

St. MARY'S UNIVERSITY
Faculty of Business
Department of Marketing Management

**An Assessment of Physical Distribution
Practices in the Case of BGI Ethiopia Beer Factory**

BY:
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SMU
2014
ADDIS ABABA

**An Assessment of Physical Distribution
Practices in the Case of BGI Ethiopia Beer Factory**

**A Senior Essay Submitted to the Department of Marketing
Management Business Faculty**

St. MARY'S UNIVERSITY

**In Partial Fulfillment of the Requirements for the Degree of
Bachelor of Arts in Marketing Management**

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Department of Marketing Management**

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Table of Contents

List of Contents	Pages
Acknowledgments.....	i
Table of Contents.....	ii
List of Tables.....	vii
Chapter One	
Introduction	
1.1 Background of the Study.....	1
1.2 Statement of the Study.....	2
1.3 Basic Research Questions.....	3
1.4 Objectives of the Research.....	4
1.4.1 General Objectives.....	4
1.4.2 Specific Objectives.....	4
1.5 Significance of the Study.....	4
1.6 Delimitations or Scope of the Study.....	4
1.7 Limitations of the study	5
1.8 Research Design and Methodology.....	5
1.8.1.1 Research Design.....	5
1.8.1.2 Population, Sample Size and Sample Techniques.....	5
1.8.1.3 Types of Data Collected.....	6
1.8.1.4 Methods of Data Collected.....	6
1.8.1.5 Method of Data Analyzed.....	6
1.9 Organization of the Study.....	6

Chapter Two

2 Literature Review

2.1 An Overview of Distribution.....	8
2.2 An Overview of Physical Distribution.....	8
2.3 Definition of Physical Distribution.....	9
2.4 The Problem of Physical Distribution.....	10
2.5 Physical Distribution and the Four Utility.....	10
2.6 The Elements of Physical Distribution.....	11
2.6.1 Transportation.....	11
2.6.1.1 Risk Management in Transportation.....	13
2.6.1.2 Functions and Principle of Transportation.....	14
2.6.1.3 Fundamental Factors of Transportation.....	15
2.6.1.4 Advantages of Transportation.....	15
2.6.1.5 Function of Transportation.....	15
2.6.1.5.1 To Encouraging Large Scale Production.....	15
2.6.1.5.2 It Increases the Mobility of Factors of Production.....	16
2.6.1.5.3 It Encourages of Specialization & Division of Labor.....	16
2.6.1.5.4 It Helps in Stabilizing Prices.....	16
2.6.1.5.5 It Provides Employment Opportunities.....	17
2.6.1.5.6 It Strengthens the Deface of a Nation.....	17
2.6.1.5.7 It Reduce the Dangers of Shortages.....	17
2.6.1.5.8 It Helps in the Transformation of the Economy.....	17
2.6.1.5.9 Transform of Social and Cultural Structures.....	17
2.6.1.5.10 It Increase of the Demand for Goods.....	18
2.6.1.6 Economic significance of transportation.....	18
2.6.1.7 Modes of Transportation.....	18

2.6.1.7.1 Roadways.....	19
2.6.1.7.2 Railway.....	19
2.6.1.7.3 Pipeline.....	19
2.6.1.7.4 Waterways.....	20
2.6.1.7.5 Airways.....	20
2.6.2 Warehousing Management.....	20
2.6.2.1 Function of Warehouse.....	21
2.6.2.1.1 Economic Function.....	21
2.6.2.1.2 Operation Function.....	21
2.6.2.2 Types of Warehouse.....	22
2.6.2.2.1 On the Basis of Ownership.....	22
2.6.2.2.2 On the Basis of Services.....	22
2.6.2.3 Elements of Warehousing Costs.....	23
2.6.2.3.1 Warehousing Infrastructural Development.....	23
2.6.2.3.2 Working Capital.....	23
2.6.2.3.3 Miscellaneous Costs.....	23
2.6.2.4 Warehouse Location Selection Criteria.....	23
2.6.3 Inventory Management.....	23
2.6.3.1 Function of Inventory.....	24
2.6.3.1.1 Work Stock.....	24
2.6.3.1.2 Safety Stock.....	24
2.6.3.1.3 Anticipation Stock.....	24
2.6.3.1.4 Pipeline Stock.....	24
2.6.3.1.5 Decoupling Stock.....	25
2.6.3.1.6 Psychic Stock.....	25
2.6.3.2 Types of Inventory.....	25

2.6.3.2.1	Based on Nature.....	25
2.6.3.2.2	Based on Uses of Material.....	25
2.6.3.3	Elements of Inventory Cost.....	26
2.6.3.3.1	Procurement Costs.....	26
2.6.3.3.2	Carrying Costs.....	26
2.6.3.3.3	Stock out Costs.....	26
2.6.4	Order Processing.....	27
2.6.4.1	Function of Order Processing.....	27
2.6.4.1.1	Order Planning.....	28
2.6.4.1.2	Order Transmittal.....	28
2.6.4.1.3	Order Handling.....	28
2.6.4.1.4	Order Picking and Assembling.....	28
2.6.4.1.5	Order Delivery.....	29
2.6.5	Material Handling.....	29
2.6.5.1	Objectives of Materials Handling.....	30
2.6.5.2	Basic Materials Handling Principles.....	31
2.6.5.3	Basic Materials Handling Consideration.....	33
2.6.5.4	Equipment of Material Handling.....	33
2.6.6	Protective Packaging.....	35
2.6.6.1	Logistical Function of Packaging.....	35
2.6.6.2	Forms of Packaging.....	36
2.6.7	Customer Service.....	36

Chapter Three

3. Presentation, Data Analysis and Interpretation of the Study

3.1. General Characteristics of Respondent.....	38
3.2. Analysis and Interpretation finding of the Study.....	41
3.2.1. Data Analysis and Interpretation of Customers Responses.....	41
3.2.2. Data Analysis and Interpretation of Employees Response.....	49

Chapter Four

4.1. Summary.....	55
4.2. Conclusion.....	58
4.3. Recommendation.....	58
Bibliography.....	60

Appendixes

List of Tables.....	vii
Appendix A. English Questionnaire for customers.....	viii
Appendix B. English Questionnaire for employees.....	xi
Appendix C.	xiv
Appendix D.	xviii
Letter of Declaration.....	
Certificate.....	

List of Tables

Tables	Pages
Table 1: The General Characteristics of Respondents and Employees.....	39
Table 2: Customer Response on Occupation, Customers of BGI and their Position.....	40
Table 3: Customer Response on the Overall Physical Distribution Practices.....	42
Table 4: Customer Response on the Transportation Activities.....	43
Table 5: Customer Response on the Order Processing Capability.....	44
Table 6: Customer Response on the Company's Customer Service.....	45, 46, 47, and 48
Table 7: Customer Response on the Company's Material Handling.....	49
Table 8: Employee's Response Its Products as the Desired Level of a Customer's.....	49
Table 9: Employee's Response towards Distribution Practices of the Company	50
Table 10: Employee's Response towards Order Processing Capability of the Company....	51
Table 11: Employee's On Availability of Transportation to Delivery Product.....	53
Table 12: Employee Evaluation towards Satisfaction Level of Customers.....	53

Appendix A

St. Mary's University

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Department of Marketing Management

Questionnaires to be filled by Customers of BGI Ethiopia Beer Factory

Dear respondents:

This questionnaire is prepared by a student researcher, prospective graduate of year 2014 in the field of Marketing Management for partial fulfillment of a senior essay. This questionnaire is prepared to measure the overall physical distribution practices of BGI Ethiopia beer factory and to identify problem related to the physical distribution practices of the company and give alternative course of action as a solution.

You are requested to fill this questionnaire and your response will have greater contribution for the company to improve its physical distribution practices. Your willingness and accurate feedback in answering the questions will be helpful for the research to accomplish the research. Therefore, please kindly extend your cooperation by frankly and honestly responding to the items contained in this questionnaire.

Directions

- Writing your name on the questionnaire isn't necessary.
- If the question has an alternative answer put ✓ or × on the space provided beside your answer.
- If the question is related to your personal opinion write it shortly on the space provided.

Part 1. General Information of the Respondents

1.1. Gender

a. Male

b. Female

1.2. Age?

a. 16-25 year

c. 36- 45 year

e. Above 55 year

b. 26- 35 year

d. 46-55 year

1.3. Educational background

a. High school

c. Diploma

e. More than 1st degree

b. Certificate

d. Degree

1.4. Occupation

a. Agent

c. Retailer

b. Wholesaler

d. If any other, please, specify _____

1.5. How long have you been a customer of BGI

a. Less than 1years

c. 4-6 years

e. More than 9 years

b. 1-3 years

d. 7-9 years

Part 2. Information Related with the Subject of the Study

2.1. Are you satisfied by the physical distribution practices of the company?

a. Yes

b. No

c. I don't remember

2.2. How do you evaluate the availability of company's product with desired levels of customers?

a. Very good

c. Medium

e. Very bad

b. Good

d. Bad

2.3. Have you had a delay for the product or draught machine cleaning and Co2 cylinder distribution offered by BGI?

a. Yes

b. No

c. I don't remember

2.4. How do you evaluate the company product transportation truck availability?

a. Very good

c. Medium

e. Very poor

b. Good

d. Poor

- 2.5. How do you evaluate the company's responsiveness to handle customer complaints?
- a. Very good c. Medium e. Very poor
b. Good d. Poor
- 2.6. How do you evaluate the transportation potential of the company towards distributing the product at the right time?
- a. Very good c. Medium e. Very bad
b. Good d. Bad
- 2.7. Do you agree that BGI product is available wherever you need it?
- a. Strongly agree c. Neutral e. Strongly disagree
b. Agree d. Disagree
- 2.8. How often do you receive defective like underweight products?
- a. Very often c. Sometime e. Very rare
b. Often d. Rare
- 2.9. How do you evaluate the transportation potential of the company towards distributing?
- a. Very good c. Medium e. Very bad
b. Good d. Bad
- 2.10. How do you evaluate the company's overall physical distribution practices?
- a. Very good c. Medium e. Very bad
b. Good d. Bad
- 2.11. How do you evaluate your satisfaction level towards the distribution practices of the company?
- a. Very good c. Medium e. Very bad
b. Good d. Bad
- 2.12. Finally, if you have any kind of additional comments please try to indicate it shortly _____

Thank You for Your Cooperation

Appendix B

St. Mary's University

Faculty of Business

Department of Marketing Management

Questionnaires to be filled by Employees of BGI Ethiopia Beer Factory

Dear respondents:

This questionnaire is prepared by a student researcher, prospective graduate of year 2014 in the field of Marketing Management for partial fulfillment of a senior essay. This questionnaire is prepared to measure the overall physical distribution practices of BGI Ethiopia beer factory and to identify problem related to the physical distribution practices of the company and give alternative course of action as a solution.

You are requested to fill this questionnaire will have greater contribution for the company to improve its distribution performance your kindly willingness and accurate feedback in answering the question will be helpful for the research to accomplish the research. Therefore, please kindly extend your cooperation by frankly and honestly responding to the items contained in this questionnaire.

Directions

- Writing your name on the questionnaire isn't necessary.
- If the question has an alternative answer put or on the space provided beside your answer.
- If the question is related to your personal opinion write it shortly on the space provided.

