Study Materials for

PROCUREMENT MANAGEMENT







TABLE OF CONTENTS

CONTENTS **PAGES**

Chapter One

1.0 Introduction to Procurement and procurement activities … 11

1.1 The Components of Procurement

1.1.1 The Principles of Procurement

1.2.0 The process of Procurement

1.2.1 The Procurement structure and process (Design)

1.2.3 ICT in Procurement – E- Procurement

1.3 The Concept of Purchasing

1.4 The role of purchasing in supply chain

Self Test Questions

Chapter Two

2.0 Public Procurement … … … … … … … … 24

2.0 Introduction to Public Procurement.

2.1 Types of Bids and the Bidding process

2.2 The Bidding process – Nigeria public sector

2.3.1 The Bid/Tender Process

2.3.2 The Bid committee – composition and duties

Self Test Questions

CHAPTER THREE

MANAGING VENDORS IN SUPPLY CHAIN … … … … … 30

3.0 Introduction of A Vendor (Registered Contractors, Supplier)

3.1 Introduction to Vendor Management

3.2 Types of Vendor Development

3.3 Steps in Vendor Section – Prequalification

3.4 More on Vendor Selection

3.4.1 Selection criteria (Score card method)

3.5 Managing Relationship with approved vendors

3.6 Challenges in Managing Vendors

3.7 Handling Challenges in Vend or Management

Self Test Questions

Chapter Four

INCOTERMS 2020 … … … … … … … … … 42

4.1 Introduction to INCORTERMS Historic overview

4.2 Understanding INCOTERMS

4.3 What INCOTERMS does not do

4.6 Type of INCOTERMS (General Transportation)

4,8 Noticeable Changes in INCOTERMS

4.12 INCOTERMS for sea Transportation

4,15 INCOTERMS and BRIXT

Self Test Questions

Chapter Five

Negotiation in Procurement … … … … … … 60

5.0 Introduction

5.1 What is Commercial Negotiation?

5.2 Forms of Negotiation in Procurement

5.3 Strategies in commercial negotiation

5,5 The Role of Procurement in Supply Chain

5.7. Sources of Conflict in Procurement

Self Test Questions

Chapter Six

Demand Planning/Management in Procurement … … … … 66

6.0 Introduction

6.1 What is Demand planning and why plan demand

6.2 Types of Demand in procurement (Dependent and Independent)

6.3. Methods of Demand planning (Forecasting models)

6.3.1 Quantitative Forecasting – Uses mathematical models

6.3.2 Qualitative Forecasting – Uses historical data and experience)

Self Test Questions

Chapter Seven

Transportation in Procurement … … … … … … … 69

7.0 Introduction to Transportation

7.1 Modal Split in Transportation for Procurement

7.1.1 Air Transportation.

7.1.2 Land Transport

7.1.3 Rail Transport

7.1.4 Sea/Inland Water Transport

7.2 Demand for Transportation

7.3 Factors that Determine Demand for Transportation

7.4 The Supply of Transportation

7.4.1 Factors that influence supply of Transportation

7.5 Packaging in Transportation for Procurement

7.5.1 Factors that influence packaging in Procurement

Self Test Questions

Chapter Eight

Logistics in Supply Chain … … … … … … … … 82

8.1 The Concept of Logistics

8.2 Elements/Components of Logistics

8.2.1 Customer Order Processing

8.3 Distribution

8.4 Inventory Management

8.5 Planning

8.10.1 Cross Docking

8.10.4 Hub and Spoke

Self Test Questions

References.

Chapter Nine

Supply Chain and Demand Planning in Inventory… … … 105

9.1 Introduction

9.2 Scope of Enterprise Resource Planning

9.3 Manufacturing Operation Cycle

9.4 Supply Chain Metrics

9.5 Demand Planning

9.6 Categories of Demand (Dependent and Independent Demand)

9.7 Components of Demand

9.8 Quantitative Forecasting Models/Forecasting Methods

9.9 Basic Approach to Demand Forecasting

9.10 Characteristics of forecast

9.11 Collaborative Forecasting and Replenishment (CPFR)

9.12 Functions of CPFR and Electronic Collaboration

9.13 Inventory Control Techniques

9.14 Factors to be Considered in Inventory Decision

Self-Test Questions

ABRIVIATIONS/ACRONYMS USED IN THIS BOOK

ABS	American Bureau of Sipping
ATO	Assemble to order
B2B	Business to Business
B2C	Business to Customer
BOM	Bill of Material
BPE	Bureau for Public Enterprise
BPP	Bu

reau for Public Procurement

CAD	Computer Aided Device
DPC	Direct Product Cost
DWT	Dead Weight Tonnage
EEZ	Exclusive Economic Zone
ETA	Expected Time of Arrival
ETD	Expected Time of Departure
ERP	Enterprise Resource Planning
FAAN	Federal Airport Authority of Nigeria
FCL	Full Container Load
GPS	Geographic Positioning System
GWT	Gross Weight Tonnage
ICAO	International Civil Aviation Organization
ICC	International Chamber of Commerce

ICD	Inland Container/Clearance Depot
ISS code	International Ships Security code
ISPS	International Ships and Port facility Security
ITT	Invitation to Tender
IMO	International Maritime Organization
LCL	Less than Container Load
NIMASA	Nigerian Maritime Administrative and Safety Agency
NVOCC	Non Vessel Owning Common Carrier
NCS	Nigeria Customs Service
NPA	Nigerian Ports Authority
NSC	Nigerian Shippers' Council,
NWT	Net weight Tonnage
NMA	National Maritime Authority
MPS	Master Production Schedule
SOLAS	Safety of Life at Sea
SON	Standard Organization of Nigeria
STCW	Standards for Training Certification and Watch keeping
TEU	Twenty Equivalent Unit = 1 x 20ft container
RFP	Request for Proposal
RFI	Request for Information
RFQ	Request for Quotation

APPLICABLE TERMINOLOGIES IN THIS BOOK

Arbitration	Method of settling disputes which is abiding to parties concerned
Air waybill	Air freight consignment note
Broker	Agent connecting shipper and carrier
Cargo Manifest	Inventory of cargo shipped
Carrier	A transporter/ Shipping line carrying the goods
Channel	A thoroughfare to pass through
Container	A metal box containing the goods, a protection
Consignee	The shipper of goods
Consignor	The Recipient of the goods
Claim	A Demand for payment for loss/damage
Demurrage	Charge raise for detaining cargo on board ship
Exchange Rate	Price and value of a currency in relation to another currency
Freight Forwarder	Agent initiating movement of freight from origin to destination
Freight	Cargo, Money Paid for carriage of goods
Freight Rate	Charge for the carriage of Freight
Force Majeur	Legal term denoting circumstances beyond control of either party to a contract
Groupage	Consolidation of units of cargo into one unit load
Indemnity	Compensation for loss/damage or injury
Lien	Legal right to withhold a property till debt is paid

Ordering supplier	Refers to the placing of purchasing requisition with a
Outsourcing	Purchasing services from an independent outsider source
Port Community	All the people doing business in the port
Port Dues	Statutory fees paid for using port facilities
Port Charges	Fees paid for port services consumed
Reefers ship	Container for transporting wet/frozen cargo connected to
Security property	Action to protect/prevent Willful loss, theft or damage of
Stakeholders	People concerned in the business
Tramp and time	An international carrier that has no fixed route, schedule
Tort	An offence punishable by law
Throughput	Volume of cargo in tons produced by a gang
Hazards:	events / conditions that may result in severity significant harm.
RAM analysis:	Reliability, Availability and Maintainability analysis.
Reliability:	The ability of a system or component to perform as defined

Risk: An evaluation of hazards in terms of severity and probability.

Safety: The degree of freedom from danger and harm.

Safety is achieved by doing things right the first time and every time.

Safety management keeping an operation safe through systematic and safety-minded organization and management of both human and physical.

CHAPTER ONE

INTRODUCTION TO PROCUREMENT

Chapter Objectives:

One completion of this chapter, the student would be able to

1. Define Procurement
2. Tell the difference between Procurement and Purchasing
3. List the activities involved in Procurement
4. Understand the roles of Purchasing in supply chain
5. Know contemporary developments in the field of Purchasing
6. Explain the roles of a Purchasing Manager

1.0 Introduction to Procurement

Organizations procure production support material from outside; it is becoming clear that world leading organizations are using their procurement functions as tools to drive short term profitability, efficient and constructive relationship with suppliers and long term competitiveness. These global leading organizations have dedicated professional staff who buy, resale and lease services on their behalf (organizations buyers). These make up the “Purchasing group” whose job is to obtain the highest quality of goods and services at the lowest possible cost for the buying organization. Procurement is the acquisition of goods and services and relevant resources at the best possible cost and for the use of the organization (Wikipedia, 2017) Procurement involves making buying decisions under scarcity. (I*bid, 2017)*

According to century dictionary, Procurement is a process of obtaining and securing goods and services for another firm under agreed terms and conditions e.g. time, place and amount. It is a contract to be performed.

Today procurement has and is playing strategic roles in terms of analyzing and develop differentiated supplier strategies. Purchasing functions are tactical in character and they standardize the purchasing process, establish effective information link with suppliers and encourage improvement of suppliers performance. The purchasing group interfaces with other units, shares/exchange information and links the suppliers who know where to locate the materials and the prevailing market price with the originator of the request. Procurement links these groups to ensure materials are supplied at the right time and within budget.

1.1. The Components of Procurement

Procurement involves various activities which the focal firm adopts to acquire support materials and remain competitive in their areas of operations. Readers must note that procurement is a larger service than purchasing. Procurement is a broader term than purchasing. Procurement includes all the activities required to get the product from the supplier to its final destination. It encompasses the purchasing function, store, traffic and transportation, incoming inspection, quality control and assurance and recycling. Procurement is based on **total cost of ownership** thinking. Among the activities of procurement entity includes:

Purchasing (Organization buying)

Development of contract /Bid documents

Specification of contract/Bed terms

Supplier/Vendor Prequalification and selection a

Vendor Management/Education

Price verification and Negotiation

1.1.1 The Principles of Procurement

Procurement organizations activity has some underlining principles that guide it. This include:-

a. Value for money – Highest Quality at the lowest possible cost
Here, the procurement group must evaluate:

a) Fitness to purpose
b) Maintenance and running cost of the purchase over the life time of the product.
c) The advantages of buying locally e.g. shorter delivery time
d) Quality assurance – the technical and commercial capacity of the vendor to comply with applicable quality specifications and standards.

1.2 The Procurement Process and Structure

Organizational procurement has structures and processes. The structure is the design or arrangement of the various activities into departments to perform some set activities in achieving the overall goal of the group. The structure is the way the labour is organized, divided into distinct tasks (departments) and coordinated among them. The design aims at bringing in a set of interrelated functions for a common goal.

1.2.1 Structure of a contemporary Procurement organization

Modern day procurement organization is made up of the following departments:

1. Legal unit (Interpret applicable laws and ordinances for the organization)

2. Accounting unit (payment of suppliers and others)

3. Operations unit (Originate requests for purchase)

4. Design and Engineering unit (prepare material specifications and design)

5. Data Processing unit (Keep inventory, monitor supplier performance)

1.2.2 The Roles/Objectives of Procurement in supply Chain

1. Ensure uninterrupted flow of materials that is the ability not allow stock out to occur. This means losing customers to competitors.
2. Manage inventory: This costs between 20-50 per cent depending on the product. Purchasing ensures that the right quantity is supplied at the right time to ensure capital (funds) is not tied up in a liability. If this number can be reduced it can affect the balance sheet in a positive manner.
3. Improve quality: This goal can achieve truly great things when we consider the cost of inferior quality, rework changes, lost of manufacturing time etc.
4. Develop suppliers: The success of supply management is directly connected to the ability of buyer to find and develop competent suppliers. After they are found then continuous improvement techniques can improve both the performance of buyer and seller.

5. Standardize: Consolidate item to determine a (one) standard item, that buyers can procure in larger quantities, thereby saving money and without having to stock different items that may require different stocking conditions or other items s that cost additional money.

6. Achieve low cost: Achieve lowest cost and not the lowest price; which is radically different. Overall cost reduction contributes to the profit leverage effect.

7. Improve competitive position: By performing the function of supply in a professional manner, costs are lowered for producing product cheaper than that of the competition. This leads to a competitive advantage.

8. Develop cross-functional relationships: These relationships with other departments will increase your ability to perform your job of cost reduction. Information is often required to forecast or determine existing costs or processes that are critical to the success of your position.

9. Reduce administration costs: The function of purchasing is well aware of the cost of doing the business and continually seeks way to reduce operating expense.

1.2.3 ICT in Procurement Management – E – Procurement

Contemporary supply chain organizations go digital to be global. This has altered the way businesses operate. Here, e-procurement solution drive procurement businesses and give supply chain firms the global reach to prospective suppliers.

E-procurement solutions can be divided into three viz:

a. Electronic Marketplace (EMP)

Information technology that is available today allows organizations to perfectly manage large volumes of transactions with human

interference. Example in B2B transaction, web leaders like Tesco and carrefour, Bol.com that provide integrated end-to-end technological solutions to their worldwide customers to connect, interact and transact business. Electronic marketplace is a site supported by the internet technology where transactions between business to business (B2B) are made. EMP simplifies the processes of searching and selecting suitable and qualified suppliers. The process allows procurement professions to venture outside traditional boundaries to scout for suppliers (global outreach). Among the electronic market place are http://www.wwre.com for retailers,and the http://www.ebay.com. National economies need to develop their respective web sites in line with their areas of speciality. In Nigeria, the bureau for public procurement is on. Here, all public procurement exercises are carried out electronically following laid down procedures

b. Electronic auction (e - auction)

The electronic auction is another digital tool public sector adopt to auction general goods to suppliers. Buyers and sellers meet on the site for transactions. In this method, the price is made by bringing supply and demand together in a transparent way. The auction is conducted virtually. The supplier is requested to provide some back ground information (Request for information, RFI) to enable the buyer ascertain the supplier's credibility and qualification for the auction. The back ground information will be on the supplier's financial strength, experience and expertise and customer references.

On the order hand, the buyer can send a request for proposal (RFP) to the supplier to get first idea of the suppliers competitiveness- price range, rates etc. After an evaluation of supplier's proposals, the buyer can decide which suppliers to invite for the auction or supply. There are two types of electronic auction- reverse auction (b) forward auction

c. Order to pay solutions. (Electronic catalogues and ordering

This offers buyers greater opportunities for more efficient order handling and improved logistics, better tracking and payments. By using Electronic catalogue order, more purchase orders can be brought under one contract. This enables them eliminate out of spec orders thereby saving more.

However organizations are having challenges coping with these high IT solutions due finance, Manpower and government regulations.

JIT is technology driven. Not all organizations have the capacity to return to work at the notice. Operations start up cost is a challenge. Information sharing medium is another challenge. The EDI that helps share data in form of standards are not common and most organizations cannot afford it.

1.3 The Concept of Purchasing and its functions

Purchasing is an activity in procurement. It is a department under the faculty of procurement. Traditionally, purchasing is concerned with buying, reselling and acquiring materials for the organization. It involves determining the purchasing need of the organization, pre-qualifying and selecting suppliers, arriving at proper prices

(negotiation), specifying the terms and conditions of contracts, contract award, monitoring and payment.

The fundamental goal of the procurement or purchasing function is to acquire optimum quality and quantity of goods and services for the company in a timely manner, and at the lowest total cost. This also means that the sale is not over when the item is delivered by the supplier. Additional items may be needed in future along with the necessary parts, services or even training in few cases. These all should be facilitated by the purchasing function.

Purchasing is defined as *the management of a company's external resources in such a way that the supply of all goods, services, capabilities and knowledge which are required for running, maintaining and managing the company's primary and support activities are secured at the most favorable conditions.* From this therefore, purchasing function includes:- activities aimed at determining the purchasing specification based on "fitness for purpose", selecting the best possible suppliers and developing procedures and routines to do such. Preparing and conducting negotiations with suppliers and write up legal contracts. Place order with selected suppliers, develop efficient purchase order, monitoring and control of orders (expediting) supplier evaluation, updating of supplier information in the data base. Carry out supplier rating and ranking.

