

The Roles Of Supply Chain Management In A Deregulation Economy

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-----ABSTRACT-----

This Study Is All About Appraisal Or The Roles Of Supply Chain Management On A Deregulating Economy, Also The Study Tended To Find Out The Meaning And Application Of Supply Chain Management In Our Economy Sector. The Study Discussed The In Depth Of Supply Chain Management And It Roles And Applications, Also Elucidate The Sound Opinion Of Different Scholars And Researcher On Purchasing And Supply Chain Management Field. A Quite Number Of Authorities On Supply Chain Management At The Chartered Institute Of Purchasing And Supply Management Nigerian (CIPSMN) Were Also Cited, The Like Of ALIYU M.J Abdul Mamman, The Foreign Authority Cited Were The Like Of Lyson C.K., Gattorna, Lamer Lee And Burt, Strauss G., Osstreft. F And Smith). This Study Recommends An Ideal Structure Of Supply Chain Management For Better Understanding F The Position Of Supply Chain Management Within The Scope Of The Best Practice

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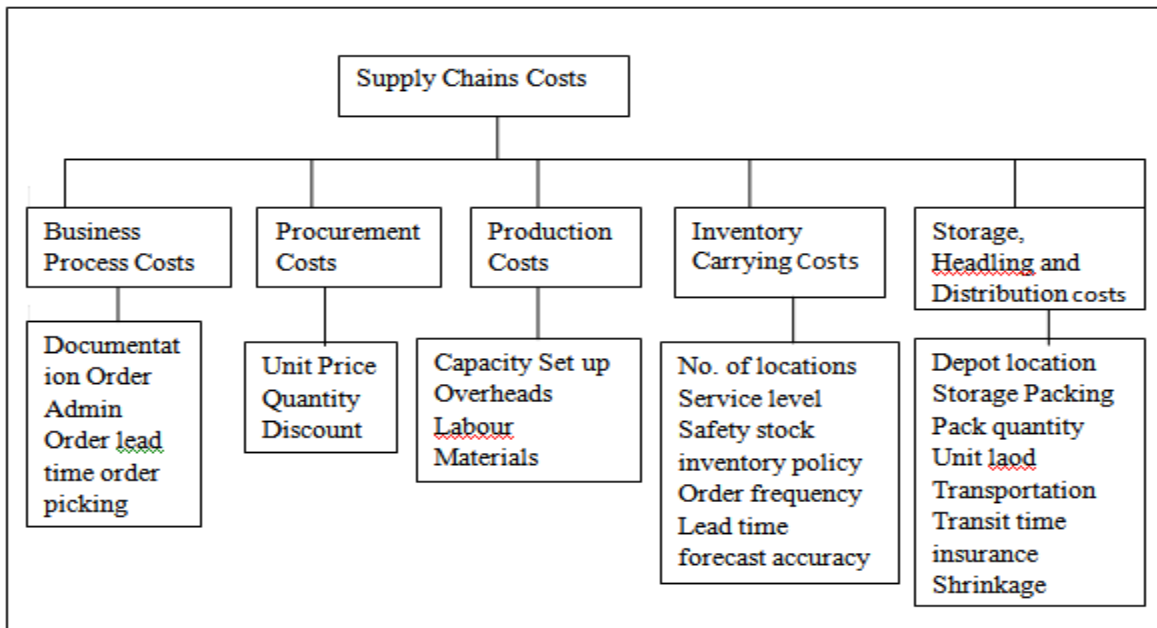
I. SUPPLY CHAIN MANAGEMENT

The term “Supply Chain” has been defined as “the network of organization that are involved through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumers. The Supply Chain can be likened to a well-balanced and practiced relay team in which the entire team is co-ordinated to run the race, there are several points about Supply Chain .According to Aliyu (2006) “It is a concept that can be described as the management of all activities, information, knowledge and financial resources associated with the flow and transformation of goods and services up form the raw materials suppliers, component suppliers and other suppliers in such a way that the expectations of the end users to the company that the expectations of the end users to the company are been met or passes. Supply Chain management therefore differs from purchasing, in that it encompasses also all logistics activities. Moreover, it entails the management of relationship not only with the first tier suppliers but also with lower tiers suppliers. Supply Chain Management can be summarized to mean timely activities that encompass the processes and functions in purchasing, procurement. Logistics, stores, warehouse and supply management. Supply Chain emphasize the process approach concerned with how a product or service is delivered to the customer, this approach is based on the recognition that the customer is concerned that the required product or service is delivered at the right price and at the right place. Customers are largely unconcerned with how this is accomplished. A process is simply a ‘set of logically related tasks performed to achieve a defined business outcome’.

