ST. MARY'S UNIVERSITY COLLEGE

BUSSINES FACULITY DEPARTMENT OF MANAGEMENT

AN ASSESMENT OF INVENTORY MANAGEMENT PRACTICE IN THE CASE OF GM MANUFACTURING COMPANY

BY
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June, 2010
SMUC
Addis Ababa

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A SENIOR ESSAY SUBMITTED TO THE DEPARTMENT OF MANAGEMENT BUSINESS FACULTY OF BUSINESS.

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BUSINESS FACULTY
DEPARTMENT OF MANAGEMENT

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Examiner	**signature**

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CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

Inventory management concept has become so much important manufacturing firms. In most manufacturing firms now a day inventory constitutes the second largest category of assets shown on the balance sheet .From the firm's invested capital around 30% is account for inventories. On the other hand numerous studied made by manufacturing firms and consults revealed that, from 20% - 40% of average inventory value is incurred by inventory carrying costs (Stanley B.Block, 1992; 192)

Generally speaking , inventories can be defined in the form of production inventories , MRO (maintenance, repair, and operating) inventories, in – processes inventories and finished goods inventories .In addition to this the researcher can determine the importance and dollar volume of each individual inventory items through analysis.

Particularly, to be effective, efficient, and competitive there must be an implementation of inventory control system directly monitors and control inventory level. And can also help to provide information about when to order and how much to order. With this regards the inventory control system can be carried out in the form of:

- Cyclical / fixed order interval system
- JIT (Just in time) approach
- MRP (material requirement planning) type system
- Order point / fixed order quantity system

Any organization can use the above inventory control system separately or by combination. It depends on the type of material / goods produced (Stanley B.Block, 1992; 192)

The inventory control system can be supported by models which depict the inventory position of maximum stock, minimum stock, reorder and lead time.

As a matter of fact in GM office furniture manufacturing PLC, the researcher is looking through basically the inventory control system in practical; and its impact on the process.

1.2 Back ground of the company

GM office furniture manufacturing company started business in 1989, with an initial capital of Birr 1500 to produce electro – ceramic ovens used for baking injera. The enterprise has only three employees when it started the business and operated for three years in the same line of production until 1991. However the owner was committed to see his enterprise's growth and invested the profit generated from three years operation in the expansion of the enterprise and changed his production line in 1992 to window frame and door production. The enterprise operated only for two years in window frame and door production in 1995 by investing in sheet metal working machines .Some independent shops began operation during this period to produce furniture parts and assembly work on contractual basis. The press shop and the upholstery shop were pioneer subcontracting units to work as business partners with GM. Eventually, the number of subcontracting shops increased as the operation of GM expanded. Owners of most subcontracting shop used to be GM's employees and acquired their skills from these skills from this company. GM was given the name "GM office furniture company" when it begins furniture production

The leap to office furniture production was gradual process. The company initially started to produce filing cabinets and book shelves. As company developed its technological capability, diversified its products to include the production of a wide range of office furniture such as tables, swivel chairs, guest chairs, computer stand, etc .Then in 1999 the company embarked on a further diversification of its product lines and started producing construction equipment and since then it is known as "GM office furniture and construction equipment manufacturing company".

The major products being products at present comprise table, swivel chairs, guest chairs filing cabinets, storage cabinets, computer stand, book shelves and open angel shelves. Recently the production of construction material such as scaffoldings and frame work has also come in to streamline with a deliberate intention of diversifying the company's products.

Since its establishment the company has also registered continuous growth both in its annual sales turnover and capital size. At present the capital of the company has reached birr 2.8 million. This growth capital size and level of operation over such a short period of time is achieve through

the concerted effort made by the promoter and his skilled employees in furniture manufacturing . Currently the company has reached agreement with selam technical and vocational college for training its technician in welding and this is believed to pay off to its future growth.

Motivated by its past achievements, the company aims at improving its performance further through expansion and / or up – gradation of its business.

1.3 Statement of the problem

Inventory control system is applied to maintain adequate level of stocks at a minimum possible cost. In case of manufacturing organization the stock out liability to supply an item from inventory could bring production process incomplete. On the other side an organization carriers excessive inventory. The added cost may represent the difference between profit and loss. (Ashenafi, 2006 P 3)

In real sense, if inventory control system has been performed properly, it would be sharpen the worker in all activities of inventory management.

When the researcher seen the actual practice of inventory control system in GM office furniture manufacturing, there are a number of problems.

The typical problem observed is lack of integration among different departments. Lack of material management knowledge related to the movement & storage of materials for instance, they carry less important items with a lesser amount. (Ashenafi, 2006 P 3)

The firm's procurement & supplies service forecasts future stock to be purchased based on previous sales data. The production technical departments needs materials purchased in large quantity, where as the finance department does not have the capacity to purchase all the required materials therefore most of the time the way they reach to an agreement & make a decision affects the inventory control system to the extent of production stoppage .Basic to a sound system of inventory control is the assembly of pertinent data on the basis of which necessary ordering point & ordering quantity can be established but this concept is not found & implemented in the organization inventory control system (Ashenafi, 2006 P 3).

There is difficulty in product line separation & it is not often advisable to pick out very similar but different products with certain accuracy & make them to assign special responsible individuals.

There is no systematic way of showing the maximum and the minimum level of inventory rather they pay attention to mass production and eager to maximize their profit without considering incremental cost result from production. Besides this the organization face finance constrains and production stoppage because of not able to maintain balance between the inventory level of raw materials and finished goods with the dynamic change of demand (Ashenafi, 2006 P 3).