From the forgoing, purchasing covers all activities aimed at:

1. Determining the specifications of orders in relations to quantity and quality

2. Select the best possible suppliers and procedures to accomplish contracts
3. Preparing and conducting negotiations
4. Order placement with selected and approved contractors
5. Follow up to evaluate suppliers performance and rank them.

The significance of the role of purchasing in organization today is based on the size of the expenditures for goods and services, as reflected in the organizations' balance sheet and cost of manufacturing or service operations. In fact the whole concept of purchasing function is now changing from traditional material controlling to managing supply chains.

However for any purchasing organization to function well, there must be a structure or design that identifies the arrangement, management and coordination of people and activities to drive sustainability and growth. Hence, there are:

a. Centralized Purchasing

This involves controlling all the purchasing activities of the plant through a single centralized location. This single point is the only place in the organization where requisitions are made and processed and suppliers selected. The aim is to ensure accountability and reduce cost. (order cost, supervision cost and enjoy quantity discount.

Advantages of Centralized Purchasing

i. Allows purchasing manager more authority and credibility
ii. Enhances better coordination and accountability

iii. Helps to point out a responsible party
iv. Enhances periodic review of activities,
v. Better evaluation of suppliers
vi. Encourages the use of professionals
vii. Creates room for training programs for future professionals.

The Purchasing Process:

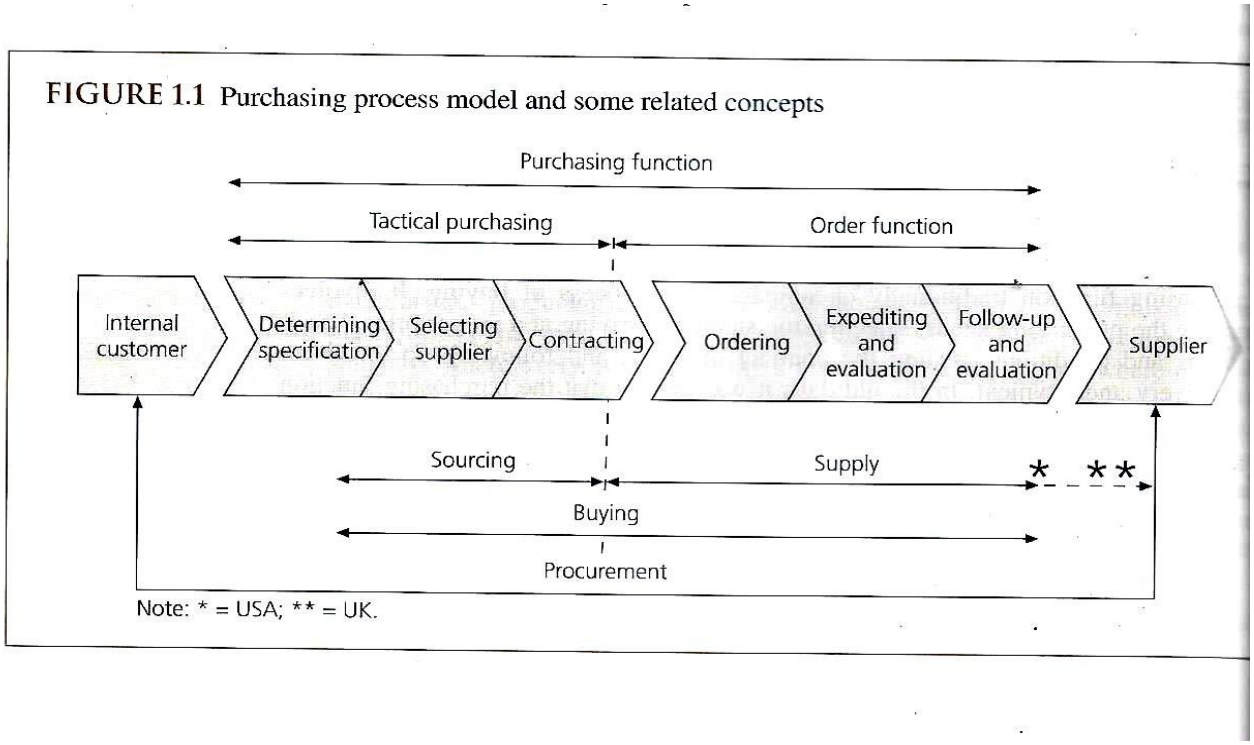
As organizations develop, there arose the need to streamline the processes and procedures of acquiring materials from external vendors. This is the procurement process which focal organizations in supply chain adopt to remain competitive.

The processes include:

Tactical purchasing that involves -

a. Determining specification
b. Selecting suppliers
c. Contracting
d. Ordering
e. Expediting and Evaluation
f. Follow up and evaluation

The purchasing process model Figure 1.1



Let's discuss about the traditional purchasing cycle first as shown in figure 1.2 below.

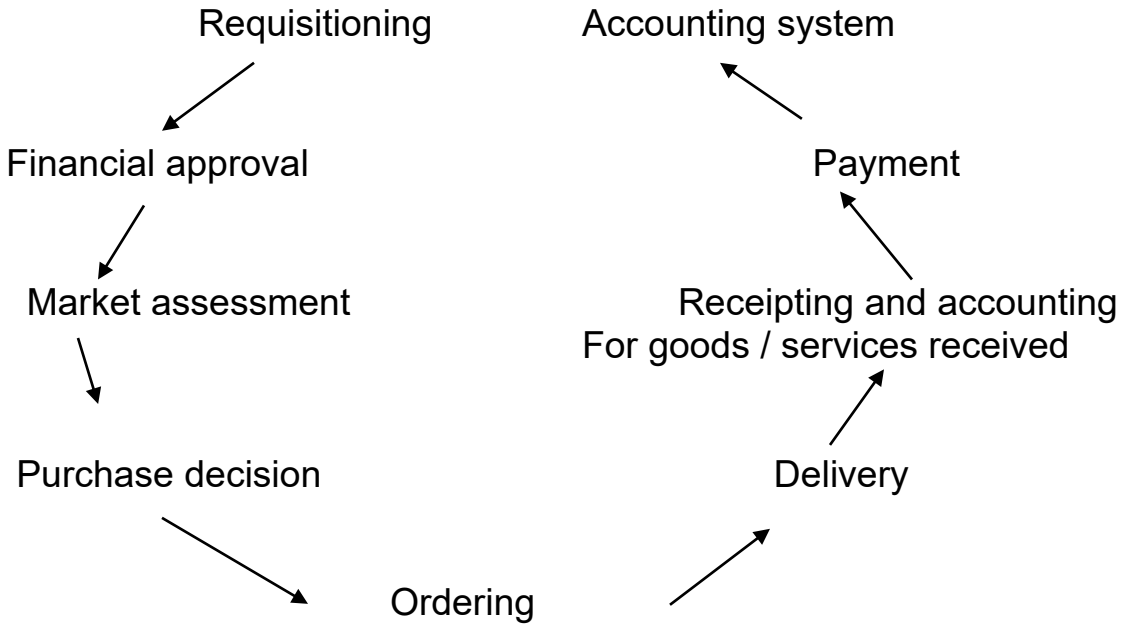


FIGURE 1.2 Traditional purchasing Process/cycle.

1.4 The Roles of the Purchasing Manager/Officer

Market Assessment

Once the purchasing officer receives an approval requisition, a check is made to ensure the item is not already in stock. A market assessment should then be made, considering the following questions:

a Is there a competitive market for the item?
b Is the volume/ value required enough to warrant calling for quotations and tenders? Should prices and other details be obtained by telephone or in writing?
c If there is no competitive market, should the sole supplier be given immediate order, or can a lower price be negotiated?
d Is it appropriate to call for “Registration of Interest”, prior to invitation to formal tenders?
e Are suitable period contracts available?
f Is there a list of “approved suppliers” for the item, or is the establishment of an “approved suppliers” list warranted?
g Could there be scope for a bulk purchase?

Purchase Decision

Having completed the market assessment and determined the method of purchase, the purchasing officer then decides on the supplier or suppliers. This decision must be documented, not only for audit purposes but also to provide clear reasons justifying the choice of supplier in case there is a subsequent complaint or request under the Official Information Act.

Questions

1. What is procurement planning? Why do firms in supply chain use external suppliers in their procurement business?

2. List any explain any five (5) roles of a purchasing manager in supply chain.

3. Write short explanatory notes on any four (4) of these concepts

   1. Centralized Purchasing (11) E-procurement (3) Reverse auction

   (4) Electronic catalog (5) Electronic marketplace

4. List and explain any four (4) principles of purchasing. How has these principles been applied in your company?

5. Procurement involves various activities. List six of these activities and explain the roles of any three (3) of these activities in the flow of goods.

CHAPTER TWO

PUBLIC PROCUREMENT

Chapter Objectives

After completing this chapter, the student would be able to:

a. Explain the term Public procurement
b. Explain the purpose of public procurement
c. Explain why government and the public sector use external sources to procure support goods and services.
d. Explain the tender/procurement processes in public sector

2.1. Introduction to Public Procurement

Public procurement is concerned with the management of purchasing function of the government and not for profit organizations e.g. educational and research institutions, charitable organizations. Governments - federal, state, local government and other government parastatal. These procure goods and services following laid down procedures using formal tendering.

Public procurement (PP) in any economic system is subjected to comply with the rules and regulations prescribed by the government or its established agency.

In Nigeria, the bureau for public procurement (BPP) is the government agency responsible for public buying, procurement policies and bidding guidelines. It is established by the procurement Act of 2007.

Public procurement process is designed to maximize competition among local and indigenous vendors. Here, Bids are used to evaluate vendors to provide services, spares and critical support materials need for governance. The International Monetary Funds (IMF) and the World Bank (WB) emphases that local vendors must be given the fair opportunity to compete in a competitive bid. Foreign firms would compete only where there are no indigenous capacity e.g. military supplies, Technical issues, health care services and medically specialized contracts. Bidding must be an equal opportunity exercise where every potential supplier is given a chance to compete. Hence, the BPP must advertise in a national daily media to the general public any government (public) plans to procure/acquire services, spares and contracts. The buying agency uses an invitation to tender (ITT) OR request for quotes (RFQ) to invite potential suppliers to quote for the contract.

The Most economically advantageous bid is awarded the contract.

A standard RFQ will set out clearly the details of the purchase./requirement e.g:

1) The contact details of the purchaser
2) A reference number to be used in reply and the date to reply
3) The quantity and description of the goods or services required
4) The require place and date of delivery
5) The buyers standards terms and conditions of purchase
6) The terms of payment

2.2 Types of Bids and the Bidding process

A Bid is an offer suppliers make to organization (buyers). It is the price they quote and are charging for provision of services to the focal organization. Bidding is a process through which firms in public and private sectors acquire goods and services from third party service providers. There various forms of Bids e.g.

a. Open Bid (Open to all potential bidders). Here, Bids can be "Responsive" this implies that the Bid package has conform to the bid invitation and timely. Also, a Bid can be "Responsible" this implies that from the look of things, this bid is capable and willing to perform as specified in the bid document.

b. Closed/Specific Bid, Here not all are allowed to participate. It is a specialized bid for technical and professional contractors e.g. invitation to supply military hard wares, Computer Hard and soft ware, medical tools and equipments and government classified supplies. It is a restricted bid.

2.3 The Bidding process – Nigeria Public sector

In Nigeria, Public procurement follows these processes

i. Government agency identifies the need/plan for a purchase

ii. The agency states clearly, accurately, completely and correctly the requirements and specifications i.e. basic and preferred characteristics of the purchase (functional and technical specifications of the purchase)

iii. There must be clear instructions on the preparation of the bid. The conditions of the purchase or contract, payment schedule, delivery date time and location must be included in the invitation for bid (IFB)

iv. Uses a notification – Invitation to tender (ITT), or invitation to bid (ITB) to advertise in national news paper or mass media to inform and invite prospective bidders.

v. The Information to bid must state the date and time for submission of commercial and technical bids. These must be submitted in sealed envelops.

vi. The date and time for Bid opening must be communicated in writing to all Bidders.

vii. Facts about all bids must be made known to all bidders and the members of the bid committee.

viii. Bidders must be pre-qualified to ascertain their capacity and capability to perform the specified contract or purchase.

ix. All Bidders must submit to the procurement entity their “Bid Bond”. A binding and legal document sure teeing that they will abide by the rules of the contract or purchase as stated in the information document.

x. The contract should be awarded to the most desirable Bid i.e. one that has met most of the requirements in the technical and commercial components.

2.3.1 The Bidding/Tendering Process

Bidding is a process through which public and private sector organizations invited third party firms or contractors to offer prices for execution of works, acquisition of spares, goods and services. In response to the invitation for bids, third party contractors submit proposals to indicate their interest.

Five Steps to the Bid/Tender

1. Bid solicitation (advertise/invitation to tender)
2. Bid/Tender submission (Technical and commercial)

3. Bid/Tender selection (Evaluation criteria)
4. Contract formation (Negotiation)
5. Project delivery (within budget, time and scope),

2.4 The Bid committee – Composition and Duties

This is made up of the procurement managers, supervisors and heads of accounts, Warehouse, operations, Logistics, Safety and senior staff of requestor departments and agencies. In the public sector, the procurement director appoints members of the bid committee and on the approval of the board of directors or the ministry in charge.

In Nigeria, the bureau for public procurement is charged with matters relating to public procurement. The agency makes know all government procurement requirements and needs and invite the general (registered contractors to bid or submit tenders or express the interest to bid for the job/procurement.

At times the agency uses a pre-qualification questionnaire (PQQ) to sick for relevant questions and data from prospective bidders and evaluate them from the information on the PQQ. Those bidders that are responsive are invited to join the next stage of the process.

Self Test Questions

1. Why do public sector organizations use 3rd party service providers to procure critical support materials required by the government.
2. What is a Pre-qualification questionnaire (PQQ)? Why do government agencies adopt this method in prequalifying or selecting purchasing contractors?

3. Write explanatory notes on any three (3) of these acronyms or abbreviations as applied in public procurement

   a. ITT (b. RFI (c) RFQ (d. PQQ (e. MRP

4. Market survey and price verification. Why do procurement officers carry out market survey and price verification?

CHAPTER THREE

MANAGING VENDORS IN SUPPLY CHAIN

Chapter Objectives:

On completion of this element, the student would be able to:

1. Explain who a vendor is and what they do.
2. Tell the requirements or criteria in selecting vendors
3. Tell the purpose of vendor management in supply chain
4. Explain the type of relationships that exist between vendors and a focal firm.

3.0 Introduction to Vendor Management

The Focal organization has areas of core competence and specialty. They call up the services of other specialists in procuring those support materials and services required to create value to the customers and return on investment for their shareholders.

Vendor, Supplier, contract etc are terms modern commerce use to describe those organizations, individuals and entities prequalified and selected by the focal firm to procure (buy/supply) those services and or production support materials needed to create value. Hence, a vendor can be defined as an individual or corporate body that supply or provide goods and services to an organisation. The focal firm must be in tune with these selected organizations as key support elements to their services and competitiveness. Considering the role suppliers play, it becomes very critical that the focal firm keeps a lasting and not adversarial relationship with the vendors. These vendors rendering services to the focal organisation must be coordinated, managed to ensure that corporate objectives are met. The right

materials are supplied, services are well rendered and the contractual agreements respected. This therefore leads to the concept of vendor management.

3.1 Vendor Management

Vendor management can be defined as all the activities that are involved in searching, engaging and maintaining vendors by corporate organizations. Vendor management are deliberate efforts a focal organization adopts to assist its approved vendors perform in a desired and acceptable way or fashion. This can be done through critical assessment of a vendor's capability (pre-qualification). These activities include issues like: determining the capabilities and capacities of the vendor, periodic Valuation, Quality standards certification e.g. ISO 9000., Getting quotation from them; determining the quality of their works, It includes supplier education, training and capacities enlargement; negotiating the contract with the vendor by the client.