Part 1. General Information Employees

1.1. Gender

- a. Male b. Female

1.2. Age

- a. 16-25 year c. 36- 45 year e. Above 55 year
b. 26- 35 year d. 46-55 year

1.3. Educational background

- a. High school c. Diploma e. More than 1st Degree
b. Certificate d. Degree

1.4. Position of BGI Ethiopia beer factory

- a. Manager c. Sales Supervisors e. Driver
b. Secretary d. Sales Person

Part 2. Information Related With the Subject of the Study

2.1. Do you think that BGI Ethiopia distribute its products as the desired level of a customers?

- a. Yes b. No c. I don't remember

2.2. If your answer for the above question is "No" please, indicate the reasons_____

2.3. Have you ever faced a problem on company's product with respect to distribution practices of the company?

- a. Never c. More than one time
b. Sometimes d. Always

2.4. How do you measure the order execution of the company as order by customer?

- a. Very good c. Medium e. Very bad
b. Good d. Bad

- 2.5. How do you evaluate the company's transportation availability towards distributing its products at the right time?
- a. Very good c. Medium e. Very bad
b. Good d. Bad
- 2.6. Do you agree the company is capable of distributing its products as ordered by customers?
- a. Strongly agree c. Neutral e. Strongly disagree
b. Agree d. Disagree
- 2.7. To what extent do you think that your customers are satisfied with the physical distribution practice offered by the company?
- a. Very good c. Medium e. Very bad
b. Good d. Bad
- 2.8. Do you agree that the company give delivery service to distributor at any time?
- a. Strongly agree c. Neutral e. Strongly disagree
b. Agree d. Disagree
- 2.9. Do you agree that the company is currently in a good position with regard to physical distribution practices?
- a. Strongly agree c. Neutral e. Strongly disagree
b. Agree d. Disagree

Thank You for Your Cooperation

Appendix C

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Appendix D



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Chapter One

Introduction

1.1. Background of the Study

Different scholars define the term physical distribution in various ways, but basically revolving around the same idea.

For instance, Hanna, (2002; 14). States that physical distribution refers to the broad range of activities that include the movement of raw materials from the source of supply to the beginning of product line as well as the movement of finished products from the end of production line to the customer. Hence, be it the movement of raw material or that of finished products, from the above definition, it is clear that physical distribution plays key roles in the process of production and provision. It must be noted that it is the planning, organizing, and controlling of all movement activities that facilitate product flow point of final consumption (Khanna, 2002; 15).

Therefore, it is undeniable that any factory working on consumer production needs to pay due attention on the quality of its physical distribution of products. And, one of the factories that have to follow the procedures stated so far is BGI Ethiopia which is the focus of this study.

The French BGI group (**Societe des Brasseries et Glaciers Internationale**) is an internationally acclaimed Brewing Company that operates in many countries under controlled by **Pierre Castel**. Presently, it has been working in Ethiopia after signing a formalized agreement to take over Ethiopians oldest brewer- Saint George beer factory in 1999 G.C.

It has three brewery factories around the country include Addis Ababa, Kombolcha, and Hawassa; and is currently undertaking the construction of winery in Zeway.

According to on line resources, BGI has an excellent reputation in producing quality bottle and draught and in enhancing the quality of St. George beer to the same standard. It is country's biggest brewery which makes such types of beer as St, George, Castle, Amber and Wine. It has also acquired a 42% stake in Raya brewery worth 210 million birr. Currently, it has an estimated capacity of producing two million hectoliters with the committed to increase its production rate and its share of emerging markets for beer in Ethiopia ([www. Addismap.com/BGI Ethiopia](http://www.Addismap.com/BGI%20Ethiopia), and [www.capital Ethiopia.com](http://www.capital%20Ethiopoia.com)).

And, from what has been described so far, one can assume that the company can have a good quality of physical distribution that helps it produce quality bottles and offer quality product distribution services. However, according to the student research's observation and reports from customers, the company often fails to conduct a balanced physical distribution.

Therefore, focusing on the company under question, identifying presently existing challenges that hinder its physical distribution from beginning consistent, and recommending possible solutions will be what the student researcher will be dealing with in this study.

1.2. Statement of the Problem

In this increasingly busy world, being on time serves a great deal to save time by meeting the temporal needs of people so that they can go on engaging in activities in accordance with their calculated plan. Analogously, if a company, like BGI, is able to meet the temporal needs of its customers by modifying the quality of its order processing and it is on time delivery of products, it can be inferred that it has an excellent quality of physical distribution, so that it will not be blamed for preventing customers from being in tune with their plan of action. Therefore, it must be noted that physical distribution has a great impact on the timeliness both in the processing and delivery of products.

Different scholars give almost identical description on physical distribution. For instance, Khanna, (2005:15), states that physical distribution refers to the distribution of materials in line with such activities as freight transportation, warehousing, material handling,

protective package, inventory control, plant and warehouse site selection, order processing, market forecasting and customer service.

The other author Sherleker, (2004:417) generally, classified distribution as physical distribution, which includes - order processing, transportation, warehousing, inventory management, material handling, package and customer service and channel members include wholesaler, agent and retailers.

Therefore, it is obvious that if one of the activities related to physical distribution is not properly performed; it will have a negative impact on the quality of physical distribution of the company, which in turn minimizes timeliness of the company in meeting the needs of customer's punctuality.

In this regard, when coming to the company under study- BGI Ethiopia, the student researcher could have some information on the quality of physical distribution of the company through preliminary observation and informal discussion with customer and regional sales manager. And from the preliminary observation and informal discussion with customers and sales manager, the student researcher could identify the lack consistency of punctuality in the case of both orders processing and delivering of products to customers.

Therefore, it is the student researcher's interest to make an assessment of transport in relation to physical distribution strategies, and order processing procedures' of the company. Thus, the study would try to answer the following questions.

1.3. Basic Research Questions

To investigate the stated problems above, this research attempt to answer the following basic research question.

- What does the current physical distribution practices of the company look like?
- What factors affect physical distribution practices of the company?
- What is the problem on distribution practices strategies of the company?

1.4. Objectives of the Research

1.4.1. General Objectives

The general objective of the study is to identify the problems on physical distribution management in the case of transportation and order processing procedures of BGI Ethiopia. In addition

1.4.2. Specific Objectives

The specific objectives of the study;

- To identify the current physical distribution practices of BGI Ethiopia;
- To find out the factors affecting physical distribution practices of BGI Ethiopia; and
- To identify the physical distribution strategy of BGI Ethiopia uses to meet the needs of its customer.

1.5. Significance of the Study

This study is significant for the company itself if its public relation practitioners have access to findings and use them to re-engineering their strategies on physical distribution in relation to transportation and order processing. It will also serves as a spring board for those individuals who are interested to conduct a research on physical distribution strategies and order processing and lastly the student researcher also a great importance about the title on physical distribution practices to get more knowledge in this area and have experienced to conduct further research.

1.6. Delimitations or Scope of the study

Even though the company is engaged in various activities, this study is delimited to physical distribution in relation to transportation and order processing procedures of a company due constraints in finance, time, and material to conduct an overall research. It also delimited only one agent (located North East of Addis Ababa) out of five agent through whom the company distributed its product; and this is because the selected agent relatively high sales volume and greater number of customers than the rest. Furthermore, the student researcher focused only on St. George bottle and Drought beer out of the total

seven products due to shortages related to time, money and material. And the last delimitation is the research study time limit is between 2009 up to 2012.

1.7. Limitation of the Study

While conducting the research study there were some factors that hindered the study not to be carried out as it was expected from; questionnaires were not fully returned for analysis, business customers didn't give sufficient answer for the study and confidentiality of some information from the company side. Even though the above problems were faced, the student researcher finally managed to collect the necessary data successfully even if it wasn't easy.

1.8. Research Design and Methodology

1.8.1. Research Design

The student researcher designed has been formulated in order that it elicits genuine information from the main resource of data (customer and employee). Thus, the study has been conducted descriptively since it is the student researcher's belief that these methods have brought findings that can meet the objectives of the study.

1.8.2. Population, Sample Techniques and Sample Size

As sources of data, the regional sales manager of the company, representative different department staff, agent employees and customer have through purposive, probability and simple random sampling techniques based on the recommendation of Malhatra, (2006) probability sampling approach is used where there is no assurance that all member of population has some chance of being included in the same. Their will 25 employees all of them has used. But the number of customers have difficult to determine, so that the total sample of 150 customers have taken using non probability sampling particularly using convenience sampling technique because the student rexsearcher use respondent that had heterogeneous character response and are available respondent at a certain specific time and place with the help of convenience.

1.8.3. Types of Data collected

Both primary and secondary data have collected so as to make to a complete study. The primary data have collected to get fresh and relatively genuine information from subjects; and the secondary data have gathered from the company records, WebPages, journals, and books available in the library in order to assess past working tradition of the company and compare it with the primary data.

1.8.4. Methods of Data to be collected

The primary data have collected through distributes questionnaires to business customers, employees has used as instruments of data gathering. In addition, interview with regional sales manager has conducted. And, the instrument has chosen on the belief that they have elicited primary information need for the study. Whereas secondary data analysis have also been made based on such source as company records, web page, journals, and books available in the library.

1.8.5. Method of Data to be Analysis

After being the student researcher collected, the responses from the questionnaires for both employees and customer has composed in to identical response categories, tailed and tabulated in order to make the data easier for descriptive data analysis and interpretation. The responses from the interview with the regional sales manager has also be summaries and included in the analysis as a supplement.

Generally, the data which be obtained through the use of questionnaires and interview have be descriptively analyzed and interpreted; and finally, conclusion and recommendations have been forwarded based on the finding.

1.9. Organization of the Study

This study is organized in four chapters. The first chapter have include background of the study, statement of the problem, basic research questions, and objectives of the research, significance of the study, delimitations or scope of the study, research design and methodologies; the second chapter have present review of literature, which has great

importance in showing a direction of physical distribution theories from different scholars' perspectives; and the third chapter have present the data analysis, presentation and interpretation of the study finally the fourth chapter have include summary, conclusion and possible recommendation.

Chapter Two

Literature Review

This research paper reviews relevant literatures, written by different authors on distribution and specifically on the area of physical distribution in order to conduct detail analysis and discussion on each and every elements found in the physical distribution management.

2.1. An Overview of Distribution

According to Havaladar and Cavale, (2007) distribution can be defined as the management of all activities which facilitate movement and consolidation of time and place utility in goods. It's the art and science of determining requirements, acquiring them, distributing them, and finally maintaining them in operationally ready conditions for their entire lives. Moreover, by supporting the above two ideas Sherlekar, (2004) generally classified distribution as channel members and physical distribution. The channel members mainly include; wholesalers, retailers and agents, whereas physical distribution comprises: transportation, inventory management, packing, warehousing, order processing, material management, and customer's service. So let's to come to the researchers focuses or to come the research topic clearly in the above;

2.2. An Overview of Physical Distribution

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 procession, 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 products. Physical distribution activities have recently received increasing attention from business managers, including small business owners. This is due in large part to the fact that these

functions often represent almost half of the total marketing costs of a product. In fact, research studies indicate that physical distribution costs nationally amount to approximately 20 percent of the country's total gross national product (GNP). These findings have led many small businesses to expand their cost-cutting efforts beyond their historical focus on production to encompass physical distribution activities.

The importance of physical distribution is also based on its relevance to customer satisfaction. By storing goods in convenient locations for shipment to wholesalers and retailers, and by creating fast, reliable means of moving the goods, small business owners can help assure continued success in a rapidly changing, competitive global market.

And physical distribution as a process delivering the product to the user or consumer promptly, safely and in time. It involves management or planning action and control of the physical flow of raw materials and finished goods from the point of use consumption to meet the consumer need at a profit.

2.3. Definition of Physical Distribution

According to Khanna, (2002) describe physical distribution as an art and science of determining requirement, acquiring them, distributing them and maintaining them in an operationally ready condition for their entire life.

Other author Shelkers, (2003) explain physical distribution as a marketing activities relating to the flow of raw materials from the suppliers to the factory and movement of finished goods from the end production line to the final consumer or ultimate user. Marketing agencies such as dealers, merchants and mercantile agents manage the flow of goods and perform the function of physical supply- right up to consumer's homes and stores.

To support of this Havalder and Caval, (2002) also define physical distribution as a system which involves the actual movement of goods and services from the shop floor to the ultimate consumer.

Therefore, from the above definitions we can derive a general definition for physical distribution that it's an art and science of determining requirements, acquiring them distributing and maintaining them in an operationally ready condition, which in other words means that it's a system in marketing activities involving the actual movement of goods and services from the production center to the ultimate consumer.