1.4 Basic research questions

In line with the above stated problem, the researcher worked to answer the following basic research question

- What does the inventory control system of the company look like?
- What does the documentation practice of the company's inventory control section look like?
- What does the inventory section's relationship with other units look like?

1.5 Objectives of the study

1.5.1 General objectives

The objective of this study is to assess GM office furniture manufacturing plc's inventory management practice, attitude of management and employees' toward inventory control system so as address the impacts of poor inventory system and to suggest the scientific approaches in categorizing and handling the inventory management practice of the company in most efficient and effective way.

1.5.2 Specific objectives

In line with the several objectives the following specific objectives this research paper concentrates on the following key points:

1. To assess the degree of integration among different departments concerned with inventory management

2. To assess the effort towards documentation in the inventory control section

3. To assess the status of inventory management system.

4. To asses the distribution coverage of the company?

1.6 Scope of the study

The scope of the study is highly concerned with the overall concepts and situation of inventory control system between the very general theories to the specific issued and the real practices of GM office furniture manufacturing.

Based on these two extremes the researchers gather information from different sources regarding to the subject matter to the extent of understanding the whole scenario and to be given possible alternative solution or improvement.

Therefore the scope of the study goes to keeping the inventory control system in the organization to maintain the best quality level with compromising reasonable cost for the expected duration.

1.7 Limitations of the study

Even if an area of this study will be more fruitful if it were conducted widely by including big sample size of GM employees by taking in to consideration the time and budget constraint, the coverage of this research would be on judgmentally selected employees from management group and subordinates of the company.

In This study the researcher did not go detailed technical and complicated mathematical formulation because there is no revised and prepare detailed and independent material activity manuals. In addition, time and budget constraint and the refuse of some of the management group and employees to give their responses are other major limitation of this study.

1.8 Significance of the study

The study contributes a lot for GM as a starting point if the company needs to study its internal problems, the causes which create problems in inventory control system and to inform the best mechanism to eliminate the problem.

The most important benefit of this study is to enable interested members of GM to have ways of managing an inventory to optimum point and gives direction in solving problems caused by poor inventory control system before it becomes a major obstacle to their work and indicates how to prepare for changes.

In respect to me, it is the time to get an opportunity of experience. It also serves as the sample purpose for those individuals who would like to undertake broader research on the topic.

1.9 Definition of terms

Inventory: it is a list of finished goods, raw materials, or those goods and materials themselves held available in stock by a business. Inventory are held in order to manage and hide from the customer the fact that manufacturing delay is longer than delivery delay and also to ease the effect of imperfections in the manufacturing process that lower production efficiencies if production capacity stands idle for lack of material.

1.10. Research design and methodology

1.10.1 Population and sampling technique

The population of the study is the owners, management staffs and non-managerial employees of GM furniture manufacturing company. There are 200 permanent employees out of these total population 15 employees were selected as a sample elements.

The sampling technique is employed for this study was judgmental sampling. The sampling units of the study are 15 employees out of 200 employees of the company which are relevant to the study. Moreover, the selected sampling method was easy and inexpensive for implementation.

1.10. 2 Methods of data analysis

In terms of analysis, collected primary and secondary data analyzed by using a descriptive analysis method, and presenting through table. Data collected from respondents of interviews are carefully analyzed in such a way that useful conclusion can be cultivated. In light of these data is organized through editing, classifying, tabulating and summarizing.

1.10.3 Data collection method

The methods of collecting data employed were observations and semi structured interview.

1.10.4 Types of data collected

The types of data collected include both primary and secondary data. The primary data are those obtained through observation and interview. The secondary data collected for the purpose include those secured using inspection of manuals and documents of the case organization.

1.11 Organization of the study

The study consists of four chapters; the first chapter deals with introduction, the company's back ground, review of related literature were discussed in chapter two. Chapter three was discussed overview of the analysis. In the last chapter; chapter four, conclusion and recommendation of the research were presented.

CHAPTER TWO

2. Review of Related Literature

2.1 Overview of inventory

Inventory is essential in an organization for production activities, maintenance of plan and machinery and for other operational requirements. The normal tendency is to have more inventories, so that most of the items are available when needed. This result in blocking of money, which otherwise could have been used more productively. The management becomes very concerned if the inventory stocks are high inventory is a part of the assets in company's balance sheet and therefore in under close management security. The management is very critical about any shortage of items requited for production. Any increase in the down time of the machine due to shortage of material leads loose. These two aspects call for continuous inventory material but also look in to aspects of minimizing the inventory cost (Dobler, 1998:P166).

Based on the above explanation, I thought that inventory management is very critical for profitability of any business firm especially for those engaged in merchandising and manufacturing businesses. As inventory is the major current asset which is always ready to be converted to revenue, firms should have to give especial consideration for the effective way of managing it in order to facilitate smooth business transaction.

2.1.1 The function of inventory

The functions of inventory management are:

A) To make material available in order to meet production.
B) To minimize investment in inventory, storage costs, and losses from damage, wastage and deterioration.
C) To avoid interruption of production or service by maintaining sufficient stock items
D) Classification of inventory

2.1.2 Classification of inventory

Inventory may be classified as:

A) Raw material inventory

These are material which are used and consumed in making the finished product the sellers' finished products may be the raw materials of the purchaser. In this class we may include the purchased parts and components awaiting further processing or assembly. All these material, parts and components may enter in the manufacturing process. These also may be further subdivided as.

B) Special items manufactured to the organization's specification or requirements,

1. Standard industrial items purchased "off the – shelf" , and
2. Commodities

C) in process inventories WIP or "Work in process " are those items found at various stages in the production process> they include semi- finished parts in progressive stages of completion, such as raw material in various stages of processing or assembly awaiting final assembly awaiting final acceptance as finished stock.