Furthermore, vendor management encompasses managing relationships and conflicts with the vendors so chosen. It further includes evaluating their performances; and also to ensure that payments are made according to the terms of the contract.

Vendor management is a very serious job that requires lots of skill, resources, expertise and total commitment to it. The success of any organisation towards pursuit of their corporate vision to an extent is tied to the degree of which vendors are well managed. Good vendor management will always guarantee prompt and effective supplies of goods and services. It is not enough to assemble vendors or

supplies from different place into an organisation. But what is so vital is the ability of the client to systematically manage these vendors very well so that there will be good working relationship, thereby creating enabling business atmosphere for both parties to operate.

3.2 Types of Vendors

The issue of types of vendor is very dynamic. The type of vendor needed is subject to the nature of the business or activities the organisation is engaged in. Since there are several legitimate businesses in the arena of business, the types of vendors can be viewed from the angles of; suppliers, sub-contractors, employee and agents.

Therefore within these categories, the client business determines the type of vendor needed whether for supply of tangible goods or for services (intangible goods). But what is important at the long-run is the ability to manage these vendors and the ability of the vendors to perform what they are hired for.

3.3. STEPS in Vendor Management

Vendor management is a serious issue in any organization and must therefore be very systematic. Wrong vendor management is a step towards corporate failure in discharging or accomplishing the very purpose that brought them into business. Based on this, vendor management steps can be followed in these ways.

a. Selection strategy: There must be due diligence in the selection strategies of vendors. This is because there could be several prospective vendors. If and where there is no application of due diligence, and such a vendor is selected, then vendor management procedure has already started.

b. Vendor on boarding strategy: This pertains to administration where by the vendor(s) are allowed to get use to the system and the organization's environment. Having been selected as a vendor to an organisation, the vendor must be on-boarded. This means that by reason of corporate administration, such a vendor must be granted or given the necessary authorization to have access to the organization's physical environments.

c. Relation management strategy: Business must be done in good and corporate relationships. That is to say that both the vendor(s) and the client must always have good relationship. With the existence of good relationship, partnership can be formed, particularly in a very competitive environment.

d. Vendor risk management strategy: In business, risks are inevitable, particularly when it is vendor related. There are certain areas the vendor may be exposed to risks such as in areas of intellectual property, information security and financial stability. In such areas, the client while entering into contractual relationship, there must be 'force majure' clause to exonerate the client from any contractual blame.

e. Financial control strategy: All receipts, invoices regarding all payments will be well recorded and documented. Finance is a serious issue in any contracted relationship and so, must be well managed. Also terms and modes of payments must be well spelt out to avoid conflict or disagreements.

f. Performance management strategy: Vendors' performance must be management. That is to say that every vendor's performance rate in terms of lead times, quality and general effectiveness must be well managed. There should be a workable key performance index or score cards for appraisal of these vendors. The essence of such is to avoid delays that would result to stoppage of production flow, etc., thereby leading to increase in costs.

g. Contract management strategy: In vendor management, the relationship of the client and the vendors are purely on contractual

basis. Such contracts must be well adhered to, especially all the terms thereto. There must also be a provision for legal redress in case there is a breach. Thus both parties must abide to the terms of such contracts.

h. Compliance strategy: In vendor management, there must be establishment of standards. And then such standards must be complied with. Apart from the compliance, such must be sustained to ensure that standards do not drop.

i. Conflict management strategy: In business, there could be differences in interest that can cause conflicts. Both parties must have an agreement on such issues. However, a good vendor management must always be very systematic towards conflict management. Conflict can rise at any time and from any angle, but must not be allowed to escalate. Therefore, there must be panaceas on how to handle conflict. Such can be alternative dispute resolution (ADR) or litigations. But ADR strategy can easily pay off.

j. Personnel management strategy: Vendor management must also consider the personnel capacities of the vendor where such is an organisation. This means having the human capacity that can do the job as contracted and ensuring that such persons are honest and diligent enough to work according to the specifications of the client.

3.4. Steps in Vendor Selection

One of the key factors for achieving success in corporate operations is the degree of competency and professionalism by those who work and render services to the organisation. Those who are employed by and work for the organization include the staff who are on the employment or service of the organization and vendors or contractors, who are approved service providers to the organization.

Therefore, there is need for proper selection of vendors in the midst of so many of them. A wrong selection will amount to serious corporate mistakes. Based on this, there are several steps that needed to be followed for effective selection of vendors. Such steps in vendor selection are:

Step 1

Business requirement analysis: It is not enough to assemble vendors without knowing the requirements of the business. So, knowing what the business requires will lead to getting the right vendors.
Knowing what the business wants and what the organization needs is a major step. This analysis must include, defining your product of services, determine the technical and business requirements; make use of experts as evaluation team. It also includes knowing the vendor requirements. With these steps, a proper foundation is being laid.

Step 2

Conduct a vendor search: This is the period of conducting a vendor search, having done the business analysis or having found out what the requirements will be. At this point, the organizations begin to search for vendors who can meet up with the business requirements. In the course of conducting vendor search, many prospective vendors will come.

At this point, the following things should be done; Compilation of the list of all possible vendors; out of those compiled, there are those vendors that you may need more information about them. Such ones should be marked. Furthermore, there should be a Request for Information (RFI). The vendor's response should be evaluated and from there a possible list of vendors to be short-listed should be developed.

Step 3

Request for proposal and quotation. This is the time to request for proposal or quotation as the case may be, having interviewed and

short-listed those that may be taken. By this request, the organisation will further use it to access the credibility of a prospective vendor.

Step 4

Vendor proposal evaluation and selection: With the proposals written and the quotations, a vendor(s) can be chosen. Those proposals and quotation serves as a yard stick for their qualification for selection.

Step5

Contract Negotiation: At this stage, the vendor has been selected and the stage is the negotiation of the contract. In contract negotiation, the client must review his objectives and the plan for the negotiation. The areas to cover include the organizations properties; note what you need or what you want; be conscious of your bottom line and define your constraints. Note the possible risks and how to resolve dispute.

Step 6

Manpower evaluation: Man power evaluation is very important. This is to ascertain if the company has the capacity and capability to execute the contract or the job given. When manpower is lacking, the execution will be difficult. Also when manpower is lacking, the relevant expertise will be very difficult to achieve. The implication is that the expected quality and standard can never be achieved, there by leading to substandard execution.

3.4.1 The score card selection criteria

The score card method is also used to pre-qualify and select vendors and contractors. The focal firm lists out key criteria or requirements

which vendor organizations need to meet or comply with e.g., Cost of doing business, Technical and equipment, safety and security standards, Experience, Staff quality etc. Score are assigned to these criteria (Mandatory and general) e.g. score (1 – 10 – 20). The firm that score highest overall is selected. The runners up and the second runner up and so on (Table 3.1).

From the score table, Ahbor with a total of 73% overall score is selected first. Where he fails to be responsive and compliant the second firm Deon (62%) is selected.

Table 3.1 Vendor Selection criteria

Criteria vendor	Cost 20marks	Tec/Equip 20marks	Safety/Security 20 marks	Staff 20 marks	Experience 20 marks	Total score
Ahbor	13	17	15	13	15	73%
Becon	14	12	12	11	14	53%
Ceson	10	11	14	13	12	60%
Deon	09	15	11	15	12	62%
Eston	11	09	15	10	13	58%

Table 3.1 selection criteria score card.

3.5. Vendor Appraisals in Procurement

Vendor appraisal is very important in vendor management in procurement. Having selected the vendor or group of other vendor, there is a need to appraise their performance. The essence of this appraisal is to access their levels of performance and to see if their performance level worth's to be continually retained by the organisation.

Based on the above, vendor appraisals can be based on the following yardstick:

a. Quality assurance operation procedures of the vendor.
b. Compliance to lead time – the delivery time of the vendor.
c. Altitude of the vendor in the course of the job performance.
d. Impression being formed by the client on the vendor.
e. Packaging ability of the vendor.
f. Labour relation records of the vendor.
g. Procedural compliance of the vendor.
h. Technical capability of the vendor – inspection/test, e.g. Calibration system of the vendor.
i. Financial stability and management of the vendor.
j. Production capacity and capability of the vendor.
k. Management ability and capability of the vendor.
l. Collective action ability of the vendor in terms of repairs, services and general procedure.

Characteristics of a good Vendor

In the course of appraising vendors in procurement, it is very relevant to note the characteristics of a good vendor. This is because a good vendor is a strong asset to the organisation towards the corporate vision fulfillment. The characteristics of good vendors are;

a. Supply goods of adequate quality.
b. Supply goods on time.
c. Offer a how price.
d. Provide good service.
e. Other customer's experience of vendor should be good.

3.7. Challenges of Vendor Management in Procurement

Challenges in vendor management in respect of procurement management vary according to the sizes of organisations. In the business would, there are organisations of diverse sizes, the big, the medium and small or start-ones. Be that as it may, there are various challenges in vendor management depending on the sizes and

scopes of these organisations. However, whether big, medium or little, the challenges in vendor management in procurement management are hereby discussed.

a. **Risk Assessment Challenge**: As organisation grows, or in a big organisation, it may be difficult to access the level of risk such vendor activities may be posing to the organisation. Thus it becomes difficult to access if the vendor is critical to the organisation or not. This is particularly precarious where such an organisation has several vendors. It becomes very difficult to access risk in terms of their operations.

b. **Exposure to Diversities Of Security Challenges**: It is therefore very crucial for vendor management officials to ensure that there is a collaborative effort to ensure compliance to security policies of such an organisation.

c. **Contract Management Challenges**: Contract issue is a very sensitive one. Many organisations do not have contract department, particularly small and medium sized organisations. This therefore makes it difficult for vendor management officials to effectively manage and review contract related matters.

d. **Appropriate documentation challenges**: Documentation is a major and key issue in vendor management. Thus when the appropriate documents are not kept, or properly kept, it becomes a big problem when it comes to reconciling of invoices, for payments, checking of items supplied, reviews of contracts in terms of price fluctuations. Again if there is need for legal litigations, it poses some difficulties and challenges.

e. **Problems of ineffectiveness and inefficiency**: When the vendor management unit or department is ineffectiveness, automatically, it affects the entire vendor operations. Based on the inefficient and ineffectiveness scenario on the part of the vendor management, the vendors can do their biddings in unprofessional manners. The aftermath of this is that corporate vision may be delayed.

f. **Absence of cost optimization**: This has to do with the identification of sourcing opportunities. However this cannot be achievable in circumstance vendor management defectiveness and where the vendors are not being sincere.

3.8. Strategies in handling Vendor Management Challenges:

a. Provision of dash-board for consolidation of the entire vendor related data: This to a great extent assists in overcoming vendor management challenges. This is more useful when dealing with multiple vendors.

b. Standardization of process: There must be a standardization policy where operations of the vendors must be according to the policy of the organisation. To have hitch-free vendor management, the organisation should have or set up a simplified vendor management process management. This will assist in achieving corporate goals.

c. Scrutinization of pilling and all payment process: In some cases, bills being paid may be over-inflated, where the correct deliveries are not made. To avoid issues there is need to scrutinize all billing procedures and all payments. This can be done by automation and systematic validation process. When this is done, it can assist or result in cost optimization and consequently helps management to handle all related vendor management bottlenecks.

d. Compliance policy and strategy: All vendors must be made to comply with both the organisation and government policies in respect of their operations and requirements. Failure to comply would amount to sanctions.

e. Development of contract monitoring team: There should be contract monitoring team regarding the operation of vendors. This will involve various stake-holders to be involved in decision making process so as to effectively maximize vendor’s operational performance.

Self Test Questions

1. Who is a vendor? Why do firms pre-qualify vendors before engaging them to work. (b) Give four (4) characteristics of a good vendor?
2. What is vendor management in procurement? Why is vendor management necessary in modern day supply chain?
3. How has the application of computer aided devices (CAD) like scanners, POS and ERP helped corporate procurement in recent times?

CHAPTER FOUR

INTERNATIONAL CHAMBER OF COMMERCE TRADE TERMS (INCOTERMS)

4.0 Introduction

INCOTERMS is the abbreviation for international commercial trade terms in international trade. The terms are rules that facilitate fair and consistent global trade. INCOTERMS outlines the shipping responsibilities of buyers (importers) and sellers (exporters) in international commerce. INCOTERMS are therefore rules for buyers and sellers to follow when formulating contracts for the shipment of goods. This is associated in international trade between buyer and sellers who may be domiciled in different countries

4.2 Understanding INCOTERMS

International commerce (trade) has been bedeviled by chains of litigations that hinder smooth flow of trade and commerce. Most of these litigations have been hindered due to differences in political, cultural and legal climates of the various parties. They are not from same nationality. The International Chamber of Commerce (ICC) therefore introduced INCOTERMS (the rules) in 1923 to detail the roles and responsibilities of each party in the import and export business.

It opens up the time each party undertakes due diligence to ensure goods arrive at the named ports in good and safe conditions. Since then, there has been several revisions to the rules, the most recent edition being ‘INCOTERMS 2020’ they are recognized by numerous countries that engage in international trade.

Incoterms are the internationally identifiable acronyms used to establish the precise nature of the relationship between seller and buyer in any commercial transaction. These phrases are efficient ways of communicating the specific responsibilities assigned to each party wherever a transaction involves the transportation of goods.

For example, INCOTERMS outline who is obliged to cover the cost of each part of the international journey, who is responsible for the shipment at each part of the international journey, and who must ensure the goods are insured. Incoterms also determine what documentation is required for the transaction.

Suffice to say that Incoterms (International Commercial Terms) are universally recognized rules that guide buyers and sellers to fulfil a contract for the shipment of goods. The International Chamber of Commerce (ICC) introduced the new rules in effect from 1 January 2020.

A careful study of INCOTERMS 2020 will repay the effort by enabling more favorable trade terms for effective trade finance. Incoterms 2020 marks the first update since 2010 to keep pace with the continually evolving global trading landscape. It consists of eleven separate Incoterms with some specific revisions that are worth addressing.

4.3 WHAT INCOTERMS DO:

a. **INCOTERMS** remove uncertainties of different interpretations of such terms in different countries and lessen misunderstandings that lead to dispute and litigation.

b. **INCOTERMS** help clarify the geographical location and destination where risk and responsibility pass from exporter to importer.

c. **INCOTERM** help outline conditions under which title is transferred from buyer to seller.

d. **INCOTERM** determines which party is responsible for export clearance, import clearance, shipping cost.

e. **INCOTERMS** indicate which party assumes the cost if merchandize is lost or damage.

4.4 What INCOTERMS Do Not Do?

a. **INCOTERMS** does not clarify how responsibility would pass

b. **INCOTERMS** are not law and so are to be incorporated into sales contract with specifics highlighted i.e., “That passes when delivery is made under Incoterms 2000”

c. They do not directly address who owns the goods at any point in the transaction

4.5 SOME INTERESTING QUESTIONS

1. If your goods are on board a ship and they arrive wet, who takes the loss?

2. If goods are shipped from your location in good condition but arrive at the destination damaged, whose loss is it?

3. You buy a toaster from Park /Shop and the price paid includes making delivery to your house. On the way, the bus is involved in a traffic accident, and the toaster is damaged beyond repair.

   Whose toaster was it? Yours or Park /Shop’s?

4.6 THE TYPES OF INCOTERMS

Currently, there are eleven (11) INCOTERMS. Each type is divided into four groups: **E, F, C and D**. These categories are determined by the delivery location and who is responsible for covering the cost of each part of the journey. The groups are then split into sub-categories which refer to various scenarios. When choosing an INCOTERM, buyers and sellers should thoroughly review each incoterm and decide which set of terms best suit them and their shipment

4.7 Incoterms Group E

EXW (Ex Works) Ex Works places most of the responsibility onto the buyer. The seller ensures the goods are at the seller’s premises or another named location where the buyer loads and clears the goods for export.