2.4. The Problem of Physical Distribution

Reliable mechanisms need to be set in order to solve the problem of physical distribution. In this regard, the following possible solutions have forwarded according to Data, (2003)

From the view point of Total system of materials management; it's always advantageous to look at physical distribution with the primary objectives of reduction in the total distribution cost. It has to be recognized, however; that a part of the cost is related to providing customer satisfaction. How well a firm can satisfy its customers' demand is a measurable value about which has been said and written, but still remains largely abstract. For firms which produce to stock, the problem relates to one inventory of maintaining the in the inventory level at such locations from where customer orders can best be filled, dispatched and delivered without delay. This in turn, relates to locating warehouses in close proximity to markets, if it's possible to assign warehouses which will then supply customer needs efficiently at least cos.

Therefore, companies need to look into their physical distribution strategy in order to identify whether it fits into remedial ideas like the one stated so far so that they will be able to come to a point where they can satisfy the overall needs of their customers.

2.5. Physical Distribution and the Four Utilities

Smykay, (2002) states that physical distribution is related to the other marketing managerial context of the 4P's in a variety ways. These four basic economic concepts includes: first, Form Utility which involves Product design that enters utility through the impact of product package dimensions, essentially in terms of size, weight, volume

and other physical distribution such as transport, warehousing and material handling; second, Place Utility which involves accessibility of the product for use through the provision of facility network so as to give the product a smooth flow based on customer requirements; third Time Utility that involves the availability of the produce at specific times. In which Physical distribution meets customer time requirement with delivery capability; and four, Possession Utility which is the use of the product in which Physical distribution plays a role in possession by making a physical transfer of goods from seller to buyer possible.

It can be inferred, from the utility types stated so far that they need to be incorporated in the physical distribution strategy of a companies'. Therefore, it's clear that if a company cant utilizes the 4P's together with its overall physical distribution strategy, it's unlikely that it meets the needs of its customers effectively.

2.6. The Elements of Physical Distribution

As an integrated management activity physical distribution consists of various activates. There are six components of physical distribution efficiency in these components can lead to reduction of total cost of the firm. The choice of the right combination of the physical distribution element is one of the best tools used by marketers to satisfy their customer. These component include; transportation, warehousing, material handling, protective packaging, inventory management, order processing, and customer service.

2.6.1. Transportation

It's an essential and one of the most important components of physical distribution.

According to Data, (2003) define transportation" it's given a brooder interpretation in the sense that it means the management of the movement of goods and materials thorough space and time from their original source to the ultimate destination.

Historically speaking, transportation has been the foundation stone on which electronic growth of a nation rests. With the advent of large scale production or distribution

systems, transportation has always exerted tremendous impact on the supporting activities which are associated with the production and marketing of goods, and general economic activity.

And also Havalder and Caval, (2007) discuss transportation is an equally important part of the logistics function. Movement of the products across space or distance add value to the product as it gets them nearer to the points of consumption and the distribution network or final users. It really provides the “time” and “place” utility, which is the primary function of the physical distribution system. Transportation or freight is one of the largest elements in the logistics costs and a significantly influence the final selling price of the product and its profitability.

The other author Chopra says, (2007) “it refers to the movement of product from one location to another as it makes its way from the beginning of supply chain to the customer. It’s an important supply chain driver because products are rarely produced and consumed in the same location”. Transportation is a significant component of the costs incurred by most supply chains.

To understand transportation in a supply chain it’s important to consider the perspective of all four parties.

A carrier maker’s investment decisions regarding the transportation equipment (locomotives, trucks, airplanes, etc) and in some cases infrastructure (rail), and then makes operating decision to try to maximize the return from these assets. A shipper, in contrast, uses transportation to minimize the total cost (transportation, inventory, information, sourcing, and facility) while providing an appropriate level of responsiveness to the customer.

We can think of a transportation network as a collection of nodes and links. Transportation originates and ends at nodes and travels on links. For most modes of transportation, infrastructure such as ports, roads, waterways, and airports is required both at the nodes and links. Most transportation infrastructure is owned and managed as a public good thought the world. It’s very important that infrastructure be managed in such

a way that monies are available for maintenance and investment in further capacity as needed. Transportation policy sets direction for the amount of national resources that into improving transportation infrastructure. Transportation policy also aims to prevent abuse of monopoly power, promote fair competition, and balance environmental, energy, and social concerns in transportation. In the next section I am discuss different modes of transportation and their cost and performance characteristics.

2.6.1.1. Risk Management in Transportation

According to Data A.K, (2003) discuss as the three main types risk considering when transporting a shipment between two nodes on the network.

- The risk that the shipment is delayed
- The risk that the shipment doesn't reach its destination because intermediate nodes or links are disrupted by external forces.

In each case it's important to identify the sources of risk and their consequences and plan suitable mitigation strategies.

Delay arises either because of congestion along links such as roads or nodes such as ports and airports. When congestion is the cause delay, mitigation strategies for the shipper include moving inventories closer to the destination, using alternative lanes, and building a buffer into the lead time. Congestion delays can be mitigated by designing a network with multiple routes to the destination and changing routes based on congestion. Congestion delay can also be mitigated thorough the use of congestion pricing by the owner on the transportation node or link. Delay may also arise because of the limited availability of transportation or infrastructure capacity. Such delays are more likely when the assets are owned by a third party that is serving multiple customers. These delays may be mitigated by owing some transportation capacity or signing long term contracts for transportation capacity with the third party. Given the high cost of owning these assets, it's best to do so for parts of the network where utilization is high.

Disruption at transportation links or nodes may occur because of natural events such as hurricanes or manmade events such as terrorism like Somalia hackers. The best

mitigation strategies in this case are to design alternative routings into the transportation network.

When considering both delay and disruption risk, it's important to identify sources that are likely to be correlated across the network. For example, the events on September 11, 2001 caused a disruption in air transportation across the entire United States of America. Alternative routings were useless as mitigation strategies in this case because no alternative route was available. For such correlated sources of risk, the only option is to decrease the probability of such a disruption.

Hazardous material can be harmful when people or the environment is exposed. The goal of risk mitigation here is to minimize the probability of exposure, and in the event of exposure, to minimize the impact. Mitigation strategies include the use of modified containers, low risk transportation modes, selecting routes with low accident probability or reduced population and environmental exposure, or modification of the physical or chemical properties of the material being transported to make it less dangerous.

Therefore, it's important to a companies' to predict possible factors that may cause risks in transportation and to create effective and reliable risk mitigation strategies, so that it will be on the safest side.

2.6.1.2. Functions and Principle of Transportation

Bowersox and Closs, (2003) pointed out that, transportations provides four major functions; product movement, storage, economy of scale, and economy distance. According to these scholars, the stated functions respectively refers to the transportation of materials to the end user or consumer; the temporary storage of materials; the cost of transportation per distance; and the cost of transportation per unit weight as the size of the shipment increases.

From the points stated so far, one can understand that such functions and principles of transportation are basic ideas that a company should follow. Otherwise, if a company conducts its physical distribution with the efficacy of the above functions and principles of transportation, its harvest will be customer dissatisfaction.

2.6.1.3. Fundamental Factors of Transportation

According to Altekar, (2005) explains that, there are three factors which are fundamentals to transportation performance, i.e. Cost, Speed and Consistency, and also Altekar, describe cost as direct cost which includes the payment for movement between two geographical locations and expenses related to administration. And indirect cost of maintaining in transit inventory. And the second factor as Speed which is the time required completing a specific movement of goods from one place to another and greater speed would result in lesser time of inventory in transit being unavailable. Hence the tradeoff is required to be made and balance has to be struck. And the third factor is consistency, which refers to the variation in time required to perform a specific movement. Consistency is reflection of dependability of the transport.

2.6.1.4. Advantages of Transportation

It provides time and place utility for the customer, it also supports the company operations some of the advantages of having a good transportation system by any company are as follows:-

- It provides greater economies in the scale of production it helps better utilization of capacity and the production units can be located in sites more suited for production.
- For providing opportunities for business, it increases the competition among transporters and this reduces costs associated with transport, inventory, and packaging.
- It provides better customer services, transportation creates the place and time utility as required either a scheduled dates as even in emergencies.

2.6.1.5. Function of Transportation

2.6.1.5.1. To Encouraging Large Scale Production

Conversion of raw materials into finished products is known and the production of goods. For large or small scale production of goods movement of raw material is essential. Then finished products must be transported. Transportation of goods takes place

from the abundant area to the scarce area. Transport is necessary at every stage of production of good. Transportation existing market and create new market. It increases the demand for goods. It leads to increase in the production level, thus large scale production is possible. Movement of products from one place to another place created place utility. Transport moves the products in the required from to the required place. It equalizes the supply.

2.6.1.5.2. It Increases the Mobility of Factors of Production

Growth of industries depends on the transport systems the four factors of production (raw material, labor, capital, and entrepreneur) for essential for development of industries. Its only through transportation, the mobilization of factors is made possible from one place to another places and from one country to other countries. It encouraged migration of people and movement of labor and capital. Quick a reliable means of transport are essential for the industries which produce perishable commodities like products, fruits, meat, poultry etc. thus it creates time utility.

2.6.1.5.3. It Encourages of Specialization and Division of Labor

Transport facilitates regional and geographical concentration. It helps the region or country which may concentrate on the production of that commodity for which it's most suited. It will rely on other countries for those goods which it can't produce. Thus it helps in territorial division of labor. Exploitation of local resources is also possible. Location of industries also is decided by the transport. Thus transportation helps everyone in the world to reap the benefit of specialization.

2.6.1.5.4. It Helps in Stabilizing Prices

Transportation brings about regional price equalization. It helps in the movement of goods from surplus area to deficit areas. This leads to equalization demand and supply conditions prices and elastic or static according to the demand and supply conditions this reduces the price of goods to the consumer. Thus transportation is good for both the consumer and producers. It intensifies competition among dealer and thus reduces prices.

2.6.1.5.5. It Provides Employment Opportunities

It provides employment opportunities to skilled or unskilled labors. Millions of peoples are needed to perform the function transport throughout the world. There are three modes of transport; land, water, air. Thus transport lends a helping hand to employment.

2.6.1.5.6. It Strengthens the Defiance of a Nation

Transport is the most important element for strengthening the defiance of a nation. Men and materials to fight wars are moved by the transport system. The national defiance force consists of air force, navy and army and these three categories of transport are essential.

2.6.1.5.7. It Reduce the Dangers of Shortages

In this world everything is in short supply relating to its demand. The danger of shortage can be eradicated with the help of transport. Transport creates place utility. American wheat, Russian kerosene, Burmese rice etc. are brought by us. We are in shortage of these commodities. Due to shortage of one commodity in one place the price will be high. But that commodity may be in abundant supply in other places at low prices. Transport helps the shortage area by bringing the goods from the abundant area.

2.6.1.5.8. It Helps in the Transformation of the Economy

Transformation of agriculture from subsistence farming to commercial farming is possible through the development of transport. Development of industries is possible only by the movement of raw material, labor capital, etc. this movement is possible only through transport. Thus, transport leads to transformation in agriculture and industrial economy of a country.

2.6.1.5.9. Transform of Social and Cultural Structures

Social and cultural contacts between one country and another country are indicated through transport. Social homogeneity and utility are created. Religious ideals are known, standard for living education and day to day life are known a society stagnant; it can

never enjoy the benefit of a modern and progressive society. National unity and integrity are prompted by transport. Increases the knowledge of the people. It spreads the culture and civilization all over the world.

2.6.1.5.10. It Increase of the Demand for Goods

Today markets have become national or international only because of transport. It wider the market, both consumers and producers are benefited by the extension of the market. New comers in newer places can easily be contacted and thus demand is created. It helps the product to be distributed in the minimum possible time.