D) Finished stock or finished goods inventories

E) These are completed products ready for shipment or awaiting sale or consignment. (Ashenafi, 2006:P 40)

Based on the classification of inventory, segregation and maintaining different kinds of inventories separately can minimizes the cost inventory management, storage costs, and losses from damage, wastage and deterioration. As the space requirement, store layout, time of handling and other factors of managing each type of inventory is different, classifying inventory can make the inventory control system more easy and simple.(personal view)

2.1.3 Objective of inventory control

The objectives of inventory control are:

- Assurance of having the items needed:

Assurance of having the needed items is not limited to projected requirements only, but also looks in to the requirement only, but also looks in to the requirements that may arise from time to time. These requirements may be result of the delays in delivery, or items received but rejected on inspection (Ashenafi, 2006 P 36).

- Economic buying

Economic buying in addition to the economic order quantity, considers various other factors, which influence the overall cost. Economic buying not only determines the quantity to procure but also considers the price fluctuation trend, quantity discounts, and other external factors having an impact on the price. Once of important objectives of the economic buying is to reduce the procurement cost to the minimum (Ashenafi, 2006p36).

- Avoiding any likely shortage of material.
- Avoiding overstocking of material
- Reducing inventory carrying cost
- Providing flexibility to the purchase department to apply appropriate purchase policies such as:

2.1.4 Responsibility for inventory control

The basic responsibility for inventory control lies with the top management who should lay down the stock holding policy, and the methods and procedures of stock control. Top management should formulate and review the basic policies, plans forecasting methods within which the daily operation of inventory controls handled (Dobler, 1998:P 150).

The day- to – day activity of inventory control should be largely a clerical or computerized defined and controlled frame work. Nevertheless, this reutilization of daily operation common flags the important of these activities. For this resonance clerical personnel fined themselves making important decisions which should require the decision of managers in a position to comprehend the total operation cost picture and the consequences (Dobler, 1998P 150).

2.1.5 Dependent and independent demand

The inventory controller should know whether the item in the inventory is dependent or independent. It is said dependent when its use is directly dependent on the production schedule being a part of the product, e.g. part of an engine are requited for the engine.

It will be independent of the items are used independently of others these items are those known as MRS (maintenance, repair and operation items) (Dobler, 1998:P150).

2.2 Inventory Control system

Inventory control is a method by which materials of the right quantity is made available as and when required with regard to economy in storage and procurement cost.

Replenish the store house to keep the level of the store house is a vital element in the management of materials.

Inventory requires high investment commitments. It is in fact a necessary evil as far as costs are concerned. On the other hand they make operation efficient and effective. Well planned and well planned and effectively controlled inventories or stocks contribute greatly to the organization' profit and satisfaction of customers, users of consumers (Chary, 2003: P 153

2.2.1 Types of inventory control system

There are a number of systems of inventory control. They may be known as cyclical ordering system, Flow control system, the fixed order quantity system, just in time (JIT),
The material requirements planning system (MRP) two bin system or visual stock control.

I. This is also called by certain authorities as constant cycle replenishment system. In this system orders are placed at constant intervals of time. This involves examining the stock records of one month, three months, one year or whatever other interval is found satisfactory in practice (Datta, 2004:P 195).

There is no fixed re-order quantity. The amount to be ordered is computed by subtracting from a fixed replenishment level the stock in and any quantities coming forward (dues in) on previous orders (Datta, 2004: P 195).

Cyclical order system is a time based system involving scheduled period to review of the stock level of all stock items. When the stock-level of a given item is not sufficient to sustain the production or operation until the next scheduled review, an order is placed replenishing the supply (Datta, 2004 P 195).

The consumption rate or usage for the required period may be based on average historical consumption rate or usage data in a stable demand situation, or on calculation or requirements from known production schedule (Datta, 2004 P 195).
The frequency of review may vary depending on the requirement of the organization and other factors.

II. Flow control system

The “flow control” method of managing inventories is a special variation of the cyclical system. This special method is applicable in continuous manufacturing operation that produces the same basic product in large quantities day after day. Most material used in such and operation are purchased on term contracts and scheduled for daily or weekly delivery throughout the term contracts and scheduled for daily or weekly delivery throughout the term. The production cycle is often a day or less in duration, and in effect, material flows through the plant in continuous streams. Inventory floats consequently can be kept quite low, thus requiring a minimum investment in production inventory (Datta, 2004: P 195).

In such and operation, an open stores system is used for most production materials, and the individual item stored on the line neat the point of use. Stores personnel visually review the level of all material stocks daily and report any imbalances to the purchasing or production control department. Changes in production schedules must be relayed immediately to buyers so that delivery schedules can be revised accordingly (Datta, 2004: P 195).

III. Fixed order Replenishment system

This system is based on the order quantity factor rather than on the time factor. The replenishment takes place when the stock level reaches the order point. The design of the system recognizes that each item possessed its own unique optimum order quantity. In this it is required t predetermine, for each time, (Chary 2003: PP 202-203).

1. A fixed quantity to be ordered for replenishing based on price, consumption rate and other factors.
2. An order to be placed automatically when the stock- level drops the order pointing.

The order point is calculated so that the estimate usage of the item during the order lead time will cause the actual stock level to fall to a planned minimum stock-level by the time the new order arrive. Then the stock level researches the maximum level (chary 2003: P 202-203).

The inventory clerk or the computer posts all the materials received and issued until the balance falls to the order point. At this point purchase request is sent to the purchaser who buys the

items and then the inventory level automatically remains between the planned minimum maximum levels, (Chary 2003: P 202-203).

