

ST. MARY'S UNIVERSITY COLLEGE

FACULTY OF BUSINESS

**DEPARTMENT OF MARKETING
MANAGEMENT**

**AN ASSESSMENT OF PHYSICAL DISTRIBUTION
PRACTICE IN THE CASE OF MEDTECH
ETHIOPIA PLC**

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**AN ASSESSMENT OF PHYSICAL DISTRIBUTION
PRACTICE IN THE CASE OF MEDTECH
ETHIOPIA PLC**

**A SENIOR ESSAY SUBMITTED TO THE DEPARTMENT
OF MARKETING MANAGEMENT**

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FOR THE DEGREE OF BACHELORS OF ARTS IN
MARKETING MANAGEMENT**

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Declaration

I, Selamawit Berihun, hereby declare that this research project work entitled "**Assessment of Physical Distribution Practice in the Case of Medtech Ethiopia Plc**" is my original work and has not been used by others for any requirements in any places and sources of materials used in this project have been duly acknowledged.

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This project has been submitted for examination with my appropriate approval as a college advisor.

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Table of Contents

Acknowledgements.....	v
Table of Contents.....	vi
List of Tables.....	viii
List of Figures.....	ix
CHAPTER ONE.....	i
Introduction.....	i
1.1. Background of the study.....	i
1.2. Statement of the problem.....	ii
1.3. Research Questions.....	iii
1.4. Objectives of the Study.....	iii
1.4.1. General Objectives.....	iii
1.4.2. Specific Objectives.....	iv
1.5. Significance of the study.....	iv
1.6. Delimitation of the study.....	iv
1.7. Limitation of the Study.....	v
1.8. Research design and methodology.....	v
1.8.1. Research design.....	v
1.8.2. Population and Sampling Technique.....	v
1.8.3. Types of data collected.....	vi
1.8.4. Method of data collection.....	vi
1.7.5. Data analysis method.....	vi
1.9. Organization of the study.....	vi
CHAPTER TWO.....	viii
Review of Related Literatures.....	viii
2.1. Overview of Physical Distribution.....	viii
2.3. Components of Physical Distribution.....	ix
2.3.1 Transportation.....	ix
2.3.2 Order Processing.....	xiv

2.3. 3. Warehousing.....	xviii
2.3.3.1. Need for Warehousing.....	xviii
2.3.3.2. Functions of the Warehouse.....	xix
2.3.3.3. Issues affecting Warehousing.....	xxi
2.3.3.4. Selection of warehouse.....	xxii
2.3.3.5. Location of warehouse.....	xxii
CHAPTER THREE.....	xxv
Data Presentation, Analysis and Interpretation.....	xxv
3.1. General Characteristics of Respondents.....	xxvi
3.2 The Quality of Physical Distribution of the Company.....	xxviii
3.4 Transportation System.....	xxx
3.5 Problems in Product Delivery.....	xxxii
3.6. Problems in Warehousing.....	xxxv
3.7. Overall Views of Retailers on the Quality of Physical Distribution of the Company.....	xxxvi
CHAPTER FOUR.....	39
Summary, Conclusions and Recommendations.....	39
4.1. Summary of the Major Findings.....	39
4.2. Conclusions.....	40
4.3. Recommendations.....	41

List of Tables

Table 1: General Characteristics of the Respondents.....	xxvi
Table 2: Type of the organization and engagement tenure in the business.....	xxvii
Table 3: Timely delivery, performance of customers' order processing and level of customers' satisfaction.....	xxviii
Table 4: Functioning and of the Transportation System and its swiftness.....	xxx
Table 5: Frequency of product delivery problems and areas.....	xxxii
Table 6: Trend of informing complains to the company.....	xxxiii
Table 7: Loyalty of Customers.....	xxxiv
Table 8: Problems in Warehousing.....	xxxv

List of Figures

Figure 1: Retailers' frequency of notifying problems to the company.....xxxiii

Figure 2: Graph showing the percentage of customers' loyalty to the company.....xxxiv

Chapter One

Introduction

1.1. Background of the study

Physical distribution involves planning, implementing and controlling the physical flow of goods services and related information from points of origin to points of consumption to meet customer requirements at a profit in short, it involves getting the right product to the right customer in the right place at the right time. (Kotler and Armstrong, 2008: 352)

According to Havalder and Cavale (2007:160) physical distribution creates value of benefit that has an impact on the company's market share, total costs and profitability. Moreover, many scholars have been recommended that physical distribution play significant role for the enhancement of market share if and only if efficient.

Physical distribution is the set of activities concerned with efficient movement of finished goods from the end of the production operation to the consumer. Physical distribution takes place within numerous wholesaling and retailing distribution channels, and includes such important decision areas as customer service, inventory control, materials handling, protective packaging, order processing, transportation, warehouse site selection, and warehousing. Physical distribution is part of a larger process called "distribution," which includes wholesale and retail marketing, as well the physical movement of product. (www.enotes.com)

Medtech Ethiopia was a privately owned pharmaceutical and medical supplies importer and exporter private limited company. It was established in 1998 G.C. currently, the company had been exhibiting a lot of progress in terms of

multifarious business. While specialized in the importation of number of pharmaceuticals, medical supplies and hospital equipment. Besides, the company was importing various non-pharmaceutical products. For instance, Bebelac brand of infant milk formulas, Lora do baby care products, a wider range of consumer goods. Furthermore, Medtech also engaged widely in the exportation of agricultural products such as cereals, spices, lentils and livestock cattle. The company had been exclusive agency agreements with a number of reputable multinational companies such as Roche, julphar, Ranbaxy, Parma international, Danon SD Diagnostics and others to import and distribute pharmaceutical items in the country. The number of employees including the sister companies had more than 500, out of which 160 employees were directly employed and working for Medtech .The distribution practice of the company had exercised by the company's transportation which are located in Addis Ababa and branch offices in Bahr Dar, Jimma and Hawassa. Similarly, it was conducted by Sub-distributors in Gonder and Nazerit. So this study will focus on the physical distribution practice of Medtech Ethiopia.

1.2. Statement of the problem

Physical distribution activities are mainly the result of the separation in distance and time between a production center location and point consumption. It is largely due to in ability or between a production center location and point of consumption of the market place thus, primer physical distribution activates are movement and storage. In addition information flow especially distribution in formation is key activity actually the distribution pattern sets guide lines for the total system (Kahanna,K 2002:16)

Shelekar (2004:147) explains Physical Distribution as the process delivering the product to the user or consumers promptly, safely and in time. Physical Distribution involves management (planning action and control) of the physical

flow of raw materials and finished goods from the point of use consumption to meet the customer need at profit.

According to the preliminary interview made with the marketing department of MEDTECH Ethiopia, the student researcher had found that there are potential problems regarding the practice of physical distribution. As it was possible to dig out the problems, to begin with, retailers' orders are delayed. Meanwhile, delay in transporting goods to retailers usually occurs. Expiry of goods was the other problem the company was frequently facing. Having identified these problems, this research study was expected to answer the following basic research questions at end.