2.6.1.6. Economic Significance of Transportation

Transportation has a great economic significance in various ways. For instance, it ensures regular supply of raw materials and workers that keep the factory running and distributing finished products over markets. It provides modern means of transport for better commodity exchange relations. It also enhances place and timer utility of commodities in a way they satisfy human wants. Not only this but it also facilitates the international flow of labor and capital in a way entrepreneurs find new opportunities to start profitable trade and industries, so that it serves as a backbone of industrial development. Furthermore, transportation plays an undeniable role in agricultural production; facilitates the distribution of surplus production to deficit areas; and it provides employment to millions of people as well.

Looking at the significance of transport described so far, it's obvious that transport plays key roles in the economic development of the world in general; that without it, there would be very slow physical distribution which has a negative impact on all business areas including the ones mentioned above.

2.6.1.7. Modes of Transportation

The effectiveness of any modes of transport is affected by equipment investments and operating decisions by the carrier as well as the available infrastructure and transportation policies. The carrier's primary objective is to ensure good utilization of its assets while

providing customers with an acceptable level of service. Carrier decisions are affected by equipment cost; fixed operating cost, variable operating costs, the responsiveness the carrier seeks to provide its target segment, and the prices that the market will bear.

Supply chains use a combination of the following modes of transportation;

When Altekar, (2005) categorized the type of transportations, there are five basic modes of transportation, as follows; each modes has its own significance depending up on the geographical location and product to be transported. Each differs in cost and time taken to transport the goods from one place to another.

2.6.1.7.1. Roadways: It's the most common means of transportation. In this is something that connects all the places. Motor carriers have the flexibility because they are able to operate in all kinds of roadways.

2.6.1.7.2. Railway: Are becoming more responsive to specific customer needs, emphasizing bulk industries and heavy manufacturing. To provide service to major rail users, railways are concentrating of specialized equipment like unit trains, etc
Unit trains are an entire train carrying one single product. Typically, the product is a bulk commodity such as coal or grain. Unit trains have also been used to support assembly operations for automobiles industries, it's faster and less expensive to operate that traditional trains.

2.6.1.7.3. Pipeline: It plays a significant part in the transportation of crude and petroleum oil. In addition to petroleum the other important product transported by pipeline is natural gas. Pipelines are also utilized for transport of manufacturing chemicals polarized by bulk materials.

The basic nature of a pipeline in unique in comparison to all other modes of transport, pipeline operate on twenty four hour basis, seven days a week and are limited only by commodity change over and maintenance. Unlike other modes there is no empty container or vehicles that must be returned.

2.6.1.7.4. Waterways: It's the oldest modes of transportation. Domestic water transportation involves the lakes, canals, and navigable rivers.

The main advantage of waterways is the capacity to move extremely is shipments. Water transport employs two types of vessels, namely the deep water vessel, which are generally operate on rivers and canals and have considerably more flexibility.

2.6.1.7.5. Airways: It's the newest, but least utilized mode of transportations air freight. Its significant advantage lies in the speed with which shipment can be transported. A coast- to- coast shipment via air require only a few hours aspect of high cost that could be prohibitive.

Therefore, a companies' needs to clearly identify which modes of transportation it should use so as to transport materials to the company itself and to its customers; and this is because the safer the modes of transportation, the safer the goods will reach its destination, which in turn, leads to customer satisfaction.

2.6.2. Warehousing Management

According to Agrawal, (2003) warehouse is the go-downs for keeping, storing and providing other related services in order to keep traders or manufacturers to preserve the goods in scientific and systematic manner so as to maintain their original value.

In supporting of the above idea Kumar and Meenakshi, (2006) defined as all activities required in the storing of goods between the times they are transported to the customer. These activities include break bulk, making product assortment for delivery to customers, storage and loading.

Kahanna, (2002) pointed out that, warehouse it's a location with adequate facilities where value shipments are received from production center brake down, reassembled in to combinations representing. Particular order or orders, and shipped to the customers location or locations.

Warehouse is a part of the company's logistics framework that stores items raw materials, packing materials tools, and work in process of finished goods at and between the point of origin and point of consumption and also provide information to management on the status and condition of the items being stored (Havaladar and Caval,2007).

2.6.2.1. Function of Warehouse

According to Agrawal, (2003) the function of warehouse can be properly discussed in two;

2.6.2.1.1. Economic Function

- **Consolidation:** In this function warehouse receive and consolidate materials or goods from different production plants and then dispatch the same to a particular customer on a single transportation shipment.
- **Break Bulk:** In this function refers to the shipment of goods from the production plant to bulk quantity by low rate value shipment to the distribution warehouse and then reshipment in small quantities.
- **Stock Pilling:** This function is a seasonal storage of goods to select business.
- **Value Added Service:** Are also provided by the warehouse, such as packaging and labeling.

2.6.2.1.2. Operation Function

- Receiving goods
- Dispatching good
- Up to date recording of goods
- Order receiving, processing and filling
- Marketing intelligence and acts as an intermediary between company and customer.
- Storing of goods at an appropriate space
- Proper handling of goods on course of loading and unloading

2.6.2.2. Types of Warehouse

According to Agrawal, (2003) there are two broad bases which warehouse classified;

2.6.2.2.1. On the Basis of Ownership

- **Private Warehouse:** It comprises warehousing facilities operated and owned or leased by a company handling its own goods.
- **Public warehouse:** Are those warehousing which are owned and operated by the organizations like government, cooperatives, or company in the private sector.

2.6.2.2.2. On the Basis of Services

- **Bounded Warehouse:** it's a licensed and authorized by the custom authorizes for storing of goods till import duty due on its paid down either by the government or private.
- **Field Warehouse:** The warehouses are managed by the public warehouse agency in the premises of the factory or company which needs the facility for borrowing from the bank against the certification of goods in the storage.
- **Cold Storage:** It's another types of warehouse which provides facility to preserve the perish ability of goods against payment of storage charge for space utilized by different parties.
- **Distribution Warehouse:** These warehouses are generally located nearer to the market owned or leased by the manufacturer to stock to their final products for immediate supply to the market.
- **Buffer Storage Warehouse:** These warehouses built at strategic locations with adequate transport and communication facilities and the goods are started in huge quantities and further transmitted to distribution warehouse.
- **Export Import Warehouse:** These warehouses are located nearer to the parts from where international trade is undertaken.

2.6.2.3. Elements of Warehousing Costs

As Agrawal, (2003) there are basically three types of warehousing costs, namely as follows;

2.6.2.3.1. Warehousing Infrastructural Development: This includes cost of procurement of storage space, handling and transfer cost, administrative cost, and cost incurred in direct and direct physical facilities.

2.6.2.3.2. Working Capital: This is involved in goods started in warehouse as inventory.

2.6.2.3.3. Miscellaneous Costs: At last, it includes tax to be paid insurance paid for covering risks, and the risk of product obsolescence or deterioration.

2.6.2.4. Warehouse Location Selection Criteria

There are various factors that should be considered before making decision on warehouse location. These factors are market service area and cost of distribution from the warehouse to the market area, satisfaction of transport requirements and facilities available, availability of various infrastructures; power, water, road, and other important utilities, labor costs in the area, the potential for later expansion, cost of land for the warehouse and other related cost.

Therefore, it's obvious that a companies' should own the safest warehousing management strategy which able to keep all the materials or goods is the warehouse originally presented while they are in the factory as well as until they transported to customers.

2.6.3. Inventory Management

According to Sherlker, (2004) describe inventory management as the heart of the game of physical distribution with regard to managerial decision like size, location, handling, and transporting of inventories.

Other author Class and Bowersox, (1996) also explains inventory management as the integrated process that operationalized the firms and the value chains inventory policy.

And also Alkator, (2005) explains inventory management as a key to any successful distribution business and provides every information need to know about the receipt and movement goods, the sale, removal or disposal of goods, the precise valuation and status of goods remaining in inventory at any time.

The term inventory can be used to mean several different things such as: the stock on hand of material at a given time or tangible asset which can be seen, measured and control, an itemized list of all physical asset, to determine the quality of items on hand, and to determine the value of the stock of goods owned by an organization at a particular time (Agrawal, 2003).

Therefore, we can set up a generalized definition for inventory management based on the authors' description stated so far. Thus, it can be said that inventory management is the heart of physical distribution will regard to managerial decision like size, location, handling and transporting of inventories as the integrated process that operationalised the firms as well as the value chain of inventory policy that a company should follow.

2.6.3.1. Function of Inventory

Inventories usually exist through the network in the various forms and for various reasons.

According to Agrawal, (2003) the functional classification of inventory management is based on its utility and inventory can be placed in one or more of the following categories.

2.6.3.1.1. Work Stock: also called Cycle or Lot Size Stock;

It's an average amount of inventory in stock that result from lot sizes to get benefits of minimum ordering and holding costs, quantity discounts, favorable freight rates.

2.6.3.1.2. Safety Stock: also called Buffer Stock;

It's also a function of this inventories is to meet short range variation in either demand or replenishment.

2.6.3.1.3. Anticipation Stack: which refers to the Anticipation or Seasonal Stock;

It refers to holding high level of inventory to meet the peak seasonal demand, erratic requirements, or in consistently in the production capacity.

2.6.3.1.4. Pipeline Stock: is also called Transit Stock or Work in Process Inventory;

It's used when goods in transit from manufacturer to be delivered to a customer are called pipeline stock. Furthermore, raw material and components being processed, waiting to be

processed, or being moved to become finished goods also come under the function of pipeline inventory function.

2.6.3.1.5. Decoupling Stock: This inventory is accumulated between the various departments' activities as stages to reduce the department requirement for completely synchronized of operations.

2.6.3.1.6. Psychic Stock: This is used to window display of an inventory in order to stimulate demand and acts as a silent sales man. This function of inventory generates an impulse buying tendency, fulfilling the need of promotion function.

2.6.3.2. Types of Inventory

Inventories can be classified in their nature and uses;

2.6.3.2.1. Based on Nature

- **Production Inventory:** It's a raw material, parts and components, which are used in production process.
- **MRO Inventory/ Maintenance, Repair and Operating Supplies:** Its items like lubricating oil, old clothes, machine spare parts etc. the requirement for smooth function of the production process.
- **In Process Inventory:** it's a semi finished product; that are found at a various stages in the production process.
- **Finished Goods:** these inventories items are final products available for sale and distribution.

2.6.3.2.2. Based on Uses of Material

- **Transaction Inventory:** These types of inventories are basically needed for transaction.
- **Speculative Inventory:** The stocking of creating material as a measure of speculation so as to get more prices of the goods in the future.

➤ **Precautionary Inventory:** The stacking of certain material or items to prevent the breaking down of the production process.

2.6.3.3. Elements of Inventory Cost

According to Agrawal (2003) there are various elements of inventory costs. This includes as follows;

2.6.3.3.1. Procurement Costs: These costs of a product are due to several factors includes cost of order processing which involves use of stationary and services, cost of staff and the executive time spend an order processing, cost of transmission of an order from the purchase department to the supplier, which includes; cost of postage and follow up message over the telephone, by telegram, telex, etc, cost of transportation including freight, transit insurance, and protective packaging, cost invoice pricing, including checking, approval, book entries and payment procedures, cost of receiving, holding, inspecting, and entry in the stock register or computer, cost of final feeding of data in the logistics information system.

2.6.3.3.2. Carrying Costs: Its start good includes space rent for storage goods, the cost of working capital locked in the inventory, the cost of insurance of goods, cost of spoilage in the quality of goods in storage, breakages in handling, cost of deterioration due to passes of time and change in weather; and cost of obsolesce of goods or depreciation.

2.6.3.3.3. Stock out Costs: It's the economic consequence of either an external or internal shortage.

An external shortage occurs when a customer order isn't filled, where as an internal shortage occurs when an order of a group or department within the organization isn't filled.

Internal shortage can result in lost production or idle resources and a delay in completion date, whose cost depends on the reaction of the customer to the out of stock situation. The external shortage incurs back orders costs, present profit loss of potential sales, and future profit cost due

to loss of corporate image, affecting future sales. The back order cost is due to in the delay in the supply of goods to the customers.