The advantages of the fixed order replenishment system are:

1. Each item is procured in the most economical quantity.
2. Replenishing is made only when required and needs arise only at this time.
3. Positive control can easily be exerted to maintain total investment at a desired level.

This system has a limitation of its own. It is applied correctly only for its items which have stable usage and lead time. Any error in posting may create disturbance of the lead time stock levels causing shortage of materials (Charky 2003: P 202-203).
In the fixed or replenishment system we order a quantity equal to economic order quantity (EOQ)

In this system the replenishment takes place, when the stock level reaches the order point.
The order point is determined from the following formula.

OP=SS + forecast (LT + RT)
OP=Order point
SS=safety stock (for the next physical period)
Forecast + forecast monthly average consumption (usage)
LT=Lead time
RT=review time in months. (Chary 2003: P 202-203)

IV. Just – in – time (JIT) Approach

JIT is an operating management philosophy. Based on that philosophy, a number of specific operating technique have been developed- techniques for manufacturing operations, for production, planning and for inventory management. Those dealing with inventory management are the products of the JIT decisions made in the manufacturing and the planning areas (Datta, 2004: P 230-231).

The operating the operating concept of the system is to gear factory output tightly to distribution demand for finished goods, to gear individuals feeder production inventories tightly to it should be emphasized at the outset, however, that as a practical matter most firms utilizing the JIT

concept do so far more than 5 to 10 percent of the materials handled by the purchasing and supply activity, regardless of the extent of the commitment in the manufacturing operation. The means that the production inventory items handled in the JIT inventory system are primary high – value A items are purchased on along – term contractual basis, with small – volume deliveries scheduled as frequently as once or twice a day up to once or twice a week., (Datta,2004:PP230-231).

If one were to observe a JIT operation strictly from an inventory point of view, it would look very much like a flow control operation, with material flowing in to and through the plat operation in continuous streams .In fact, it functions much like a flow control operation, only more tightly and more stringently controlled .From strictly and inventory point of view, the system have almost identical objectives. Many JIT materials are delivered directly to the production operation and are stored close to the point of use; others are handled in a conventional closed stores operation (Datta, 2004:PP230-231).

From a practical point of view, a JIT inventory system in its purest sees is workable only in continuous manufacturing processing operations or in intermittent operations that produce a small number of standard products and because of this fact, are similar to continuous operations. Most, if not all, of the materials handled are dependent demand items. (Datta, 2004: PP230-231)

How are the when and how much questions answered? The buyer and the supplier work together closely on the matters of delivery volumes and scheduling .The buying firm's production schedule drives the entire process. The detailed production scheduled typically is firmed up for one or two weeks at a time, and in more general terms for a month or so ahead .A specific daily requirement for JIT materials can be determined from this schedule and are relayed directly is worked out jointly in an attempt to minimize the buyer's incremental inventory – related cost and, at the same time, to maintain an efficient and practical operation for the supplier. As A general rule, the buyer does not identify a specific safety stock component in the firm's inventory of figure. Depending on the material, the buying firm typically works on an inventory of several days, to a week's supply .As is the case in flow control system, stores personnel on the shop floor visually monitor stock levels at least daily and communicate potential overage or shortage problems to the appropriated buyer (Datta, 2004: PP 230-231).

V. Material requirements planning (MRP) system

Widespread use of computer – based planning and a control system has greatly increased managements ability to analyzed and accurate information for decision – making purpose. In certain types of manufacturing firms, this data handling revolution has spawned the development of a third of production inventory planning system. It is currently known as material requirements planning or MRP (Datta, 2004: P 241-42).

The MRP concept provides very basic and different way of looking at the management of production inventories in an intermittent manufacturing operation. Fundamentally MRP challenges the traditional concept that any significant need be carried prior to the time materials are actually required by the production operation .once the firm's master production schedule has been established , and product bills of material have been finalized, it is possible to calculate precisely these productions material needs for a given finished products can be exploded and extended for the number of units to be produced to obtain the products exact requirements for each component material or part. Since a given part typically is used in more than one finished products requirements for the part during the operating period in question .Without a computer, this explosion and aggregation process is virtually impossible to do quickly and accurately in a firm producing many different products. With a properly programmed computer to process the huge volume of data, however, the task can be accomplished with relative ease (Datta, 2004: P 241-42).

In practice, the MRP approach calculates production material requirements weekly (based on production schedules that are updated weekly) several operating periods in advance of the actual need. It then generated requisition for each material to be delivered in the required quantity several days prior to the starry of the manufacturing operation , in essence, the pure MRP approach attempts to eliminate (minimize) most inventory requirements and gear purchasing and production activates to the timing and quantity usage demands of the final product assembly schedule (Datta , 2004: P 214-42).

The cyclical system calls or order delivery before the material is actually needs and maintains an inventory safety stock .Ideally, an MRP system time's material delivery to concede with production requirements and maintains no safety stock (Datta, 2004: P 241-42).

Clearly, this major element in the MRP concept had involved from experience with the cyclical ordering system. And , more refined use of the computer has produced accurate and timely data that permit MRP to eliminate, or minimize the need for safety stock inventory .A cardinal difference between the two systems , however, is the driving force which actuates the material acquisition cycle .In the case of the cyclical ordering system , it is the inventory control itself that is designed to initiate the request of material .In MRP operation , the master production schedule (as updated each week) is the force that directly initiates and drives Subsequent activities of the purchasing and manufacturing function .It is this fundamental difference which sets the MRP system apart from all other inventory control system (Datta, 2004:P 241-42).