1.3. Research Questions

- What are the major reasons that create delay in processing customers' order?
- What are the major problems related with transport and vehicle use policy for the company?
- Why do goods expire in the company's warehouse?

1.4. Objectives of the Study

1.4.1. General Objectives

The general objective of the study was to assess the physical distribution practice and to describe the major barriers in the physical distribution of products for Medtech Ethiopia and to recommend possible intervention strategy the company needs to follow.

1.4.2. **Specific Objectives**

- To explore the major reasons that create delay in processing customers' order;
- To identify the major problems related with transport and vehicle use of the company;
- To examine why goods expire in the company warehouse.

1.5. **Significance of the study**

The study was intended to have the following significant to different parties.

- It creates good opportunity for the student researcher to get more practical knowledge about the area of physical distribution and to know the practice method of conducting a research.
- It was very important for Medtech Ethiopia to know its problems and helps to enhance the organization capacity to wards physical distribution.
- It could be used as input and baseline study and data for other researchers who are interested to conduct research related to physical distribution.

1.6. **Delimitation of the study**

This study was delimited to the physical distribution practice in Medtech Ethiopia PLC with main focus on the transportation inventory management and order processing system in the head office. The study didn't intend to make an in-depth investigation of other components that can affect the distribution of the products for the company. The study was also delimited to cover not wider geographical scope. To this end, it focuses only on two distribution areas out of the eight found in Addis Ababa. Hence, Bole and Mexico areas were taken as

sample. Because this study had limitations on time, financial resource and distance other physical distribution practices component and factors were not deeply considered in this study. More over the research was delimited to data available in the last two years, because it was too difficult to obtain information beyond two years.

1.7. Limitation of the Study

The student researcher has faced different problems while conducting this research. Getting literature related to the issue under study, shortage of resources and time constraints were the major difficulties that have been restraining the student researcher's endeavor. However, it was possible to conduct the research with in these constraints.

1.8. Research design and methodology

1.8.1. Research design

In order to assess necessary data and address the problem mentioned the student researcher used descriptive research method because it helped to realize the objective and in order to answer the research question. There had never been a previous study conducted on the physical distribution of the company, hence this study mainly focused on describing key physical distribution issues in the company.

1.8.2. Population and Sampling Technique

The population of this study was retailers, employees and marketing managers of Medtech Ethiopia PLC. There were 160 employees, out of them 15 warehouse, transportation and order processing employees used for a sample by using purposive Sampling Technique. The student researcher used the model provided by Malhotra (2006:339) as a general rule and sample size 200 respondent retailers

so to get sufficient and reliable input. Because the retailers are unknown and it was difficult to take all population for conducting research. So that total sample of 150 retailers was taken using non-probability sampling particularly using convenience sampling technique.

1.8.3. Types of data collected

Primary data and secondary data were used. Primary data were collected by conducting interview and questionnaire. Secondary data were collected by reviewing books, magazines, internet and the company's published documents.

1.8.4. Method of data collection

The student researcher collected data by conducting interview and questionnaire. The interview was conducted with Marketing Manager and a questionnaire was distributed to employees and retailers.

1.7.5. Data analysis method

All data of quantitative nature were analyzed using pie-chart, tables and percentages and qualitative data analysis used for the answer collected from interview.

1.9. Organization of the study

This study is presented in to four chapters. The first chapter consists of background of the study, statement of the problem, basic research question, and objectives of the study, significance of the study, delimitation of the study, research design and Methodology and organization of the paper. The second chapter consists of the review of literature. The third chapter deals with analysis of the data collection. The fourth chapter consists of summary, conclusions &

recommendations. And finally questionnaires and interview check lists, Bibliography are attached to the study.

Chapter Two

Review of Related Literatures

This section is devoted to scholarly views regarding leadership. Therefore, the concern of this section will be on cross validating the ideals in the data analysis to follow in reference to the works of acknowledged researchers and authors/authoresses.

2.1. Overview of Physical Distribution

According to N. Kumar and R. Mittal (2001: 207) describe physical distribution system involves the actual movements of goods and services from the shop floor to the ultimate consumers and therefore cannot be avoided at any cost. It thus provides the time, place and possession utilities and the transfer of legal ownership

Moreover, Scherlekar (2004: 417) explains the marketing process is not complete simply by creating a superb product and by creating a customer by aggressive salesmanship. Delivering the product to the customer at the right time and place is an equally important function in marketing. In the process of marketing this vital function is called physical distribution. In simple language, physical distribution involves management (planning action and control) of the physical flows of raw materials and finished products.

From the points of origin to the pants of use consumption to meet the customer needs at a profit. It covers all activities in the flow of goods between producer and consumer.

2.2. Overview of Physical Distribution Management

Also, Grouchtt, Leadley and Forsyth (2004: 437) explains physical distribution management is the term describing the integration of two or more activities for the purpose of planning, implementing and controlling the efficient flow for raw materials in process inventory and finished goods for point of origin to point of sale and consumption.

2.3. Components of Physical Distribution

As an integrated management activity physical distribution consist of various activities. These activities include: transportation, warehousing, material handling, packaging, inventory management, and order processing and customer service.

2.3.1 Transportation

Transportation is an essential and one of the most important components of physical distribution. Its importance is illustrated when a strike in the railways, an airline or road transport paralyses a country. Not only does the movement of raw materials but also of finished products come to a halt, and various industries and public face hardships. (Khanna, 2002: 17).

2.3.1.1 Functions and Principles of Transportation

Bowersox and Closs (2002: 312) pointed out that transportation functionality provides two major functions: product movement and product storage.

Product movement: refers to whether the product is in the form of material, components assemblies, work in process or finished goods transportation is

necessary to move it to its next stage of the manufacturing process or physically closer to the ultimate customer.

Product storage: refers to less common transportation function which products are temporarily stored on vehicles until they reach their final destination. Also, Bowersox and Closs (2003: 314) explain that there are two fundamental principles guiding transportation management and operations. These guidelines are: economics of scale and economic of distance.

Economical scale: refers to the characteristic that transportation cost per unit of weight decrease when the size of the shipment increases. This is because fixed expenses associated with moving a load can be spread over the load's weight. As much a heavier load allows costs to be "spread out" there by decreasing costs per unit of weight.

Economic of Distance: refers to the characteristics that transportation cost per unit decrease as distance increases. The rationale is similar that of economy of scale.

2.3.1.2 Mode of Transportation

As Shelekar (2004: 434) explained that there are five means of transports at our disposal: rail ways, road way, waterways, air ways and pipelines. However, the two relevant means of transportation for flower product distribution are taken.

Railways: are becoming more responsive to specific customer needs, emphasizing bulk industries and heavy manufacturing. And now a day railways become the most preferable modes of transportation for shipping bulk commodities because of its lower cost.

