on control system used by the company.

Table 7: Responses on stock physical counts.

How frequent the stocks subject to physical verification/counts/?	No. of respondent	Percentage (%)
- On a continuous basis	-	-
- Periodic counts during month and year.	-	-
At the end of physical year only.	52	100
Total	52	100

As Table 7: above shows, all 52(100 %) of the respondents' responded that physical count of stock are made at the end of physical year only.

This indicates that the company's counted   at the end of physical years only.

Table 8: Inventory system

What type of inventory system to determine the ordering time and the quantity needed?	No. of respondent	Percentage (%)
- Fixed quantity system	20	38.46%
- Fixed period system	20	38.46 %
- Just in time	-	-
- Material requirement planning	12	23.07 %
Total	**52**	**100**

As table 8, above shows, each 20(38.46%) of the respondents answered that fixed quantity and fixed period system and 12(23.07%) of the respondents answered the material requirement planning.

This implies that most of inventory system to determine the ordering time and the quantity needed are fixed quantity system and fixed period system.

Table 9: Materials purchase requisition.

Description	Alternatives	No. of respondent	Percentage (%)
Are additional supplies made based on minimum stock of reorder levels?	Yes	10	19.23%
	Partially done	25	48.07%
	No	17	32.69%
	Total	52	100

Respondents were questioned whether supplies requisition is on the basis of reorder level as can be seen from the above table about requisition of additional supplies of minimum stock and reorder level, 25(48.07%) of the respondents say "partially done", and 17(32.69%) of the respondents say "No" and 10(19.23%) of the respondents say "yes". Respondents those who said "no" justifies that the organization does not set its minimum and maximum stock level policy.

Table 10: Respondents response whether items or goods may be issued from stock only by authorized employees.

Description	Respondents		
Are there procedures insure that items or goods can issue from stock only by authorized employees?		**No. of respondents**	**Percentage (%)**
	Yes	52	100
	No	-	-
	Total	52	100

The above table 10 shows that 100 %(52) of respondents said that items or goods was issued from stock only by authorized employees.

Table 11: Protection of high value items

Are there adequate physical controls to ensure that high value, fast moving and essential item are more protected than other stock items?	**Alternatives**	**No. of respondent**	**Percentage (%)**
	Yes	40	76.92%
	No	12	23.07%
	Total	52	100

Respondents were asked whether there are adequate physical controls to ensure that high value, fast moving and essential items are more protected than other stock items. And as can be seen on table 11, 40(76.92%)of the respondents replied that "Yes" the rest 12(23.07%) of the respondents answered the opposite .

This implies that most of the respondents answered have adequate physical controls to ensure that high value, fast moving and essential items are protected that other stock items.

3.11 Interview

Interviews were conducted with administration employee.

The *first interview* was how much the annual inventory carrying cost is? All interviewed personnels answered that the organization does not know its inventory carrying cost. They justified that, "there is no record of inventory costs on stock cards and the stock cards used only for the purpose of follow up of the physical movement of inventory. Therefore, it is impossible to know the cost."

The *second interview* posed was "how the organization administers absolute inventories?" The interviewee answered that the organization tries to administer absolute stock by keeping in store and when inventories are sold, computing on stock cards as inventory is issued out. On the other hand, when raw materials are purchased, when semi-products are processed, and when finished goods are produced, inventories are added on the end balance of stock.

The *next interview* was "is there wastage of materials while inventories are in store?" All interviewees answered that there is wastage in stores. In addition to this they said that wastage is normal, because of this the organization estate a maximum material wastage.

The *final interview* posed to interviewees was "what weakness is observed in the inventory controlling system?" They answered there is no sufficient store space for stock items, there is no timely disposal of obsolete item and serviceable and non serviceable items are stored together without differentiation inventory recording system is poor and optimum and minimum level of inventory replenishment is not set yet.

CHAPTER FOUR

Summary, Conclusion and Recommendation

The general purpose of this paper is to assess solutions that contribute to the subscribed problems of inventory management practice of Alemgenet Trade and Industry plc.