VI. Two-bin system or visual stock control

Tow – Bin system is a variation of the fixed order replenishment system. The difference is the absence of perpetual inventory record for the two – bin system .The stock is physically separated in two – bins or containers or by taking half of the quantity by a string or placing in a separate bag according to the nature of the item .one bin or the other container or bag contains a quantity of stock equal to the order point quantity .this is just enough stock to last from the date a new order is placed until it is received in stock. the other bin or container contains a quantity of stock equal to the difference between the maximum and the order point figures .at the ouster, the material of one; bin or bag is used until it is depleted .when it is used up or finished the storekeeper or the clerk responsible for replenishing gers signal .then he initiates order and the material from the other bag or container is used until the new stock arrives (Dbler, 1998: p163).

The two –bin system is widely used or stationery and form items and for hardware supplies. The advantage of this system is the reduction of clerical work. This system is a simple practiced associated with a control of stock by quantity. It is operated in the warehouse itself by means of segregation by marking or typing up with tape. It is a method which underlies the basic fixed order quantity system (Dobler, 1998: p 163).

CHAPTER THREE

3. Data presentation, analysis and interpretation

3.1. Overview of the chapter

In Gm manufacturing company there are 200 permanent employees out of this total population 15 employees were selected for unstructured interview and the interview was held with them. In this chapter the data collection through interview are analyzed and integrated as follows

Table 1 – General Characteristics of respondents

Item	Resource	Frequency	percentage
sex	Male	6	40%
	Female	9	60%
	Total	15	100%
Education level	Less than Diploma	0	0
	Diploma	12	80%
	Degree	3	20%
	Above degree	0	0
	Total	15	100%
Service year	Up to 6 years	9	60%
	7-12 years	6	40%
	Above 12 years	0	0
	Total	15	100%

Regarding the demographic distribution and analysis of the respondents, as we can see from table-1 out of 15 respondents, 6(40%) of them are males while the rest 9(60%) of them are females.

In terms of qualification, about 12 (80%) of the respondents are Diploma holders, about 3 (20%) of them are Degree holders and there are no less than Diploma. This entails that the degree of misunderstanding the concept of the interview is too minimal and also conforms that the information suggested by respondents could be more professional and reasonable.

As shown on the table, about 9(60%) of the respondents have worked in the company for less than 6 years, about 6(40%) of them have experience ranging between 7 to 12 years. From this distribution it is highly likely that they have enough knowledge about the subject matter.

3.2 The main products that the company produces

The information gets from the marketing department one of the company's products is furniture. Furniture is generally classified under three categories;

1. Household furniture
   - Living room furniture
   - Bed room furniture
   - Dining room furniture and
   - Kitchen furniture
2. Office furniture
   - Office desks
   - Swivel chairs
   - Conference table and chairs
   - Shelves and
   - Filling cabinets
3. Institutional furniture
   - School furniture
   - Hospital furniture
   - Hotel furniture and others

Because of the liberalization of the economic policy, the numbers of furniture manufacturer are increased in an increasing rate .These manufacturers are categorized as traditional and modern line establishments. The traditional establishments are small producers, which depends on manual work using hand tools and has not more than 10 workers .They produce limited rang of products in small scale and the quality of products are also poor. The reasons for the poor in quality of the products according to the respondents are poor qualities assurance and careless material handling system.

On the other hand, as GM Furniture, those who have large lot of land, factory, sophisticated machines and highly skilled man power are considered as modern furniture manufacturers. Nevertheless the factory doest have the necessary inventory control set up.

3.3 The relationship between inventory management with factory and sales

According to the response given by the managers of production and procurement departments GM office furniture manufacturing main factory is located in alemgena – sebeta that covered an area of 18 thousands meter square. The factory organized under six major categories.

1. **Wood work processing**
2. **Metal work processing**
3. **Upholstery workshop**
4. **Chair and household furniture**
5. **Painting**
6. **Sub contractors workshop**

There is also another workshop in additional to main factory. These workshops are managed and ordered by factory manager in centralized way .They are far from main factory.

1. Zenebework workshop
2. UNI work shop
3. New workshop around alemgena woreda for future expansion

Concerning the factory locations and sales, it is possible to say that GM furniture manufacturing company has an appropriate factory location and the sales out late of company are quite enough to reach those customers who are willing and able to use there products.

The set up of sub contractors in and around the factory are as follows

Based on the reply of concerned personnel, the company uses sub-contracting as one alternative to handle production and inventory level when the demand for that specific item is over the production capacity of the company and when demand reaches it pick level.

As the interview made with the production manager, the company by itself arranges all requirement of production facilities to sub-contractors. These facilities include providing raw materials, machineries, working space, tools and the like. Finally when the sub-contractors finishes the product, they deliver the end item to company's store keeper and receive their payment in a piece rate method.

The company classifies its sub-contractors based on product type like metal products, chair products and wooden products. The list of sub-contractors, the products which are sub-contracted, processing and work location of each product line are summarized in the following tables (table-2, table -3, table-4)

Table-2 Company sub-contractors for metal products

No	Sub-contractors	Product type	Work processing	Work place
01	Sub-contractor -1	Dixon shelves Supermarket shelf Open angel shelf	▪ Cutting ▪ Bending ▪ Painting ▪ Punching ▪ Packing ▪ Assembling	Zenebework workshop
02	Sub-contractor -2	Storage Cabinet Filling cabinet Sliding Cabinet Lockers	▪ Painting ▪ Packing ▪ Assembling	Factory
03	Sub-contractor -3	Fitting for Tables	According to specification given painting	Factory
04	Sub-contractor -4	L-Shape table Single table Double table Conference table Coffee table Computer stand	▪ Cutting ▪ Bending ▪ Painting ▪ Punching ▪ Packing	Zenebework workshop

(Source: document of the company)

In the above table lists of other organization, with whom the company workers are given. Through delegation of some inventory management duties the organization could be verified of the disadvantages that might result otherwise