2.6.4. Order Processing

Agrawal, (2003) explains a customer order is the message that sets the supply chain process in motion. Its starts with the receiving of customer order and ends with the final delivery of goods along with transfer of title, the phrase means how a firm handles incoming orders. More specifically, order processing is the activity that takes place in the period between the time a firm receives an order and the time a warehouse is notified to ship the goods to fill that order.

In other words, it's a set of activities for receiving, recording, assembling of products for dispatch to fill the customer order. Order cycle is a related term having several meanings, depending up on ones perspective. From the seller's point of view, it's the time from when an order is received from a customer to when the goods are delivered to the customers end. From buyer's perspective, the order cycle is from when the order sent out to when goods are received.

According to Havalder and Caval, (2007) define order processing as getting orders in time from customers, checking on the status of execution and delivery.

By supporting the above idea Reeder R and others, (2001) describe that an efficient order processing system is the essential aspect of logistical coordination system. Physical distribution starts with the receipt of a customer order and ends when the customer receives shipments. Because of the dynamic change in the needs and wants of customers, order processing plays vital role in creating time based competition companies which one now a day's operating in an order processing manner become more successful. Since they create mutual benefit, i.e. they aren't only operating for the sake of their benefit; rather they attempt to give equal benefit to their target customers and as the number of customer become more and more their benefits also increase.

2.6.4.1. Function of Order Processing

According to Agrawal, (2003) the major function s of order processing is order entry, credit checking, inventory availability check, order acknowledge, order pitting, and modification, order

pricing, order status inquiry, price and discount extension, back order processing, raise invoice, prepare transportation and shipping scheduling, reserve inventory or safety stock and their release; reassign order source; verify shipment; and return processing in case of defective delivery.

The function of order processing can also be discussed more systematically in five steps as follows:

2.6.4.1.1. Order Planning: It refers to designing an efficient order handling system, i.e. it determine how a customer order is received and by whom, what techniques should be adopted (centralized or decentralized).

Order are generally placed by customer to visiting sales people of the company or by telephone, fax, mail order, e mail or electronic data interchangeable directly to the dispatching point off controlling office or head office.

2.6.4.1.2. Order Transmittal: It refers to a series of event that occurs between the times a customer places an order or send an order and the seller receives the order.

2.6.4.1.3. Order 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 it to pick the shipment and updates the firms master inventory file, and transportation of shipment from the warehouse by the traffic department.

2.6.4.1.4. Order Picking and Assembling: It involves giving instruction to a specific warehouse to assemble a given order for a customer. In other words, it's a written document given order for a warehouse and its employee indicating the item to be assembly function includes as per the list of the customer order.

The order picking and assembly function includes the activities from the time the warehouse receives an order to the ship items until goods are loaded an out bound carriers.

2.6.4.1.5. Order Delivery: The last function of order processing. The time from when a carrier picks the shipments until it's delivered to the customers receiving dock, i.e. transit time. This transit time has a direct and major impact on sellers total order cycle time or customers' replenishment cycle time. Hence, proper load planning fleet management are essential function of total order processing.

Generally, a company has to have effective order processing system which helps to clearly understand the needs of its customer. It should also follow all the functional system of order processing that go up to the last function which is order delivery because they are all essentials to create and keep better business relation.

2.6.5. Material Handling

As mentioned Data A.K, (2003) material management is responsible for materials flow from the moment a product is conceived or customer order is received till the moment the materials reaches the production shop floor and, then again, from the time the finished product leaves the production pipe line and is delivered to the ultimate consumer. Therefore, covers an activity that goes on in a storage place, warehouse or at the construction site of a project, where materials and equipment are picked up and moved. This applies equally to raw materials and supplies, in process inventories, maintenance and material for repair operations and equipment and finished goods. In short, every operation requiring raising, lowering or moving an item may be termed as material handling. But, movement of materials from one place of operation to another doesn't add to the value of the material in question and/or perform a value addition operation.

According to the British institute of materials handling, MM is a broad term covering a wide range of activities but, in general terms, it can be sub divided in to two separate but closely interlinked disciplines- Material Handling Management and Material Handling Technology and Engineering. The former is applied to systems covering such matters as production manning and control, buying, storage and distribution, and the second applies to the technological aspects, for example, technical and mechanical means of handling and movement of a commodity, be it either solid, liquid or gaseous.

It's basically related to facilitate the movement of goods. It's an art and science involving the moving, packaging, and starting the goods in any form of, say materials, component in process, semi- finished or finished product (Agrawal, 2003).

2.6.5.1. Objectives of Materials Handling

As mentioned Data A.K, (2003) it must be stressed again that material handling can't be viewed in isolation. Efficient handling of materials function must be viewed as an important handling tool for the furtherance of the objectives of the organization as a whole. And herein lays the importance of the Total Concept of Materials Handling. This aims at reducing costs of production and efficient distribution of the end products so as to achieve the organizational objectives. However, within the framework of total organizational objectives, Material Handling Objectives can be divided in to two major segments: (i) Primary and (ii) Secondary.

The primary objectives will include provisioning, storage and minimization of inventories. These will include as a natural corollary' economic procurement, proper store keeping and physical upkeep, issuance and timely distribution, store accounting; record keeping and store control. Inventory control will keep close watch with an eye on high inventory turnover.

The secondary objectives will cover such functions as locating new sources of supply, vendor development, variety reduction, standardization and quality control, value analysis, value engineering, and developing the skills of human resources with a view to harmonizing and coordinating all functions and activities for smooth flow of materials, to, through and out of an organization.

It must be remembered that material handling is by and large a staff function, which must give supportive services to the production and other user department to attain the basic objectives of the total organization include:

- a. Profit maximization for survival and growth,
- b. Maximization of customer service,
- c. Technological innovations to overcome resistances to growth and competition,
- d. Good employer-employee relations, and
- e. Other social objectives.

Needless to mention, therefore, those material objectives of any organization should be supportive to these basic data total objectives, which *inter alia* include:

1. Continuity of supply in order to maintain a uniform flow of materials,
2. Reducing of overall materials costs through the use of scientific tools and techniques,
3. Releasing working capital by ensuring effective control over inventories,
4. Ensuring right quality at the right price,
5. Establishing a harmonious buyer-seller relationship, and
6. Ensuring lower departmental costs, higher and better service to customers, and maintaining of ethical practices and standard.

And needless to mention here that modern material handling provides many simple tools and techniques which offer great scope for cost reduction to improve the profitability of any organization.

2.6.5.2. Basic Materials Handling Principles

As mentioned Data A.K, (2003) While MH practices vary from industry to industry, the basic principles remain the same, and they are as under;

- **Least Handling is best handling:** its best to keep the handling cost to the minimum, because handling doesn't add value to the product or material.
- **Standardization of Equipment:** MH equipment should be selected in such a manner as to afford flexibility and be capable of performing multiple operations, but standardized. This will result in reduction of cost operations, maintenance, and repair and also costs of storage.
- **Specialized Equipment Kept to a Minimum:** it may be desired to have specialized equipment, but the first cost, cost of operation, maintenance and repair are generally more than those of standardized equipment. Present worth and life span value should be evaluated.
- **Volume Dictates the Method:** volumetric consideration determines the method of handling, regardless of size, shape and value. Therefore, the most important criterion is the volume.
- **Planning Ahead:** simultaneously with other planning activities, selection and procurement of MH equipment should be conducted in advance to take care of all aspects of handling and storage, particularly of standardize equipment and combining method.

- **Length and Number of Moves:** movement must be studied in detail to reduce 'back tracking' of materials. The extent of movement must also be studied so as to afford better utilization of men and equipment.
- **Equipment Capacity:** the capacity of rates should be carefully examined and never exceeded, as overloading causes undue wear entails excessive maintenance and repair cost. It also creates potential accident hazards, violating the safety first principle in MH.
- **Analysis of Operations:** to determine combination of handling activities, all operations must be analyzed. This will result in simplification and possibly, reduction in handling and cost.
- **Payload:** the selection of equipment must be made after careful consideration of the cost of moving and economics can be measured by studying the cost operation involved in handling in each move. The physical state of nature of material is a determining factor in the selection process.
- **Straight Flow Line:** the shortest distance between two given points is the straight line. This line provides a guideline for the path to follow.
- **Standardization of Methods:** the line, method of picking, carrying and settling down of material varies. This doesn't call for an analysis like micro motion analysis but calls for forming a basis for MH in the minimum length with the available equipment. When the method is standardize, the time could be fixed and wastage in time, labor, and equipment could be eliminated.
- **Short Irregular Moves:** some MH operations aren't repetitive in nature. In such cases, deployment of equipment may be costlier than manpower. If the load capacity doesn't exceed the manpower, it's economical to use manual labor for short and irregular moves.
- **Prepositioning of Materials:** whenever practicable, material (viz. containers after determination of unit loads) should be moved on a horizontal plane. When loading and unloading, excessive work can be reduced if the work layout is properly planned.
- **Loading and Unloading:** since a major portion of MH activity lies in loading and unloading, this function must be a given a great deal of attention. Whenever economical, loading and unloading should be done by mechanical devices such as, industrial trucks, cranes, a conveyer, etc. when this principle is followed, not only is the possibility of loss and damage reduced, but accident hazards are also reduce and safety and protections are increased.

A large number of pickups and delivery points will increase loading and unloading requirements affecting manpower and equipment. Therefore, several pickup points should be combined into one central point. Further, by segregating material at source or destination will eliminate double handling of material (Data A.K:2003)

2.6.5.3. Basic Materials Handling Consideration

While deciding about material handling facilities the following facts should be taken in to consideration;

- **Types of Products to Be Handled:** The physical characteristics of the product like weight, size, shape, etc. coupled with the nature like solid, gas liquid, and etc have significant impact on the selection of materials handling equipments and facilities.
- **Types of Production System:** Equipments like lift trucks, pallets, hand truck and trolleys are more useful in intermittent production systems.

➤ **Material Handling Cost:**

❖ Equipment cost

- ✚ Cost of material handling device
- ✚ Usable life of the device
- ✚ Resale or scrap value

❖ Operating cost

- ✚ Fuel cost
- ✚ Repair and maintenance
- ✚ Insurance cost and
- ✚ Labor cost

2.6.5.4. Equipment of Material Handling

The range of industrial material handling is quite varied, each type designed for intra depot or project base facilities handling. There are two basic types: powered and non-powered, each type designed to cover specific areas of operation, and each unable to perform all operations.

- **Pallets:** it's a specially designed platform built to dimension to suit fork-lift operations. These are made of hard-woods, though in some operations, steel pallets are also used. Supplies are loaded on pallets, transported and stored in warehouses. They may be two way

or four way entry pallets so that the forks or fork lift trucks may be inserted to carry and lift the loads.

- **Fork-Lift Trucks:** by a pair of projecting fork (arms) which can slide up and down, the forks are inserted below the platform of the pallet, and then raised to clear the ground up to a height of 3 meters. Fork-lifts are versatile and have vertical as well as lateral movement, have pneumatic tires and may be operated or diesel driven.
- **Cranes:** its power driven, self-propelled unit fitted with a boom mounted on a mobile chassis. The boom can be operated independently without movement of the chassis. Cranes are usually fitted with pneumatic tires or caterpillar wheels for outdoor operations. The capacity of a crane may vary from 5 to 100 tones.
- **Conveyors:** it's a device to move materials along a definite path and used for moving bulk materials over long distances.

However, the selection of the right conveyor system is very important. Roller conveyors are powered, consisting of a set of rollers with a driving mechanism incorporated in the system. The carrier rollers are driven by pressure rollers beneath the drive belt. The maintenance cost of roller fed gravity conveyor is considerably lower than other means of conveyance. Overhead chain conveyors reduce the risk of damage to components or finished products.

- **Elevator:** it consists of an endless chain or belt running over two terminal pulleys or sprocket- wheel fixed at different levels in the vertical plane.
- **Hoists:** they are classified according to the service for which they are commissioned. Hand-operated hoists may be: pulley block, chain block, snatch block, winch or crab, friction hoist or skip hoist.
- **Movable Ramps:** these are used for loading and unloading in trucks, wagons, etc. and are constructed permanently or fabricated for mobile operations.
- **Hand Trolley:** these are two- wheelers used in connection with skid platforms and pallets, and when fully elevated, a few centimeters from the floor, the lifting bar assumes a fixed position.
- **Tractors:** where it's uneconomical to use forklift trucks for transport and movement over a long distance, a tractor should be used. A tractor can handle a trailer or a train of trailers.