Roadways: this is the most popular and commonly used mode of the transport goods, trucks are used to transport the product. The freight payment could be

prepaid, to pay, or to be done after sale delivery of the product at the final destination.

Airways: the newest but least utilized mode of transportation is air freight. Its significance advantage lies in the speed with which the shipment can be transported but it's very expensive compared with other mode of transportation. This mode of transportation is used for high value products, for perishable products, emergency products and for short life items like fashion items.

Waterways: this is oldest mode of transportation used to move extremely large shipment. It's cheap but it is also very slow with transport ranks between rail and road transport interns of fixed costs.

Pipelines: this kind of transportation is used for the movement of large quantities of liquids and gas over long distance. This mode is normally use for petroleum products, gases, crude and manufacturing chemicals. The basic nature of pipeline is unique in comparison to all of other mode of transport, which they operate seven days in weeks and twenty four hours in a day and pipelines have high fixed cost and low variables cost among the transport modes.

2.3.1.3 Elements of Transportation Costs

According Agrawal (2003: 222) there are various element of transportation costs: tariff of transportation which refers to the freight charge of modes of transport to be paid for movement of good from one location to another, transit time cost, which deals with the cost of inventory in transit. This element of transport cost is longer; it means that the product of the company remains in transit for longer periods of time to result. In to higher transit time cost, obsolescence and deterioration cost: these elements of transport cost involved cost caused due to deterioration and obsolescence in the physical attributes of the product during transit. There are certain categories of products which are perishable and

delicate in nature, whose physical attributes deteriorate over period of time gradually resulting in to the devaluation of the product, protective, packaging: is for specific products and modes of transport. When there is a requirement for a specific package and such cost is under total transport cost, transit insurance cost; in the cost of insurance paid to insurance company to cover various types of risks.

At advent of containerization this cost has been minimized due to lesser chances of damages of good during transit, miscellaneous cost: a part from the above elements of transport costs, such as local taxes especially when goods are shipped through roadways.

2.3.1.4 Transportation Strategy-Key for Logistics Effectiveness

Transportation is a very key element of the logistics process and the supply chain which runs from vendors through to you to your customers. It involves the movement of product, service/speed and cost which are three of the five key issues of effective logistics. It also impacts with the other two logistics movement of information and integration within and among suppliers, customers and carriers.

A transportation strategy, to be effective in supply chain management, is not playing one carrier off against another. It is not beating down rates. Rather it is a way to respond to the dynamics of your business, its customers suppliers and operations. The strategy, regardless of whether you are involved with domestic or international is much more and should recognize-

Customer requirements: the supply chain involves continuous and efficient movement of product from vendor to company to customer. Therefore the transportation program must reflect and meet the customer needs. The time and service aspects of transportation are vital.

Shipments must move timely: customers demand their shipments to be delivered as they require-on the data needed, by the carrier preferred, in the proper shipping packaging method and complete, both shipped complete and delivered complete and in good order. Being able to have a transportation program with can do this provides customer satisfaction and can give your company a competitive advantage.

Mode selection: how will you move your product, by air versus surface? What roles do transit time play in your supply chain? How will the inventory and service impacts be measured as compared to the freight charges?

Carrier relationship: volume creates carrier/forwarder attention. Even if you have no strategy, the number of carriers trying to meet with you will make you develop one. Infrequent shipping dictates another approach.

Measuring/benchmarking: you need to know how well your strategy and your carriers are performing. This takes two approaches. One is measuring. Measuring means comparing performance versus standards.

Regulatory impact: Regulatory changes can change, for better or worse, your strategy. The recent demise of the Interstate Commerce Commission eliminated a safety net for shippers, especially for small shippers, shippers now need to work with carriers with whom they can develop contractual relationship which reflect the new transport world as to liability, freight class, rate change, accessorial and other needs.

Carrier mergers and alliances and closings: this is an important and difficult issue. In the fifteen years or so since motor carrier deregulation, there have been significant changes. Many carriers went out of business others changes their focus from truckload to LTL. New truckload carriers came into being Maritime has its issues. Large steamship lines in the trans-Pacific and trans-Atlantic trade

formed alliance. Now with the recent merger of P&O and Nedolloyd, mergers are beginning to occur.

Flexibility: change is happening. It is not a question of whether or not it happens. The only question is how quickly it occurs. Your strategy has to be ready to change. New customers, new products, new business, new suppliers, new corporate emphasis. Each of these can dramatically change your strategy. Recognize that change will occur. Keep an open ear and mind to other modes and carriers. The times they are a changing and so will your strategy (Thomas Craig President Ltd Management (www.ltdmgmt.com 30/03/12).

2.3.2 Order Processing

Order processing is considered as the key to customer service and satisfaction. Order processing includes receiving, recording, filling and assembling of products for dispatch. The amount of time required from the date of receipt of an order up to the date of dispatch of goods must be reasonable and as short as possible. Marketers are now using computer system to speed up order handling (Sherlerker, 2004: 426).

2.3.2.1 Functions of Order Processing

According to Agrawal (2003: 260) the major functions of order processing is order entry, credit checking, inventory availability check, order acknowledge, order editing and modification, order pricing order status inquiry, price and discount extension, back order processing raiser invoice, prepare transportation and shipping advice, shipping scheduling, reserve shipment, and return processing in case of defective delivery.

The function of order processing can also be discussed more systematically in five steps, namely order planning, order transmittal, order handling, order picking and assembly and delivery.

Order planning: refers to designing an efficient order handling system. i.e. it determine how a customer order is received and by whom, what technique should be adopted (centralized, decentralized) order are generally placed by customer to visiting sales people of the company or by telephone, fax, mail order, email or EOI directly to the dispatching point / controlling office/ head office.

Order transmittal: refers to a series of events that occur between the times a customer places an order or send an order and the seller receives the order.

Order handling: order process handling which includes activities such as the checking for completeness and accuracy of the order, a credit check by the credit departments recording of transaction by the accounting department, allocation of products by inventory department and advices to pick the shipment and updates the firm's master inventory file, and transportation of shipment from the warehouse by the traffic department.

Order picking and assembly: function of order processing involves giving instruction to a specific warehouse to assemble a given order for a customer. In other words, it is a written document given order for a warehouse and its employee indicating the item to be assembled as per the list of the customer order. The order picking and assembly function includes all the activities from the time the warehouse receives an order to the ship items until goods are loaded on out-bound carriers.

Order delivery: the last function of order processing is order delivery. The time from when a carrier picks the shipment until it is delivered to the customer's receiving dock, i.e., transit time. This transit time has a direct and major impact

on sellers total order cycle time or customer's replenishment cycle time. Hence, proper load planning fleet management are essential functions of total order processing.

