St. MARY'S UNIVERSITY COLLEGE

FACULTY OF BUSINESS
DEPARTMENT OF MANAGEMENT

ASSESSMENT OF INVENTORY MANAGEMENT PRACTICE IN TSEDA TRADING PLC

BY

ABEBE ASFAW

JUNE 2010

SMUC

ADDIS ABABA

ASSESSMENT OF INVENTORY MANAGENET PRACTICE IN TSEDA TRADING PLC

BY

ABEBE ASFAW

A SENIOR ESSAY SUBMITTED TO THE DEPARTMENT OF MANAGEMENT FACULTY OF BUSINESS St. MARY'S UNIVERSITY COLLEGE

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS IN MANAGEMENT

JUNE 2010

SMUC

ADDIS ABABA

St. MARY'S UNIVERSITY COLLEGE

ASSESSMENT OF INVENTORY MANAGEMENT PRACTICE IN TSEDA TRADING PLC

BY

ABEBE ASFAW

FACULTY OF BUSINESS

DEPARTMENT OF MANAGEMENT

APPROVED BY THE COMMITTEE OF EXAMINERS

____________________	____________________
Department Head	Signature
____________________	____________________
Advisor	Signature
____________________	____________________
Internal Examiner	Signature
____________________	____________________
External Examiner	Signature

ACKNOWLEDGEMENTS

I would like to forward my gratitude to my Advisor, Ato Merga Mekuria for his continuous support, valuable and constructive comments, and suggestions made towards improving the quality of this research paper. So without his advises, this paper would not have its real present form.

I want to take this opportunity to thank Ato Haile G/Wahid and W/ro Leteyohannes G/Egziabiher for devoting much of their time to supply the whole thing what I want.

In addition to this I would like to thank Ato Tsegaye G/Tsadik and W/ro Azebe Haile for their financial support particularly for this research paper.

Above all; however, I could not pass the temptations without the help of God. So I would like to praise God, the Almighty and his mother, Saint Virgin Mary, for helping me out of my entire problem that I had throughout my school life.

Table of contents

Title **page**

Table of contents

Title **page**

Table of contents

LIST OF TABLES

LIST OF Figures

LIST OF ACRONYMS AND ABBREVIATIONS

FIFO---------------- First in First Out

LIFO---------------- Last in First Out

JIT------------------- Just in Time

ABC----------------- Always Better Control

VED----------------- Vital, Essential, and Desirable

EOQ----------------- Economic Order Quantity

LTZ------------------ "L" shaped steel profile
"T" shaped steel profile
"Z" shaped steel profile

REBAR-------------- Reinforcement bar

RHS------------------- Rectangular Hollow Sections

GIT-------------------- Goods in Transit

SIC -------------------- Selective Inventory Control

ABSTRACT

The study was conducted on “Assessment of inventory management practice in TSEDA Trading PLC.” The main objective of the study was to assess the inventory management practice of TSEDA Trading PLC, so as identify areas of improvement.

To achieve the objective of the study all necessary data have been collected from primary and secondary data. Questionnaires have been distributed to staffs of the company who have direct contact with inventories working at Head office, sales centers and warehouses.

All of the questionnaires were responded and the analysis and findings have been clearly stated. Based on the findings, the researcher came up with the conclusion and recommendations which he believe are very substantial and will contribute a lot.

The information from the secondary data are obtained from sales receipts, financial reports, stock states reports, company’s business plan and other materials which enable the researcher to know about the company.

The current situation of TSEDA Trading PLC’s inventory management practice was found to be weak. While conducting the study it has been found that the company’s system of inventory control has indicated some fundamental problems like unauthorized person involvement in issuance of inventory, lack of proper inventory recording system, problem of assigning right person on inventory management, and generally, the company has not given emphasis to this field. Therefore, the company needs serious attention to revise its inventory management practice.

Chapter One

INTRODUCTION

1.1 Background of the Study

Inventory control is the implementation of management's inventory policies in a manner that assures that the goals of inventory management are met. Wise control of inventory is often a critical factor in the success of businesses in which inventories are significant. The goal of inventory control is to be sure that optimum levels of inventories are available, that there are minimal stock outs, and that inventory is maintained in a safe, secure place and is always readily accessible to the proper personnel. (http://www.Answers.com/topic/inventorycontroll)

Policies relate to what levels of inventories are to be maintained and which vendors will be supplying the inventory. How and when inventories will be replenished, how inventory records are created, managed, and analyzed, and what aspects of inventory management will be outsourced are also important components of proper inventory management. (http://www.Answers.com/topic/inventorycontroll)

In the Beginning pitfall

Prior to the eighteenth century, possessing inventory was considered a sign of wealth. Generally, the more inventories you had, the more prosperous you were. Inventory existed as stores of wheat, herds of cattle, and rooms full of pottery or other manufactured goods. (http://www.Answers.com/topic/inventorycontroll)

Communication was difficult and unreliable, easily interrupted, and often took long periods of time to complete. Stocks were difficult to obtain, and supply was uncertain, erratic, and subject to a wide variety of pitfalls. Quality was inconsistent. More often than not, receiving credit for a purchase was not an option and a person had to pay for merchandise before taking possession of it. Businesses were able to maintain large quantities of goods without fear of sudden shifts in the market, and these inventories served as buffers in the supply line. (http://www.Answers.com/topic/inventorycontroll)

In the eighteenth and early nineteenth centuries, markets were very specialized. There was often one supplier for each market in each area of business. Except for the basic necessities of life, there was much local specialization and distinct specialization by region. If customers were unhappy with their existing supplier, they had to suffer some inconvenience to find an alternate source because of the monopolies that existed. (http://www.Answers.com/topic/inventorycontroll)

The Early Twenty-First Century

Today's business world shares few similarities with yesterdays. Communication is quick, easy, reliable, and available through a host of media. Supply is certain and regular in most environments of merchandising and manufacturing. Tax laws are generally consistent and reliable. However, market changes can be abrupt and difficult to forecast. Global competition exists everywhere for almost everything. Products are available from anywhere in the world, with delivery possible within in one day in many cases. Competition is driving the price of most products down to minimum profit levels. Inventories are managed for minimum stocking levels and maximum turnover. In the twenty-first century, high inventory is a sign of either mismanagement or a troubled economy. It is expensive and wasteful to hold and maintain high inventory levels. Proper utilization of space is also a critical component in today's business world, whether one is a retailer, wholesaler, or a manufacturer. (http://www.Answers.com/topic/inventorycontroll)

Modern retailers and manufacturers are equipped with an array of tools and support mechanisms to enable them to manage inventory. Technology is used in almost every area of inventory management to help control, monitor, and analyze inventory. Computers, especially, play an enormous role in modern inventory management. (http://www.Answers.com/topic/inventorycontroll)

1.2 Background of the Organization

1.2.1 Establishment

As there are no enough local construction products in the country, most of the construction inputs are imported. Tseda Trading PLC, since as Walia Trading PLC in 1997 was importing construction materials, especially reinforcement bars, Angle - Iron, Hollow – Sections, Nails, and Sheet – Metals etc from Turkey, China , India, and other European countries for a whole sell and retailing purposes. (TSEDA Trading PLC, Business Plan, 2009:P.1)

Among others, the following stand out as key reasons for the establishment of the company:

- Profit to the owners of the firm and to its suppliers,
- Tax revenue to the government,
- Employment opportunity, and
- Customer satisfaction and contributing to the qualitative assets building in the country. (TSEDA Trading PLC, Business Plan, 2009:P.1)

1.2.2 Mission Statement

TSEDA Trading PLC's mission is to supply quality construction materials to the construction sector; to enhance its share holder's value; to become the very dependable company to its employees; and to fulfill its corporate responsibilities to both the community in which it shares with the world. (TSEDA Trading PLC, Business Plan, 2009:P.1)

1.2.3 Objective

In the short run the objective of the company is to maximize in quantity of import diversifying the varieties of the products. In the long run Tseda Trading PLC's aim is to enter the export market, focusing on agricultural products such as coffee, oil seeds, pulses, spices and natural gum. (TSEDA Trading PLC, Business Plan, 2009:P.1)

1.2.4 Status of the Company

Tseda Trading PLC is a merchandising company. It is engaged on importing and distributing construction materials, and it is one of the largest private companies in Ethiopia. (Tseda Trading PLC, Business Plan, 2009: P.2)

It imports Reinforcement bars, Angle Iron, Circular and Rectangular Hollow Sections of various sizes, Sheet metals, Nails and steel (Black and Annealed) wires from Europe and China. The company also Purchases the local steel manufacturing factories such as Abyssinia Integrated Steel PLC and Libo-Sisay Joint Investment (Walia Steel Industry) PLC. (Tseda Trading PLC, Business Plan, 2009: P.2)

It supplies the above construction inputs to various local and foreign construction companies working in the country. Industrial house builders also buy the merchandise marketed by the company. Its market has tremendously expanded as a result of the construction boom taking place throughout the country. (Tseda Trading PLC, Business Plan, 2009: P.2)

Currently the company has 85 employees of which 35 are permanent and 50 are temporary, and it conducts its business through two sales outlets, two warehouses, and a main headquarter. (Tseda Trading PLC, Business Plan, 2009: P.2)

1.3 Statement of the problem

Practicing inventory management policy safeguards the organization from different consciously and unconsciously occurring problems. On the financial statement of the company in 2008/09, 36.92% of the total asset is reported as stock (inventory). Therefore, this asset needs a serious and tight control.