Many factors influence the selection of MH equipment, either for a specific operation or for a project. Keeping in mind the basic principles of materials handling and taking into consideration the type, size and volume of materials to be moved, the distance between loading and unloading points the right type of MH equipment should be selected.

Therefore, it's undeniable that a company has to set clear material handling objectives based on the basic principles of material handling, and by considering the materials to be handled through the use of compatible equipments in order to achieve the company's business objectives.

2.6.6. Protective Packaging

An Agrawal, (2003) define packaging is the science, art and technology of enclosing or protecting product for distribution, storage, sales, and use. Furthermore, it's the process of design, evaluation and production of packaging.

Packaging generally categorized in to two broad types; namely consumer and logistical packaging.

Consumer packaging is often used based on marketing consideration in terms of advertising and sales volume.

Logistical packaging on the other hand is what facilitates products flow during manufacturing, shipping, handling and storage. In support of the above idea Kotler, (2003) described packaging is defined as all activities of designing and producing the container for a product and the container is called **Package**.

Also Kahanna, (2002) define as the use of containers and parts together with the decoration and labeling of product in order to contain, protect and identify the merchandise and facilitates the use of product.

2.6.6.1. Logistical Function of Packaging

- **Containment:** From logistical and supply chain management point of view, the containment function of packaging is narrowed as it refers to minimization of weight and space

requirement on packaging so that overall logistics can be reduced by means of minimization of transportation and storage cost.

- **Protection:** Protects the products from spoil, discolor, loss of fragrance, damage, break, contamination, or physical deterioration of the products.
- **Utilization:** The logistical operation like truck loading, storage in warehouse and warehouse order and picking productivity are affected by package utility.

2.6.6.2. Forms of Packaging

- **Blanket Wrapping:** Its being a traditional all form is an ideal method for packaging irregularly shaded products like chairs because the uncaptioned chairs can be nested.
- **Film Based Packaging/FBP;** It uses flexible packaging materials to replace rigid materials such as carry rated fiber or boxes. Traditionally film based shrink-wrap and stretchers- wrap system have been used to stabilize unit load.
- **Returnable Packaging:** Automobile manufacturers always use returnable racks for interplant shipment of auto-body parts, chemical companies always reuses steel drums.
- **Pallet Pools:** It have been developed to overcome traditional problems with the disposal and exchange of pallet. Pauperization is the most important contribution to logistical productivity.
- **Plastic Pallets:** Are designed to eliminate the shortcoming of wooden pallet and they are sanitary, light weight, and recyclable. Additionally their life cycles costs are comparable to the traditional wooden pallets are longer to a great extent.

2.6.7. Customer Service

According to Havalder and Caval, (2007) customer service is the result of physical distribution activity which creates customer value or benefits that has impacts on the company market share, total cost and profitability.

In support of the above idea Bowersox and Class (2003) also explain as a process of providing significant value added benefit to the supply chain in a cost effective way.

According to Sherlekar, (2004) customer service means several things the speed of order execution and delivery of goods, safe delivery with minimum damages and losses, quick replacement of damaged goods, prompt after sales service, and reasonable service charge.

Thus we can understand from the above definitions that the effectiveness of other elements in physical distribution activity has an impact on customer service which in turn has an impact on market share, total cost, and profitability. And hence customer service is one element of physical distribution; we can conclude that physical distribution in general can have an impact on market share, profitability and total cost.

Chapter Three

Data Presentation, Analysis and Interpretation

This chapter deals with the data presentation, analysis and interpretation of the data gathered from both customers as well as employees of BGI Ethiopia beer factory.

The data were obtained through questionnaires. The questionnaires were distributed to customers and employees of B G I Ethiopia beer factory.

Among the company's customers who are found within the specified territory, 150 (i.e. 23.55 %, 637) were taken as a sample respondents. Thus 150 copies of questionnaires containing both open and close ended questions were distributed to customers of B G I Ethiopia beer factory. And out of the total 150 questionnaires distributed and 129 questionnaires were filled and returned from customers and all returned 25 and filled employees' questionnaires.

This means that out of the total 150 questionnaires distributed, the rate of return were around 86 percent.

This information obtained from regional sales managers, employees and customers is summarized by using descriptive statics were raw data is computed in percentages. The summarized data then analyzed by applying descriptive analysis method using tables, following detail explanations, at last interpretation is made to demonstrate implications of major findings.

3.1. General Characteristics of Respondent

Below indicates the general characteristics of respondents, which include gender, age, educational level and background of customers.

According to item 1 of table 1 in the following page, which indicates gender composition of respondents and employees, 84 (65.12%) and 17 (68%) of the customers and the employees are male; whereas 45 (39.88%) and 8(32%) of them are female respondents. Based on the data indicated above the student researcher can infer that most of the respondents were male customers and employees.

With respect to item 2 of table 1, 23 (17.83%) and 4 (26.67%) of the customers and the employees are between the age range of 26-35; 42 (32.56%) and 16 (40%) of them between 36-45; 54 (41.86%) and 5 (33.33%) of them between 46-55; and 10 (7.75%) of the customers are above the age of 55. Based on the data indicated above the student researcher can infer that majority of the respondents, both customers and employees, were found to be matured to respond to the questions.

Table 1. General Characteristics' of Respondents

No	Item	No. of Respondent		Percentages	
		Customers	Employees	Customers	Employees
1	Gender				
	Male	84	17	65.12	68
	Female	45	8	34.88	32
	Total	129	25	100	100
2	Age				
	16-25	-----	-----	-----	-----
	26-35	23	4	17.83	26.67
	36-45	42	16	32.56	40
	46-55	54	5	41.86	33.33
	Above 55	10	-----	7.75	-----
	Total	129	25	100	100
3	Educational level				
	High school	43	-----	33.33	-----
	Certificate	41	8	31.78	32
	Diploma	25	12	19.40	48
	Degree	20	5	15.50	20
	More than first degree	-----	-----	-----	-----
	Total	129	25	100	100

With regard to item 3 of table 1 in the previous page, which indicates educational background of respondents and employees, 43 (33.33%) of customers are high school complete and 41 (31.78%) and 8 (32%) of the customers and the employees are certificate holders; 25 (19.40%) and 12 (48%) of them have got diploma; 20 (15.50%) and 5 (15.50%) of them degree holders. Based on the aforementioned data the student researcher can infer that most of the respondents are literate to read and respond to the questions posed to them.

Table 2: Customer Response on Occupation, Customers of BGI and their Position or responsibilities

No	Item	Customers	Percentage
1	Occupation of customers		
	Agent	1	0.78
	Wholesaler	38	29.46
	Retailer	86	66.67
	If any	4	3.10
	Total	129	100
2	How long you have been a customer of BGI?	Customers	Percentage
	Less than 1 years	-----	-----
	1-3 years	19	14.73
	4-6 years	41	31.78
	7-9 years	48	37.22
	More than 9 years	21	16.28
	Total	129	100
3	Position In the Company	Customers	Percentage
	Manager	3	12
	Secretary	3	12
	Sales Supervisors	2	8
	Sales Persons	10	40
	Drivers	7	28
	Total	25	100

According to item 1 of table 2 in the above page, which indicates customers of BGI Ethiopia in relation to their occupation or responsibilities, 1 (0.78%), 38 (29.46%) and 86 (60.67%) of customers have the occupation as an agent, a wholesalers, and a retailers, respectively. And, only 4 (3.10%) of them fall under the “If any” category. Based on the data indicated above the student researcher can infer that most of the respondents was retailers.

With respect to item 2 of table 2 in the above page, which indicates how long they have been a customer of BGI, 19 (14.73%), 41 (31.78%), and 48 (37.22%) of the customers have been the customers of BGI from 1 to 3, 4 to 6, and 7 to 9 years, respectively. And 21 (16.28%) of them have been customers for more than 9 years. Based on the data indicated above the student researcher can infer that majority of the respondents are stay a long period of time i.e. 48 (37.22 %) are a years from 7-9.

With regard to item 3 of table 2 in the previous page, which indicates to the position or responsibilities of the employees in the company, 3 (12%), other 3 (12%), 2 (8%), 10 (40%) and 7 (28%) of the employees have such positions in the company’s as manager, secretaries, sales supervisors, sales persons and drivers, in the respective order. Based on the aforementioned data the student researcher can infer that most of the respondents were sales persons.

3.2. Analysis and Interpretation finding of the Study

The student researcher tried to investigate the effectiveness and efficiency of physical distribution practices of B G I Ethiopia beer factory from the point of view of customers as well as employees of the company. And also various questionnaires were asked to sample respondents mainly related with distribution practices, delivery performance, and satisfaction level towards distribution practices, availability of transportation facility and order execution of the company.

Therefore, in this section of the study response from customers and employees are summarized in the form of percentages and presented below.

3.2.1. Analysis and Interpretation of Customers Responses

This table below (from three to eight) shows, the response of customers in relation to physical distribution practices of the company.

Table 3. Customer response on the overall physical distribution practices

No	Item	No. of respondents/ employees	Percentages
1	How do you evaluate the company overall physical distribution practices?		
	Very good	-----	-----
	Good	27	20.93
	Medium	71	55.04
	Bad	21	16.28
	Very bad	10	7.75
	Total	129	100

According to item 1 of table 3 in the, which indicates the responses of customers on the overall physical distribution practices of the company's. And, only 27(20.93%) of respondents replied that the company's overall physical distribution is good. However, 71(55.04%), 21(16.28%) and 10(7.75%) of them answered 'medium', 'bad' and 'very bad' to the same item, respectively. Based on the data indicated above the student researcher can infer that most of the respondents answers medium; and which indicates that the majority of the respondents agree that the overall physical distribution practice of the company has much to do so as to meet its customers' needs.

According to item 1 of table 4 in the in the next page, which indicates that the evaluation of the transportation potential of the company towards distributing, only 9 (6.98%) and 18 (13.95%) of the respondents answered 'very good' and 'good'. However, 14 (10.85%), 58 (44.96%) and 30 (23.26%) of them respectively replied to the same item that the transportation potential of the company's towards distributing is 'medium', 'bad', 'very bad'. Based on the data indicated above the student researcher can infer that most of the respondents answers bad. And, this implies that the majority of the respondents disagree that the transport potential of the company has to work hard to increase its potential in transportation in a way customers will be satisfied.

Table 4. Customer response on the transportation activities

No	Item	No. of respondents/ employees	Percentages
1	How do you evaluate the transportation potential of the company towards distributing?		
	Very good	9	6.98
	Good	18	13.95
	Medium	14	10.85
	Bad	58	44.96
	Very bad	30	23.26
	Total	129	100
2	How do you evaluate the company towards product transportation truck availability?		
	Very good	16	12.40
	Good	47	36.43
	Medium	55	42.64
	Poor	11	8.53
	Very poor	-----	-----
	Total	129	100

With respect to item 2 of table 4 in the above, which indicates that the evaluation of the company towards product transportation truck availability, 16 (12.40%) and 47 (36.43%) of the respondents answered ‘very good’ and ‘good’, respectively. However, 55 (42.64%) and 11 (8.53%) of them replied that product transportation truck availability of the company is ‘medium’ and ‘poor’, in the respective order. The data shows that more than half of the respondents agree on the shortage of product transportation truck availability in the company. Based on the data indicated above the student researcher can infer that most of the respondents answers medium. And, this indicates that there is failure in the company to deliver products on time to customers because of shortage of truck to deliver products.