II. SUPPLY CHAIN DIFFER

There is no single supply chain organization from network of chains with common point of interconnection. Each organization is both a supplier and a customer, as it looks both up and down a particular chain. Acknowledging the individuality of particular chain does not pre- adopt the concept as a means of analyzing how operations may be improved Supply Chain are linked to value chains, the first point states that each activity within a value chain provides inputs. After processing, each input provides added value to the output which the ultimate customer receives in the form of a product or service of as the aggregate of value at the end of the value chain, the amount of added value is determined by subtracting the sum of the bought out materials and services comprising an activity from the increased worth of a product or services at the end of that activity within the supply chain. Gathering and Walters state that apart from identifying activities, the value chain indicates the relative importance of activities and that by allocating cost to activities rather than functions we identify the true costs involved in service delivery. A simple method of value chain analysis is to call the price charged to the customer, at the end of the supply chain, 100% and by working backwards estimate the amount of value added by each supply chain activity. Flint point out the that the optimization of the supply chain costs and as shown on the diagram below, suggest supply chain cost areas where specific ideas for cost savings can be made.

Procurement expertise can add value by generating savings and offering improved services to internal customers. Savings can be achieved not only by price reductions or enhanced value in the prices of bought items but by such means as reducing the supply base and numbers of purchase orders or accounts



Improved services include times, and paper work, the benefits to be derived by the internal customer receiving the services should as cannon says be quantified in money terms, as should be cost delivering it. It is only if there is a net benefit that the service is worth delivering. Cannon also suggests that money based service levels should be benchmarked against other organization as a further check on the functions effectiveness. Value analysis can also be sued to determine more accurate costs for providing services to internal customers using the activity-based costing. Supply Chain costs are linked to time, in the shorter the Supply Chain , the lower costs. This emphasized the importance of the time compression approach. Supply Chains emphasize cross-functional teams, Womack, Jones and Roos state that at Toyota and Honda project leaders or Shusas assemble small team that are assigned to the development project for its life. Team members come from functional departments with whom they retain links, source their career success depends on moving up through their functional specialty. An example of cross or intra-functional organization is shown on the figure below.

		FUNCTION	DESIGN	PURCHASING	PRODUCTION	TRANSPORT	MARKETING	
Project leader	Process team leader	PROCESS						
		QUANTITY		•		•		•
	Process team leader	COST		•		•		•
		DELIVERY		•		•		•
	Process Team							
								CUSTOMER

SUPPLY CHAINS

Definitions

There are many definitions of the term ‘Supply Chain;’, of which the following is typical: a Supply Chain is that network of organization that are involved, through upstream and downstream linkages, in the form of products and services in the hands of the ultimate customer or consumer. Author. The above definition emphasizes key characters of supply chain:

- SUPPLY CHAINS ARE NETWORK:** Traditionally Supply Chain where loosely linked associations of discrete business. The network concept implies some coordination of cow to customer processes and relationships. An alternative definition is that a supply chain is:
 A network of connected and interdependent organizations mutually and cooperatively working together to control, manage and improve the flow of materials and information from suppliers to end users.
 Networks are further considered in section 4.3
 Supply Chain linkages are upstream and downstream: Upstream means against the current and relate in relationships between an enterprise and its suppliers. Downstream is with the current and relates to the relationship between an enterprise and its customers. There can also be upstream-downstream, as is the case with organizations that have returnable containers pallets, drums and so on or trade-in products.
- LINKAGES:** The coordination of supply chain process and relationships. A supply chain is only as strong as its weakest
- PROCESSES:** In the context of a business, a process is defined by Cooper et al, as: a specific ordering of work activities across a time place with a beginning and an end and clearly identified inputs and outputs, a structure of action.
 From a purchasing standpoint, the processes that comprise the supply chain are shown in figure 3.6
 Figure 3.6. supplier chain processes from a purchasing perspective

Search	Acquire	Use	Maintain	Dispose
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Source not seen

From a supplier's standpoint the process are shown in figure 3.7

- VALUE** is defined by Porter (2005) as what buyers are willing to pay'. Superior value stems from offering lower price for equivalent benefits or providing unique benefits that are more than offset a higher price.
- THE ULTIMATE CUSTOMERS:** A customer is simply the recipient of the goods or services that result from all the processes and activities of the supply chain. A function or subsystem can be the customer of the preceding or succeeding link in a supply chain.