The inventory control is a means to the implementation of management's inventory policies. However, the company is not yet set a policy or a procedure that can helps to meet the goal of inventory management which regard with the optimum levels of inventories available, and policies related to on what levels of inventories are to be maintained.

On the other hand if the inventory management system is not strong enough, the company's asset may face various risks like theft, spoiling, unordered goods may be issued, and goods ordered may be diverted for personal use.

The company has not yet incorporated the inventory management department in its structure to manage its inventory independently. Therefore, this implies that there is no independent party who is going to be responsible for any committed fault with this regard.

And the other main problem in inventory management system for this company is failed to use technology like networking among sales centers, warehouses and head offices in almost every area of inventory management to help control, monitor and analyze inventory.

Finally, amount of time to process every purchase is not known, and reorder point or reorder levels are not calculated yet.

1.4 Basic Research Question

In line with the above problems, the researcher works towards answering thee following questions.

- What is the inventory management system of TSEDA Trading PLC look like?
- Is there any application of the different independent and dependent inventory management techniques?
- What does the trend of inventory costs of Tseda Trading PLC look like?
- What does the company inventory recording system look like?
- What kind of system the organization is using to categorize inventories?
- How does the inventory be replenished?

1.5 Objective of the Study

1.5.1 General Objective of the Study

The main objective of the study is to assess the inventory management practice in TSEDA Trading PLC, so as identify areas of improvement regarding to technology, avoiding risks and the way how to have reorder point.

1.5.2 The Specific objectives of the study

In line with the above general objective the researcher works towards achieving the following specific objectives.

- ✓ To assess the inventory management system of TSEDA Trading PLC.
- ✓ Identifying whether there are any application of different independent and dependent inventory management techniques are practiced in the company
- ✓ To assess the trend of inventory costs of TSEDA Trading PLC look like
- ✓ To find out what the company's inventory recording system look like
- ✓ To identify the organization's system of categorization of inventories and
- ✓ To asses how the inventory replenishment is made in the company.

1.6. Significance of the study

The improvement of the company's inventory management system, as one of merchandising firm, will have a great role and contribution on the development of the country through organized inventory management system which can help the enterprise to continue on profitable track, and resulted in additional investment and better job opportunity to the society.

Therefore, to avoid the given problems this paper will clearly state that how to avoid unordered goods not to be issued, how to minimize the ordered goods not to be diverted to personal use, indicate that how maximum and minimum levels of stock are kept at their optimum lot, and how this can improve the requirement of materials when they are needed. It also shows how a well-structured storage system results in an efficient inventory reporting, which can facilitate accurate provision of information for the firm financial statement. It tries to pin point the possible solution to overcome these problem.

1.7 **Scope (delimitation) of the study**

The study focuses on the assessment of inventory management practiced in TSEDA Trading PLC. Thus, an emphasis is made on the assessment of inventory valuation methods, storage system of inventory, and reorder processing in TSEDA Trading PLC across the sales centers and on its warehouses in Addis Ababa. This research includes time lap of (2005-2009) or the last five years.

The researcher tries to dig out information in order to point out problems that should be analyzed and recommend by the paper.

1.8 Limitations of the Study

TSEDA Trading PLC is one of the private merchandising companies in the country. As it is known, merchandising companies use resalable inventories for their revenue generation. This nature of the organization had some difficulties that faced and affected the study.

- **Time Limitation**

Since the researcher is being extension student and full time employee in an organization, there was time constraint as to enable him getting information and making observation.

- **Documentation**

There are many relevant documents which could have made this study more elaborative and indicative to the problems and solutions regarding inventory control and management practices but some difficulties faced during the study period like unwillingness to provide the researcher the necessary documents by the company.

- **Security Problem**

There were many informal information about the misuse, fraud, theft, lack of recording system related to inventory management practice in TSEDA Trading PLC but those persons who know the details refused to give all information subjected to the security of their employment. Therefore, the above mentioned problems limited the study not to be more elaborated and supported by relevant documents.

- Lack of administrative money and
- Lack of research experience

However, confronting those limitations the writer comes up with this paper.

1.9 Research Design and Methodology

1.9.1 Research Design

The researcher used descriptive types of research that helped him to answer “WH” questions except “Why”. The research’s sample size incorporated all concerned personnel of the organization. That is the Administration & Finance department, Marketing department, Store keepers, and Purchasing & Procurement department.

1.9.2 Population and Sampling Techniques

Out of the available departments in the organization, the Administration & Finance department, Marketing department, Store keepers, and Purchasing & Procurement department are taken as the major focus of attention in the study because they have direct relations with inventory movement. Responsible individuals for various positions are contacted for the required data and information necessary for the study by using judgmental sampling techniques.

Among the selected departments and selected persons, the researcher gave priority to question that are more close to the accounting records of the enterprise and which had a direct relationship to inventory records and inventory items.

As the sample design concerned, samples of 24 employees out of 85 are selected by judgmental sampling techniques to answer the questionnaire because all the company's employees may have no knowledge of inventory to fill the questionnaire and in addition to this, observation were employed.

1.9.3 Types of Data Used

The paper used both primary and secondary sources of data to make the research more valid and reliable. The primary source of data was the employees of the organization. The secondary source include financial report, stock status report, sales receipts, other relevant documents of the organization and other related literatures.

1.9.4 Methods of Data Collection

The primary data were collected through use of questionnaire and personal observation (company's warehouses and sales centers were observed).

The secondary data were Financial Statements, Sales Invoices, Stock Status Reports and other relevant documents of the company.

1.9.5 Methods of Data Analysis

Descriptive data analysis technique was employed to analyze the collected data and others like graphs tables and illustrations were used to present the data.

1.10 Organization of the study

The paper consists of four chapters. The first chapter deals with introduction part which includes background of the organization, statement of the problem objective of the study, and research design and methodology of the research. The second chapter shows review of related literatures, the third chapter describes the general overview of inventory management activities and provides data analyses and interpretation and the fourth chapter contains summary, conclusion and recommendations.

Chapter Two

REVIEW OF RELATED LITERATURE

2.1 Definition of Inventory

The ordinary dictionary meaning of inventory is ‘a list of goods an estate contains’ in industry inventory means’ stock of goods’ It may mean raw materials, work – in – process, maintenance materials, processed and sum-processed, oils, fuels and lubricants as well as finished and semi-finished goods, they either in solid, liquid or gaseous form required for future use, mainly in production process as in the case of finished goods for resale. (A.K.DATTA, 1988:P99)

Sharma also define inventory as follows:

i. Inventory is a detailed list of movable goods,

ii. Inventory is a physical stock of items that a business or production enterprise keeps in hand for efficient running of affaires of its production.

iii. Inventory is a quantity of goods, raw materials or other resources that are idle at any given point of time. (S.Sharma. 1999: P.509)

2.2. Inventory Management

Whatever form inventory takes of whatever its purpose, it often represents a significant cost to a business firm. If a firm carries excessive inventories, it is estimated that the average annual cost of carrying inventory would be approximately 30% of the total value of inventory held by the firm.

Conversely, if the firm is a manufacturer, the stock-out could in extreme cases bring production to halt and cause huge losses due to idling of machinery, equipments and labor, hence, if the amount of inventory could be reduced to an optimal level, both stock-out cost and inventory carrying cost can be reduced to the minimum possible level. Skillful inventory management can make a significant contribution to a firm’s profit.

(K Shridhara Bhat, 2003: P, 566)

2.3. Inventory Control

2.3.1. What Is Inventory Control?

In simplest language, inventory control may be said to be a planned method whereby investment in inventories held in stock is maintained in such a manner that is ensures proper and smooth flow of materials needed for production operations as well sales while at the same time, the total costs of investment in inventories is kept at a minimum. (A.K.DATTA, 1988:P.102)

2.3.2. Overview of Internal Control

Control is a wider term and will include all types of management control. It is a means of assessing modern business management in discouraging its functions. The term internal control has been defined as "the whole system of control, financial or other wise, establishes by the management in order to carry on business of the company in an orderly manner, safeguard its assets and secure as possible the accuracy and responsibility of its records" (R. Saxena, 1990:P 44)

In addition to this Datta says "One way of improving the profit margin is to turn inventories into salable products with less investment and as quickly as possible so that higher sales targets can be achieved and move profits made with less investment. In other words, a high inventory to sales turnover ratio is necessary to achieve an improvement over return on capital. The inventory turn over ratio can be defined as the gross sales revenue to average inventory held during a year". (A.K.DATTA. 1988:P.100)

2.4. The Techniques

Some of the techniques which will follow include methods of fixing purchase quantities, setting of order point and safety stocks. The decision as to which item to make when and to keep inventories in balance requires application of a wide range of techniques from simple graphical methods to more sophisticated and complex quantitative techniques. Many of these techniques employ concepts and tools of mathematical methods and make use various control theories from engineering and other fields. They are primarily aimed at helping to make better decisions and getting people involved and follow a wise policy. (A.K. DATTA, 1988: P, 103)

2.5. Functions of Inventory

One reason organizations maintain inventory is that it is rarely possible to predict sales levels, production levels, and demand and usage patterns exactly. In such situations, inventory serves as a buffer against uncertain and dictating demand and keeps a supply of items available in case items are needed by the organization or its customers.