Table 5. Customer response on the order processing capability

No	Item	No. of respondents/ employees	Percentages
1	Have you had a delay for the product or draught machine cleaning and Co2 cylinder distribution offered by BGI?		
	Yes	79	61.24
	No	34	26.36
	I don't remember	16	12.40
	Total	129	100

According to item 1 of table 4 in the above which indicates that the enquires whether they have ever had a delay for the product or draught machine cleaning and Co2 cylinder distribution offered by BGI, 79 (61.24%), 34 (26.36%) and 16 (12.4%) of the respondents replied 'Yes', 'No' and 'I don't remember' respectively. Based on the data indicated above the student researcher can infer that most of the respondents answers yes. So that almost all of the respondents have had a delay in product delivery, which indicates there is still a gap distribution quality of the company that needs to be filled so as to meet customer's interest.

According to item 1 of table 6 in the following page, which indicates in replying to the evaluation of their satisfaction on the right time distribution practices of the company, 29 (22.48%) and 47 (36.43%) of the respondents answered 'Very' and 'Good', respectively. Also, 37 (28.68%) and 16 (12.48%) of them respectively replied 'Bad' and 'Very bad' to the same item. Based on the data indicated above the student researcher can infer that most of the respondents as per the data more than half of them respondents agree that the company has good right time distribution practices, it also shows that a little less than half of them don't agree with this fact. And, this implies that there are questions for the right time distribution of the company's.

Table 6. Customer response on the company’s customer service

No	Item	No. of respondents/ employees	Percentages
1	How do you evaluate your satisfaction level towards the distribution practices of the company product at the right time?		
	Very high	29	22.48
	Good	47	36.43
	Medium	37	28.68
	Bad	16	12.48
	Very bad	-----	-----
	Total	129	100
2	How do you evaluate the availability of company’s product with desired levels of customers?		
	Very good	21	16.30
	Good	53	41.09
	Medium	34	26.40
	Bad	13	10.10
	Very bad	8	6.20
	Total	129	100

With respect to item 2 of table 6, which indicates in replying to the evaluation the availability of company’s product with desired levels of customers, 21 (16.30%) and 53 (41.09%) of respondents replied ‘Very good’ and ‘Good’, in the respective order. However, 34 (26.4%), 13 (10.10%) and 8 (6.20%) of them answered that their evaluation of the availability of company’s product with desired levels of customers is Medium’, ‘Bad’ and ‘Very bad’, in the respective order. Based on the data indicated above the student researcher can infer that most of the respondents as per the data , a little more than half of the respondents agree that products are

available with customers desired level, a little less than half of them don't agree with it. And, this indicates that there is a gap in the company's in availing products with customers desired level.

No	Item	No. of respondents/ employees	Percentages
3	How do you evaluate the company's responsiveness to handle customer complaint?		
	Very good	16	12.40
	Good	24	18.60
	Medium	68	52.71
	Poor	21	16.28
	Very poor	-----	-----
	Total	129	100

With regard to item 3 of table 6, 16 (12.40%) and 24 (18.60%) of the respondents replied that the company's responsiveness to handle customer complaints is 'Very good' and 'Good', respectively. However, 68 (52.71%) and 21 (16.28%) of them answered 'Medium' and 'Poor', in the respective order. Based on the data indicated above the student researcher can infer that most of the respondents as per the data reveals that more than half of the respondents are not satisfied with the company's way of handling customer complaint. And, this indicates that the company isn't satisfactorily handling complaints from customers.

With regard to item 4 of table 6 in the next page, 17 (13.20%) and 34 (26.40%) of the respondents replied 'Strongly agree' and 'Agree', respectively that BGI products are available wherever they need it. However, 35 (27.13%) and 43 (33.33%) of them responded 'Neutral' and 'Disagree', respectively to the same item. Based on the data indicated above the student researcher can infer that most of the respondents as per the data shows that more than half of the

respondents don't agree with the availability of BGI products wherever they need it. And, this implies that the company fails to distribute its products wherever customers need it.

According to item 5 of table 6, which indicates in replying to satisfied with the physical distribution practices of the company's, 40 (31.01%) of the respondents replied 'Yes'. However, 70 (54.26%) and 19 (14.73%) of them responded 'No' and 'I don't remember', respectively to the same item. Based on the data indicated above the student researcher can infer that most of the respondents as per the data reveals that majority of the respondents aren't satisfied with the physical distribution practices of the company. And, this indicates that the company isn't totally and efficiently satisfying its customers with effective physical distribution.

Table 6. Customer response on the company's customer service

No	Item	No. of respondents/ employees	Percentages
4	Do you agree that BGI product is available wherever you need it?		
	Strongly agree	17	13.20
	Agree	34	26.40
	Neutral	35	27.13
	Disagree	43	33.33
	Strongly disagree	-----	-----
	Total	129	100
5	Are you satisfied by the physical distribution practices of the company?		
	Yes	40	31.01
	No	70	54.26
	I don't remember	19	14.73
	Total	129	100

6	How do you evaluate your satisfaction level towards the distribution practices of the company?		
	Very good	36	27.91
	Good	26	20.28
	Medium	31	24.03
	Bad	15	11.63
	Very bad	21	16.28
	Total	129	100

According to item 6 of table 6, which indicates in replying to how you evaluate your satisfaction level towards the distribution practices of the company's ; 36 (27.91%) and 26 (20.28%) of the respondents replied 'Very good' and 'Good', respectively. However, 31 (24.03%), 15 (11.63%) and 21 (16.28%) of them responded 'Medium', 'Bad' and 'Very bad', in the respective order to the same item. Based on the data indicated above the student researcher can infer that most of the respondents as per the data reveals that more than half of the respondents have low level of satisfaction with the distribution practices of the company. And, this implies that the company fails to distribute its products to the extent its customers are totally satisfied.

According to item 1 of table7 in the following page, 31 (24.03%), 53 (41.10%) and 45 (34.88%) of the participants responded 'Sometimes', 'Rare', and 'Very rare', respectively to indicate the frequency of their receiving defective products from the company's. the data shows that though its sometimes, rarely and very rarely, all the respondents agree that they receive defective products from the company's. Based on the data indicated above the student researcher can infer that most of the respondents as per the data indicates that the company, even if it's not very often and often, shows failure in handling material.

Table 7. Customer response on the company’s material handling

No	Item	No. of respondents/ employees	Percentages
1	How often you receive defective like underweight products by your company?		
	Very good	-----	-----
	Often	-----	-----
	Sometimes	31	24.03
	Rare	53	41.10
	Very rare	45	34.88
	Total	129	100

3.2.2. Analysis and Interpretation of Employees Response

This table below (from nine to thirteen) shows the response of employees in relation to physical distribution practices of the company.

Table 8. Employee’s response its products as the desired level of a customers

No	Item	No. of respondents/ employees	Percentages
1	Do you think that BGI Ethiopia distribute its products as the desired level of a customers?		
	Yes	8	32
	No	12	48
	I don’t remember	5	20
	Total	25	100

According to item 1 of table 8, which represents employee’s responses in relation to the availability of the company’s products as the desired levels of customers, out of the total 25

(100%) of respondents, 8 (32%) replied 'Yes', whereas 12 (48%) and 5 (20%) of them answered 'No' and 'I don't remember', respectively to the same item. Based on the data indicated above the student researcher can infer that most of the respondents as per the data reveals that more than half of the employees don't think that BGI Ethiopia distributes its products as the desired level of customers. And, this indicates that even the employees of the company are in support of the customers on the fact that the company's distribution of products isn't as the desired level of customers.

According to item 1 of table 9 in the above, which depicts employees' responses on the distribution practices of the company's answering only 4 (16%) of the respondents replied that they have never faced a problem in distributing the products of the company. However, 5 (20%), 11 (44%) and, another 5 (20%) of them revealed that they 'Sometimes', 'More than one time' and 'Always' face problems, respectively. Based on the data indicated above the student researcher can infer that most of the respondents as per the data reveals that almost all the employees agree that they face problems in distributing products. And, this indicates that there are failures in the company's distribution practices, which is in support of the responses of the customers.

Table 9. Employee's response towards distribution practices of the company

No	Item	No. of respondents/ employees	Percentages
1	Have you ever faced a problem on company's product with respect to distribution practices of the company?		
	Never	4	16
	Sometimes	5	20
	More than one time	11	44
	Always	5	20
	Total	25	100

2	Do you agree that the company is currently in a good position with regard to physical distribution practices		
	Strongly agree	5	20
	Agree	4	16
	Neutral	7	28
	Disagree	7	28
	Strongly disagree	2	8
	Total	25	100

According to item 2 of table 9, which indicates that the company's relation to in a good position with regard to physical distribution practices 5 (20%) and 4 (16%) of the employees answered 'Strongly agree' and 'Agree'. However, more than half; 7 (28%), other 7 (28%) and 2 (8%) of them respectively replied 'Neutral', 'Disagree, and 'Strongly disagree' to the same item, Based on the data indicated above the student researcher can infer that most of the respondents as per the data, which indicates that the company isn't in a good position with regard to physical distribution practices.

Table 10. Employee's response towards order processing capability of the company

No	Item	No. of respondents/ employees	Percentages
1	Do you agree that the company is capable of distribution its product is order to customers?		
	Strongly agree	5	20
	Agree	7	28
	Neutral	7	28
	Disagree	6	24
	Strongly disagree	-----	-----
	Total	25	100

2 How do you measure the order execution of the company as order by customer?		
Very good	-----	-----
Good	7	28
Medium	5	20
Bad	6	24
Very bad	7	28
Total	25	100

Order processing capability of the company is represented in table ten and thus, according to item 1 of table 10 in the above page, 5 (20%) and 7 (28%) of the respondents replied ‘Strongly agree’ and ‘Agree’, respectively that the company is capable of distributing its products in order to customers. However, 7 (28%) and 6 (24%) of them answered ‘Neutral’ and ‘Disagree’, respectively to the same item. As to the data, a little more than half of the employees disagree with the company’s capability of order processing. Based on the data indicated above the student researcher can infer that most of the respondents as per the data, which indicates that there is some form of ineffectiveness in the company’s order processing capability.

With regard to item 2 of table 10, which indicates that the measure of order execution of the company as ordered by customer, 7 (28%) of the employees replied ‘Good’, whereas 5 (20%), 6 (24%) and 7 (28%) of them answered ‘Medium’, ‘Bad’ and ‘Very bad’, respectively. Based on the data indicated above the student researcher can infer that most of the respondents as per the data reveals that majority of the employees agree that the company’s order execution isn’t that much effective. And, which indicates that the company fails to effectively execute orders from customers.

According to item 1 of table 11 in the following page, only 5 (20%) of employees replied that the company’s transportation availability towards distributing its products at the right time is good. Nevertheless, other 5 (20%), 6 (24%) and 9 (36%) of them answered ‘Medium’, ‘Bad’ and ‘Very bad’, respectively to the same item. Based on the data indicated above the student researcher can infer that most of the respondents as per the data, which indicates that data almost all of them

agree that the company's transportation isn't satisfactorily available in distributing products on time. And, this implies that the company fails to distribute its products at the right time due to in availability of sufficient transportation.

Table 11. Employee's on availability of transportation to delivery product

No	Item	No. of respondents/ employees	Percentages
1	How do you evaluate the company's transportation availability towards distributing its products at the right time		
	Very good	-----	-----
	Good	5	20
	Medium	5	20
	Bad	6	24
	Very bad	9	36
	Total	25	100

Table 12. Employee evaluation towards satisfaction level of customers

No	Item	No. of respondents	Percentages
1	To what extent do you think that your customers are satisfied with the physical distribution practice offered by the company?		
	Very good	8	32
	Good	4	16
	Medium	4	16
	Bad	9	36
	Very bad	-----	-----
	Total	25	100

According to item 1 of table 12 in the previous page, 8 (32%) and 4 (16%) of the employees replied that the extent their customers are satisfied with the physical distribution practices of the company is 'Very good' and 'Good', respectively. However other 4 (16%) and 9 (36%) of them answered 'Medium' and 'Bad', respectively to the same item. Based on the data indicated above the student researcher can infer that most of the respondents as per the data, which indicates that a little more than half of that all customers aren't equally satisfied with the physical distribution of products up to the level where all its customers can equally be satisfied.