2.3.2.2 Factors that Affect Order Time in Order Processing

Every year business and individuals place orders over the telephone or through the internet. Although ordering is convenient for sellers and buyers, there is still a waiting time for order to be processed. While most orders are processed quickly and efficiently, a number of factors sometimes cause orders to be processed more slowly. Agrawal (2003)

Credit Card Approval: while processing order, one of the biggest factors that affect order times is waiting for the credit card to be approved. The process begins with a credit request by the seller. The credit company has to review the request and then approve the transfer of the money. The wait for approval is anywhere from a few minutes to a day or two.

Business Day: orders that are taken by automatic systems depend on workers to package and distribute the goods. Typically, processing the order occurs during the work week, when there are employees at the place of business who can verify and complete the order process. If the order is taken late on a Friday, then it will less likely be processed until after the weekend on the following Monday. That's why most businesses explain that it sometimes takes two to three business days to process an order.

Out of Stock: in most cases when ordering a product, the major factor determining the order time is the availability of the item. Sometimes there are low stocks or the item is not in stock at all. In this case, the customer is forced to wait until stocks are relending before having the order request processed.

Without the item ready to be distributed, both the seller and buyer have to wait until the distributor can send more units.

2.3.2.3. Three Factors that Affect the Planning Process

The three classic factors that affect the planning process in business are inputs, processes and outcomes. Inputs are raw materials, resources, knowledge and anything else brought to the planning process. Processes are what you do to the inputs to create outcomes. Outcomes are partly profits, but also jobs created for employees, and the use and pleasure that customers receive from finished products or services. (Jefferson Hansen, 30/12/12).

Planning Process: the efficient way to plan and organize a business is to work backwards from the end products. Consider your desired outcomes, and the processes and inputs needed to get there. It's helpful to consider concepts such as mission statement, goals or benefits. How do you want to compensate your employees? How will you implement quality control? How long can you go before you turn a profit?

Processes: processes are the way inputs are processed into outcomes. You should consider affordability, practicality and efficiency. Specific responsibilities are assigned to put processes in motion. Deadlines for specific task and larger assignments are put in place and successes, while expected, are rewarded.

Inputs: inputs are the raw materials you bring to the business. This includes not just material resources which may be nothing but also knowledge, ideas, and entrepreneurial and employee skill. Financing is always crucial and your investors may expect you to turn a profit in a few years.

Implementation: once the planning process is worked out, it can be implemented. You should now have a list of your inputs, the specific ways each

will be processed, how these processes match up with larger concerns and how they all contribute to the company's mission.

2.3. 3. Warehousing

Warehousing is an important element of activity in the distribution of goods, from raw materials and work in progress through to finished products .It is integral part to the supply chain network within which it operates and as such its roles and objectives should synchronize with the objectives of the supply chain. It is not a 'Stand-alone' element of activity and it must not be a weak link in the whole supply chain network. Warehousing is costly in terms of human resources and of the facilities and equipments required, and its performance will affect directly on overall supply chain performance. Inadequate design or managing of warehouse systems will jeopardize the achievement of required customer service levels and the maintenance of stock integrity, and result in unnecessarily high costs. The recent trends and pressures on supply chain / logistics-forever increasing customer service levels, inventory optimization, time compression and cost minimization -have inevitably changed the structure of supply chains and the location and working of warehouses within the supply chains network. (V.E. Mohan 2010: 11)

2.3.3.I. Need for Warehousing

(Mohan, 2010) points out that warehousing is necessary due to the following reasons.

Seasonal Production- You know that agricultural commodities are harvested during certain seasons, but their consumption or use takes place throughout the year. Therefore, there is a need for proper storage or warehousing for these commodities, from where they can be supplied as and when required.

Seasonal Demand- There are certain goods, which are demanded seasonally, like woolen garments in winters or umbrellas in the rainy season. The production of these goods takes place throughout the year to meet the seasonal demand. So there is a need to store these goods in a warehouse to make them available at the time of need.

Quick Supply - Both industrial as well as agricultural goods are produced at some specific places but consumed throughout the country. Therefore, it is essential to stock these goods near the place of consumption, so that without making any delay these goods are made available to the consumers at the time of their need.

Continuous Production- Continuous production of goods in factories requires adequate supply of raw materials. So there is a need to keep sufficient quantity of stock of raw material in the warehouse to ensure continuous production.

Price Stabilization- To maintain a reasonable level of the price of the goods in the market there is a need to keep sufficient stock in the warehouses. Scarcity in supply of goods may increase their price in the market. Again, excess production and supply may also lead to fall in prices of the product by maintaining a balance of supply of goods, warehousing leads to price stabilization.

2.3.3.2. Functions of the Warehouse

Functions of warehouse are listed as follows according to (Mohan, 2010).

1. Receiving-This includes the physical unloading of incoming transport, checking, recording of receipts, and deciding where the received goods are to be put away in the warehouse. It can also include such activities as unpacking and repackaging, quality control checks and temporary quarantine storage for goods awaiting clearance by quality control

2. Inspection- Quality and quantity check of the incoming goods for their required Characteristics
3. Repackaging- Incoming lot may be having non-standard packaging which may not be stored as it is in the respective location. In those cases these materials have to be pre packed in unit loads/pallet loads suitable for storage.
4. Put away - Binning and storing the goods in their respective locations including the temp locations from the receiving docking area.
5. Storage - Binning the approved material in their respective locations.
6. Order-Order picking / selection -Goods are selected from order picking stock in the required quantities and at the required time to meet customer orders. Picking often involves break bulk operations, when goods are received from suppliers in, say, whole pallet quantities, but ordered by customers in less than pallet quantity .order picking is important for achieving high levels of customer service; it traditionally also takes a high proportion of the total warehouse staff complement and is expensive. The good design and management of picking systems and operations are consequently vital to effective warehouse performance
7. Sorting - This enable goods coming into a warehouse to be sorted into specific customer orders immediately on arrival. The goods then go directly to order collation.
8. Packing and shipping - Picked goods as per the customer order are consolidated and packed according to customer order requirement. It is shipped according to customer orders and respective destinations.
9. Cross-docking -Move products directly from receiving to the shipping dock - these products are not at all stored in the specific locations.

10. Replenishing - This is the movement of goods in larger order quantities, for example a whole pallet at a time , from reserve storage to order picking, to ensure that order picking locations do not become empty. Maintaining stock availability for order picking is important for achieving high levels of order fill.

2.3.3.3. Issues affecting Warehousing

Since warehouses, stores and distribution centers have to operate as essential component elements within supply chains network, key decisions when setting up such facilities must be determined by the overall supply chain strategies for service and cost. (Oxley. J et al. 2000) According to these authors, the factors that should be considered include the following.

Market and product base stability

Long-term market potential for growth and for how the product range may expand will influence decisions on the size and location of a warehouse facility, including space for prospective expansion. These considerations will also impact on the perceived need for potential flexibility, which in turn can influence decisions on the type of warehouse and the level of technology to be used.