Table-3 Company sub-contractors for chair products

No	Sub Contractors	Product Type	Work Processing	Work place
1	Sub-contractor -1	Printer stand Bar table Coat Hunger Guest Chairs Conference table Reception Guest chair Three seater Double Seater	Cutting Bending Punchiest Packing Assembling	UNI work shop
2	Sub-contractor -2	Guest chair Double seater Conference chair	Cutting welding	UNI work shop
3	Sub-contractor -3	Managerial chair secretarial chairs		UNI work shop
4	Sub-contractor -4	Safe boxes	Cutting Welding	Zenebework workshop

(Source; Document of company)

As for metal products, the company also have partners with whom it does its manufacturing activities. From the relationship that exists between the company and its sub-contractors, they should create and maintain good relationship in for coming future, so that either shortage or coverage of inventory will not take place.

Table – 4 Company sub-contractors for wooden products

No	Sub contractors	Product type	Work processing	Work place
1	Sub-contractor -1	L-Shape table Double pedestal	Assembling Fitting Packing	Factory
2	Sub-contractor -2	Managerial Secretarial conference under table		Factory
		Book shelf (M1 ,M2, M3 , M4) Computer stand (M4 , M6 ,M7) Photo copier stand TV stand	Assembling and fitting packing Assembling (in customer office)	Factory

(Source; Document of company)

Regarding the sales outlets, the marketing manager explains that the company has seven outlets all over the country, which four of them are located in Addis different sub-cities and the remaining three are found in the capital cities of three different regions. The list of all showrooms are:

1. Olompia area (show room)
2. Olompia area(show room)
3. Alemgena area (show room)
4. Gotera area (show room)
5. Adama Branch (show room)
6. Bahirdar Branch (show room)
7. Awassa Branch (show room)

3.4 The inventory management practice of the company (GM PLC)

Based on the response generated from the interview made with procurement department manager and the representative of inventory controllers, the idea of inventory control is developed in the

company since Aug /2006. Before Aug/06 the company maintain all material activity with limited manpower, store space, handling materials and with out computerized system.

As a manufacturing company , it is not given special attention in controlling inventories .All the activities related to material was done in trial and error .Actually it is to difficult to manage materials with out any special system .The company lack this special controlling system for those past 9 years.

In real sense the company has good will in producing and selling quality furniture for those past years .Just like many manufacturing companies in Ethiopia, GM plc also have lack of knowledge related to materials activities, (purchasing, stores, inventory, transpiration/ traffic).

Even if it has good will in outsiders , stock out of critical martial happens for those production years .This result in downtime of machines, unnecessary labor hour ,(cost) and other overhead cost .On the other hand not delivering on time leads to dissatisfaction of customers.

For the emphasis on inventory control the researcher clearly put the classification of inventory and material group handled in each classification here under

3.5 Classification and codification of inventories in GM plc and their implication on the inventory management practice

3.5.1 Classification practice

GM plc classifies its inventories under three main categories. As the researcher get detail explanation from purchase and supplies Head, the following classifications exist in the company.
And the following tables i.e. table 5, table 6, table 7 shows that the classification, type and location of inventory in the company.

Table – 5 Raw materials inventory

Stores	Type	Location	Remark
Store 1	Upholstery Materials store	Factor	
Store 2	Raw material and furniture parts store	Factory	
Store 3	Accessories and supplies store	Factory	

(Source; document of company)

As it can be seen in the above table on its three stores the company holds several kinds of raw materials. How ever as the purchasing and supplies Head responds that the company has not yet established a systematized control of inventory in a sense that there is no application of any of the modern inventory management techniques such as EOQ, ABC and MRP in an adequate manner.

Table – 6 finished goods

Stores	Type	Location	Remark
Store 1	Chair and other related products store	Factory	
Store 2	Tables and other furniture	Factory	
Store 3	Table and other furniture	Zenebework workshop	

In addition to the raw materials inventory the organization also have finished goods inventories for meeting unexpected demand from customers.

Table –7 semi finished goods

Stores	Type	Location	Remark
Store 1	All semi-finished parts store	Factory	

(Sours; Document of company)

The company's practice of keeping semi finished goods as it does with the raw materials and finished goods enables to keep operation smooth.

As the information gets from the division head the following lists are the material which include in the inventory (stocks) in the company.

- ❖ Inventory (Stock) in upholstery Materials store

1. Foam sheets
2. Fabric
3. Imitation leather
4. pure leather
5. plastic Boarders
6. Mastish
7. Packing plastic
8. Packing cartoon (corrugated box)9.Thread
9. Nylon Rope
10. Other upholstery materials

- ❖ Inventory (stock) in raw materials and furniture parts store

1. Sheet metals
2. Square pipes
3. Rectangular pipes
4. Circle pipes
5. Flat Irons
6. Round Irons
7. Angle Irons
8. Tub- profiles
9. Laminated Boards

10. MDF Boards
11. Chip woods
12. Timbers
13. Vinners
14. plywood
15. Haney combs
16. Touchwoods
17. Furniture Parts

Arm rest seat supports Caster wheel

- gas lift
- Dust cover
- Wooden seat and back
- Plastic edge cover
- PVC edge cover
- Other furniture parts

The list of the above materials would enable some one to understand how complex inventory management could be in the company under consideration .Nevertheless the company doesn't seem that it is exercising the said to appropriate system of inventory management.