Group F

In this group, the seller is responsible for delivering the goods to the buyer's pre-agreed method of transportation. After this, the buyer takes responsibility for all the costs and risks. There are a couple of sub-groups in the F category of incoterms, including:

1. **Free Carrier (FCA)**: This is similar to Ex Works. The seller delivers goods either to the carrier, a nominated person at the seller's premises, or another named location. The point at which any risks are passed onto the buyer must be clearly stated.

ii **Free Alongside Ship (FAS)**: FAS is when the seller delivers goods alongside a vessel nominated by the buyer. The responsibility lies with the buyer once the goods are alongside the vessel.

iii **Free on Board (FOB)**: FOB is when the seller delivers goods on-board a vessel nominated by the buyer. The responsibility lies with the buyer once the goods are on-board the vessel. Both FAS and FOB are incoterms used for waterway shipments.

Group C

In this group, the seller bears responsibility for all costs to the destination port. Once the goods are loaded onto the transport, the risks are transferred to the buyer. Group C incoterms include:

i **Cost and Freight (CFR)**: CFR is similar to FOB. The difference is that the seller must pay for the costs and freight to deliver goods to their destination.

ii **Cost, Insurance and Freight (CIF)**: CIF is similar to CFR. The difference is that the seller arranges insurance cover against the buyer's risk of loss or damage. Both of these terms relate to waterway shipments.

iii **Carriage Paid To (CPT)**: In this case, the seller is responsible for arranging the transportation of the goods to a named destination, but not for insuring them.

iv **Carriage and Insurance Paid To (CIP)**: This is similar to CPT, except the seller is also responsible for insuring the goods.

Group D

These terms relate to the destination of goods:

i **Delivered at Terminal (DAT)**: DAT is when the seller delivers the goods to a named place of destination, once the goods have been unloaded. The seller has full responsibility for the goods up until the named place of destination.

ii **Delivered at Place (DAP)**: DAP is when the seller delivers the goods ready for unloading at the named place of destination. The seller has full responsibility for the goods up to the named place of destination.

iii **Delivered Duty Paid (DDP)**: This is for when the seller is responsible for all costs and risks relating to the delivery of goods to the buyer's named place of destination. This includes clearing goods for export and import, paying any duty and carrying out customs formalities.

4.8 What are The Most Important Changes in INCOTERMS 2020?

INCOTERMS 2020 formally defines the delivery point in the transaction where 'the risk of loss or damage to the goods passes from the seller to the buyer'. In contrast, previously, the term had a more informal explanation. Knowing the point of risk transfer eases the transaction for different trade finance parties.

INCOTERMS 2020 rules make security more prevalent by listing import and export requirements. Also, they help in distinguishing whether the buyer or seller is responsible for meeting each of those

requirements. The updated definitions split the incoterms into 2 groups, each relevant to a specific mode of transport.

4.9 WHICH INCOTERM SHOULD YOU CHOOSE?

Free Carrier (FCA) and Delivered at Place (DAP) incoterms are popular incoterms as they can be used for both domestic and international shipments and for any mode of transport. The seller is responsible for export customs and the buyer is responsible for import customs. In contrast, using Ex Works (EXW) places full responsibility onto the buyer, which poses the risk of the buyer not being able to carry out all of these responsibilities.

One can carry out a cost/benefit analysis to help one decide which incoterm to use. This might enable one to identify any tax or other financial benefits available for the transaction. It is also worth checking there are no legal issues that could cause problems with a shipment reaching its destination. For example, there might be country-specific restrictions on one's goods if they are prohibited. It's incredibly important to ensure one have all the necessary documentations, including licenses or permits.

Shipments can face problems without the correct incoterm so it is really important to think carefully about which one is appropriate. Failure to understand incoterm definitions leads to problems throughout the supply chain. For example, logistics costs could increase, the terms may not match the requirements of the buyer or seller or the buyer or seller may not be able to comply with the incoterm.

4.10 The Most Significant Changes

a The most significant change relates to the term FCA (Free Carrier). It now allows the buyer to instruct the carrier to issue a Bill of Lading with an onboard notation to the seller. By doing so, it satisfies the terms and conditions of a Letter of Credit.

Previously, many exporters preferred to use FOB (Free on Board) to arrange payment under a Letter of Credit. Nonetheless, FCA was more suitable for the shipment of containerized goods. It was due to the extra delivery cost differential between FCA and FOB.

b Another major change is the replacement of DAT (Delivered at Terminal) with DPU (Delivered at Place Unloaded). Previously, the word 'Terminal' was confusing, and DPU broadly covers all delivery options.

The term CIP (Carriage and Insurance Paid) changes the insurance coverage requirements. The seller, under Institute Cargo Clause A, must purchase a higher level of insurance. The insurance could amount to 110 per cent of the invoice value, which is more appropriate for manufactured goods.

The CIF (Cost Insurance & Freight) is for commodity shipments. The Institute Cargo Clause C specifies the insurance requirements (unchanged).

c Additionally, FCA (Free Carrier), DAP (Delivered at Place), DPU (Delivered at Place Unloaded) and DDP (Delivered Duty Paid) now take account of buyers and sellers arranging their own transport rather than using a third party.

d Expense allocation between buyer and seller are now listed more precisely to help avoid confusion. In the 2010 Incoterms, costs sometimes became a big issue. Carriers could change their pricing structure by adding back charges. As a consequence, sellers faced additional terminal handling expenses. Unravel the different INCOTERMS costs involved when selecting trade terms for your shipment.

4.11 INCOTERMS for Any Mode of Transport

Some INCOTERMS are better suited to specific modes of transport than others. These are broken into two subcategories:

1 Rules for any mode of transport (x7). That is to say that there are seven incoterms that are suitable for any mode of transport.

2 Rules for sea and inland waterway transport (x4). That is to also say that there are four incoterms that are suitable or can be used for sea and inland waterway transport only.

Based on the above incoterms classifications for any mode of transport and inland waterway transport, they are discussed hereunder:

a Incoterms Applicable for any Transport Mode (The 7 Rules)

EXW – Ex Works

Under the EXW term, the seller is responsible for making the goods available at its premises. The parties can also agree on another named place such as factory, office or warehouse. At this point, the buyer gains ownership of the goods. Then, he handles all costs and risk after the products are collected.

EXW is most favorable to the seller. He has no obligation to load the goods or to cover freight costs once the goods have left the premises. This term can cause complications for the buyer if products are for export.

FCA – Free Carrier

With FCA, the seller is responsible for delivering the goods to the buyer's nominated premises. He needs to load the stocks onto th buyer's transportation. Then, the seller organizes the shipping, including export clearance and meeting security requirements.

The risk is transferred once the goods are loaded onto the buyer's transportation. Thus, any damage to the products when on board the vessel is the responsibility of the buyer.

The buyer pays the cost of freight, bill of lading fees and insurance. Also, he pays for unloading and transportation costs to the final destination. FCA is the term that has been most significantly changed under the Incoterms 2020 rules. Previously, the use of a transport intermediary meant the seller was unable to obtain a bill of lading with onboard notation. The reason was that he did not present the goods directly to the international shipper. Without the BL, the transacting bank would not authorize payment to the seller.

Under the new Incoterms 2020, FCA resolves this problem. The buyer should instruct the carrier to issue a bill of lading with the onboard notation to the seller. The parties specify this notation on the sale contract.

CPT – Carriage Paid To

CPT goes beyond FCA by specifying that the seller bears the costs of transportation to the buyer's place of destination. The seller clears the goods for export and delivers them to the carrier or place of destination as instructed by the buyer.

At the defined place of shipment is where the risk is transferred to the buyer. The seller is responsible for the transportation costs associated with delivering goods. However, he is not responsible for procuring insurance.

If the buyer requires the seller to obtain insurance, the parties should consider the INCOTERM CIP instead.

CIP – Carriage and Insurance Paid To

CIP is broadly similar to CPT. However, the seller is required to insure the goods in transit and to pay the transportation itself.

The seller clears the goods for export and delivers them to the carrier or place of destination as instructed by the buyer. The seller is responsible for the transportation costs of the items to the designated place of destination. The risk is transferred to the buyer at the defined place of shipment.

In one of the most significant changes under Incoterms 2020, CIP requires the seller to purchase a higher level of insurance. This level of coverage is appropriate for containerized goods: 110% of the contract value under Institute Cargo Clauses (A) of the Institute of London Underwriters. Previously the minimum insurance was applicable under Institute Cargo Clauses (C).

DPU – Delivered at Place Unloaded

It was previously known as Delivered at Terminal (DAT). It has been renamed because the buyer (or seller) may want to specify the delivery location rather than the terminal. This term is often used for consolidated containers with multiple consignees. It is the only term that tasks the seller with unloading the goods. The seller covers all the costs of transportation (export fees and carriage). Also, at the destination port, the seller pays the unloading from the carrier and the port charges. He assumes all risks until arrival at the destination port or terminal.

The buyer is responsible for all costs and risks after unloading. It includes import duties, taxes and customs clearance. Also, the buyer pays local transportation to the final named place of destination. If the seller is not able to organize unloading, he should consider shipping under DAP terms instead.

DAP – Delivered At Place

The seller delivers the goods to a named place of destination but is not responsible for unloading. His responsibilities include packing, export clearance, carriage expenses and any terminal costs up to the agreed destination port.

DAP means the buyer is responsible for all costs, duties and taxes associated with unloading the goods. He is also responsible for clearing customs to import the products into the named country of destination. The risk is transferred to the buyer at the final designated place of destination.

DDP – Delivered Duty Paid

DDP means the seller bears all risks and costs associated with clearing and delivering the goods to the designated place.

The seller is liable for clearing the goods through customs in the buyer's country. It includes payment of both duties and taxes. Furthermore, he needs to obtain the necessary authorizations and registrations from the authorities. However, the seller is not responsible for unloading.

This term places the maximum obligations on the seller and minimum obligations on the buyer. The buyer bears no risk or responsibility until the goods are at the final agreed place.

Hence, the term is favorable for online businesses seeking e-Commerce financing for cross-border trading.

Unless the seller has a profound understanding of the rules and regulations in the buyer's country, DDP terms can be a considerable risk both in terms of delays and in unforeseen extra costs. Hence, DDP should be used with caution.

4.12 Incoterms for Sea and Inland Waterway Transport (the 4 rules)

The following four rules apply to goods shipped by sea or inland waterways.
Usually, the risk and responsibility are transferred when the goods are on board (apart from FAS). As the condition of the items must be verified at this point, these terms are only suitable for non-containerized goods, such as commodities.

Note: In previous editions of INCOTERMS (2010), the risk passed between the seller and the buyer at the point where the goods crossed the ship's rail.

1 FAS – Free Alongside Ship

The seller delivers the goods alongside the buyer's vessel at the named port of shipment. It means that the buyer bears all costs and risks of loss or damage from that moment. The FAS term requires the seller to clear the goods for export (under previous Incoterms, the buyer arranged export clearance).

2 FOB – Free On Board

Under FOB terms, the seller bears costs and risks until the goods are loaded on board of the designated vessel. The seller's responsibility includes arranging export clearance. At the same time, the buyer pays the cost of marine freight, bill of lading fees and insurance. He is also responsible for unloading and local transportation costs from the

port of arrival to the final destination. Any damage to the goods when on board the vessel is the responsibility of the buyer.

For this reason, FOB is ideal for invoice financing solutions. This is because the risk of goods is transferred to the buyer once the goods are shipped. Since Incoterm FCA was introduced in 1980, FOB should be used only for non-containerized sea freight and inland waterway transport.

However, FOB continues to be the most commonly – and incorrectly – term used for all modes of transportation. Despite the contractual risk that can result (which include the difficulty of checking goods if they are enclosed in a container).

3 CFR – Cost and Freight

CFR incurs more significant risk and responsibility for the seller who pays for the carriage of the goods up to the named port of destination. The risk is transferred to the buyer at the country of export. Specifically, when the goods have been loaded on board the ship.

The shipper pays for export clearance and freight costs to the selected port. Furthermore, he is responsible for any damage to the goods on board the ship until the port of final destination.

The buyer pays for local delivery from the port to the final destination and is responsible for purchasing insurance. If the buyer requires the seller to obtain insurance, the parties should consider the Incoterm CIF instead.

CFR should only be used for non-containerized sea freight and inland waterway transport. For all other modes of transportation – and for

containerized goods – it should be replaced with CPT, as specified in a critical change in Incoterms 2020.

4 CIF – Cost, Insurance & Freight

The seller clears the goods for export and delivers them when they are on board at the port of shipment. The seller bears the cost of freight and insurance to the designated port of destination. Also, he is responsible for any damage to the goods on board the ship. The seller needs to purchase the minimum level of insurance under Clause C of the Institute Cargo Clauses. (This requirement is unchanged from Incoterms 2010.)

At the port of arrival, the seller must turn over three key documents – invoice, insurance policy and bill of lading. Those documents represent the cost, insurance and freight of CIF. This Incoterm is similar to CFR. However, the seller needs to obtain insurance while the goods are in transit.

4.13 THE 7 RULES FOR ANY MODE OF TRANSPORT *[FOR MORE CLARITY]*

Group E

1 **EXW**: **Ex Works (insert place of delivery)** – the Supplier arranges the trade of products, but it's the Buyer's responsibility to arrange shipment to the preferred location (which could be the Buyer's premises or a third party address).

Group F

2 **FCA**: **Free Carrier (insert named place of delivery)** – the Supplier arranges shipment of goods and assumes responsibility for risks and costs. Once the goods are in with the carrier, the Buyer is then responsible for the risks and costs of the shipment.

Group C

3 **CPT: Carriage Paid to (insert place of destination).** The Supplier must pay additional freight costs for the goods (even after the Buyer

has assumed responsibility for risk) when the carrier receives the item.

4 **CIP:Carriage and Insurance Paid To (insert place of destination)**. The Supplier incurs additional freight and insurance costs for the goods even after the carrier receives the item. The Buyer assumes responsibility for loss or damage to goods during transportation.

Group D

5 **DAP: Delivered at Place (insert named place of destination).** The Supplier is responsible for all risks and costs of goods being shipped until they reach their destination (regardless of the location). This includes freight and insurance costs but **not** customs duties, import permits or the costs of unloading goods, which are the Buyer's responsibilities.

6 **DPU: Delivered at Place Unloaded (insert place of destination).** The Supplier is responsible for the shipped goods - including all risks and costs - until they reach their destination (wherever it may be). This includes all freight and insurance costs **and the costs of unloading goods** but **not** customs duties or import permits.

7 **DDP - Delivered Duty Paid (insert place of destination).** The Supplier assumes all responsibility for risks and costs of shipped goods - including customs and import duties and insurance costs - until they reach their destination.

4.14 The Things INCOTERMS Do not Cover

INCOTERMS can be used ***within*** contracts to define and agree upon shipping terms and responsibilities, but they do not represent a sales contract between a Buyer and a Supplier. There are additional details that must be agreed upon alongside them.

Some of the common trade details **not** covered by Incoterms include:

a Pricing details, such as those of the goods

b Exact payment details, such as the method or currency of payment

c Details on the quality or condition of goods

d Legal implications of contract breaches

Note: INCOTERMS 2020

The latest edition of INCOTERMS is known as **Incoterms 2020** and was published in the same year.

This edition is not too different from the previous iteration - **Incoterms 2010** - and features the same 11 rules. However, there were some important updates added to the 2020 iteration.

Most significantly, **Incoterms 2020** features an **in-depth introduction** and **expanded explanatory notes** for each term and trading role, which previous editions did not have. The 2020 edition also outlines **best practices** for using the terms in global trade deals and their incorporation into sales contracts.

These updates were included to minimize errors and improve efficiency and accuracy in international trade.