The many functions that inventories perform can be summarized as follows:

a) Smoothing out irregularities in supply: Inventories provide a buffer to overcome the problems of uncertainties in supplies such as delayed delivers and supply of short quantity by vendors as against the goods may increase suddenly which affects the ability of the manufacturer to meet the customer demand. In such cases also, an inventory of finished goods held in the ware houses will act as a buffer against the uncertainties in demand. Thus, inventories fill the gap between supply and demand.
b) Buying or producing in lots or batches: when the demand for and item does not justify its continued production thr4outgh – out the year, it is produced in batches or lots on and intermittent basis. During the time when the item is not being produced, demands are met from the inventory which is accumulated by batch production.
c) To meet seasonal or cyclical demand: companies will produce items at a constant production rate more than the demand rate in order to meet the seasonal demand occurring at a later period for which the production capacity is insufficient.
d) To take advantage of price discounts while buying items: Accompany will often purchase large amounts of inventory to take advantage of price discounts, as a heading against anticipated price increases in the future. In some case large quantities are ordered because the cost of an order may be very high and it is more cost-effective to have higher inventories than to order small quantities several numbers of times in a year.
e) To maintain continuity to operations in production possesses: many companies find it necessary to maintain in-process inventories at different stages in manufacturing process to provide independence between operations and to avoid work stoppages or delays and to continue production smoothly if there are temporary machine breakdowns or other work stoppages. (K. Shridhara Bhat, P.569).

2.6. Buffer of Uncertainty Inventories or Safety Stocks:

Some additional stokes are always provided in order to meet contingencies of unanticipated demand due to both (a) lead-time variations and (b) usage pattern during lead-time. This additional stock, safety of buffer stock as it is called, will however depend upon the service level desired on the one hand and the risk of stock-out one the other.

If the rate of consumption remains fairly constant, the suppliers' delivery items do not vary, there are no rejections during inspection. It would have been a simple matter to place a new order whatever stock on hand reaches the quantity equal to the lead-time usage. A hundred per cent service level can be easily attained in such circumstances when there will be no occasion for stock-outs as fresh supplies would always be arriving before the existing stock run out, such an idealized behavior of inventory (saw tooth model, as it is technically called), can be viewed from the diagram below: (A.K.DATTA, 1988:P. 117)

2.7. Types of Inventory

Inventories may be classifies as under:-

1) Raw materials and production inventories: These are raw materials, parts and components which enter into the product direct during the production process and generally form part of the product.
2) In-process inventories: semi-finished parts, work-in-process and partly finished products formed at various stages of production.
3) M.R.O. Inventories: maintenance, repairs and operating supplies which are consumed during the production process and generally do not form part of the product itself (e.g. POL, petroleum products like petrol, kerosene, diesels, various oils and lubricants, machinery and plant spares, tools, jibs and fixtures, etc.)
4) Finished goods inventories: Complete finished products ready for sale.(A.K.DATTA, 1988:P. 103)

Inventories may also be classifies according to the function they serve, such as,

a) Movement and transit inventories: This arises because of the time necessary to move stocks form one place to another. The average amount can be determined mathematically thus-**I =S x T**

Where, **S** represents the average rate of sales

T: - the transit time required to move from one place to another, and

I: - the movement inventory needed.

b) Lot-size Inventories: in order to keep costs of buying, receipts, inspection and transport and handling charges low, larger quantities are bought than are necessary for immediate use. It is common practice to buy some raw materials in large quantities on order to avail of quantity discounts.

c) Fluctuation Inventories: On order to cushion against unpredictable demands these are maintained, but they are not absolutely essential in the sense that such stocks are always uneconomical. Rather than taking what they can get, general practice of serving the customer better is the reason for holding such of inventories.

d) Anticipation Inventories: Such inventories are carried out to meet predictable changes in demand. In case of seasonal variations in the availability of some raw materials, it is convenient and also to some extent economical to build up stocks where consumption pattern may be reasonably uniform and predictable. (A.K.DATTA. 1988: P 104)

The starting point in inventory management and control is the development of a stores catalogue, which is more or less comprehensive and complete in all respects. All inventories should be allotted. Similar items should be grouped together and standard codification should be adopted. (A.K. DATTA, 1988: P.105)

2.8 Inventory Valuation Method

Inventories are recorded at their original cost. However, a major departure form the historical cost principle is made in the area of inventory valuation if inventory declines in value blow its original cost. Whatever the reason for declines –obsolescence, price-level changes, demand goods, and so forth-the inventory should be written down to reflect this loss. The general rule is that the historical cost principle is abandoned when the future utility (revenue-producing ability), the assets not longer as great as its original cost. (Donald and Willion, 1995:P.448)

2.9 Optimum Investment in Inventory

The level of sales, the length of production cycle, and the durability of the product are the major determinants of investment in inventory. To determine the optimum investment that minimizes the total cost of inventory, management must evaluate both carrying cost and ordering costs. (Suk H.Kim, 1989:P. 346)

2.10 Inventory Decision Models

Substantial research has been devoted to the problem of determining optimum inventory size, order quantity, usage rate, and similar considerations. An entire branch in the field of operations research is dedicated to the subject. (Stanley B. 1992: P. 189)

2.11 ABC Analysis of Selective Inventory Control (SIC)

In most cases of inventories where it may be found that about 20 per cent of the total number of items is responsible for about 80 per cent of the value. The idea of studying such inventory value is to find out 'where the money lies'. As this 20 per cent of items, 80 per cent of value' rule' rule holds good in many inventories situations, high value items need more stringent control, which may be termed 'A' class items, and the remaining ones can be classified 'B' and 'C' class items according to descending order of value. Thus, the principle of graduated control may be affected and the degree of control may be equated with the frequency of reviews. Controlling tightly means reviewing frequency, and frequency in turn tends to determine the order quantity. A item would be reviewed frequently, and because of their high value they will be ordered in small quantities in order to keep the inventory investment minimum. B items will be reviewed less frequently and C items still less. (A.K. DATTA, 1988: P. 106)

ABC Classification of Inventory

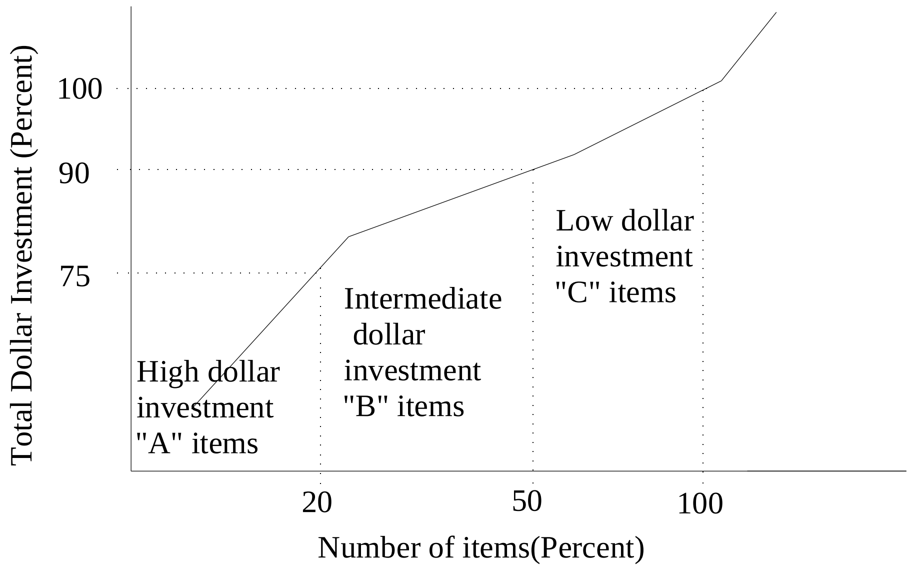


Fig.1 ABC classification of inventory

2.12 Inventory Control Systems

Two fundamental issues which underlie all inventory planning and control systems are:-

(i) How much to of each material when orders are placed with either outside supplies or production departments in- house.

(ii) When to place the orders (i.e., at what stock or inventory level). Order quantities (called order points or re-order levels, determine the amount of materials held inventory at any given time.

Dependent demand and independent Demand Inventories:

Inventories may contain materials which have either dependent demand or independent demand. In independent-demand in spare parts, stationery items other item carried in inventory. Is independent of the demand for and other item carried inventory. For example, inventories of finished products, tools, spare parts, stationery items etc., are example of indecent- demand depends on the demand for other items held in inventory. For example, the raw materials, components, parts, sub-assemblies etc. which will become parts of the finished product and the packing materials required to pack and ship the finished goods – all are dependent demand. This means the demand or all these items (called bill – of- materials items) depend on the demand for end product demand form these items. Order quantity and order point decisions for dependent – demand inventories are there for distinctly different from those of independent – demand inventories.

2. 13. Inventory Systems

Records pertaining to quantity and value of inventory in hand can be maintained according to any of the following two systems:-

- Periodic inventory systems
- Perpetual Inventory systems (S. Macheshwari, 200:P. 677)

2.13.1. Periodic Inventory System

In case of this system the quantity and value of inventory is found out at the end of the accounting period after having a physical verification of the units in hand. The system does not provide the information regarding the quantity and value of materials in hand on continuous basis. The cost of the cost of material used is obtained by adding the total balance of inventories during the period to value of inventory in hand in the beginning of the period and subtracting the value of inventory at the end of the period. (S. Macheshwari, 2000: P. 677)

2.13.2. Perpetual Inventory System

It is also known as automatic inventory system. According to the institute of cost and management accountants London, it is a system of records maintained by the controlling department, which reflects the physical movement of stocks and their current balance. The definition given by Sheldon is more exhaustive and explanatory accounting to him. It is "a method of recording inventory balances after every receipt and issue, to facilitate regular checking and ledger gives balance of raw materials, work in process ledger gives the balance of work in progress and finished goods ledger in hand on continuing basis. (S. Macheshwari, 2000: P. 678)

2.14. Main Types of Inventory Cost

There are two types of costs associated with inventory namely:

a) Costs associated with the purchase of inventory items i.e., cost of materials purchased.
b) Costs on materials consisting of there basic costs namely,

I. **Ordering costs or acquisition costs** which are costs associated with the placement of an order for the acquisition or replenishment of the stock of inventory. Ordering costs are expressed as rupees per order and are independent of the order size. Ordering costs per year vary with the number of orders placed in a year. Costs incurred each time and order, transportation and shipping, receiving, inspection, handling and placing in storage, transportation and shipping, receiving, inspection, handling and placing in storage, accounting, and bills payment and auditing costs.