- ❖ Inventory (stock) in accessories and supplies store

1. Accessories and other fittings

- Keys
- Handles
- Paints
- Rubber cups
- Bolt and nuts

Screws (metal and wooden screw) ~ Hinges

Iron Nails

- Rollers
- Glasses (Normal ,Tinted ,Frosted) ~ Drill Bits
- Wooden and Metal Sand papers
- Cutters and Bladders
- Fittings (Fisher, stopper, wirecup…..) ~ others

2. Supplies

- Uniforms
- Stationers
- Printings
- Cleaning Materials
- Medical Supplies
- Electric Materials
- Water Supplies
- Building Materials
- Vehicles Spare
- Machine Spare
- Tools
- Oil and Lubricants
- Other Supplies

3. Fixed assets (Capital Equipment)

❖ Inventory (Stock) in chair store (Finished goods)

1. Secretary swivel chair
2. Draftsman swivel chair
3. Managerial swivel chair
4. Conference chair
5. Cushioned chair
6. Guest chair
7. Sofa Guest chair
8. Other non – standard chairs (cinema, Cafeteria, Institutional, and schools…..)

❖ Inventory (stock) in chair store (Finished goods)

1. Secretary swivel chair
2. Draftsman swivel chair
3. Managerial swivel chair
4. Conference chair
5. Cushioned chair
6. Guest chair
7. Sofa Guest chair
8. Other non standard chairs (Cinema, Cafeteria, Institutional, and schools…….)

❖ Inventory (Stock) in tables and other furniture store

1. Coffee table
2. Computer Stands
3. Printer, TV, Side tables
4. Secretary tables
5. Conference tables
6. L-shape table Arc connection
7. Managerial table
8. Book shelves (Wooden and Metal)
9. Storage Cabinets
10. Filling cabinets
11. Steel Cabinets
12. Dixon Shelves
13. Open Angle shelves
14. Lockers
15. under table Drawers
16. Safe Boxes
17. Supper Market Shelves
18. Coat Hungers
19. Other non – standard products (for institution, schools, Hospitals……..)

The above list is the major line items available in the company under these line items there are many items available based on their shape size color type. From the lists so far made it is possible to deduce that there exists a need to maintain a modern system of inventory management in an effort to avoid all of the poor inventory management.

3.5.2 Codification practice

Proper classification and codification of store based on standard nomenclature are essential prerequisites for smooth operation of stores. The method of classification should correspond to those used for the purpose of inventory control, although actual arrangement of the stocks need

not follow this method, which will largely up on the nature of the item its accessibility and frequency of issue.

In the researcher's observation the company use this system for raw materials other supplies and fixed asses they use number codification system and for semi finished and finished goods they use numeric system. Their system is based on the length size shape color type, purpose model etc of the materials products.

3.6 Inventory control system and technique in the company

According to the procurement and supplies management head department replies the company has no clear and specific inventory control system. The section is not well organized. It is on the way of identifying the appropriate control system.

Actually the increasing rate of production and sales forces, the material section in different control system. Even if these systems are some how in uses, It is not clearly stated which control system is appropriate for which type of inventory available in the company.

As the information gets from the division head, just for simplicity they use:-

1. They use cyclical ordering system for all stationery, printing, uniform, cleaning and medical supplies. The issuance of these supplies for users once a month based on their predetermined consumption. And the replenishment for these supplies is in fixed time inertial of once in four months.
2. They use Two- Bin system for fitting like screw, bolt and nut, iron nails, wooden dowels, glue, paints. These materials are appropriate for this controlling system. They are purchased in boxes, case, barrels… and also the nature of the store as the researcher observed is continence.
3. The company also uses material requirement plane (MRP) system .Those systems are handled by manual (with out computerized system). As the division head information, at the beginning of the fiscal year when the company prepare a master budget, they use these controlling technique. The section gets detail sales and production plane for all products from sales and production department respectively. The Division then by analysis the inventory on hand at that time and with the help of detail Bill of material only. The reason for this is , as Division Head explanation, it is difficult to mange all raw material and

accessories (fittings) manually. After preparing this MRP for these critical raw materials, for purchasing and handing purpose, they classified this master material requirement in quarterly base. We observed the monthly break down of production schedule of the company. This break down is just based on sales forces (plan and capacity of machines and manpower of the factory. Even if it is essential for inventory section in applying this controlling system, the manual handling system is a big problem (obstacle) for prepare MRP.

Once the section prepare annual material requirements and get monthly breakdown of production schedule, as Division Head information , they use additional control system together with MRP (Fixed order Replenishment, Flow Control) based on material type there is also use Best Order Quantity (BOQ) EOQ controlling technique just for few and major raw materials.

As the researcher observed the under mentioned basic documents are available and managed in material section as an input for inventory control section.

In addition to this the division head says that they have a well organized documentation mechanisms the following table shows that how the documents are implemented.

Table – 8 Documentation practice with regard to inventory control.

No	Document	Purpose
1	Material Receiving Memo	To receive purchased goods
2	Store Issue Voucher	For issuing good to job order (Manufacturing section) and other operational actives
3	Store Return Note	Use when the issued goods returned to the store for different reasons
4	Semi finished Goods Receiving Note	Used by Factory store section to receive semi processed parts from the factory
5	Semi finished goods issue Note	For issuing semi process parts for finishing purpose
6	Finished goods receiving Note	To receive finished products from the factory (Sub contractors)
7	Delivery Noted	To deliver finished goods to customers by referring sales order
8	Stock Transfer In and Out Boucher	For transfer of goods different stores b/n sales branch

(Source; Document of company)

The above table 8 shows that the company inventory control section has different documentation mechanisms with specification purpose .This would enable the company to have a necessary measure taken to make the proper functioning of the inventory system true.