4.15 INCOTERMS AND BREXIT

INCOTERMS are beneficial when setting expectations between Suppliers and Buyers in international trade agreements. However, many companies are concerned about the impact that Brexit has had - and will continue to have - on the use and validity of Incoterms. Brexit has not drastically affected the use of Incoterms in international trade. But there is occasional confusion regarding the term DDP (Delivered Duty Paid).

The UK's withdrawal from the EU has caused confusion about the destinations of goods, such as the places where Buyers receive shipments **before** they reach their destination.

Furthermore, new rules surrounding **custom fees** post-Brexit have made this more challenging for Suppliers.

Therefore, Suppliers must pay closer attention to ensure they are applying the correct terms.

4.16 What Are the Most Used Incoterms?

The most commonly used Incoterms are EXW and DDP. This is because these two agreements see a single party – the Buyer or the Supplier – take full responsibility for shipment risks and costs, reducing the sales contract complexities.

EXW sees the Buyer assume full responsibility for the risks and costs of the shipment, while DDP requires the Supplier to organize and assume responsibility for the shipment.

Incoterms may appear complicated but they are easy to understand once you realize why they are there. The terms exist to reduce errors and delays in international trade, therefore ensuring an easy experience for both Buyer and Supplier.

4.17 THE DOCUMENTATION PROCESS

a. Documentation involves knowing the required paperwork (documents) and the function they perform and being able to prepare such documents, avoiding discrepancies and maintaining a standard format.

b. In most cases, competent freight forwarders and customs broker are retained to handle the many details of export and import shipment.

c. This helps to minimize the paperwork for organizations and maximize the chances that the shipment will arrive intact and on time.

4.18 CARRIER AND CONSOLIDATION

CARRIER:

- This is essentially the function of moving cargo. This can be a stream ship line, an airline, or an inland carrier such as trucking company or railroad. Almost all shipments involve more than one mode of carriage such as – truck from warehouse to airport, - truck from warehouse to railroad to airport
- The movement of cargo via different modes of transport in a single seamless journey is called Intermodal Transport while Multimodal Transport refers to the same movement of different cargos

Consolidation:

- This is an intermediary service by carriers and it is done when a carrier operates no aircraft but contract with major airlines for a guaranteed amount of cargo from airport X to airport Y.
- In such cases, the carrier is obligated to pay the minimum of the guaranteed amount if they have the cargo or not.

NVOCC: Non Vessel Operating- Common- Carrier. This is the name of carriers which purchase space from steamship lines, retail the space out, but operate no vessel of their own. Sometimes called "NVO".

Self Test Question

What are the relevance of INCOTERMS IN INTERNATIONAL shipping?

CHAPTER FIVE

COMMERCIAL NEGOTIATION IN PROCUREMENT

5.0 Introduction

Negotiation is a fact of life as it is a process of coming to an agreement. We all negotiate as a basic means of getting what we want from others each day of our life. It is the duty of the procurement or the purchasing manager to specify clearly the characteristics of the purchase or the exact specifications of the contract or service in line with the applicable price. Therefore, procurement must call for negotiations – which is a process through which agreements can be reached on the characteristics of a commercial or service contract. Procurement managers in public and private sectors have the express authority to create or develop legally binding contractual/commercial agreements with approved vendors (contractors). This could be done through an invitation to negotiation forwarded to the prospective suppliers.,

5.1 What is Commercial Negotiation in Procurement?

As stated by onwubiko (2019), negotiation is a process of give and take for parties with divergent interest and opinions coming to agreement. It is a process by which agreements are reached on the terms and conditions of intended commercial relationships As a commercial agreement, care and caution must be exercised as this agreement is legally binding and has some financial, legal and business consequences on the organization.

Negotiation is a process by which parties with different and potential divergent interests come to agreement.

According to Burt and Sterling (2011), negotiation is a process of planning, analyzing and reviewing buyers and sellers adopt to reach acceptable agreement or compromise which includes all aspects of the business transaction and not just price.

As proposed by Lyson and Farrington – In procurement view, negotiation is a process whereby two parties decide what each will give or take in an exchange. Negotiation is an interactive process to this Rubin and Brown stated that It is the exchange of valued currency between interdependent parties.

Onwubiko (2021) added that it is a process that involves communication and interactive exercise in which parties with different mind sets seek to exploit and achieve explicit or implicit advantage while resolving problems that are barriers to agreement.

In procurement, negotiation is a commercial activity. (Commercial negotiation) It can be viewed as a purposeful persuasion where each party persuades the other to accept their own point of view or comply with its wishes.

On the one hand experts see negotiation as a constructive compromise where each parties considers the need to come closer to each other's position (win/win), identifying areas of common ground and make concessions.

It can be seen as an interpersonal problem solving skills and technique, enabling parties to meet their needs as far as possible in a

conflict of interest situation without damaging on going relationship among them.

It is a tool managers in business adopt to make good their relationship with suppliers, workforce, team members and business partners.

However, there are alternative ways procurement managers can reach agreement with suppliers without negotiation these include

1. Persuasion: Encourage the supplier to accept the merits of your case with no concession on your side.
2. Giving in: Accept the other party's case without requiring it to make concession
3. Coercion: insist that the other party accepts your view or …..
4. Problem solving: working together to remove the differences (seek win/win) solutions
5. Competitive bidding

5.4 Strategies/Approaches in Commercial negotiation

There are ways agreement on contracts can be reached. It can be Strategic or Tactical methods of negotiation. At the higher management level, strategic negotiation happens for the long run procurement and commercial contracts and relationships. Strategic negotiation addresses long-range issues that involve the direction and objective of a strategic or long term supply chain relationship, e.g. the nature of collaborations, type of competitive advantage to

seek for, This level identifies what to do and the actual benefits derivable from such actions.

Other strategies adopted in negotiation include

1. Win-Lose Approach (1 Man gain another man Lose – the zero sum game)
2. Lose – Lose approach (No Victor No Vanquished -)
3. Win – Win approach (Fair deal for all parties – collaborative problem sharing)

5.5 The role of negotiation in procurement

Resolving conflicts in Negotiation – One of the roles of procurement is to maintain a corporative working relationship in the organization through cross functional consultation, team working and effective supplier management.

Procurement management is a complex ongoing process of managing diversity and difference in people and organizations to achieve set goals. Public and private sector procurement involves managing individuals, corporate organizations that are potentially diverse and divergent in opinion, goals, interest attitude, mind sets and priorities. Due to these differences misunderstanding, disagreements and hostilities happens from time to time. These issues constitute conflict in organizational relationships

What are conflicts in Procurement?

According to John Hunt (2012) conflict is a disagreement that stem from difference in approach or view or life style. At time conflicts may be destructive and damaging to life and relationships.

Damaging Conflict may

i. Distract attention from task

ii. Act as a barrier to communication

iii. Subvert objectives in favour of secondary goals and agenda

iv. Encourage defensive and “spoiling “ behavior

v. Stimulate emotional hostility

These types of conflict can be resolved by negotiation.

5.6 Sources of Conflict in Procurement

A wide range of sources can led to conflicts in procurement, sourcing and purchasing. Dessler, (2010) identified four (4) sources of conflict in a procurement network via

a. Interdependence and shared resources

b. Difference in goals, value and perception

c. Power imbalance

d. Ambiguity

In procurement and purchasing conflict may arise on cross function activities e.g:

i Cost reduction

ii Specification (technical and otherwise)

iii Supply priorities (delivery time, payment date etc)

iv Budget allocation

Conflict of Buyers with suppliers and contractors

1. Late/unreliable delivery by supplier

2. Late/delayed payment by buyer
3. Unethical treatment by both parties
4. Poor and unreliable performance by supplier
5. Harsh and unfair treatment by buyer

Self Test Question

1. Explain the term conflict? List and explain any four (4) sources of conflict in purchasing contract.

2. Focal firms appoint suppliers from outside their organization. Why do firms use external suppliers when they can buy up material from the market?

3. Negotiation aims at managing relationships in the procurement process. Why do procurement firms adopt negotiation as a way of settle conflicts. List other approaches in settle disagreements in procurement.

CHAPTER SIX

DEMAND PLANNING/MANAGEMENT IN PROCUREMENT

6.0 Introduction

Procurement organizations do not wish to be price takers but price givers. They read the market and demand trends and adjust themselves to lead the market. They do this by distinguishing the types of demand (dependent and independent demands) that trend on the given marketplace and cue in to lead. They do so through various forms of forecasting. They are aware of the seasonal variations that occur of the year. They predict when these will happen based on historic demand patterns or trends and use forecasting technique to guide their weekly, monthly or quarterly productions. With these, they can avert costs associated with excess stock or under stock. Each of these sides of the divide has costs implications to the organization. Where there is excess stock funds will be trapped, while stock out will result in loss of market share. Hence, firms rely on demand planning and management to balance the rift between demand and available capacity to supply. They do this by

a. Improving production schedule
b. Curtailing demand
c. Increasing capacity (engage more workers, facilities, leasing)
d. Back order system
e. Increasing work hours and overtime (services)

f. Customers self service.

Demand planning looks at the customer demand trend in the short run. It gives oversight to the current demand. The aim is to ensure the firm does not experience recession, loss of profit and market share.

6.1 What is Demand planning and why plan demand

Demand planning is a deliberate effort organizations make to ensure a match between demand and supply of their products or services. They do not want to be price takers but price givers. Hence, they plan to:

a. Avoid loss of market share, profit and recession
b. Respond positively to the market and pressures in demand
c. Help them take opportunities
d. Ensure prompt delivery and customer satisfaction. Through the use of forecasting tools.

6.2 Types of Demand in procurement (Dependent and Independent)

In procurement and inventory management, demand is classified according to the source of such demand. There is the independent demand that is sourced from outside of the organization i.e. the customer. This demand is said to be independent since it is independent of the organizations internal action. It is a “Direct Demand” Items in this category include those sellable finished materials. Independent demand is the opposite of dependent demand. Here, the planner does not have the view of the customer but goes on to produce to stock (inventory) after an estimate or forecast of possible future demand, e.g. produce to stock for Christmas, Olympics games etc. The planner triggers the production

in anticipation of increase in future demand. The customer does not in any way decide what, when and how it will be produced. This is independent demand inventory.

Dependent Demand – This is stems from the fact that it was planned by the organization to make the finished product. For a manufacturer, producing ten reams requires ten tires and each car requires five tires and five reams

6.3. Methods of Demand planning (Forecasting models)

Forecasting is a key element in managing demand. Forecasting aims at giving insight into the future. It helps to predict what the future event may show up with. This helps in decision making and planning by minimizing the deviation between actual demand and a forecast.

6.3.1 Quantitative Forecasting – Uses mathematical models

This is a predictive forecast that uses mathematical and algerbraic expression to relay forecasts. Also are causal variables to forecast demand. They include:

i. Simple Moving Average

ii. Weighted Average

iii. Exponential smoothening

6.3.2 Qualitative Forecasting – Uses historical data and experience)

This forecast method believe there a relationship between the past and the future. Hence use past trends to predict the future. The accuracy of this method is based on the experience of the prediction.

Questions: What is demand management/Planning? Give five (5) reasons why firms carry out demand planning.(b) What are the benefits of forecasting to a bread producer in Nigeria.

CHAPTER SEVEN

MANAGING TRANSPORTATION IN PROCUREMENT



Multiple modes of Transportation a support to Procurement

Chapter Objective

On completion of this chapter, students should be able to

1. Tell and explain the modes of transport and their characteristics
2. Explain the challenges of these mode of transport in freight transportation
3. Explain the role of transportation in procurement management.

7.0 Introduction

Transportation in Procurement –Aviation, Rail, Road Ocean an Pipeline

Transport is a movement service that aims at creating space and location value/Utility. i.e., transport is concerned with the movement of freight, information and passengers round the world from areas of need to consumption. It is one of the tools civilized societies adopt to create order out of chaos. It reaches every phase and facet of our existence. Transportation management is concerned with purchase

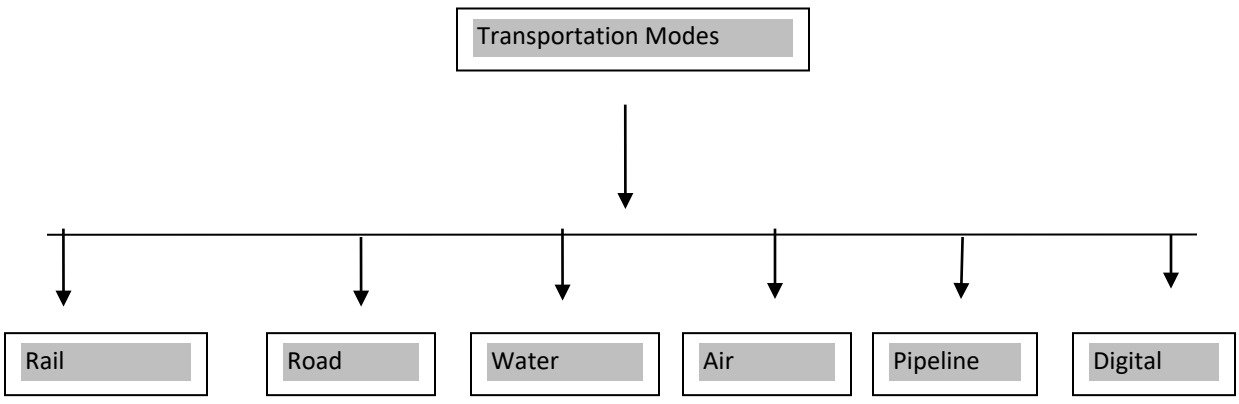
and control, planning, budgeting, supervising and co-coordinating of movement services used by a firm (procurement) to achieve her logistics objectives e.g. procurement. Transportation accounts for between one-third and two-thirds of total logistics costs. Transportation increases the time and place utility of products by delivering them at the right time and to the right place where they are needed. Hence, efficient and effective management of transport systems impacts on the three types of inter-firm flow (product, information and cash) this is critical in achieving supply chain integration and objectives.

In procurement, transportation has a derived demand. Managers demand transportation services as a means to serve other problem e.g. movement of resources. Hence we say that transport is a movement service that creates time and place value.

7.1 Modal Split In Transportation

Transport is organized in modes with each mode expressing a unique characteristic. In which ever mode we operate, there are six basic modes of transport that move or enhance flows in supply chain via:

Fig 7a Basic modes of Transportation



7.1.1 Air Transport



Fig1. Air Carrier a support to International Procurement

This includes the fixed wing (Air plane), the rotary wing (helicopters) and all forms of balloons, rockets that move above the ground or in space. Air transport is noted for its high technological input, speed and higher international regulations by ICAO. It has the highest technological input. This has reflected as a high fare per kilometer and good for international travel for its speed. It has speed, reduced packing, safety and security, wide market

Weaknesses

Has a restricted right of way. As such, it can not engage in door to door delivery of services (incomplete service delivery).

Faces international safety standards and multiple local regulations and restrictions.

It is capital intensive as such cannot serve the purpose of low income group.

It is not versatile in reaching every point of origin and destination. Its operation is affected by weather conditions.

Have restrictions in size and weight. It's best for transportation of goods of high value e.g. diamonds, electronic equipments and

perishable goods for its speed. However there are high restrictions on carriage of dangerous goods like explosives, flammables, compressed gasses and all other hazardous materials. (ICAO and IMO). Air transport is covered by the Warsaw and the Montreal conventions.