II. **Carrying or holding costs** are the costs of holding items in storage. These vary with the level of inventory and with the length of time an item is held i.e. the greater the level of inventory over time, the higher the carrying cost. Carrying costs include the direct storage costs such as rent, lighting security, refrigeration, record keeping, inters on capital tied up in holding the inventory (i.e.., cost of capital) depreciation of equipment used for material handling, costs due to pilferage, spoilage, obsolescence, and taxes and also the cost of opportunity lost due to loss of funds tied up in inventory. Carrying costs are expressed as rupees per unit of item held in inve3ntory per time period such as a month or year. Alternately, carrying costs are sometimes expressed as a percentage of the value per year.

III. **Shortage costs** also referred as stock-out costs occur when customer demand can not be met because of insufficient inventory on hand. Shortages may result in permanent loss of sales of items demanded but not provided, resulting in loss of profits. Shortages can also cause customer dissatisfaction and a loss of good will which may result in permanent loss of customers and future sales. In some instances delayed deliveries to customers due to shortages may result in specified penalties in the form of price discounts or rebates. When demand is internal, a shortage can cause work stoppages in the production process and create delays resulting in downtime costs and cost of lost production.

The there costs are related to each other in some way or the other. The ordering costs per year decreases as the order size (i.e.., the quantity ordered each order) increases, thereby decreasing the number of orders per year. However, an attempt to place few orders per year results in bigger order size which in turn increases the average inventory held and the carrying cost or holding cost. Shortage occurs because it is too costly to carry inventory in stock. As result shortage costs are inversely related to carrying costs increases while shortage costs decrease. The objective of inventory managements is to employed when orders should be placed in order to minimize the sum of the three costs i.e. ordering costs, carrying costs and shortage costs. (K.Shridhara Bhat, 2003: P.571)

The inventory costs may be broadly divided into three components:

A. Procurement Cost (this includes administrative and provisioning costs.)

B. Storage Cost (this includes carrying, handling, etc.)

C. Stock-out Cost (this may be laid by management accounting to its policy).

(A.K. DATTA, 1988: P. 110)

A point of minimum cost is reached at which the ordering cost will be just equal to the carrying cost so that the total cost is minimum at that point. In other words, neither excess quality of material is ordered, nor frequently too many orders are placed for the same materials during a period of time. We assume, however, that no stock-out or idle-time cost has to be accounted for. Also where quantity discounts are allowed on lot-purchases or where there are price-breaks, this will not hold true. In such cases, linear relationship of the unit price with purchase quantity breaks down and distorts the formula given below as we shall presently see. When unit price is same regardless of the quantity purchased, we can use the following formula when we find that the order quantity varies in proportion to the square root of the demand. These are indices given on scientific basis to order quantity, keeping in view position states of inventories, viz., the set of costs, ordering cost and carrying cost. This is known as Economic order Quantity (EOQ). (A.K.DATTA. 1988: P 110)

2.15. Economic Order Quantity

Models Deterministic Inventory

1. Economic Order Quantity (EOQ Model)

   The EOQ mode is applicable when the de3mand for an item has constant or nearly constant rate and when the entire quantity ordered arrives in inventory at one point of time (instantaneously).

The EOQ model system is also known as fixed – quantity system (Q system) or a continuous or perpetual review system. In this system order is placed for the same order is placed for the same constant or fixed amount (known economic order quantity) when level or re-order point, continual record of inventory level for every item is maintained. The order that is placed to replenish the stock of inventory is for a fixed quantity which minimizes the total inventory carrying, ordering and shortage costs. (K.Shridhara Bhat, 2003: P.573)

A Positive feature of a continuous review system is that inventory level is closely and continuously monitored so that management always knows the inventory status. This is advantageous for critical such as replacement parts of raw materials or supplies.

A positive feature of a continuous review system is that inventory level is closely and continuously monitored so that management always knows the inventory status. This is advantageous for critical items such as replacement parts of raw materials or supplies.

The function of the EOQ model, also referred to as the economic lot size model is to determine the optimal order size that minimizes total inventory costs.

There are several variations of the EOQ model, depending on the assumptions made about the inventory system. There such variations are

   (a) The basic EOQ model, (b) the EOQ model with non-instantaneous receipt or gradual arrival of supplies and (c) the EOQ model with shortages.

2. The Basic EOQ model

The formula for EOQ and Re-order level are derived under a set of simplifying and restrictive assumptions, as follows:

- Demand is known with certainty and is relatively constant over time
- No shortages are allowed.
- Lead time for the receipt of orders is constant.
- The order quantity is received all at one i.e. instantaneously,

2.16. Assumptions Used In the Basic EOQ Model

I. Only one product is involved.

II. Annual demand requirements are known.

III. Demand is spread evenly throughout the year.

IV. Demand rate for the item is constant and known with certainty.

V. No constraints (e.g. truck capacity or materials handling limitations) on the size of the size of each lot.

VI. Only two relevant costs are the inventory carrying cost and the ordering cost and the ordering cost.

VII. No uncertainty in lead time or supply. The lead time is constant and known with certainty.

VIII. Each order is received in a single delivery.

IX. Quantity received is exactly what was ordered and it arrives at once (i.e. instantaneous supply).

X. There are no quantity discounts. (K.Shridhara Bhat, 2003: P.573)

2.17. Derivation of EOQ Formula

a) The how – much –to order decision

Let ‘D’ be the annual demand for an item in units. If ‘Q’ is the order size (i.e. EOQ to be determined then, the number of orders/year = D/Q

Let C o be the cost per order or ordering cost.

Then, annual ordering cost

= [No. of orders per year] X (Cost per order)

= D/Q X Co (K.Shridhara Bhat, 2003:P.574)

2.18. Managing Independent Demand – Economic Order Quantity Models

Fixed Quantity Models

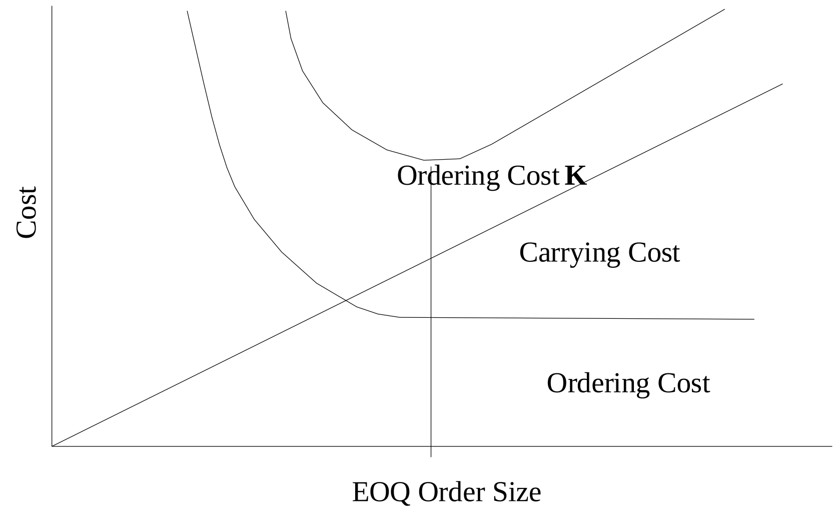
The objective of the model is to minimize the total annual costs. In the very simplest form of this model, annual demand (R), variable order or set up costs (S), Lead time (L), and holding cost percentage (K), price (C) are all constant now and in the future.

When inventory drops to the reorder point (P), q fixed economic order quantity (Q) is ordered, which arrives after lead-time (L), Back orders and stock outs are not allowed. Total costs is given as purchase cost, plus set up or order cost, plus holding cost.

$$\boxed{TC = RC + RSQ + QKC2}$$

The minimum value of Q (also known as the EOQ) is found at:

This is the value at which order cost and carrying cost are equal. The next figures show how costs vary with changes in order size and how inventory levels change overtime using this model.