The researcher uses non probability sampling technique; from the population primary and secondary data are obtained through questionnaires, interviews and written documents are used from the organization manuals and report.

In analyzing and presenting data the researcher also uses descriptive analysis method like percentage, tables and figures. The research analysis can be summarized as follows:

4.1 Summary of the Major Findings

➢ The organization does not set minimum and maximum stock level policy. on the other hand The adequate physical controls to ensure that high value, fast moving and essential items are protected that other stock items and items or goods was issued from stock only by authorized employees.

➢ The Procedures of store and finance department to record the inventory shows that, bin card and stock card are used to control balance and their cost. Even though the company has its formats and procedures are not used properly.

➢ The organization does not know its inventory carrying cost. There is no record of inventory costs on stock cards and the stock cards used only for the purpose of follow up of the physical movement of inventory.

➢ The organization tries to administer absolute stock by keeping in store and when inventories are sold, computing on stock cards as inventory is issued out. On the other hand, when raw materials are purchased, when semi-products are processed, and when finished goods are produced, inventories are added on the end balance of stock. And there is wastage in stores. In addition to this the wastage is normal, because of this the organization estate a maximum material wastage.

➢ There are storing problems, meaning that some store materials are not shelved and item tags are not properly coded. Due to these problems raw materials are not in a condition that enables inventory count.

➢ There is no sufficient store space for stock items, there is no timely disposal of obsolete item and serviceable and non serviceable items are stored together without differentiation inventory recording system is poor and optimum and minimum level of inventory replenishment is not set yet.

➢ Most of respondents considered that the physical counts of stock are made at the end of physical year only and quantity and value stock cards maintained as an important part of the accounting system.

➢ All respondents said that the organization used weighted average method and the procedures that the stores and finance management should follow to record the inventory was by bin card for stores and by stock card for finance.

➢ All respondents considered that the procedures to issue items or goods from stock are done only through authorized employees.

4.2 Conclusions

➢ The inventory cost assumption of the company is weighted average inventory method. However, the firm has many unmovable or damaged items at store, which is not go with the cost assumption inventory. Thus Alemgenet Trade and Industry plc inventory cost assumption method is not efficient.

➢ The Procedures of store and finance department to record the   inventory shows that, bin card and stock card are used to control balance and their cost. Even though the company has its formats and procedures are not used properly.

➢ The organization does not know its inventory carrying cost. They justified that, "there is no record of inventory costs on stock cards and the stock cards used only for the purpose of follow up of the physical movement of inventory. Therefore, it is impossible to know the cost."

➢ As it is observed there are storing problems, meaning that some store materials are not shelved and item tags are not properly coded. Due to these problems raw materials are not in a condition that enables inventory count.

➢ The physical counts of stock are made at the end of physical year only and quantity and value stock cards maintained as not an important part of the accounting system.

4.3. Recommendations

➢ The Procedures of store and finance department to record the inventory shows that, bin card and stock card are used to control balance and their cost. Even though the company has its formats and procedures are not used properly. If this documents and procedures are used properly, it enables the company to controls its inventory movement.

➢ The physical counts of stock should be used Periodic counts during monthly and at the end of the year. And quantity and value stock cards maintained as an important part of the accounting system.

➢ The company should be set up the inventory method and avoids unmovable or damage items from the store. Thus Alemgenet Trade and Industry plc inventory cost assumption method is well-organized.

➢ The stock cards record used not only the purpose of follow up of the physical movement but also used the inventory carrying cost record on stock card exactly. And it is possible to know the cost.

➢ As a result of analysis, the researcher recommends the company to take a corrective action on the following points. An effective materials and inventory management system should be installed throughout the organization and inventory management system should give place in the organizational hierarchical structure, to avoid problems regarding policy implementation possibility and innovation.

➢ The company should facilitate the way to coding items, shelve them properly and count them as per the schedule of the company.