7.1.2 Land Transport

Road is the term applied to describe the route (paved and unpaved) that units of carriage pass on to deliver goods. (Cars, Trucks, Trailers, bikes – units of carriage) Road transport is classified under two major heading:-

Motorized Mode Of Transportation (Motor Carrier)
These are those nonhuman units of carriage that derive their energy or motive powers from steam, alcohol, coal, petroleum, gas, electricity or batteries, solar and nuclear energy. These units of carriage are the motor vehicles which are mechanically propelled devises intended to be used on the roads, routes etc. This sub-mode has gained exceptional acceptance among travelers for the speed, comfort and reliability in short and medium distance travels. In Nigeria for example, the mode carries about ninety percent (90%) of passengers and freight- (Lucy, 2004). The motorized mode or the motor carrier is the most accepted mode in Nigeria as it is able to lend itself to expansion to reach every settlement within the region. Also, it has the most extensive route network reaching every origin and destination (door to door)

Advantages

a It provides door-to-door or origin to destination services

b It is cheap, fast and economical for short distance travels

c It is very flexible and ubiquitous.

d It is a multipurpose medium of transport (cars)

Disadvantages

a It has high fuel consumption rate

b Not very economical for long distance travel

c Too many users hence causes congestion and over crowding

d It is a pollutant i.e. source of noise, air, and water pollution.

e Has low tonnage and carrying capacity as compared to other modes

The Motor Carrier



Fig. 1 Units of Carriage in land transportation

The motor carrier is the principal unit of carriage of road transport for procurement. It has greater advantage to other modes of transport for its easy take off and drop off of limited units of goods. It has the principal character of accessing every origin and destination. It can under take door to door delivery. The motor carrier has emerged to be the favored mode in recent times for it medium speed and able to cover short and medium distances with reduced travel time. Today, technical changes sweeping through the transport world has ushered

in an era of trucks with increased axle load, speed, safety, comfort and reliability.

7.1.3 Rail Transport (restricted right of way)

Rail transportation is a land based mode of transport. It has a restricted right of way as it runs on steel rail tracks which guide the wheels and enable the unit carry heavy loads while resisting flexibility on the tracks. It has the advantage of moving large volumes of freight over very long distances. The rail system has under gone tremendous change with the introduction of computers and information technology. There are three main grades of rail (train) systems namely:-

a Steam train (water powered/ steam locomotion)
b Diesel trains (powered by diesel fuel)
c Electric trains (powered by electricity)
d Pipe Line (slow for liquids and powders)

7.1.4 Sea and Inland Water Transport)

Inland Water Transport (IWT)

Nigeria has over 42 navigable rivers, 36 inland waterways and two major lakes. These rivers form a waterway network connecting major towns and economic and population centers and they use the river ports as nodal points for exchange.

This mode of transport uses the inland water ways as the high ways. It is principally used by riverine people and coastal communities that move their sea food to up land areas for exchange. In Nigeria, the rivers Niger and Benue are the principal arteries of transport and

communication. In the past, colonial master used the rivers extensively as tools for effective administrative and economic coordination of the state. Some commercial companies like – The Royal Niger Company, Julius Berger, United African Company (UAC) used these rivers to move large towns of cargo, steel for construction and iron ore that supported development of Ajeokuta steel company.

7.1. 5 Problems of Inland Water Transport (IWT) in Nigeria

a Infrastructural/Super structural Issues
b Structural/Systematic Constraints
c Jurisdictional Constraints
d Manpower/Capacity Constraints
e Lower Private Sector Participation
f Competition from other Modes – Road, Rail, Air
g Poor Funding/Organizational Bottlenecks
h Morphology:

7.1.6 Ocean/ Maritime

This is the highly regulated sea/ocean transport where ships of various tonnages (GRT, NWT and dwt) travel international waters as the principal unit of carriage in international trade and commerce. The seaports are the nodal points (Transport terminals) for ocean transport.

Characteristics of Ocean Transport

a It has the capacity to carry the largest tonnage of freight and passengers in supply chain compared to any other mode of transport.
b It is international in nature and subject to international rules and regs

c It is the cheapest mode of transport

d It has very low speed.

7.2 The Demand and Supply of Transport in Supply Chain

The Concept of Derived Demand in Transport

According to transport planners, the demand for Transport Services is ignited by the desire to meet other needs – work, Shopping, School, Hospital and other social or political issues this is in relation to land use. Transport is not demanded for its own sake but as a means to satisfy other needs.

Transport is demanded to satisfy other economic, social and personal needs, e.g. the demand for shopping, work, tourism, recreation. Take for example, people living kilometers away from their place of work demand transport to get them to their work location quickly and safely too. Again, a trader in the central business district (CBD) needs to take his new fashion to a nearby village that has good market, he demands transport to enable him move the fabrics to the market. Here, we say that transport opens access between two complimentary areas. Manufacturers need to move their produce from the factory to the market. None of the above demanded transport for the sake of it. The demand for transport is just a means to an end. Hence, Bonavia in (1936), Akpoghomeh, (2003) opined that transport aims at creating place utility. The concept of derived demand is important to a transport operator or planner as it could be used to predict or relate the number of trips that take place as compared to land use activities.

Also, the number of trips into a shopping centre can be related to the size of the shop and the number of employees. Hence, the derived

demand can be used to predict the travel pattern as a function of land use activities. Transport is a service rarely demanded for its own (except sightseeing and leisure)

7.3 Factors That Determine Demand For Transport Services

a Income per Head of travelers (Per capita income)

b Cost of Transport (Mode)

c Cost of Closer substitutes (other modes)

d Employment

e Population structure

f Geographical locale of residential areas

g Urbanization and travel pattern

h Demand for commerce and movement will cause transport to develop. Transport has a catalytic effect on the society as it stimulates commerce and movement.

7.4 The Supply of Transport

Transport is a service. The supply will be determined by the objective of the operating firm. If the service provider is profit driven, its supply is affected by the price or cost of the service. Where the cost or price is high, transport service providers will put in (supply) more of their units of carriage (cars, Lorries, trailers buses etc). They want to maximize profit.

Price is the principal determinant of supply in a profit driven market. The higher the price the higher the profit and the more suppliers put in more of their services. The converse is true for decrease in price.

Political Influence/legislations Government may legislate price of services e.g. air transport, Port dues, Docking fees and action of Competitors or Price of alternatives

7.4.1 Factors That Influence the Supply Of Transport

a Cost of Transport in a mode.

b State of Technology in the mode

c Price of other closer substitutes

7.5 PACKAGING IN EXPORT/IMPORT TRADE (Foreign Procurement)

International procurement involves movement of goods across the globe. It requires that goods for transportation need to be properly secured and packaged to avoid risks associated with long distance travel and handling and to meet international regulations of various countries (importing/Procuring countries).

As such, there are basic and accepted ways cargo must be packaged to meet such international requirements. These include:

a. Use of ISO certified Metal Container /boxes, bags, pallets, nets racks etc. for various types of goods e.g. for general dry bulk cargo, we use the general purpose ISO certified metal containers and open-top containers for pipes and piping accessories. “Gen. Purpose”




Fig. 3 and 4 ISO certified Open top and General Purpose Containers

b. For wet and frozen stock that requires constant freezing and cooling, a type of ISO container called the reefer is recommended for international shipment. Reefer are connected to main ships source of power from port of origin to destination. Temperature sensitive cargo are stuffed here so are drugs and vaccines. The container gives opportunities for easy handling at the ports of loading and discharge. It enhances greater throughput for a work gang.



Fig. 4 A Reefer for wet and frozen Purchases (cargo)

c. It is also recommended that wet liquids and hydrocarbons, acids, corrosives be transported in special containers or ISO certified container tanks. Each must be accompanied with a vivid description

of the cargo and a material Safety data sheet (MSDS) that will explain the nature, character and reactivity of the substance to protect the handler and the environment. These substances must be rated according to their rate of reactivity from (1 - 9). A mark from (1 – 3) implies that such cargo or chemical is capable of spontaneous e.g. explosion, reaction, acidic, flammability etc. While numbers (4 -6) averagely (7 – 9) capable.

d. Life animals. These need to be handled with care. Hence a special type of containers are made for their transportation. Such are ISO certified

7.5.1 Factors that influence Packaging of Cargo in International Procurement

a Mode of Transport

b Government policy

c Nature and cost of packaging material

d Value of cargo to be packaged

f Nature and type of cargo (Dangerous goods, Life animal, Time sensitive etc.)

Exchange Rate

This is the value or worth or price of a currency in relation to another currency. It is the cost/value of a currency in international market. It is the number of units of a currency that can exchange for a given number of units of another currency – Branch 2013. Hence, the rate for the Naira is the number of units of another currency to the Naira. Take for example, if there are N450 to a 1Pound sterling, it implies that the exchange rate for the Pound (UK) is N450. Here, the cost/price of one British Pound is N450 Naira. It is concerned with the

method of settling foreign debts, means of payment and the services of bankers and brokers in international markets. Each politically independent nation of the world has its currency that serves as a medium of exchange (legal tender). It is also used for purchase of goods and services in international market after it has undergone conversion (Change to desire currency). Exchange rate are not static but changing in international market as the forces of demand and supply drive it (fluctuation).

Two closing rates are quoted for each currency – the higher is the buying market rate for that currency while the lower is the market selling rate for same currency. Bankers and brokers base their market price on this market cover which guides their price or rates to customers.

Questions

Why is road transportation in higher demand than other modes of transportation in your country?

List and explain any four challenges of air transportation as a major carrier in international procurement.

CHAPTER EIGHT

LOGISTICS IN SUPPLY CHAIN MANAGEMENT

8.1 The Concept of Logistics

Logistics can be defined as the science pertaining to the movement of materials and the services along with its information. The more comprehensive definition says, “Logistics is the process of moving and positioning inventory to meet customer requirements at the lowest possible total landed cost.”

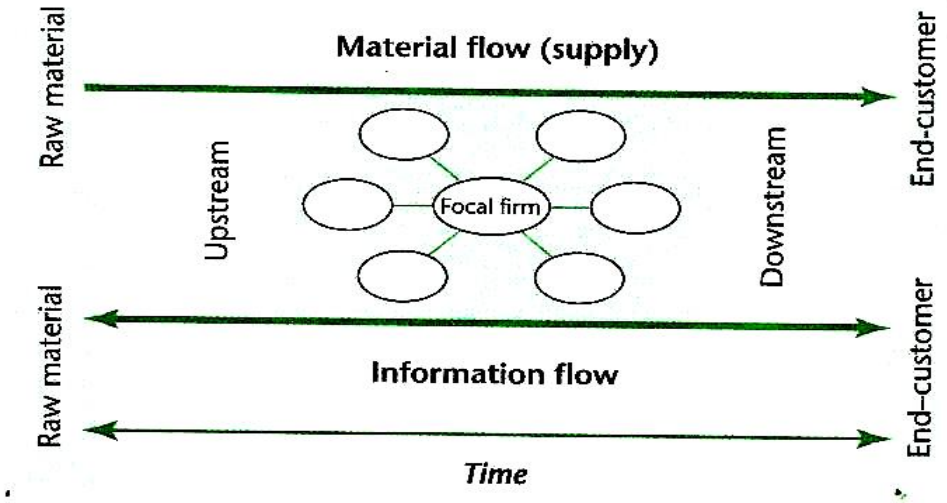
According to the Chartered Institute of Logistics and Transport (CILT). Logistics is the time related positioning of resources at the right time at the right place at the right quantity and at the right price.

To get these “rights” correct, logistics involves activities and processes like planning, Inventory, costing, transportation, warehousing, customer care and all other activities that will help create value at the hand of the final consumer. Logistics is and involves the flow of resources, information, ideas, money and all other input that create value. Resources are (5Ms) – Men, Machines, Money Materials and Management. These five elements interact with the boundaries of an organization to develop a process called LOGISTICs. It involves all the activities and organization performs within the fence to create customer satisfaction (Value).

Here, value is defined from the end users perspective. E.g. to the investor (shareholder, value is return on investment (ROI). Hence logistics managers are on their toes to control cost, working capital and fixed assets.

Logistics is concerned with funds flow. Material flow and information flow within the organization. It is a cross-functional discipline that addresses management processes of plan, make, deliver and return. These processes are repeated across the supply chain (Harrison 2008).

8.2 Elements or Wings of Logistics



Adapted from Harrison and Van Hoek, 2008, pg 93

Logistics management consists of eight elements called wings of logistics. These are discussed in a nutshell below:

8.2.1 CUSTOMER ORDER PROCESSING

Flow of Actions

1. Filling up the order form
2. Deciding the specifications of the product
3. Deciding the quality check list of the product
4. Deciding the delivery schedule
5. Deciding the location of delivery

Important Factors

1. Cost of order processing
2. Whether the company is capable of producing a component
3. Detailed list of specifications

Techniques

1. Electronic data Interchange (EDI)
2. E- Enterprise Resource Planning (ERP) or Collaborative planning (CPFR)
3. Web portal

8.2.2 LOCATION ANALYSIS

Flow of Actions

1. Cost of transportation of raw materials and finished goods:
- Proximity to suppliers
- Proximity to customers
2. Availability and type of land
3. Availability of secondary resources
4. Availability of desired manpower at affordable cost
5. Communal harmony
6. Governmental regulation and taxation

Important Factors

1. Cost of operations as a percentage of sales
2. Shelf life of product

8.2.3 INVENTORY CONTROL

Flow of Actions

1. On hand inventory analysis
2. Communicating the quantity, quality and timing of material with the supply points
3. Getting the material of right quality, quantity and at right time

Important Factors

1. Inventory control at planning stage
2. Lead time
3. Cost vs importance of raw material

Techniques

1. DRP and replenishment order control
2. Fixed order interval system
3. Economic order quantity with ROP system
4. Selective inventory control (ABC, VED, FSN analysis etc.)
5. Order forecasting using statistical tools

8.2.4 MATERIAL HANDLING

Flow of Actions

1. Type of material (Business significance like raw material, finished goods etc.)
2. Material handling requirements of the material (Fragile, inflammable)
3. Cost ratio of material handling to material cost
4. Material default location, identification and traceability

Important Factors

1. Material breakage
2. Pilferage
3. Cost of material handling
4. Number of handlings

Techniques

1. Operational research
2. Material flow analysis
3. Computerized material retrieval system
4. ASRS (Advanced Storage & Retrieval System)

8.2.5 Packaging

Is the process of containment of the cargo for protection and easier stowage.

Flow of Actions

1. Packaging requirement for the
2. Material (Refrigeration, Fragile etc.)
3. Primary packaging
4. Cost of packaging
5. Transportation requirement for packaging (Vibration proof, water or moisture tight)

Important Factors

1. Protection to product
2. Holding the product
3. Communicating the message to customers
4. Customer requirement for packaging
5. Reverse logistics for packaging
6. Recycling of packaging materials
7. Cost of packaging

Techniques

1. Standardized box packaging
2. Containerization of packaging
3. Direct part marking
4. ISO 14001
5. Recycling of packaging materials
6. Reusable packaging materials
7. Eco-friendly packaging materials
8. Bar coding
9. Bumpy bar coding
10. GPS tracking system
11. RFID

8.2.6 Transportation

Flow of Actions

1. Mode of transportation
2. Cost of product
3. Speed of transportation
4. Ambience requirement of material (Refrigeration, Vacuum)
5. Cost of transportation

6. Urgency of the product to customers

Important Factors

1. Urgency of the product
2. Cost of product
3. Cost of transportation

Techniques

1. Containerized transportation
2. Cool Chain Transport (Refrigerated Vans/Containers)
3. Multi-modal Logistics
4. Milk Run Distribution systems
5. Cross Docking
6. Direct Shipment

8.2.7 Warehousing

Flow of Actions

1. Location of the warehouse
2. Inventory level at the warehouse
3. Storage requirement of the product
4. Packaging and repackaging requirement of the product
5. Shelf life of the product

Important Factors

1. Availability of space
2. Availability proper material handling systems
3. Strategic location
4. Packing and Re-packing facilities
5. Information and allied services

Techniques

1. Third Party Logistics

2. Third Party Warehousing

8.2.8 Customer Service

Flow of Actions

1. Contractual services offered to client
2. Type of customer service required for the product
3. Location of the service centre
4. Service level at the service centre
5. Cost of service vs replacement

Important Factors

1. Contractual requirement of customer service
2. Service quality
3. Reserve logistics

Techniques

1. AMC (Annual Maintenance Contracts) and free replacements
2. Limited (free) trail period
3. Guarantee and Warrantee
4. User clubs
5. Help lines, toll free number, call centers
6. CRM

8.3 Distribution

Distribution in layman's language refers to getting the right product to the right place at the time. Distribution can be defined as the channel structure used to transfer products from an organization to its customers. Distribution organizations manage the activities

associated with the movement of materials, usually finished goods or parts, from the supplier to the customer. All activities related to physical distribution need to be managed. This movement may be through one or more levels of field warehouses. The distribution strategy used, e.g. financial planning services, may be offered from printed material, and sold at retail, sold by consultants face-to-face, or delivered electronically by computer, by phone and by correspondence-multitude of different distribution systems.