Material carrying and order cost

This model suggested an order of Q_{opt} you units when every the inventory Drops to L amount

Fig. 2 Material carrying and order cost

Simple Fixed Quantity Model

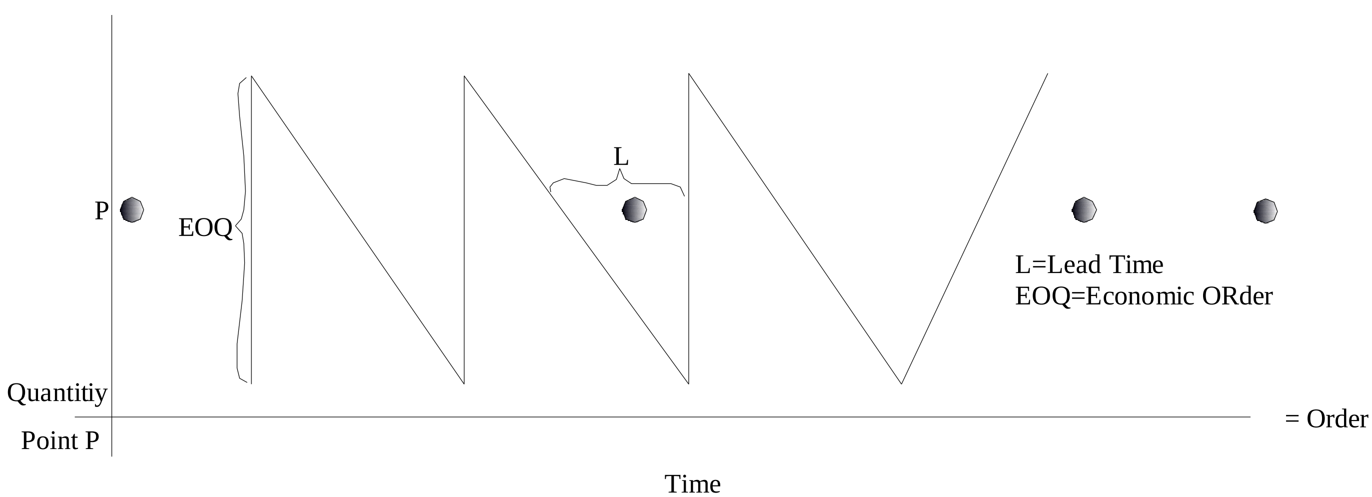


Fig. 3 Simple Fixed Quantity Model

2.19. Just-In-Time (JIT) Inventory Management System

A relative new concept in inventory management, just-in-time inventory management (JIT), was designed for Toyota by Japanese firm Shigeo and found its way to the United States. (Stanley B. Block, 1992: P.192)

Just-in-time inventory management is pure of total production concept which often interfaces with a total quality control program. A JIT program has several basic requirements:

1. Quantity production that continually satisfies customer requirements
2. Close ties between suppliers, manufacturers, and customers: and
3. Minimizing the level of inventory. (Stanley, B. Block, 1992:P.192)

2.20. Material Requirements Planning System

One of the most common dependent demand inventory systems used in the United States is the material requirement planning (MRP) system. MRP is a computer-based management information system designed to manage dependent demand inventory items in the transformation process of operations management. This includes products that are made from dependent demand inventory items such as components or raw materials. (Operations Management: 1994 PP. 290)

Chapter Three

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

On the first chapter of this research, the researcher endeavor to put the blue print of the study. In addition, on the 2nd chapter of this paper, it was attempted to cover and describe the theory of inventory management practice as a whole.

Whereas in this chapter, the researcher examined the actual inventory management practice of TSEDA Trading PLC through colleted primary and secondary data. To make this research genuine, primary data (structured questionnaire and physical observation) were employed. Additionally, the secondary data like financial report, stock status Report, Business Plan of the company and other vital documents of the company were assessed.

The primary data used for this study were collected from three departments and one section. These are Finance department, Marketing department, Administration Department and Stock Administration Division. These departments were selected because of their relationship to inventory.

To come up with the required results, out of 85 employees, 24 of them were included in the study. To get genuine and relevant information, first respondents were made aware of the objective of the study. And the structured questionnaire was distributed to these staffs. The questionnaire contained both open and close ended type. However, among 24 respondents 21 of them had returned the filled questionnaire to the researcher.

The data obtained have been tabulated, interpreted and the percentage was computed to make the interpretation easier.

3.1 Characteristics of the Study Population

Table 1: Sex, Educational Background, and Service years of respondents

1. SEX	Number	% (percentage)
1.1 Male	11	52.38%
1.2 Female	10	47.62 %
Total	**21**	**100%**
2. EDUCATION	NUMBER	% (percentage)
2.1 10^{th}/ 12^{th}	6	28.57%
2.2 Vocational Diploma	5	23.81%
2.3 Advance Diploma	6	28.57%
2.3 Degree (BA/BSC)	4	19.05%
Total	**21**	**100%**
3. SERVICE YEARS	NUMBER	% (percentage)
3.1 1-5 Years	16	76.19%
3.2 6-10 Years	2	9.52%
3.3 11 years and Above	3	14.29%
TOTAL	**21**	**100%**

As shown in the above table, 11 (52.38%) are male respondents and 10 (47.62%) are female respondents. The above data indicates that even though there is a little variation between male and female respondents, there is fair distribution of sex in the organization.

Regarding the educational background of respondents, the largest group reported as 6 respondents or (52.38%) are Vocational and advance Diploma Holders. The second largest group is 10^{th} or 12^{th} Complete which is 28.57% of the total respondents and the remaining 19.05% of the respondents are Degree holders. From this table it is understood that the majority of employees are Advanced and Vocational Diploma holders. This implies that the employees are in position to understand and act according to the questionnaire items.

Regarding work experience the majority of the respondents served for 1-6 Years, as shown in Table 1 above. The next largest group is employees who served for 11 years or above. The remaining group said they worked in the organization for 6- 10 years.

This indicates that a very considerable number of employees have served in the company for a long period of time by which they are more familiar with the objectives importance and guidelines of inventory management activities.

3.2 Inventory Management Practice of TSEDA Trading PLC

TSEDA Trading PLC records purchase and sales on its general ledger, determine and record inventory and cost of goods sold for each sale of merchandise. The company shows the balance of inventory on the Stock card but does not use bin card for each inflow and outflow of merchandise. Since TSEDA Trading PLC records cost of goods sold on each sale in its general ledger and subsidiary ledgers, it follows **perpetual** inventory system. However, the company uses the balance of the stock on the card to cross check with physical count of the inventory at the end of the year.

3.2.1 Inventory Valuation Method of TSEDA Trading PLC

Table 2: Valuation of Inventory Method in TSESA Trading PLC

Responses	Frequency	% (percentage)
Weighted Average Method	21	100%
FIFO Method	-	-
LIFO Method	-	-
Total	21	100%

Source: Questionnaire 2010

As can be seen from the table 2- the company uses Weighted Average Method for inventory valuation. While respondents asked about the type of inventory Valuation method of the company, 100% of them replied that the company uses ***Weighted Average Method***.

3.3 Inventory Control Procedure

All respondents answered that the sequential procedures followed by the store management of TSEDA Trading PLC to record the inventory are: -

a. Reconciliation of Purchase order with purchase receipt
b. If the above get reconciled; goods receiving notes will be prepared
c. Posting will be done to stock cards
d. Sales Invoice and finally,
e. Store Issue Voucher will be employed to calculate balance on stock card.

Source: Questionnaire 2010

This implies that the company has its own inventory recording procedure followed to manage the store.

3.3.1 Procedures to guarantee item issues, physical control over cut-off materials, and safe guards to prevent theft

Table 3- Inventory physical control and safe guard to prevent theft

Items	Frequency		Total No. of respondents	% (percentage)		Total % of respondents
	yes	no		yes	no	
1. Are there appropriate procedures to guarantee that items may be accessed from store only by authorized employees?	19	2	21	90.48	9.52	100%
2. Is there adequate physical control over cut off materials until the necessary decision is made by the management?	17	4	21	80.95	19.04	100%
2 Are there adequate physical safeguards to prevent theft or an authorized removal of goods from store?	21	-	21	100%	-	100%
3 Are stocks records frequently reconciled against actual physical count?	8	13	21	38.1	61.9	100%
4 Are there adequate cut off procedures in operation to ensure that there are no movements of stock while the counts are in progress and that all stock issues and receipts have been recorded?	11	10	21	52.38	47.62	100%
5 Are goods marked while they are counted, to avoid the same items not to be counted twice?	9	12	21	42.56	57.14	100%
6 Does a supervisor or internal auditor check to ensure that all items have been sold or omitted from stock?	12	9	21	57.14	42.56	100%

Source: Questionnaire 2010

As shown on table 3.3.1, 19 (90.48%) of respondents said “yes” to say “there are appropriate procedures to guarantee that items accessed from store only by authorized personnel”. On contrast, 2 (9.52%) respondents replied “No”. They justify that “currently there are no better mechanism and procedures to access items from store only by authorized person.” In addition to this the respondents said “the system is totally based on trust of employees and electronic issue voucher is not employed in any one of the stores of the company.”

On the 2nd item 17 (80.95%) respondents agree that there is adequate physical control over cut-off materials until the necessary decision is given by management. In contrary, 4 (19.04%) of respondents disagree and said “No.” Because the nature of the material makes difficult to control physically (i.e. most of cut-off materials are small in size). For item 3 in the table, all respondents answered that there are adequate physical safeguards to prevent theft. The table also shows 38.10% of the respondents say stocks records are frequently reconciled against actual physical count. However, 61.9% of the respondents say “No.” Their justification is “records and physical count are reconciled only at the end of the fiscal year due to the nature of inventories that the company holds.” Respondents those answered related to cut-off procedures, *52.38*% of them know that there is no movement of stock while the counts are in progress but *47.62*% of the respondents say “No.” Their justification for their disagreement is “there is no adequate cut-off procedures in the organization during operation time but the company make physical count at the end of every fiscal year of weekends due to fear of high probability of losing customers.”

For item 6, *42.56*% of the respondents agree goods marked as they are counted to avoid the same items being counted twice. *57.14* % of the respondents disagree. They reason out, since the natures of some inventories are bundled together, it is difficult to count them and it is also difficult that every bundle has the same amount of pieces.

And finally, *57.14*% of the respondents agree a supervisor check to ensure that all items have been sold and no goods are omitted from stock. On the other hand, *42.56* % of respondents say “No” their reason is that “from the beginning, the company has no supervisor or internal auditor who is going to check (report) either the item is sold or omitted from stock.”