3.7 Relation of inventory section with other units

A well organized inventory control section is a back bone for manufacturing firm. In GM PLC this section is facilitating the purchase and store activities since Oct/006.As the Head of the department give the information , this section support not only material activity but also production, sales and finance dep't in any essential information and smooth supply of material. But the relation is not enough as a manufacturing firm. The researcher observes that there is a big problem of integration among working units that result form:-

- Fastest increasing of sales
- Expansion of new workshops
- Production capacity of existing plant
- Financial constraint (unbalance of production need and money available)
- Luck of basic knowledge related to material supply activity (In management area)
- The unbalance of number of worker in inventory control section and task preformed.(i.e. only one personal works as inventory control at this time)
- Reliable (accurate) information is not provided by inventory by inventory control section due to luck of special computerized control program.(i.e. the section use Peachtree accounting program for its inventory activity)
- Repeatedly unperformed production schedule and material need exist the company
- The distance of sales out let contribute poor relation
- As a big and manufacturing firm problem of working facility (Trucks for delivery, automated machines also contribute for poor relation,

All the above main problem is disrupt the smooth relation of units with supply section (inventory)

3.8 Valuation inventory items

Based on the responds of company's finance manager, materials are purchased in different price by comparing the price. (I.e. the ultimate value for the product). After material are purchased and received by store section, they can be delivered to internal manufacturing used and consultation or to customer. During this trend the issue/ delivery cost of martial products could be:-

1. At the actual price purchase price
2. At market price

In GM private Lt. Co. the valuation cost of issue is depends on the consideration of the martial for the company. This means for raw material issuance the company use valuation of cost at actual price/ purchase price .For finished products ,item issuance cost is at market price i.e. products are issued to customer and for profit.

With regard to the company seems to be using an appropriate inventory valuation method .However the company has not so far applied the common methods of inventory valuation such as – FIFO

- LIFO
- Weighted average

CHAPTER FOUR

4. SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter deals with the summary of major findings, the conclusions driven from these findings and the recommendations forwarded by the student researcher based on the findings and the conclusions made.

4.1 SUMMARY OF FINDINGS

In the course of the study the researcher has came across the following facts about the inventory management practice of GM manufacturing company

- The general background of the respondents is such that majority are female, (80%) with greater proportion of them diploma holders, having up to 6 years of service.

- The company has a variety of products classification to raw material, semi finished and finished goods inventories well classified and codified for better inventory control.

- The company has six retail outlets in Beklobet, olompia, alemgena, gotera area, Adama branch Bahirdar branch. This could reach its customers easily.

- With regard to documentation the company has all the necessary documents with specific purpose.

4.2 CONCLUSIONS

From the major finding presentation above the following conclusions were drawn

- The demographic analysis shows that out of 15 respondents, 6(40%) of them are males while the rest 9(60%) of them are females, about 12 (80%) of the respondents are Diploma holders, about 3 (20%) of them are Degree holders and there are no less than Diploma and also about 9(60%) of the respondents have worked in the company for less than 6 years, about 6(40%) of them have experience ranging between 7 to 12 years.
- The company produces and distributes a variety of furniture products. GM furniture is a famous brand in the market and one of the leading companies in local products. Its major furniture products are household, office and Institutional furniture.

- The factory's operation process is organized under six major categories such as Wood work processing, Metal work processing, Upholstery workshop, Chair and household furniture, Painting and Sub contractors' workshop. In addition, the company uses sub-contracting as one alternative to handle production and inventory level when the demand for that specific item is over the production capacity of the company and when demand reaches it pick level.
- In GM office furniture manufacturing company the idea of the system is there but it is applied in un adequate manner .The classification of stores and inventories are incorrigible .The lay out of the store and codification system for all inventory are applicable .Except inventory control section for all other material activities are organized in qualified personnel
- The product distribution coverage is enough to reach its customers easily. The company have seven outlets from these seven outlets four outlets are located in Addis Ababa and the rest outlets are Adama branch, Awassa branch and Bahirdar branch.
- The documentation practice of the company's inventory control system is different documentation mechanisms and it uses for specific purpose. This helps the company to take a necessary measure to make the proper function of inventory system. With regard to codification, the company use this system for raw materials other supplies and fixed asset they use number codification system and for semi-finished and finished goods they use numeric system.
- The company could not organize the inventory section in well trained and qualified personnel, in system manual, and in recent developed inventory control system software. And the inventory section is not enough relationship with other units as a manufacturing company.

4.3 RECOMMENDATIONS

- The company should maintain computerized inventory control system to increase the effectiveness and efficiency of the company. They should use complete application software that handles all transaction that are issues, purchased, returned, and adjusted. This is basic for applying inventory control system, techniques and inventory control model.
- The demand for furniture is increasing due to increasing construction activity and growing economic activities, so the company should set short term and long term plan in

implementing and improving the inventory control system to satisfy the need of its customers.

- The company should work on in expansion of sales outlet by holding enough inventories through effective inventory controls system.
- As the company's long term strategic plan, ISO quality management certification is the first and the most element. To get this ,for it is effective planning , operation and control of process; the company should give special attention on essential documents like:-

- The researcher emphasis rest on advising the company to revise and prepare detailed and independent material activity manuals.

- Purchase manual
- Store management manual and
- Inventory control manual and policy

These well organized manuals together with qualified personnel and computerized system lead the company to success and get ISO quality management certification.

To sum up improving and implementing inventory control activity directly or indirectly result in:-

- ✓ Improved company image
- ✓ Image customer satisfaction
- ✓ Improved competitiveness in furniture industries
- ✓ Increased productivity
- ✓ Increased profits and company growth
- ✓ Improved utilization of resources
- ✓ Improved traceability to root causes of integration problem among units. (I.e. to improve communication).
- ✓ Improved management confidence.

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Appendixes

Organization structure of GM plc