Distribution decisions have significant implications on:

a Product margins and profits
b Marketing budgets
c Final retail pricing
d Sales management practices

Distribution channels can include one or more of these options:

a Retail: Stores selling to final buyer (one store or a chain of stores)
b Wholesale: An intermediary distribution channel that usually sells to retail stores
c Direct Mail: Generally catalog merchants that sell directly to buyers at retail prices plus shipping via mail
e Telemarketing: Merchants selling directly to buyers at retail via phones
f Cyber Marketing: Merchants selling directly buyers at retail prices, or business-to-business products and services at wholesale prices via computer networks

g Sales Force: Salaried employees of a company or independent commissioned representatives who usually sell products for more than one company

Distribution planning applications are designed to calculate what products need to be received at which location, and at what time. Distribution planning helps organizations create their Distribution Requirement Plan (DRPs) and establish distribution lead times. Before a system can calculate the shipment plan it must understand what inventory is available to meet the demand at any point in time and what demand might be unmet at any point in time. It is difficult to complicate when allocating for limited supply, customer priorities, shipment costs and other organizational priorities.

Many organizations are interested in building complete supply chain planning systems that can address these major application types. Thus, most planning solutions usually include multiple products, from which users can select particular components or integrate third-party components to create the finished application.

8.4 Inventory Management

Inventory management is the deliberate planning, coordination, control and budgeting of distribution resources to meet customer's requirements at all time and to create value for the organization. It is key to any successful distribution business. Inventory management provides everything you need to know about the receipt and movement of goods, the sale, removal or other disposition of goods and the precise valuation and status of goods remaining in inventory at any time.

Effective inventory management allows a distributor to meet or exceed his customer's expectations of product availability with the amount of each item that will maximize the distributor's net profits.

8.4.1 Reactive Inventory System

This system responds to the channel members inventory needs by drawing the products through the inventory channel. In the reactive system, the retailer independently decides when and how much to order to the wholesalers. The wholesalers in turn order independently to their suppliers. These independent actions create a lot of uncertainly which increase the need to have certain safety stock for adequate performance.

8.5 Planning Approach

It is an approach that schedules the product movement through the channel according to the forecasted demand and the availability of the product. It coordinates the inventory requirements across various locations by sharing information. There are two types of inventory planning methods:

a Fair Share Allocation

b Distribution Requirement Planning (DRP)

Fair Share Allocation: It is an inventory planning method that provides a "fair requirements at the stocking locations and ensure that the supply sources are able to meet the demand. It has been viewed as the key requirement for a just in time production (JIT) and logistics system. DPR is defined as:

Distribution Requirement Planning (DRP) is a planning approach that considers multiple distribution stages and the characteristics associated with each stage. DRP, in fact, is the logical extension of MRP(Manufacturing Requirement Planning). PRP helps to schedule the production resources and attempts to resolve the capacity problems like shortage of material, in the material management system. Manufacturing requirements determine the master production schedule (MPS) and manufacturing requirement plan (MRP). MPS defines the weekly or daily production and machine schedules. Given the MPS, MRP co-ordinates the purchase and arrival of materials and components to support the manufacturing plan. The characteristics of DARP and MRP are highlighted in Figure 5.1

FIGURE 8.1 Characteristics of DRP and MRP

DRP	MRP
• DRP is determined by customer demand on which the organization has no control.	• MRP is determined by a production schedule which is in turn managed by the enterprise
• DRP operates in an independent demand situation	• MRP operates in a dependent demand situation
• DRP co-ordinates once • the finished goods are received in the plant warehouse	• MRP controls inventory till manufacturing or assembling is completed.

DRP Process: DRP is a process that co-ordinates inventory levels, plans the inventory movement, and reschedules inventory between levels (if necessary). The most fundamental DRP planning tools is the schedule.

It co-ordinate the requirements across the planning horizon.

8.6 Benefits of DRP System

The integrated inventory planning system such as DRP provides various benefits to the management. This system has especially helped marketing and logistics.

The major marketing benefits include:

a DRP, through the integration of various distribution centres, has helped to provide timely delivery to the customers.

b The on time delivery system in turn has helped to reduce the number of customer complaints.

c The system has helped to forecast the future requirements, which helps to anticipate the shortages so that lower product stocks do not affect the company's name.

d It has improved the inventory co-ordination with other functions such as MRP and it has offered a co-ordinated inventory management system to the customers.

8.7 The Major Logistics Benefits include:

a There has been a considerable reduction in the distribution costs incurred earlier, due to coordinated shipments.

b It has contributed a lot so as to maintain low inventory levels as DRP can predict what product is needed and precisely at what time.

c DRP further has also reduced the warehouse space required to store the goods as a result of lower inventory levels.

d DRP further has improved the amount of co-ordination between the manufacturing division and the logistics division as they have to work in close co-ordination with each other in this integrated system.

e The budgeting capability has increased as DRP can effectively simulate inventory and transportation requirements.

8.8 Constraints

The most important thing required in such an integrated system is accurate and coordinated forecasts for each and every distribution centre. The forecast is required to direct the flow of goods through the distribution channels. Moreover, this forecast is required for each distribution centre and SKU (Stock Keeping Unit).

Here, there might be 3 kinds of errors:

1. The forecast itself might be wrong.
2. It requires stable, consistent and reliable performance cycles.
3. System nervousness is a major constraint to the effectiveness of DRP. It is mainly due to production breakdowns or delay in delivery etc.

Uncertainties such as supply transportation performance cycles and the reliability of vendor delivery can cause extremely nervous management; many companies have reported substantial performance improvements with its use.

8.9 Distribution Strategies

Distribution strategies are the methods a focal organization adopts to make its products or market offerings get to their final consumers regardless of their locations. Distribution Strategies can be of the following types:

a Cross docking

b Milk runs

c Direct shipping

d Hub and spoke model

e Pool distribution

8.10.1 Cross Docking

Traditional warehouses move materials into storage, keep them till they are needed and then move them out to meet the customer demand. Cross docking co-ordinates the supply and delivery so that the goods arrive at the receiving area and are transferred straight away to the loading area, where they are put into delivery vehicles. In other words, Cross docking is the movement of materials from the receiving docks directly to the shipping docks. It is said, “Cross docking is a flow through concept and we don’t want product to stop anywhere, because space, brick and mortar is getting very expensive these days”.

Goods do not need to be placed in storage, creating a significant cost saving in inventory and material handling. Cross docking helps reduce direct cost associated with excess inventory by eliminating unnecessary handling and storage of product. Fewer inventories means less space and equipment required for handling and storing the products. This also means reduced product damages and product obsolescence. Thus, the step of filling a warehouse with inventory before shipping it out is virtually eliminated. Cross docking shift the focus from “supply chain” to “demand chain”. For example, stock coming into docking centre has already been pre-allocated against a

replenishment order generated by a retailer in the supply chain. Cross docking helps retailers streamline the supply chain from point of origin to point of sale. Cross docking also encourages electronic communications between retailers and their suppliers.

Two Basic Forms of Cross Docking

1. Basic Cross Dock: In this form the packages are moved directly from the arriving vehicle to the departing ones. This form of cross docking does not need a warehouse and a simple transfer point is enough.

2. Flow Through Cross Dock: In case of the flow through concept, when the materials arrive and they are in large packages, these are opened and broken into smaller quantities, sorted, consolidated to deliver them to different customers and transferred to vehicles.

   Cross docking can develop to a phase where nothing actually moves through a warehouse. The stock kept within vehicles is referred to as stock in wheels. Nowadays wholesalers use the method of drop-shipping, where they do not keep the stock themselves, but coordinate the movement of goods from the upstream suppliers to the downstream buyers.

How Cross Docking Works

On receiving goods workers put them in lanes corresponding to the receiving doors. A second team of workers sort the goods into shipping lanes from which a final ream loads them into outbound trailers. This is illustrated in Figure 8.2

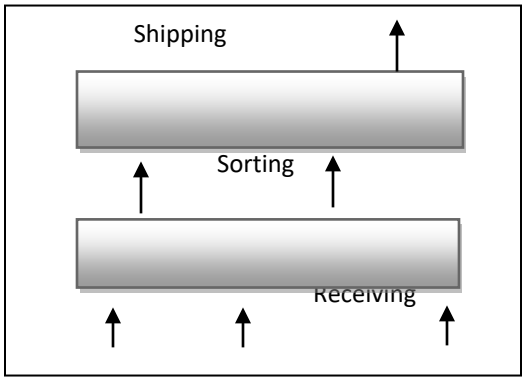


FIGURE 8.2 Working of Cross Docking:

BENEFITS OF CROSS DOCKING

1. Cross docking helps to improve the speed of flow of the products from the supplier to the stores.

2. It helps to reduce the costs as the labour is removed from the job of storage (warehouse).

3 It helps eliminate the two most expensive distribution operations i.e. warehousing and storage.

4. Cross docking helps to reduce the amount of finished goods inventory that is required to be maintained as safety stock.

4. Cross docking reduces costs and hence helps to save money.

Constraints

1. Cross docking requires a strong IT base and real time information sharing facilities, e.g. (Bar codes on cartons).

2. Cross docking is appropriate for products with large, predictable demands and also requires that the distribution centers should be set

up such that the benefits of economies of scale in transportation can be achieved on both the inbound and the outbound side.

3. It requires a great degree of coordination and synchronization between the incoming and outgoing shipments which, in turn, relies on better information and planning.

4. Further the product availability, accuracy and quality are also critical.

5. The company can't force other members of the supply chain to incur additional costs or efforts so as to take the benefits of cross docking.

8.10.2 MILK RUNS

A milk run is a route in which a truck either delivers product from a single supplier to multiple retailers or goes from multiple suppliers to single retailer as shown in Figure 5.3 (a) and (b). in other words, in a milk run, a supplier delivers directly to multiple retail stores on a truck or a truck picks up deliveries for many suppliers of the same retail store. The main job of the supply chain manager is to decide on the routing of each milk run

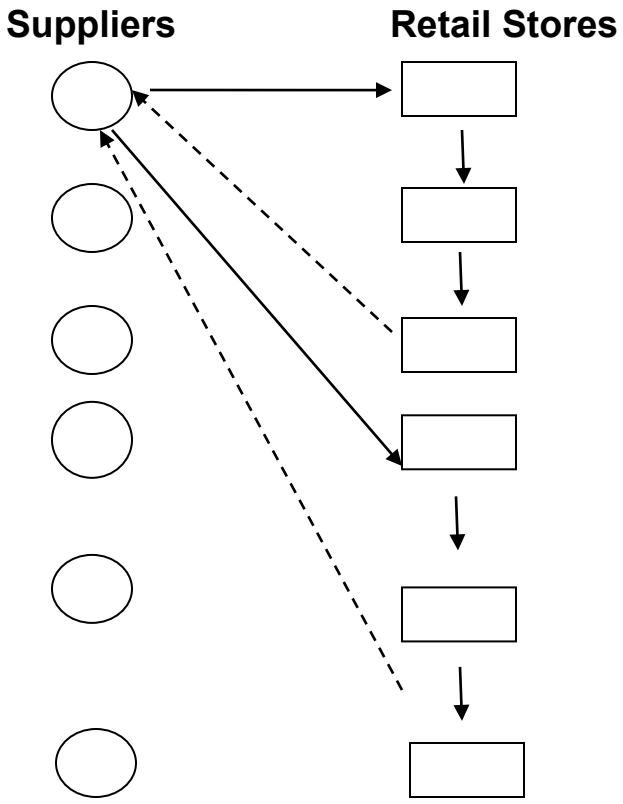


Figure 8.3 (a) Milk runs from single supplier to multiple retailers

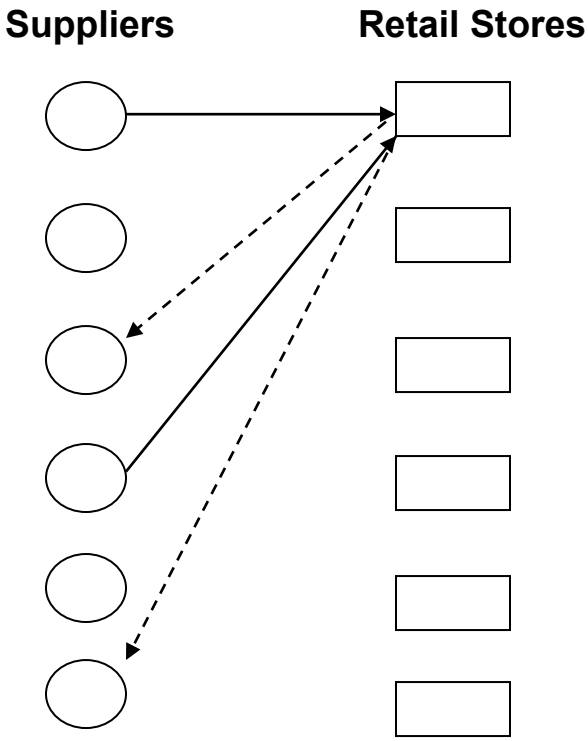


Figure 8.3 (b) Milk runs from multiple suppliers to single retailer.

Benefits of Milk Run

1. **Reduces costs**: Milk runs help to reduce the transportation costs by consolidating shipments to multiple stores on a single truck. The use of milk runs allows deliveries to multiple stores to be consolidate on a single truck, resulting in a better utilization of the truck and somewhat lower costs.
2. **Proximity of suppliers**: The use of milk runs is helpful if very frequent, small deliveries are related on a regular basis and either a set of suppliers or a set of retailers is in geographical proximity.
3. **Reduces inventory**: Milk runs also help to reduce the amount of inventory need to be kept as safety stock in the warehouses.

   One of the major challenges faced by the milk run system of distribution is the degree of coordination and synchronization required among the members of supply chain.

8.10.3 Direct Shipping

Direct shipping refers to the method of distribution in which the goods come directly from the suppliers to the retailer stores as shown in figure 5.4. in case of direct shipment network, the routing of each shipment is specified and the supply chain manager only needs to decide on the quantity to ship and the mode of transportation to use. This system eliminates the need for the intermediate facilities that are otherwise required, e.g. warehouses and distribution centres. The products that are generally distributed through the method of direct shipping are certain perishable items, high volume goods, high bulk items and specialty products.