The above paragraphs imply that there is better procedure to guarantee item issues, physical control over cut-off materials, and safe guards to prevent theft in TSEDA Trading PLC.

3.4 Major Products Selling in the Company

Table 4- Respondents response with regard to Major selling products in TSEDA Trading PLC

Responses	Frequency	Percentage (%)
Reinforcement Bars	20	95.24%
Angle Irons	12	57.14%
RHS (Hollow Sections)	17	80.95%
"**LTZ**" Profiles	11	52.38%
Sheet Metals	15	71.43%
Wire Rods	5	23.81%
Annealed Black Wires	5	23.81%
Iron (as a whole)	1	4.76%

Source: Questionnaire 2010

As can be seen from the table 4, respondents replied about the major products selling in TSEDA trading PLC, 95.24% of respondents answered that, Reinforcement bar is the major selling merchandise inventory in the company. The following item are prearranged according to the percentage of respondents answered. RHS (Hollow Sections), Sheet Metals, Angle Irons, LTZ Profiles, Wire rods and Annealed Black wires are the rest more salable inventories in the company. Only one respondent answered for the question mentioned above as a whole "Iron products" are the major selling product in the company.

3.5 Human Resource utilization in TSEDA Trading PLC

Table 5 - Inventory physical control and safe guard to prevent theft

Items	Frequency		Total No. of respondents	% (percentage)		Total % of respondents
	yes	no		yes	no	
1. Is there clear assignment of duties among custody of stocks and record keeping stocks?	19	2	21	90.48	9.52	100%
2. Does the physical counting activity take place by independent personnel?	17	4	21	80.95	19.04	100%
3 Are there skilled internal supervisor and internal auditor to control the inventory?	21	-	21	100%	-	100%
4 Are stocks counting teams sufficiently familiar with the items they are counting or are they working with a superior to identify the items?	21	-	21	100%	-	100%

(Source: Questionnaire)

Table 5, item 1 show 19 respondents or (90.48%) say “yes there is segregation of duties in TSEDA trading PLC.” Even so, 9.52% the respondents disagree on the availability of clear assignment of duties in the company concerning with materials management. For item 2 on table 5, 80.95% respondents say “Yes.” 19.04% of respondents say “No.” Their justification is that there are no assigned independent personnel yet. All respondents agree on there is skilled internal supervisor and internal auditor to control inventory. All (100%) of the respondents replied “yes” there are familiar stock counting teams with the items they are counting.

The above 4 paragraphs Imply that there is a clear assignment of duties related to inventory management, there is familiar personnel who can actively perform physical count independently, and there is skilled internal supervisor and internal auditor to control the company’s inventory.

Table 6 –Slow Moving and Damaged Items and Adjustments on Unbalanced Inventories

Items	Frequency		Total No. of respondents	% (percentage)		Total % of respondents
	yes	no		yes	no	
1. Are procedures for identifying and reporting slow moving, obsolete or damaged items adequate?	9	12	21	42.86	57.14	100%
2. Are differences, damages, and slow moving inventories reported to the management?	12	9	21	57.14	42.86	100%
3. Do you have procedures to adjust unbalanced inventory with respect to recorded document?	19	2	21	90.48	9.52	100%

(Source: Questionnaire)

On the table 6, item1, it is shown that 42.86% of the respondents know about damages and slow moving items are identified. On the other hand, the remaining 57.14% of the respondents say no because store clerks and store keepers know slow moving items only through experience. On the table 6, row two, it is shown that 57.14% of the respondents say “yes; damages and slow moving items are reported to the management.” On the other hand, the remaining 42.86% of the respondents say “no, not reported.” Their justification is that “due to lack of procedures, we did not know how to report to the management.” All of the respondents replied “yes there are procedures to adjust unbalanced inventory with respect to recorded document”

3.6 Inventory Models of TSEDA Trading PLC

Among 21 respondents 71.23% of them answered the company is using ABC model. 52.23% of the respondents say we are using Economic Order Quantity (EOQ). On the other hand 9.52% of the respondents replied that the company is practicing Materials Requirement Planning. Finally, 47.62% of the respondents agree on the Just in Time Models. Therefore, majority of the respondents answered that the company is using selective inventory control (ABC) inventory models. (Source: Questionnaire 2010)

However, the researcher observed that the company is using neither of the above stated models. The company has no reorder point, led time, safety stock, and no predetermined optimum inventory level to control its inventory. (Source: observation, 2010)

3.7 Findings of the Study

3.7.1 Summary of Observation on the Inventory Management Practice of TSEDA Trading PLC

The company holds imported and locally produced iron products like reinforcement bars (8-24mm per diameter), Hollow Sections it is also called RHS (10x10 - 100x100x3mm with different thickness), LTZ profiles (28x28 - 38x38mm with different thickness), Angle Irons (25x25x1.2 – 60x 60x5 with different thickness), Decorated handle iron, Galvanized pips, Square bars (with various size), Plain bars(with various size), “U” Channels, Flat Irons, Round pipes (20mm – 30mm), Sheet Metals (0.5 – 20 mm), Chaucer Plates (1.6 – 3mm), Wire rods, Annealed Black wire (1.5 – 2.5), Nails (5 - 15cm) and other inventory items in large quantity. (Source: observation, 2010)
Among these inventories the researcher focuses on the inventories for which the company invests large some of money. (Source: observation, 2010)

In addition to questionnaire the researcher observed the over all conditions of materials handling. Among three inventory valuation methods the company uses Weighted Average method to obtain average value of the inventory in different circumstances. (Source: observation, 2010)

Merchandise inventory on hand at the end of the year is ending inventory. According to the company practice, all goods entered in to the company’s store are included in the inventory. The cost estimation of the company is made using **Weighted Average** valuation method. The researcher observed that the company includes all related costs to own the inventory such as purchase price, transportation, custom duties etc. as cost of inventory. Such inclusion proves the complete recording of inventory cost. So every purchased item costs are accumulated together and divided by the number of units acquired. Therefore, FIFO and LIFO valuation methods are not practiced in the company’s inventory management practice. (Source: observation, 2010)

TSEDA Trading PLC has adopted historical cost of goods have sold which means it does not use replacement cost. This shows that even if the inventories have less value than their cost, the company uses this cost until it is sold. This will lead to in appropriate inventory holding because the value for the goods will be lesser than its original cost. (Source: observation, 2010)

Goods that are in transit are not included in the inventory. However, these goods are recorded under the accounting name "Goods in transit" and reported as current asset. This leads to underestimate of inventory, which also has the same effect on the reported income. (Source: observation, 2010)

Generally,

✷ Due to the nature of the product, the storage system of reinforcement bars is piled up out of the store. This may cause rust and result in depreciation before sale, and their arrangement is not favorable for physical count too. (Source: observation, 2010)

✷ Some merchandising inventories are hoarded in store randomly without order. Easy access is not possible if an item is needed for sale. (Source: observation, 2010)

✷ On the other hand, except some hollow sections, all most all are ordered properly and any body can count them at any time. (Source: observation, 2010)

✷ Materials acquisition and issuance are performed through the owners of the company or by intimacy to them due to lack of trust on other employees. If it is considered as right way to acquire and issue materials, it is also possible to conclude that the company is practicing the correct way to acquire and issue inventories. (Source: observation, 2010)

✷ Any one who has relation to the owners has right to enter into the stores which increases unauthorized access to materials. (Source: observation, 2010)

✷ Store receiving note is properly employed for each purchase through Finance Department (not by store keepers). However, when imported inventories are received from port, the necessary documents are available with it. The third party, who has a permit to control the quality together with the companies' quality controllers, checks the quality of the inventory. As the researcher observed most of the time the document sent from the suppliers were not agreeable with the actual quantity received by the store keepers; especially Reinforcement bars. The company is not trying to adjust the difference of actual quantity received with the document. It simply accepts the document and work with it. (Source: observation, 2010)

✷Store issue voucher is also done by finance department but it is not prepared for each sale. (In average 4-8 receipts are used on one store issue voucher) (Source: observation, 2010)

✷Even if 100% respondents of the questionnaire answered that there is adequate physical safeguards to prevent theft, the researcher observed, store keepers and store clerks have no properly built office and security guards are unarmed. So these problems make their job difficult to protect the company's assets from theft and robbers. (Source: observation, 2010)

3.8 Inventory control Practice in TSEDA Trading PLC

Table 7 Company's documents to record Inventory

No.	Item	Inventory control Procedure
1	Bin Card	Not used
2	Stock Card	Used
3	Identity No. of materials	Not used
4	Materials Requirement Plan	Not used
5	Economic Order Quantity	Partially
6	Lead Time	Not used
7	Re-Order Point	Not used
8	Store issue voucher	Used
9	Goods receiving Note	Used
10	Goods inter transfer voucher	Not Used
11	Purchase Order	Not Used
12	Purchase Requisition	Not Used

Source: Primary data (observation)

✷The above lists drawn from the observation the researcher made in the course of the study. Therefore, the above table indicates that how the inventory control procedure of the company is practically going on and which documents are applied to control inventory. Stock Card, Goods Receiving Note, and Store Issues Voucher are documents used by the company. The other documents are unused documents by TSEDA Trading PLC that show lack of strong inventory control mechanisms in the organization.

✷Merchandise inventories are purchased by the owners of the company. Other consumable items are purchased by those employees who have relation with the owners. While this is done purchase requisition form is not prepared by these parties.