Type of materials to be handled:

Materials handled can include raw materials, WIP, OEM Auto spare parts, packaging materials and finished goods in a span of material types, sizes, weights, products lives and other characteristics. The units to be handled can range from individual small items through carton boxes, special storage containers for liquids, drums, sacks, and palletized loads. Special requirements for temperature and humidity may also have to be met in the case of perishables and all of these will impact on the type of warehouses and technology level.

Warehouse Facility: type, size and location.

The type of operation, the design capacity and size of a warehouse and its location will all be influenced if not directly determined by its exact role and position in the supply chain network, and the role, capacity and location of any other facilities in the supply chain. The customer base, level of inventory, the need for optimization of inventory, time compression in the supply chain and the overall customer service levels should also be considered when deciding on type, size and location.

2.3.3.4. Selection of warehouse

Warehouse Management and Physical Distribution are important flow control activities in the supply chain network. Regardless of the efficiency with which all preceding activities have been conducted, these activities have major influence in determining the degree to which total customer service level is achieved. In present global business environment, the quality of warehousing and distribution management can have major impact on corporate performance and profitability. The following flow chart clearly shows hierarchy of decisions to be made about the selection of warehouses in the strategic marketing policies with an objective of achieving max customer service level. (Frazelle, 1996)

2.3.3.5. Location of warehouse

It is apparent that no seller can be equally near all customers or prospective customers. The space and time also impose significant limitation on the movement of goods from seller to buyer. In consequence, the location of the seller's production and distribution facilities in relation to those of customers is an important decision making process. (Frazelle, 1996)

In this context, the location problem can be three types:

1. locating a warehousing system at the production facility itself;
2. locating a single central distribution warehousing system away from the production plant
3. Locating warehousing system at more than one place.

But for any type of problem, the optimal location is the one that is most likely to achieve the maximum rate of return on investment over the long run. For this optimal criterion, as a general rule, industrial companies tend to conform to one of four location orientations; raw materials, labor market, or power. Depending on the nature of production process, the types of materials required the characteristics of the end product and the tendency of buying companies to cluster in a given area, proximity to raw materials may be in overriding consideration.

In cases of warehouses stocking finished goods, factors such as proximity of ports, railway lines, quality of roads, availability of power etc., become important considerations. Added to all the above factors the warehouses should be constructed with sufficient flexibility for expansion needs.

The following considerations determine the location of a warehouse:

As (Frazelle, 1996) points out, the following basic considerations determine location of warehouse:

1. Market service area and cost of distribution from the warehouse to the market service area;
2. Satisfaction of transport requirements and facilities available in the form of rail, link roads and road vehicles;

3. Transportation rates prevailing in the area and distribution costs per unit;
4. Competition by rival companies and whether they have warehouse in the same area;
5. Availability of power, water, gas sewage disposal and their cost;
6. Labor supply and labor costs in the area;
7. Industrial relations climate and labor productivity;
8. Pricing arrangements and the level of service desired to be rendered in terms of availability of the product to the customer;
9. Individual company requirements and constraints;
10. Real estate, excise and government taxes assessed in the area;
11. Attitudes of local residents and government towards establishment of the warehouse;
12. Restrictions associated with warehouses;
13. Potential for later expansion;
14. Cost of land for the warehouse and other costs;
15. Possibility of change in the use of the facility at a later date if the company so desires, and lease or sale of the land and buildings;

Chapter Three

Data Presentation, Analysis and Interpretation

This chapter deals with the presentation, analysis and interpretation of the data gathered from Medtech Ethiopia plc marketing department and retailers of the products of the company found in Addis Ababa, having been limited to Bole and Mexico areas. The population consisted of 153. From this 3 are those who are in top management of Medtech Ethiopia plc and 150 are pharmacies, hospitals, clinics, health centers and others. In the chapter, quantitative data are presented in tables, graphs and percentage whereas qualitative data are presented in writing.

Bole and Mexico distributing areas in Addis Ababa were taken as study area on the basis of convenience sampling. In these zones 150 retailers were given to fill out the questionnaires, out of which 121 or 80.6% were returned. Hence the student researcher believes that these collected questionnaires are sufficient for analysis and provide a ground for possible conclusion and recommendation.

The student researcher has tried to consider gender of the respondents as much as possible. Even though some of the retailers were not easily contacted at ease since they were operating, the student researcher made big endeavor to meet them and was able to contact them and administer the self-administered questionnaire.

3.1. General Characteristics of Respondents

Table: General Characteristics of the Respondents

S. No	Item	Number of respondents	Percentage (%)
	Sex of the respondents		
I	Male	88	72.7
	Female	33	27.3
	Total	121	100%
	Age of the respondents		
II	21-30	5	4.1
	31-40	22	18.2
	41-50	40	33
	51-60	36	29.8
	Above 60	18	14.9
	Total	121	100%
	Educational Status		
III	MA/MSc degree and above	7	5.8
	First Degree	55	45.5
	Diploma	24	19.8
	Certificate	35	28.9
	Below certificate	0	0
	Total	121	100%

Source: Questionnaire

From item I of Table 1, it is noted that the number of male category is 88 (72.7%) whereas the percentage of female is 33 (27.3%). From this we can understand that male respondents dominate in filling out the questionnaire.

According to item II of Table 1, which describes age distribution of respondents, 5(4.1%) of the respondents fall in the age of 21-30 while 22(18.2%) of the respondents are in the age of 31-40. Other 40(33%) of the respondents fall in the age of 41-50, and 36(29.8%) of the respondents are between 51 and 60 years old. The rest 18 (14.9%) are above 60 years old. From this the student researcher can infer that most of the respondents are matured.

From the findings in item III of Table1, the respondents whose qualification is first degree are 55(45.5%). The study also revealed that respondents had also acquired academic qualifications stipulated in the questionnaire; certificate 35 (28.9%), and diploma 24 (19.8%). while those with MA/MSc degree and above category had the least

percentage 7(5.8%). None are below certificate. This implies that most of the respondents are above certificate.

Table 2: Type of the organization and engagement tenure in the business

S. No	Item	Number of respondents	Percentage (%)
	Type of the company		
I	Pharmacies	74	61.2
	Hospitals	7	5.8
	Health Centers	11	9.1
	Clinics	20	16.5
	Supermarkets	9	7.4
	Total	121	100
	Engagement tenure as customer		
II	Below 2 years	63	52
	3-4 years	12	10
	5-6years	31	25.6
	above 7 years	15	12.4
	Total	121	100%

Source: Questionnaire

As it is depicted in item I of Table 2, the respondents under the category of pharmacy are 74 (61.2%). clinics are 20(16.5%), health centers are 11 (9.1%) whereas hospitals 7 (5.8%). Those under the category supermarkets are 9(7.4%). This implies that pharmacies are the largest retailers of the products distributed by the company.

According to item II of Table 2, retailers who stayed as customers of Medtech Ethiopia plc below 2 years are 63 (52%) followed by those which have been in the business from 5-6 years are 31 (25.6%). On the other hand, those who have experienced above 7 years constitute 15 (12.4%). The remainders 12 (10%) are those who have been customers from 3-4 years. From this one can understand that most of the retailers are experienced. However, there are a growing number of retailers of the products of the company which is good news for the firm.