Chapter Four

4. Summary, Conclusion and Recommendation

4.1. Summary

The research was conducted in order to assess physical distribution in the case of B G I Ethiopia Beer Factory. To this end, problems in relation to physical distribution were stated; research questions that could find out findings which were able to meet the general and specific objectives of the study were generated.

- ✚ Regarding to the general characteristics' of the respondent and employees gender composition of respondents and employees, 84 (65.12%) and 17 (68%) of the customers and the employees are male; whereas 45 (39.88%) and 8(32%) of them are female respondents, With respect to the age, 23 (17.83%) and 4 (26.67%) of the customers and the employees are between the age range of 26-35; 42 (32.56%) and 16 (40%) of them between 36-45; 54 (41.86%) and 5 (33.33%) of them between 46-55; and 10 (7.75%) of the customers are above the age of 55, and lastly in the regardless of the educational background of respondents and employees, 43 (33.33%) of customers are high school complete and 41 (31.78%) and 8 (32%) of the customers and the employees are certificate holders; 25 (19.40%) and 12 (48%) of them have got diploma; 20 (15.50%) and 5 (15.50%) of them degree holders.
- ✚ Customer response on occupation, customers and employees of BGI and their position or responsibilities; it indicates that, 1 (0.78%), 38 (29.46%) and 86 (60.67%) of customers have the occupation as an agent, a wholesalers, and a retailers, respectively. And, only 4 (3.10%) of them fall under the "if any" category, it also indicates their relationship of a customer of BGI, 19 (14.73%), 41 (31.78%), and 48 (37.22%) of the customers have been the customers of BGI from 1 to 3, 4 to 6, and 7 to 9 years, respectively. And 21 (16.28%) of them have been customers for more than 9 years, and also, 3 (12%), other 3 (12%), 2 (8%), 10 (40%) and 7 (28%) of the employees have such positions in the company's as manager, secretaries, sales supervisors, sales persons and drivers, in the respective order.
- ✚ In relation to the responses of customers about the overall physical distribution practices of the company's. And, only 27(20.93%) of respondents replied that the company's overall

physical distribution is good. However, 71(55.04%), 21(16.28%) and 10(7.75%) of them answered 'medium', 'bad' and 'very bad' to the same item, respectively order.

- ✚ In the regardless of the evaluation of the transportation potential of the company towards distributing, only 9 (6.98%) and 18 (13.95%) of the respondents answered 'very good' and 'good'. However, 14 (10.85%), 58 (44.96%) and 30 (23.26%) of them respectively 'medium', 'bad', 'very bad' and the evaluation of the company towards product transportation truck availability, 16 (12.40%) and 47 (36.43%) of the respondents answered 'very good' and 'good', respectively. However, 55 (42.64%) and 11 (8.53%) of them replied 'medium' and 'poor', in the respective order.
- ✚ However had a delay for the product or draught machine cleaning and Co2 cylinder distribution offered by BGI, 79 (61.24%), 34 (26.36%) and 16 (12.4%) of the respondents replied 'Yes', 'No' and 'I don't remember' respectively.
- ✚ In the case of in replying to the evaluation of their satisfaction on the right time distribution practices of the company, 29 (22.48%) and 47 (36.43%) of the respondents answered 'Very' and 'Good', respectively. Also, 37 (28.68%) and 16 (12.48%) of them respectively replied 'Bad' and 'Very bad'.
- ✚ In the evaluation the availability of company's product with desired levels of customers, 21 (16.30%) and 53 (41.09%) of respondents replied 'Very good' and 'Good', in the respective order. However, 34 (26.4%), 13 (10.10%) and 8 (6.20%) of them answered that their evaluation of the availability of company's product with desired levels of customers is 'Medium', 'Bad' and 'Very bad', in the respective order.
- ✚ In the regardless of the respondents replied that the company's responsiveness to handle customer complaints is 16 (12.40%) and 24 (18.60%) 'Very good' and 'Good', respectively. However, 68 (52.71%) and 21 (16.28%) of them answered 'Medium' and 'Poor', in the respective order.
- ✚ In the relation to BGI products are available wherever they need it, 17 (13.20%) and 34 (26.40%) of the respondents replied 'Strongly agree' and 'Agree'. However, 35 (27.13%) and 43 (33.33%) of them responded 'Neutral' and 'Disagree', respective order.
- ✚ According to satisfied with the physical distribution practices of the company's, 40 (31.01%) of the respondents replied 'Yes'. However, 70 (54.26%) and 19 (14.73%) of them responded 'No' and 'I don't remember', respectively to the same item.

- ✚ With the regarding to evaluate their satisfaction level towards the distribution practices of the company's; 36 (27.91%) and 26 (20.28%) of the respondents replied 'Very good' and 'Good', respectively. However, 31 (24.03%), 15 (11.63%) and 21 (16.28%) of them responded 'Medium', 'Bad' and 'Very bad', in the respective order to the same item.
- ✚ 31 (24.03%), 53 (41.10%) and 45 (34.88%) of the participants responded 'Sometimes', 'Rare', and 'Very rare', respectively to indicate the frequency of their receiving defective products from the company's.
- ✚ The employee's responses in relation to the availability of the company's products as the desired levels of customers, out of the total 25 (100%) of respondents, 8 (32%) replied 'Yes', whereas 12 (48%) and 5 (20%) of them answered 'No' and 'I don't remember', respectively.
- ✚ About employees' responses on the distribution practices of the company's answering only 4 (16%) of the respondents replied that they have never faced a problem in distributing the products of the company. However, 5 (20%), 11 (44%) and, another 5 (20%) of them revealed that they 'Sometimes', 'More than one time' and 'Always' face problems, respectively, at the same table item two shows; indicates that the company's relation to in a good position with regard to physical distribution practices 5 (20%) and 4 (16%) of the employees answered 'Strongly agree' and 'Agree'. However, more than half; 7 (28%), other 7 (28%) and 2 (8%) of them respectively replied 'Neutral', 'Disagree, and 'Strongly disagree'.
- ✚ 5 (20%) and 7 (28%) of the respondents replied 'Strongly agree' and 'Agree', respectively that the company is capable of distributing its products in order to customers. However, 7 (28%) and 6 (24%) of them answered 'Neutral' and 'Disagree', respectively to the same item; item two also depicts to measure of order execution of the company as ordered by customer, 7 (28%) of the employees replied 'Good', whereas 5 (20%), 6 (24%) and 7 (28%) of them answered 'Medium', 'Bad' and 'Very bad', respectively.
- ✚ Only 5 (20%) of employees replied that the company's transportation availability towards distributing its products at the right time is good. Nevertheless, other 5 (20%), 6 (24%) and 9 (36%) of them answered 'Medium', 'Bad' and 'Very bad', in the respectively order.
- ✚ 8 (32%) and 4 (16%) of the employees replied that the extent their customers are satisfied with the physical distribution practices of the company is 'Very good' and 'Good',

respectively. However other 4 (16%) and 9 (36%) of them answered 'Medium' and 'Bad', in the respectively order.

4.2. Conclusion

After analyzing and interpreting the data obtained from both customers and employees of the company, the student researcher could reach the following conclusions;

- ✚ The data revealed that the company's overall physical distribution practices aren't that much satisfying to its customers.
- ✚ It was found out that there is failure in the company to deliver products on time to customers due to shortages of trucks to deliver products, which indicates that the transport potential of the company towards distribution is less than customers' expectation.
- ✚ Not only had this but the finding also disclosed that there are gaps in the company in availing its products with customers' desired level.
- ✚ In addition, it was found out that the company fails to distribute its products wherever its customers need it, which implies the company's failure in always handling material safely.
- ✚ Furthermore, it was found out that the company's order processing capabilities as well as order execution aren't that much effectively satisfying to its customers.
- ✚ And, when customers complain on all these failures, the data revealed that the company isn't satisfactorily handling complaints from customers.

Generally, the findings revealed that, though in various degrees, the company problems in delivering products at the right time, available products with customers' desired level, distributing products wherever customers need it, handling materials safely, processing orders, executing orders, and handling complaints from customers satisfactorily, which indicate that the company isn't in a good position with regard to its physical distribution practices.

4.3. Recommendation

Based on the findings obtained from the data analyzed and interpreted, the student researcher has forwarded the following recommendation;

It's unquestionable that a company has to satisfy its customers by working effectively and efficiently towards meeting their needs from the company.

- ✚ And it can be effective in totally satisfying its customers if it's able to avail its products with customers desired level; deliver its products wherever its customers are; deliver products at the right time; process and execute orders effectively; and if it's able to respond satisfactorily to complaint from customers on its failure in providing good service.
- ✚ Therefore, the company B G I Ethiopia beer factory in this case should avail its products to customers so that it will be aware of the level of desire in the customers and work to meet their need.
- ✚ It should also deliver its products at the right time and wherever its customers are by researching in to and transforming its physical distribution strategies in a way it tackles the problems in the delay of product delivery and equal distribution of products.
- ✚ Not only this but the company should also process and execute orders from customers by transforming its order processing and order execution strategies in a way customers can be equally satisfied.
- ✚ Furthermore, the company should always distribute its products to its customer's by transforming its transportation strategies in a way great care is taken to transportation up to the moment they are delivered to customers.
- ✚ And, in addition to all this, the company should satisfactorily be responsive to complaints from customer by giving effective training to its public relation practitioners or by positioning experienced public relation experts or (for company's calling promoters) who are well skilled in openly listening and responding to order processing from customers on all the gaps they report the company has.
- ✚ Generally, by assessing it's on its strategies on physical distribution, order processing and execution, transportations, product delivery, and its strategies of responding to complaints from customers, B G I Ethiopia beer factory has needs to bring about tremendous changes in order to get its customer always equally satisfied with its service.

Bibliography

- Agrawal, D. (2003). Logistic and Supply Chain Management. New Delhi: Mc Millan India Ltd.Co.
- Altekar, V. (2005). Supply Chain Management: Concept and Case. New Delhi: Prentice Hall.
- Bowersox and Class. (2003). Logistic Management: Integrated Supply Chain Process. New Delhi: Prentice Hall of India Private Limited.
- Data, K. (2003). Material Management Procedures Text and Cases. New Delhi: Prentice Hall of India Private Limited.
- Havalder, and Cavall, M. (2007).Sales Management Distribution Logistical Approach. Mumbai; Himalia Publishing House.
- Kahhana, K. (2002). Physical Distribution Management: Logistical Approach 10th Edition. New Delhi Asakek Gash Prentice Company.
- Kotler, Philip and Gray. A. (2006). Principle Marketing. 11th Edition. Prentice Hall of India Private Limited.
- Kumar, A and N, Meenaksh. (2006). Marketing Management. New Delhi: Viskas Publishing Home Pvt. Ltd.
- Reeder, R and Others (2003). Industrial Marketing Analysis Planning and Control: New Delhi: Prentice Hall of India Private Limited.
- Sheelker (2004). Marketing Management. Mumbai Himalia Publishing House New Delhi: Vikas Publishing House Ltd.
- Sheelker (2003). Modern Marketing Management. Mumbai Himalia Publishing House New Delhi: Vikas Publishing House Ltd.
- Snaykay, K. (2002). Physical Distribution Management. 3rd Edition. London: Macmillan Publishing Co.

APPENDICES

Letter of Declaration

I undersigned, declare that this senior essay on the topic An Assessment of Physical Distribution practices of in the case of B G I Ethiopia Beer Factory is completely a result of my original work. I have carried out the paper independently with the support and guidance of the research advisors instructor Yalew Gorfu and Assaye. All sources of materials used for the manuscript have been duly acknowledged.

Solomon Worku

June 2014

St. Mary's University

Certificate

This is to certify that Solomon Worku has carried out his research work on topic entitled An Assessment of Physical Distribution practices in the case of B G I Ethiopia Beer Factory under my supervision. This paper has been submitted for examination with my approval as the university advisor.

Yalew Gorfu

Paper Advisor

St. Mary's University