✷Even if all respondents of the questionnaire agree on there is skilled internal supervisor and internal auditor to control inventory, the researcher observed that there is no internal supervisor and internal auditor in the company. In addition to this from the whole respondents only 2 store keepers are diploma holders with less service year. The remaining respondents are 10^{th} /or 12^{th} complete (these indicates only those who have direct relation to inventory control). So it is difficult to say that there is skilled supervisor and internal auditor.

✷Even if 71.23%, 52.38%, 9.52%, and 47.62% of the respondents say that the company uses ABC, Economic Order Quantity (EOQ), Materials Requirement Plan, and Just in Time (JIT) respectively, the researcher observe that the company employs none of them. The company has no reorder point, led time, safety stock, and there is no optimum inventory level. Therefore, lack of practicing these models and procedures may affect the company sales due to shortage of inventory or on the other hand may incur unnecessary carrying and inventory cost.

3.9 Inventory control Practice

✷TSEDA Trading PLC carries out physical count every year end randomly, and the result of the inventories is cross checked against finance department stock cards. As the researcher tries to assess what would be done if discrepancies or losses are found, there were no serious measurement is taken yet by the management to correct the difference.

✷On the other hand, stock records were observed. Records made by the company seem that the inventory method of the company is perpetual. However, as physical observation made by the researcher, the company performs periodic inventory method on which physical count is made at the fiscal year end. On stock cards the value remaining inventory items are not calculated but the stock cards are used only to follow up the remaining quantity at stock.

✷It is realized that relating to Hollow Sections and LTZ profiles damages are properly identified but slow moving items are not identified yet.

✷ Damages and shortages are immediately reported to the management but slow moving items are not reported because there is no responsible person who can identify them.

✷Inventory cost of the company includes cost associated with purchase of inventory items like transportation, loading and unloading. However, carrying or holding costs and shortage costs are not considered in the inventory.

3.10 Management of Sellable Scraps and Damage Items

Scrap is a small piece or remnant that has been detached from or torn off a large piece, waste metal. **(Microsoft® Encarta® 2009. © 1993-2008)**

Damage is a physical injury that makes something less useful, valuable, or able to function. **(Microsoft® Encarta® 2009. © 1993-2008)**

✷Sellable Scrap and damaged items are properly identified and ready to load.

3.11 Weaknesses of the Company Related to Inventory Management Practice

✷The inventory control is a means to the implementation of management's inventory policies. However, the company has not yet set a policy or a procedure that can help to meet the goal of inventory management which regards with the optimum levels of inventories available, and policies related to on what levels of inventories are to be maintained.

✷Through the researcher observation, it is realized that the inventory management system of the company is not strong enough; this may result in the company's asset facing various risks like theft, spoiling, or robbed.

The company has not yet incorporates the inventory management department in its structure to manage its inventory independently. Therefore, this implies that there is no independent responsible party who is going to over come problems regarding inventory management.

✷The company has no complete manuals and procedures for inventory control and management. Goods receiving note, Store issue voucher, and physical inventory sheet are some of the formats the company is using.

✷ The other main weakness of the company in inventory management practice is that it failed to use technology in almost every area of inventory management to help control, monitor and analyze inventory. (Stores, sales center and Head Quarter of the organization are not networked to manage inventory of the company).

✷Finally, amount of time to process every purchase is not known, and reorder point or reorder levels are not set yet.

Chapter Four

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

4.1 Summary of findings

The company holds imported and locally produced Steel products. As it is observed the company uses the periodic inventory system that does not record costs sold during each sale. It registers inflow and outflow of merchandise on *stock card (which works like the store bin cards)* to follow the balance of inventories on hand. And at the end of the period the company physically counts to check the existence of such inventories.

Among three inventory valuation methods the company uses Weighted Average method to obtain average value of the inventory in different circumstances.

Merchandise inventory on hand at the end of the year is ending inventory. According to the company practice, all goods entered in to the company's store are included in the inventory. The cost estimation of the company is made using Weighted Average valuation method.

TSEDA Trading PLC has adopted historical cost of goods have sold which means it does not use replacement cost. This shows that even if the inventories have less value than their cost, the company uses this cost until it is sold.

Goods that are in transit are not included in the inventory. However, these goods are recorded under the accounting name "Goods in transit" and reported as current asset. This leads to underestimate of inventory, which also has the same effect on the reported income. This proves the incomplete recording of TSEDA Trading PLC follows the same cost principle in cost determination the costs included in the inventory are production cost and purchasing costs of merchandise inventories.

The company has no complete manuals and procedures for inventory control and management. Goods receiving note, Stock cards (uses as bin cards), Store issue voucher, and physical inventory sheet are some of the formats the company is using. These documents and procedures are enough to control its inventory movement.

TSEDA Trading PLC has insurance coverage for goods in transit. However, the company has no insurance coverage on its inventories at hand.

Segregation of duties is not exercised in TSEDA trading PLC related to materials management especially in inventory acquisition, receiving, and storing.

4.2 Conclusion

Inventories are one of the most important assets of the company. Based on the data gathered from primary and secondary data sources and observation made for the relationship between the current problem of the company (that is huge amount of capital tied up in inventory) and the inventory problem of the company that the cause of the problem are inefficient inventory management, the researcher believes that the following point justifies his conclusion.

About the inventory management practice of TSEDA Trading PLC, the company used periodic inventory system, which is appropriate for small value and large quantity items. However, the company has both small value large quantity and high value small quantity items. Therefore, the inventory system of the company followed has lack of appropriateness with the business type.

The company applies none of independent and dependent inventory management. To specify; ABC, Economic Order Quantity (EOQ), Materials Requirement Plan, and Just in Time (JIT), are not employed in the company. The company has no reorder point, led time, safety stock, and there is no optimum inventory level at all. Therefore, lack of practicing these models and procedures may affect the company sales due to shortage of inventory or on the other hand may incur unnecessary carrying and inventory cost.

Inventory cost of the company includes cost associated with purchase of inventory items like transportation, loading and unloading. However, carrying or holding costs and shortage costs are not considered in the inventory. As mentioned earlier the inventory cost assumption of the company is weighted average inventory method. However, the firm has many unmovable or damaged items at store, which does not go with this cost assumption inventory. Thus TSEDA Trading PLC inventory cost assumption method is not efficient.

In addition to this the inventory assumption of the firm excludes goods in transit from its inventory. However, as per the agreed and accepted accounting principles goods in transit are a part of the firm inventory. Therefore, the company is very inefficient in determination of inventory items.

The company recording system is prearranged as follow:

a. Reconciliation of Purchase order with purchase receipt
b. If the above get reconciled 'goods receiving notes' will be prepared
c. Posting will be done to 'stock cards'
d. Sales Invoice and finally;
e. Store Issue Voucher will be employed to calculate balance on stock card. This implies that it lacks (misses) some procedures.

Finally, the company has no mechanism to categorize inventory as per their value, as per their movement, or as per their item type.

4.3 Recommendation

Besides a well organized inventory management system the company needs to make exhaustive effort in implementing as well as in improvement of managing and controlling inventory in the future. The researcher insists that the following changes and adjustment could be good for the company.

First of all the company should incorporate/ establish inventory management department in the company's structure and TSEDA Trading PLC should assign independent and responsible personnel on the specified position because those employees of the enterprise assigned relating to inventory management are not well educated and also not well experienced; therefore, assignment of qualified and experienced employees for each position and segregation of duties and responsibilities to the store should be restricted.

On the other hand, about those who have experience; their experience has not been supported by trainings. In line with the current advancements and new concepts the staff members should be given training in their respective fields like inventory management, Store keeping, operation and maintenance etc.

With regard to inventory management the enterprise should apply the appropriate inventory management techniques to cope-up problems related with poor inventory handling and costs that arise because of much accumulation of inventories. As a result it will make the carrying cost higher. So the company must have detailed plan based on demand forecasting.

The company needs to prepare interim report. It saves more money and time of sales. Therefore, company is expected to change the periodic inventory management system to perpetual inventory system.

The overall inventory management system of the company should be improved and adjusted in a way to minimize risk by:-

- Including goods in transit in its inventory.
- Calculating activity measurement ratios to give more emphases for goods which have high inventory turn over.
- Net working the head quarter to sales centre and main store and sub store to make the inventory management reliable.
- Goods received should be effectively inspected for quality, quantity and conditions when received.
- The company should minimize cost by using proper inventory management procedures
- The company should follow an appropriate inventory recording system by maintaining or developing necessary formats.
- While count is performed discrepancies may be investigated. These discrepancies should be adjusted and appropriate measures should be taken soon.
- If possible each sales site and warehouses should have or use compatible computerized and net worked inventory management practice with head office. Therefore, if these comments are properly applied inventories are safe from damage and theft.

BIBILOGRAPHY

- DATTA. A. (1988). **Materials Management and Inventory contro**l. (1st Ed) Bombay Delhi Jaico publishing house.

- Donald, R., Cooper, C, and William, E. (1995). **Business Research Methods.** (5th Ed).

- Gizaw and Mohammed (2009). **Assessment of Inventory Management System on ALSAM Trading PLC.** SMUC.

- Gopaakrishnon P. (2007). **Purchasing and Materials Management**. Administrative staff college of India Hyderabad.

- Katoch (2000). **Materials Management**. (1st Ed) New Delhi: Anmol Publications PVT. LTD.

- Krishnan (2004). **Purchasing and Materials Management**. (6th Ed). New Delhi: Tata McGraw-hill Publishing Company Limited.

- K.Shridhara Bhat, (2003) **Production and Materials Management**. Mumbai. Delhi, Himalaya publishing house.

- Oberoi (2001) **Materials management**. New Delhi: & sons.