3.2 The Quality of Physical Distribution of the Company

The quality of physical distribution of the company is assessed in terms of transportation, order processing and warehousing. The data gathered from the sample retailers are presented in tables and graphs. To this end, the student researcher has inquired retailers how often they are genuinely delivered their orders on timely basis. The responses are presented in the table below.

Table 3: Timely delivery, performance of customers' order processing and level of customers' satisfaction

S. No	Item	Response	Number of respondents	Percentage (%)
I	How often does the company deliver the products on timely basis?	Always	30	24.8
		Most of the time	64	52.9
		Some times	21	17.3
		Rarely	6	5
		Never	0	0
Total			121	100
II	How often does the company deliver the products in the required amount?	Always	6	5
		Most of the time	54	44.6
		Sometimes	51	42.1
		Rarely	10	8.3
		Never	0	0
Total			121	100
III	To what extent are you satisfied in the company's practice of order Processing?	Highly	57	47.1
		Medium	54	44.6
		Less	10	8.3
Total			121	100

Source: Questionnaire

Item I of table 3 shows 64 (52.9%) of the respondents rated that the company delivers the products promptly most of the time and 30 (24.8%) of them said always. On the other hand, the data reveals that 21(17.3%) of the respondents said that the company's products are promptly delivered sometimes whereas 6 (5%) said rarely. This indicates that the company's performance in delivering the product on a timely basis is in a good status. However, certain gap occurs in such a case.

Yet, the management body of the company was interviewed to what extent the company is committed to perform delivery of the product on schedule. As he responded, the company is very good in delivering its product on timely basis since it delivers the product in terms of the schedule except little inconveniences occurred sometimes.

Moreover, the company's marketing officer replied as the company is reputable in the market for its genuine customer service. However, he admitted that some inconveniences are inevitable, minor failure might occur.

From the above responses it can be inferred that the company has a good quality of keeping delivery schedule promise. However, some inconveniences occur in its undertakings and this has its own impact on customer satisfaction.

According to item II of table 3, depicted in the previous page, 54 (44.6%) of the respondents said that the company delivers the product in the required amount most of the time whereas 51 (42.1%) of the respondents said that the product is delivered in the needed quantity, sometimes. Another 10 (8.3%) however, said the company rarely delivers them the product in terms of the amount they needed while only 6 (5%) said that they always get the product in the amount they ordered. From this it can be inferred that the company has problem of processing customers' order.

Item III of table 3 shows that 57 (47.1%) of the respondents are highly satisfied by the company's customer order processing whereas 54(44.6%) are medium. Another 10(8.3%) are less satisfied. This implies that the company has considerable problems in the case of customers' order processing.

3.4 Transportation System

Effective functioning of transportation system is vital for the smooth progress of distributing products. To this end, the respondents were inquire to rate how much the transportation system of the company is functioning well. This is presented in the following table.

Table 4: Functioning and of the Transportation System and its swiftness

S. No	Items	Response	Number of respondents	Percentage (%)
I	How is the level of functioning of the company's transportation system?	Very good	11	9
		Good	91	75.2
		Medium	7	5.8
		Poor	12	10
		Very poor	0	0
Total			121	100
II	What is the performance of the company in terms of transporting the product swiftly?	Very good	10	8.3
		Good	69	57
		Medium	15	12.4
		Poor	27	22.3
		Very poor	0	0
Total			121	100

Source: Questionnaire

Item I of table 4 states that the transportation functioning of the company is good as 91 (75.2%) of the respondents rated whereas 12 (10%) said that the company has poor transportation system whereas 11 (9%) said very good. Additional 7 (6%) of the respondents rated that the system is functioning in a medium capacity. From this it can be understood that the company has sound capacity in

transportation though it could hardly satisfy some portion of its customers in this case.

Effective delivery of product will be ease and punctual if the transportation is swift. Respondents were inquired to rate how much speedy is the company in transporting product to deliver on time, and they responded as the following table.

As can be seen from item II of table 4 found in the previous page, 69 (57%) the respondents rated that the company is good in transporting its products. The other 15 (12.4%) said it is only medium whereas those who say poor constitute 27 (22.3%) of the respondents whereas 10 (8.3%) said very good. This implies that the company's production distribution in terms of transportation is also nice. However, there is an indicator for which the company's performance in this case is poor.

Moreover, the student researcher interviewed a management staff member of the company to identify how the transportation system is functioning at ease and how much vehicles are found to undertake delivery. He said that the company has five medium trucks in which the product is distributed. Though the company does not have enough vehicles to distribute the product to the retailers, it is trying its best to serve customers' on timely basis.

From the response above it can be understood that there are no enough vehicles to deliver the product on time. In addition, while the student researcher observed that the company covers wider distribution zone for the whole retailers with only 6 trucks. Therefore, from this case it can be inferred that the transportation system is not satisfactory. Given the wider geographical area the company covers, it is problematic to deliver this much number of retailers on time.

3.5 Problems in Product Delivery

The respondents were asked how often they had faced problem while purchasing the product of the company and their responses are summarized as in the following table.

Table 5: Frequency of product delivery problems and areas

S. No	Item	Response	Number of respondent	Percentage (%)
I	How often are problems related to product delivery experienced?	Always	13	10.7
		Most of the time	33	27.3
		Sometimes	37	30.6
		Rarely	38	31.4
		Never	0	0
Total			121	100
		Problem areas		
II	Which one of the following areas is more problematic	Transportation	52	43
		Order processing	56	46.3
		Warehousing	13	10.7
Total			121	100

Source: Questionnaire

As depicted in item I of table 5 in the previous page, problems related to product delivery is experienced rarely as 38 (31.4%) responded. Another 37 (30.6%) said that sometimes there is problem in this matter. Nevertheless, respondents who said that they face such problems most of the time are 33 (27.3%) while 13 (10.7%) those who said always. This shows that all of the respondents have experienced problem in this case though most of the respondents frequently suffer from this problem are many, which implies that the company has remarkable problem in this area.

As item II of table 5 shows, 56 (46.3%) of the respondents said that the major problem areas that they encountered during product delivery are order processing. Additional transportation 52 (43%) said that there is transportation

problem. Another 13 (10.7%) assert that they face problems related to warehousing. This indicates that there is more problem in order processing followed by transportation.

Table 6: Trend of informing complains to the company

S. No	Item	Response	Number of respondents	Percentage (%)
1	Do you inform your complaints to the company?	Yes	34	28
		No	87	72
Total			119	100

Source: Questionnaire

Moreover, the student researcher has summarized data collected from the respondents in the following chart.