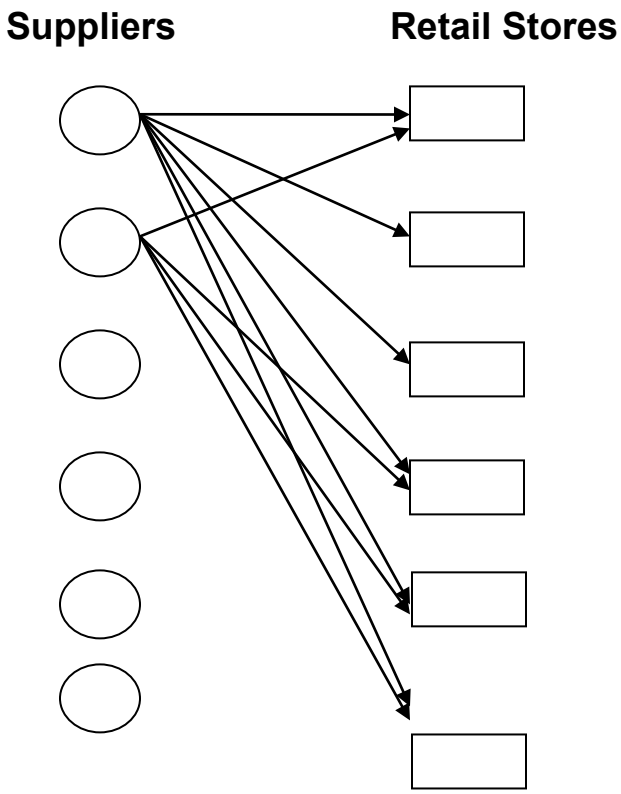


FIGURE: 8.4 Direct Shipment Network

Benefits of Direct Shipment

1. **Elimination of Intermediaries**: The major advantage of direct shipment network is the elimination of warehouses and the simplicity of its operation and coordination.
2. **Saves Time**: It saves a lot of time as the required for distribution of goods from the supplier to the retail store would be short because each shipment goes direct.
3. **Less Damage**: As the goods move directly from the supplier to the retailer there is less handling of the products as a result there is product damage.
4. **Improved Accuracy**: Since the distribution is direct the invoices match receiving records, correct products enter the store etc.

Challenges

1. **Large Retail Stores**: The direct shipment network is justifies if the retail stores are large enough. With the small size of retail stores the direct shipment network tends to have high costs.
2. **Higher Costs**: Due to the system of direct distribution the costs of transporting the goods may be higher than other systems of distribution.
3. **Hassle for Store Personnel**: The shipment directly from the supplier retailer poses a lot of hassles for the store personnel e.g. more deliveries, paperwork, loading and unloading etc.
4. **No Safety Stock**: If there is certain problem in the shipment of goods from the supplier, e.g. wrong goods are transported; goods are damages while shipment etc. maintenance of no supply stock creates a problem.

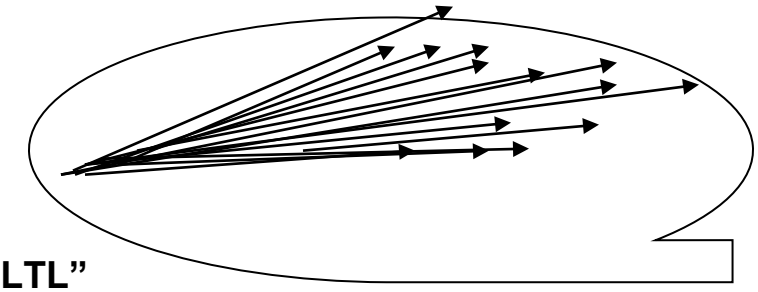
8.10.4 Hub and Spoke Model

In case of the hub and spoke model of distribution is the Nicholas Piramal Group. Nicholas Piramal is using the hub and spoke model to reduce the finished goods inventory. Currently, the stock holding at the carrying and forwarding agent level is 30 days. Once all the hubs are set up, the response time will reduce to 10 to 2 days. Using the system, the inventory at the carrying and forwarding agent level would go down to 7 days and at the hubs level would also be 7 days bringing down the overall inventory level to 14 days. The company has already set up 2 hubs and would be putting up 1 more. Some high volume products would be going directly to the carryingand forwarding agent. The problem to get full truckload can be solved by supplying to the hubs.

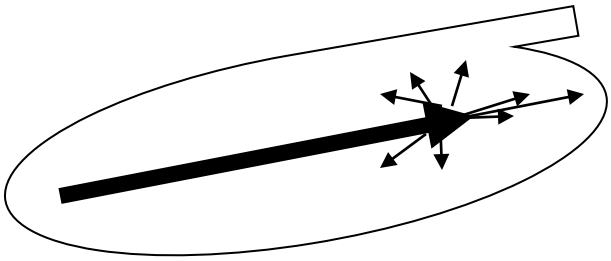
8.10.5 POOL DISTRIBUTION

Pool distribution is the distribution of product to numerous destination points customers, stores or stop points) within a particular geographic region.

Characteristics include high frequency regular shipments in LTL quantities, typically in the 150 to 2000 pound per shipment range. Pool distribution (Figure 5.5) represents an excellent cost effective alternative to the higher cost of individual LTL shipments. Instead of LTL direct, product is shipped to regional terminals in truckload quantities. There it is off loaded, then segregated and sorted by delivery point the reloaded on local delivery trucks for delivery to the individual destinations. Pool reduces transit times, maintains shipment integrity and allows a significant discount over LTL rate.



Normal "LTL"



"Pooled"

FIGURE 8.5 Normal LTL and Pool Distribution

Benefits

1. When you have multiple shipments bound for a specific region, pool distribution is a simple, cost effective alternative to LTL.
2. Speed merchandise to retail outlets.
3. Truckload transit time is shorter than LTL and once at our distribution centres, your multiple shipments are delivered the next day.
4. Reduce claims (less handling than normal LTL service).
5. Meet customer delivery requirements.
6. Reduce delivery costs to your customer.
7. Handle peaks in business effectively.

Above all, the mode of distribution depends on the overall need of the customer i.e. the nature of the customer order. In case of any damage to the goods in transit by any packer, it is the duty of the company to reimburse the entire order and that too within the time prescribed, otherwise the goodwill/reputation of the company would be at stake. The company also gets the full amount of insurance in case of any damage to the goods. So this damage does not cause any loss to the company.

Questions

a. What is cross-docking? Explain the benefits of cross docking to the procurement and supply chain managers. What are the constraints?

b. Explain the concept of the Milk Run as a distribution strategy. What are the advantages of this concept in supply chain?

c. Why do procurement officers control inventory. List three ways inventory can be controlled in a modern warehouse.

CHAPTER NINE

SUPPLY CHAIN AND DEMAND PLANNING IN INVENTORY

9.1 INTRODUCTION

For effective study of this topic, it is important to recommend that every company involved in the business of supply chain must have an Enterprise Resource Planning (ERP). An Enterprise Resource Planning is a computer system that merges essential departmental functions, like Manufacturing, Logistics, Operations, Supply Chain, Sales and Accounting in a firm. This system enables smooth management and monitoring of supply chain management activities in an organization.

However, to have a comprehensive management of supply and demand planning in a firm, it is essential to incorporate the concept of “Transaction Processing”. Transaction processing is the management of posting and tracking of the routine activities of a business for decision making purpose. The end result of transaction processing brings about “Decision Support” concept. The Decision Support is the act of the system to provide relevant means to effectively and efficiently manage the business.

9.2 Scope of Enterprise Resource Planning

The scopes of ERP in any supply chain firm are in 3 categories, which are:

1. Manufacturing and Logistics: Under Manufacturing and Logistics, the following are essential functions:

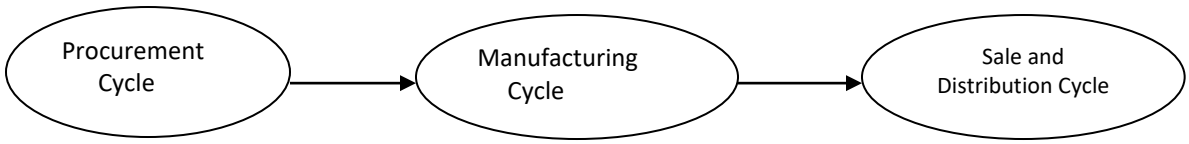
a. Procurement and Logistics
b. Operations
c. Manufacturing Planning and Control
d. Sales and Operations Planning
e. Material and Capacity Planning
f. Materials and Vendor Management

2. Enterprise Resource Planning: The following functions are under ERP:

a. Enter Planning Models
b. Enterprise performance
c. Data Warehousing
d. Report Generation
e. Transaction Processing
3. Administration: Administration includes:
a. Management/Administration
b. Human Resource Management
c. Finance
d. Sales and marketing

9.3 Manufacturing Operation Cycle

The manufacturing Operation Cycle, MOC, is the management tool use by supply chain managers in order to effectively and efficiently plan the production cycle for the purpose of forecasting.



1. **Procurement Cycle**:
a) Purchase Cost of Material
b) Accounts Payable

2. **Manufacturing Cycle:**
a) Raw Materials Inventory
b) Work-in-Process
c) Finished Goods Inventory

3. **Sales and Distribution Cycle**:
a) Distribution Inventory
b) Accounts Receivable

9.4 SUPPLY CHAIN METRICS

The supply chain council with practical steps has developed many metrics to be used in the measurement of the performance of the supply chain in a firm.

MEASURE	DESCRIPTION	BEST IN CLASS	AVERAGE OR MEDIAN
Delivery performance	What percentage of order is shipped according to schedule?	93%	69%
Fill rate by line item	Orders often contain multiple line items. This is the percentage of the actual line items filled	97%	88%
Percentage order fulfillment	This measures how many complete orders were filled and shipped on time	92.4%	65.7%
Order fulfillment lead time	The time from when an order is placed to when it is received by the customer	135 days	225 days
Warranty cost of % of revenue	This is the actual warranty expense divided by revenue	1.2%	2.4%
Inventory days of supply	Hoe long an item spends in inventory before being used	55 days	84 days
Cash-to-cash cycle time	Considering account payable, accounts receivable and inventory, this is the amount of time it takes to turn cash from a customer	35.6 days	99.4 days
Asset turns	This is a measure of how many times the same assets can be used to generate revenue and profit	4.7 turn	1.7 turns

Source: Council of Supply Chain Management professionals

It is important for Supply Chain Management Professionals to apply the supply chain metrics in their firms in order to ascertain the efficiency of supply chain management in their organization.

9.5 Demand Planning

Demand Planning is the management function in the supply chain that deals with forecasting. Forecasting is vital because it determines the quality of inventory to be stored I order to meet customer's orders

9.6 Categories of Demand (Dependent and Independent Demand)

a. Independent demand: This kind of demand is concentrated in finished goods.

b. Dependent demand: This kind of demand is concentrated in semi-finished goods, subassemblies or components.

Independent demand goods are forecast able while dependent demand goods are forecast able subject to finished goods.

9.7 Components of Demand

Components of demand can be divided into six components.

1. Average Demand for the period
2. A Trend
3. Season Element
4. Cyclical Element
5. Random Varieties
6. Autocorrelation

It is pertinent that supply chain firms should establish their demand within the specific years either two or four years incorporating any of the six components of demand.

Cyclical factors may be complex to determine because of certain influences such as economic status, political elements, security instability, war, religious indifference.

Random varieties are caused by event of chance. When all the known causes of demand components are established and what is yet to be established is the unknown portion of demand. If he unknown cannot be determined, it is assured to be a random chance.

Autocorrelation is when there is persistence occurrence. The value expected a certain point in the future correlated with its own past values.

Trend line is the starting point in developing a forecast. It is designed in such a manner it can be adjusted in the future as other components of demand surfaces.

You must understand that these demand components may not be too strong.

9.8 Quantitative Forecasting Models/Forecasting Methods

Forecasting can be grouped into four categories:

1. Qualitative
2. Time Series Analysis
3. Causal Relationships
4. Simulation

Qualitative forecasting is the use of qualitative techniques in forecasting.

Time series analysis is a forecasting in which post demand is used to predict future demand.

Causal relationships is the used of linear regression technique which assure that demand forecasting is related to some certain factors in the environment.

Simulation models give the person forecasting the chance to apply various range of assumption about the condition of the forecast.

Key Facts: qualitative Forecasting Methods are primary subjective, they rely on human judgment and opinion to make a forecast.

Time Series Methods use historical data to make a forecast.

Causal method involves assuring that the demand forecast is highly correlated with certain factors in the environment like the state of economy or interest rates.

Simulation forecasting methods imitate the consumer choices that give rise to demand to arrive at a forecast. Using simulation, a firm can combine time series and causal methods to ensure such question like what will be the impact of price promotion on sales.

9.9 Basic Approach to Demand Forecasting

a) Properly understand the main and objective of forecasting

b) Merge demand planning and forecasting

c) Identify cogent factors that influence the demand forecast

9.10 Characteristics of Forecasts

a. Forecasts are sometime wrong

b. Long-term forecasts are usually less accurate than short-term forecasts.

c. Aggregate forecasts are usually less accurate than disaggregate forecasts. For example, it is more accurate to forecast the GDP of a country than forecasting the earning of a specific company.

9.11 Collaborative Planning Forecasting Replenishment (CPFR)

Collaborative Planning, Forecasting and Replenishment is the sharing of forecast, production, purchasing and related business information among business partners in the supply chain to enhance automatic product replenishment. It is an electronic/internet aided system where trading partners are connected to a central server where information is share across the chain and channel members. It aims at improving collaboration between and among buyers and suppliers to improve customer service and inventory management..

9.12 Functions of CPFR and Electronic Collaboration

Collaborative planning focuses on the processes of forecasting supply and demand and bringing projections from suppliers and customers into synchronization. This must be an internet supported device. This makes products available to customers at all times, while improving service delivery. (speed and accuracy are the immediate gains of this electronic collaboration.

1. Creation of a front-end partnership agreement
2. Joint business planning
3. Development of demand forecast
4. Sharing forecasts
5. Inventory replenishment

9.13 Inventory Control Techniques

Inventory Control Techniques is vital in forecasting of inventory. Inventory control techniques ensure availability of any material while at the same time, checking through a system, the tendency to hoard larger inventory than is necessary.

Inventory Management is the effective and efficient maintaining, storing and assurance of adequate supply of inventories in order to meet an expected pattern of distribution of demand for a given financial investment.

9.14 Factors To Be Considered In Inventory Decisions

1. Where should warehouse be placed?
2. What should be stored there?
3. How much an item should be stored?
4. How much extra of an item should be stored (safety stock)?
5. How long should it be placed there before expected request (safety time)?
6. How can we find and keep track of what is stored and where?

7. How can we move/use items from different stores?

Questions

a What is collaborative planning?

b Why do supply chain organizations adopt this form of joint venture?

c What are the key challenges to collaboration in today's business?

d Why do supply chain firms spend money on demand forecasting? List and explain any three forms of forecasting contemporary firms use today.

References

Alan and Kelly Branch (2013); Managing Import and Export 5th EditionTata - Mac Grow publisher New Delhi India.

Alan Harrison and Ramko Van Hoek (2008) Logistics Management and Strategy Competing through the Supply Chain 3rd edition – Prentice Hall

Arjan J. Van Weele (2017) Purchasing and Supply Chain Management, sixth edition –Cengage publishers London United Kingdom.

Altekar R.V. (2013); Supply Chain Management: Concepts and Cases; PHI Learning Private Limited, Delhi – 110092; pp. 174-179; 181-189

Altekar, Rahu (2004); Enterprise – Wide Resource Planning: Theory and Practice, Prentice Hall of India.

Arora K.C. (2010); Total Quality Management, S.K Kataria and Sons, Ansari Road, Darya Ganj, New Delhi-110002.

Burnt and schools (2017) Managing Contracts and Negotiations in Procurement 3rd Edition CenGage publisher UK.

Bhatt, M. S, "Paradigm Shift in Materials Management Philosophy in the Millenium Transition Period," 1999, Edited by B. S. Sahey.

Copacino, William, Supply Chain Management: The Basics and Beyond, 1997.

Doz&Hammel (1998); Alliance Advantages: the Art of Creating through Partnering, 1998. Gartner Group Report, ILS, December 1996.

Onwubiko V.C. (2022) The Role of Negotiation in Procurement, (Unpublished lecture notes and Msc thesis), Federal university of Technology Owerri

Porter, M. E. (1985), "Competitive Advantage: Creating and Sustaining Superior Performance.

Saunders, Malcolm (1997); "Strategic Purchasing and Supply Chain Management,"

www.hcmworks.com

Simplicable.com/new/vendor_management

John Spacey (2016); A type of Vendor Management.

Jul Fourner (2015); What is Vendor Management?

www.spendedge.co/blogs/vendor_management_challenges_tagsh