- Saxera, G.R. (1990), **Principles and Practices of Auditing**. New Delhi: Himalay publishing Hause.

- Shridihara (2003). **Production and Materials Management.** (1st Ed). New Delhi: Himaliya publishing. House.

- Stanley B. and Geoffrey (1992). **Foundation of Financial Management**. (6th Ed). Richard D. Irwin Inc.

- Suk, H.Kim, (1989). **Purchasing and Materials Management** New Delhi: & sons.

- Tseda Trading PLC, (2009). **Business Plan.** Addis Ababa

- Tseda Trading PLC, (2009), **Financial Repost.** Addis Ababa

- Zipkin (2000). **Foundation of Inventory Management**. Singapore: Hill Higher Edition.

- http://www.Answers.com/topic/**inventorycontroll**.

- **(Microsoft® Encarta® 2009. © 1993-2008)**

Appendices

Appendix One

Questionnaire to be filled by Staff of TSEDA Trading PLC

Dear Respondents,

The purpose of this questionnaire is to gather adequate information on inventory management Practice of TSEDA Trading PLC. The questionnaire is prepared by student of St. Mary's university college as a requirement for partial fulfillment of the Bachelor of Arts Degree in management.

The researcher would like to underline that all of your response will be used for writing a senior essay research on partial fulfillment of the Bachelor's degree in Management only. Therefore, the researcher would like to thank in advance for your cooperation and genuine responses.

Please mark (✓) on your relevant answers and justify when you need to give justification.

I. Personal Profile

1. **Sex** ☐ Male
   ☐ Female
2. Educational Level
   - ☐ Blow 10^{th} or 12^{th}
   - ☐ 10^{th} complete or 12^{th} completed
   - ☐ Vocational Diploma
   - ☐ Advance Diploma
   - ☐ Bachelor Degree
   - ☐ Masters Degree and Above
3. Please specify your position in the organization

____

4. Years of service in TSEDA Trading and other places
   - ☐ Blow 1 year
   - ☐ 1-5 years
   - ☐ 6-10 years
   - ☐ 11 years and above

II. Specific research questions

1. Which of the following inventory system is in use by TSEDA Trading PLC?

   Perpetual ☐ Periodic ☐

   If any other specify ____

   ____

2. Which type of inventory valuation method does the company employ?

   FIFO ☐ LIFO ☐ Weighted average ☐

   If any other specify ____

   ____

3 What are the sequential procedures followed by the store management to record the inventory? ____

____

____

____

____

4 What are the major products selling in your company? ____________________

____

5 Are there appropriate procedures to guarantee that items may be accessed from store only by authorized employees?

Yes ☐ No ☐

If no why? ____

____

6 Is there segregation of duties among custody of stocks and record keeping stocks?

Yes ☐ No ☐

If no why? ____

____

7 Is there adequate physical control over cut off materials until the necessary decision is made by the management?

Yes ☐ No ☐

If no why? ____

____

8 Are stocks records frequently reconciled against actual physical count?

Yes ☐ No ☐

If no why? ____

____

9 Does the physical counting activity take place by independent personnel?

Yes ☐ No ☐

If no why? ____

____

10 Are procedures for identifying and reporting slow moving, obsolete or damaged items adequate?

Yes ☐ No ☐

If no why? ____

____

11 Are differences, damages, and slow moving inventories reported to the management?

Yes ☐ No ☐

If no why? ____

____

12 Are there skilled internal supervisor and internal auditor to control the inventory?

Yes ☐ No ☐

If no why?____

____

13 Are there adequate physical safeguards to prevent theft or an authorized removal of goods from store?

Yes ☐ No ☐

If no why? ____

____

14 What inventory models the company use? More than one response is possible.

ABC ☐ Economic Order Quantity ☐

Material Requirement Plan ☐ Just In Time ☐

15 If the company uses any one of the inventory model listed above, does it always implement the model?

Yes ☐ No ☐

If no why? ____

____

16 Are stocks counting teams sufficiently familiar with the items they are counting or are they working with a superior to identify the items?

Yes ☐ No ☐

If no why? ____

____

17 Are there adequate cut off procedures in operation to ensure that there are no movements of stock while the counts are in progress and that all stock issues and receipts have been recorded?

Yes ☐ No ☐

If no why? ____

____

18 Are goods marked while they are counted, to avoid the same items not to be counted twice?

Yes ☐ No ☐

If no why? ____

____

19 Does a supervisor or internal auditor check to ensure that all items have been sold or omitted from stock?

Yes ☐ No ☐

If no why? ____

____

20 Are stocks record checked against the physical count sheets to ensure that items not omitted?

Yes ☐ No ☐

If no why? ____

____

21 Do you have procedures to adjust unbalanced inventory with respect to recorded document?

Yes ☐ No ☐

If no why? ____

____

Appendix Two

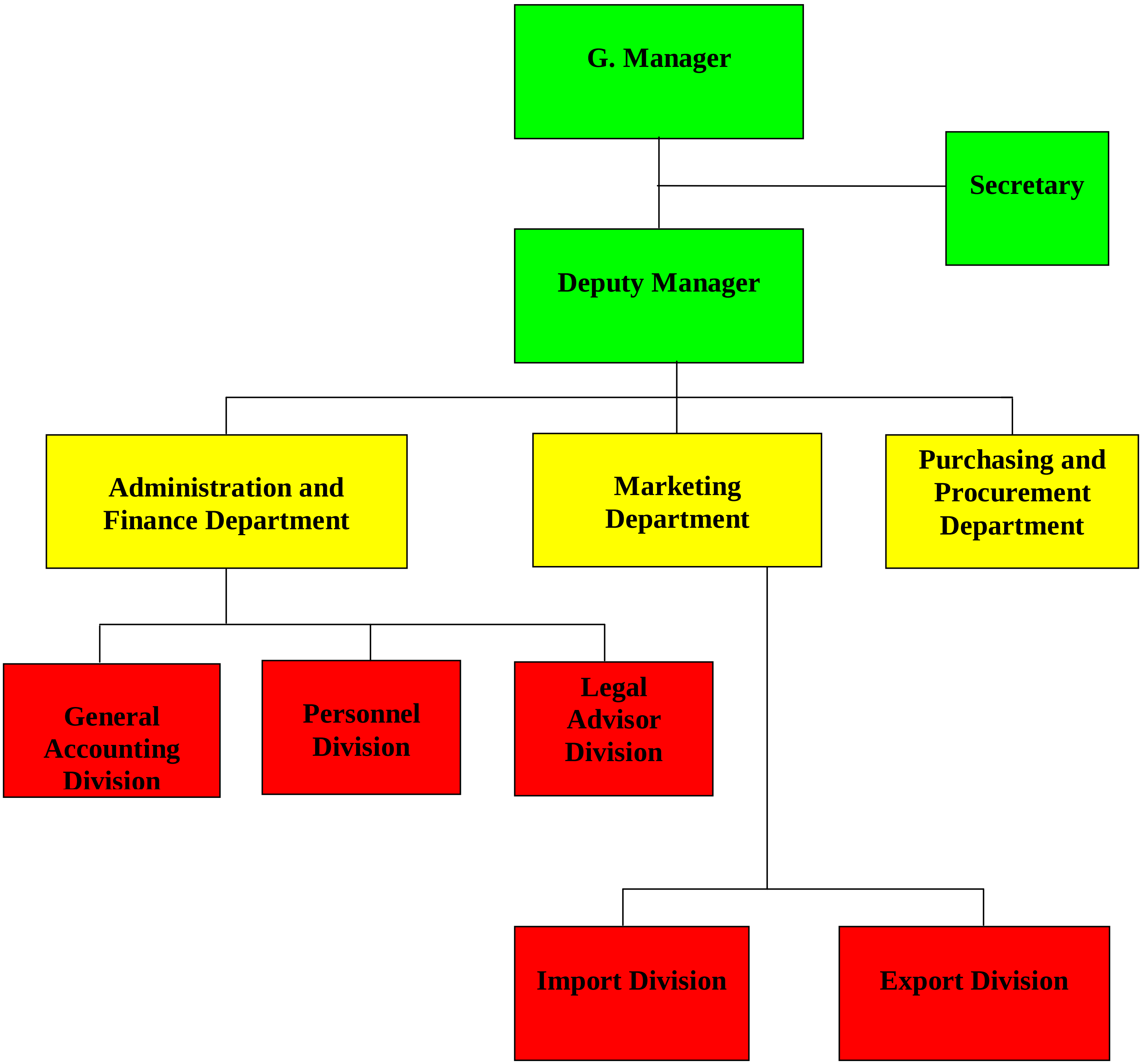
Observation Check List

a. What kinds of inventory Items the company holds?
b. What types of inventory valuation methods the company employs?
c. How does the company compute the cost of inventories?
d. How does the company store and arrange its merchandise inventories?
e. How does the company manage the issuance and acquisition of inventory?
f. What types on documents are used to manage the company's inventory?
g. What is the inventory control practice of the company as a whole?

Appendix Three

TSEDA Trading PLC

Organizational Structure



DECLARATION

I the undersigned declare that the comments given to the draft of this paper are incorporated to my satisfaction.

Name of advisor __________________________

Signature _________________________________

Date of Submission ________________________

STATEMENT OF DECLARATION

I the undersigned declare that this thesis is my work and that all sources of materials used for this paper have been duly acknowledged and this paper is prepared under the guidance of Ato Merga Mekuria.

Name ________________________

Signature ____________________

Place of Submission ___________________________

Date of Submission ____________________________

TSEDA Trading PLC

Organizational Structure