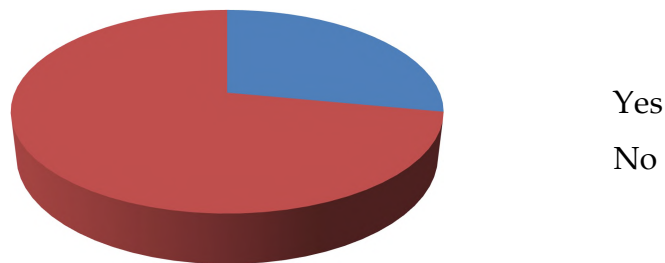


Figure 1: Retailers' frequency of notifying problems to the company

As shown in item I in table 6 above, 87 (72%) of the respondents do not present their to the company whereas only 34 (28%) inform problems they are encounter regarding order processing and transportation. This shows that there is weak communication trend between the company and retailers. Moreover, it can be inferred that the company has no significant access of information from its retailers. Thus the company has no sound awareness about its customers' problems.

The respondents were asked whether they would continue as the customer of Medtech Ethiopia plc or not and their responses are put as in the following table and chart.

Table 7: Loyalty of Customers

S. No	Item	Response	Number of respondents	Percentage (%)
I	Do you want to continue to be a customer of Medtech Ethiopia plc?	Yes	53	44
		No	34	28
		Not sure	34	28
Total			121	100

Source: Questionnaire

The following graph illustrates the percentage of respondents willing to keep being consumers of the company.

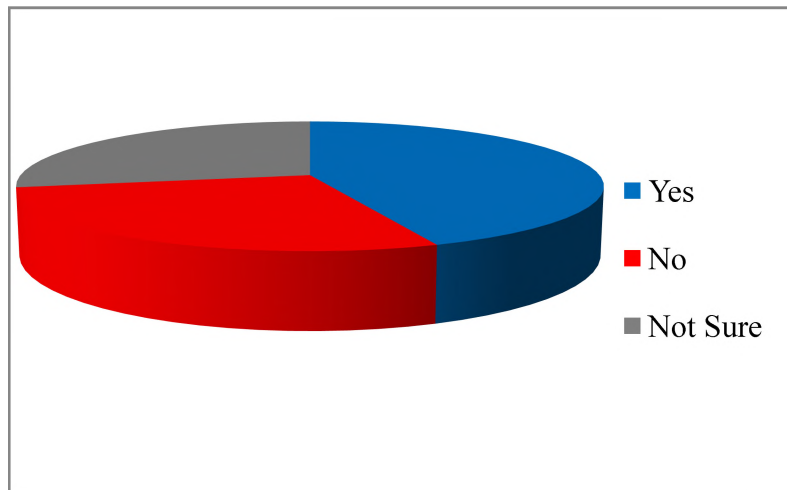


Figure 2: Graph showing the percentage of customers' loyalty to the company

According to the result of data presented in item I of table 7 found in the previous page and the figure above, 53(44%) of the respondents want to keep as customers of Medtech Ethiopia plc. On the other hand, 34(28%) of the

respondents are not sure whether they would shift to another producer or keep their business with Medtech Ethiopia plc. Another 34(128%) do not want to continue as customers in the future. This implies Medtech Ethiopia plc has many loyal customers. However, others hesitate whether they would continue or not.

3.6. Problems in Warehousing

Table 8: Problems in Warehousing

S. No	Item	Response	Number of respondents	Percentage (%)
I	Have you had any experience of receiving materials which are under risk of damage?	Yes	54	44.6
		No	57	47.1
		Do Not Remember	10	8.3
Total			121	100

Source: Questionnaire

According to item I of table 8 above, 54 (44.6% of the respondents have received materials under risk of damage while 57 (47.1%) had never. On the other hand, others 10 (8.3%) do not remember whether they faced such incidence or not. From this it can be inferred that even though about half of the respondents are delivered risk free materials while others not.

Moreover, the student researcher interviewed a materials management staff member of the company to identify how the warehousing system is functioning to impede perish or damage of products. He said that the company has special storage for easily expiring items and good level of technology is used though it is not wowing. Some items need special requirements for temperature and humidity may also have to be met in the case of perishables. The type of warehouses and technology level currently used does not meet the requirements.

The student researcher extended the question to identify the type of operation, the design, capacity and size of the warehouse and its location. In addition, the

personnel was asked possibility of change in the use of the facility at a later date if the company so desires, and lease or sale of the land and buildings, as well as potential for later expansion cost of land for the warehouse and other costs.

The response obtained from all the above cases is that the company's warehouse is old and no any consideration is made for each questions raised above as well as future expansion. Moreover, the personnel admitted that the company incurs loss due to mainly expiry of products, which are all attributed to warehousing.

From the response above it can be understood that there are no enough considerations given to warehousing. Therefore, it can be inferred that products are perishing due to the less consideration given to warehousing weak performance of the system and this is highly affecting the company's market.

3.7. Overall Views of Retailers on the Quality of Physical Distribution of the Company

Order processing, transportation and warehousing play dominant role in marketing. Taking the reality as the case for her study, the student researcher had interviewed each category of respondents. Therefore, opinions of the respondents are presented below.

Retailers who had been asked to express their opinion on the overall activities of the company's order processing, transportation and warehousing system claim that they do not have direct contact with the company. In addition, they accuse the company as it is not performing well as it is more responsible for distributing the product. They admitted that the product delivery system can be said as very good. However, they criticized the practice as it is not an excellent because it has some problems in respect to order processing from acknowledging their order

until delivery mainly due to delay in transportation. They said that the product is not delivered as soon as they order.

A management staff member of the company said that the practice of physical distribution of the company could be said very good. However he did not conceal that the company has some problem in terms of warehousing and transportation. As he said, processing customers' order could take longer time based on the condition since there are problem of communication between the retailers and the company. He added that sometimes the company does not deliver the product on time. He mentioned different reasons for delay in delivery. One is problem related to transportation. As he said, cars could not reach the product on time due to high traffic jams. Therefore, this problem should not be attributed to the company since it is not something that could be solved by the company. He made retailers responsible for lately order they make since they mostly order after they finish the product from their stock.

A marketing officer in Medtech Ethiopia plc said that the company gives due emphasis for its marketing and has sound marketing strategy. He also appreciated the practice of order processing of the company. He admitted that there is some problem in respect to transportation. He did not also deny that delay sometimes occurs due to high traffic jams in the city as it is inevitable and he does not make the company responsible for the problem that occurs due to this reason since it is not something that could easily be detected by the company's capacity. He suggested that customers should notify their order before they run out of products from stock so that they could have enough products to deliver their respective customers to solve this problem.

Regarding warehousing, the company values the security of pharmaceutical materials. To this end, medicines and other materials are kept in safe places. However, for the safety of some, the company has not yet gotten highly sophisticated warehouse in which medical equipment are stored in a safer condition and this could affect the life of service of some materials though not all.

From the above data we can see that the performance of physical distribution is in a good status. However, as the top managers of the company and retailers agreed, there are problems in communication and responsiveness. The retailers claim that there is no immediate delivery right after their order. Besides this, the company admitted that there is lateness in delivery. The delay in transport was attributed to shortage of transportation vehicles and traffic jam.

It can generally be understood that the practice of physical distribution is facing four main problems: delay in transportation and delivery, delay in processing customers' order and warehousing. There is also communication problem between the company and retailers.

Chapter Four

Summary, Conclusions and Recommendations

4.1. Summary of the Major Findings

As the responses obtained from the respondent retailers indicate, 57 (47.1%) of them are highly satisfied by the company's customer order processing whereas 54(44.6%) are medium. Another 10(8.3%) are less satisfied. This implies that the company has considerable problems in the case of customers' order processing. The company's top managers also admitted that there is limitation in satisfying customers in this regard.

The transportation functioning of the company is only good as 91 (75.2%) of the respondents rated whereas 12 (10%) said that the company has poor transportation system whereas 11 (9%) said very good. Additional 7 (6%) of the respondents rated that the system is functioning in a medium capacity. A management staff disclosed that the company has five medium trucks in which the product is distributed and they are not enough to distribute the product to the retailers as needed.

Regarding warehousing, 54 (44.6% of the respondents have received materials under risk of damage while 57 (47.1%) had never. On the other hand, others 10 (8.3%) do not remember whether they faced such incidence or not. The company's materials management personnel admitted that the type of warehouses and technology level currently used does not meet the requirements as some items need special requirements for temperature and humidity may also have to be met in the case of perishables.

4.2. Conclusion

Regarding order processing, the company was blamed throughout the entire process — from acknowledging customers' order until delivery. Delivering products on timely basis and in the required amount are those which were seen as the major problems by the respondent retailers. The top managers and other personnel in the company also agree on the limitation of the company on this matter.

Transportation is the other problem that agitated the problem of delayed delivery. The limited number of trucks available in the company could not meet the demands of the total number of customers given the traffic jam observed every day.

Regarding warehousing, it has been identified that there are not enough considerations given to warehousing. Some items need special requirements for temperature and humidity may also have to be met in the case of perishables. The type of warehouses and technology level currently used does not meet the requirements. In general, the study found out that the practice of physical distribution is facing three main problems: delay in transportation and delivery, delay in processing customers' order and warehousing. Therefore, it can be noticed that products are perishing due to the less consideration given to warehousing weak performance of the system which has a negative effect on the company's market.

4.3. Recommendations

As the student researcher was examining performance of order distribution in Medtech Ethiopia, weaknesses of the company were identified. Hence, the company is recommended to improve those weaknesses by considering this suggestion as a constructive point for further development of its market.

- In order to solve problems regarding order processing, the company should establish agent distributors to reduce burden of processing customers' order in the head office. Continuous marketing surveys should be made; further marketing researches are also critical to identify and minimize the problem.
- To solve transportation problem in respect to traffic jams, other mechanisms like timely transportation of items should be employed. The company should increase the number of trucks. Considering the traffic jam in the city, delivery may incur delay. Hence the retailers should be notified that they should make orders before they are run out of the products from their stocks. To minimize the problem, the company should create communication with the retailers via different channels as much as possible.
- Problems regarding warehousing could be solved by creating new system for warehousing and conducting training to warehousing personnel. The company could minimize risk of expiry of products which is caused by excessive storage of products in the warehouse by delivering products timely. This mechanism could solve both order processing and warehousing problems by organizing the two cases at once.

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Appendix A

St. Mary's University College

Faculty of Business

Department of Marketing Management

Questionnaire to be filled by Retailers

Dear Respondents

The purpose of this questionnaire is gathering data to prepare senior paper entitled "An Assessment of Physical Distribution Practice in the Case of MEDTECH Ethiopia". The output of this questionnaire will have greater impact on the outcome of the study. Meanwhile, it will also help the company in showing the gap so as to improve its distribution performance. Your thoughtful response to the questions are sought to be a greater help to the success of this study. Therefore, please kindly extend your cooperation by frankly and honestly responding to the items contained in this questionnaire.

Thank you in advance for your cooperation!

Instruction

Please note the following in responding the questions:

1. All your responses will be kept confidential and used only for academic purposes;
2. Please put a "V" mark/ sign for question with options, or write a brief answer whenever necessary; there is neither right nor wrong answer.
3. You need not write your name.

Thank you in advance for your kind cooperation.

I. General characteristics of respondents:

1. Type of Organization

- A. Pharmacy EH B. Hospital EH C. Clinic EH
D. Health Center Q E. Supermarket EH

2. How long have you been customer of MEDTECH Ethiopia?

- A. Below 5 years EH
B. 6 - 10 years **EH**
C. 11 - 15 years I—I
D. Above 15 years EH

I. Questions directly related with the study

1. How often does the company deliver the products on timely basis?

- A. Always EH B. Most of the time EH C. Sometimes ^
D. Rarely |~| E. Never |~|

2. How often does the company deliver the products in the required amount?

- A. Always EH B. Most of the time EH C. Sometimes EH
D. Rarely |~| E. Never |~|

3. To what extent is the company punctual in delivering products?

- A. Very high **EH** B. High **EC** C. Medium **EH** D. Low **EH** E. Very Low |~|

4. How often are problems related to product delivery experienced?

- A. Always EH B. Most of the time EH C. Sometimes EH
D. Rarely |~| E. Never |~|

5. To what extent are you satisfied in the company's order processing practice?

- A. High EH B. Medium Q C. Less EH

6. What does the company's order processing look like?

- A. Very quick EH B. Quick EH C. Average EH D. Slow | | E. Very slow Q

7. What is the degree of functioning of the company's transportation system?

A. Excellent EH B. Very good EH C. Good EH D. Poor EH E. Very poor EH

8. What is the level of risk of delivery of product to customers in terms of transportation?

A. Very high **di** B. High **EH** C. Medium **EH** D. Low **EH** E. Very Low **EH**

9. Which one of the following areas is more problematic to you?

A. Transportation EH B. Order processing Q C. Others EH

10. Do you inform your complaints to the company?

A. Yes B No

11. If your answer for the above question is "Yes", what does the company's response look like?

A. Fast Q B. Medium Q C. Low Q

12. Have you had any experience of receiving materials which are under risk of damage?

A. Yes **EH** B. No **EH** C. I do not remember **EH**

13. Do you want to continue to be a customer of MEDITECH Ethiopia?

A. Yes **EH** B. No Q C. I do not know **EH**

13.1. If your answer for the above question is "Yes", why?

13.2. If "No", why?

14. If you have additional comments please mention it?

Appendix B

St. Mary's University College

Faculty of Business

Department of Marketing Management

Interview Questions to Top Managers of MEDTECH Ethiopia

1. How do you evaluate the company's order processing practice?
2. How does the firm handle retailers' complaints in relation with transportation and order processing?
3. How do you evaluate the company's transportation system?
4. What are the major problems related with transport and vehicle use policy for the company?
5. What are the major reasons that make goods expire in the company's warehouse?



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