Figure 3.7. Supply chain process from a supplier's perspective

Research	Design	Manufacture Or Provide	Sell	Service
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Customers may be either internal or external. The definition refers to the 'ultimate customer or consumer's so that the supply chain may extend beyond the customers from whom the direct order for goods or service emanate.

3.4.2 Types of Supply Chain

Supply chain can be classified in numerous ways. An organization such as a food retailer will have many types of supply chains reflecting difference in products, services, production and distribution methods, customer-supplier relationships and information flows. Supply chain may be roughly classified according to four customer-supplier characteristic and also in relation to virtually, scope, service, complexity, products, purpose and value.

Customer-supplier characteristics

These may give rise to:

- Concentrated chains found in businesses such as the automotive industry that have:

 - Few customers but many suppliers
 - Customers with demanding requirements
 - EDI systems or a requirement for JIT deliveries
 - Batch manufacture chains that have:

 - Many customers and many suppliers
 - Complicated relationship webs – an undertaking with which an enterprise is in contact may, at different times. Be a customer, supplier, and competitor orally.
 - Retail and distribution chains that have:

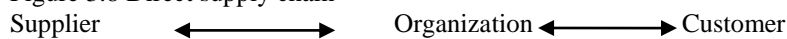
 - Customized methods, such as vendor-managed inventory (VMI) of facilitating dealings with suppliers.
- Service chains that implement the mission statement of organizations such as hospitals, libraries and banks concerned with the delivery of services, books, information and financial service or restaurants and cinemas delivering food and entertainment, for example-essentially services chains are not different

from manufacturing chains as every service involves people, something physical (an asset or part something performed), an action and a time element.

Other characteristics

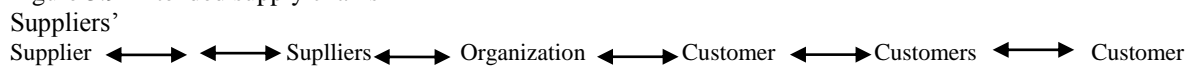
- **Virtuality:** Virtual is the opposite of real. Thus, a ‘virtual’ enterprise is the counterpart of a real, tangible business. As Christopher (2006) ‘a virtual supply chain is in effect, a series of relationships between partners that is based upon the value added exchange of information’s’. In a virtual supply chain, information replace the need for inventories. A mail-order business may have no inventory and simply call for supplies from the manufacturer when orders are received from customers.
- **Scope** supply chains be local, regional and international in scope. Some suppliers of gas, such as BP, for example, have the ability to put together delivery chains to bring gas suppliers from Trinidad to Spain, from Siberia to China and from North Africa to Southern Europe.
- **Complexity** Mentzer et al. (2008) identify three degrees of supply chain complexity: ‘direct’, ‘extended’ and ‘ultimate’. A direct supply chain, as shown in Figure 3.8, is comprised of a company or supplier and a customer involved in the upstream and/or downstream flow of products services, finances and information.

Figure 3.8 Direct supply chain



An extended supply chains, as shown in Figure 3.9. Includes suppliers of the immediate supplier and customers of the immediate customers.

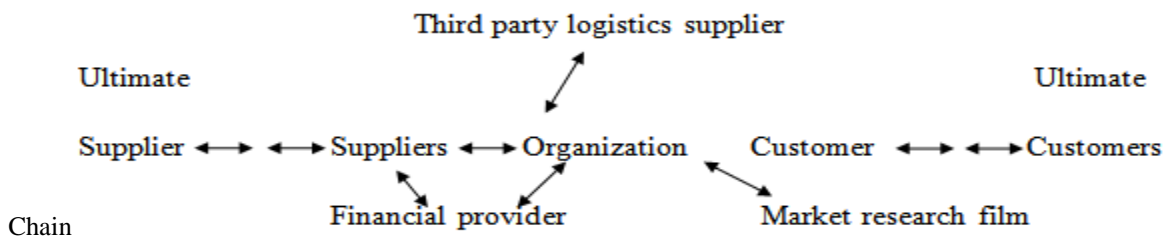
Figure 3.9 Extended supply chains



An ultimate supply chain, as shown in Figure 3.10, includes all the organizations involved in all the upstream flows of products, services, finances and information.

From the ultimate supplier to the ultimate customer.

Figure 3.10 Ultimate Supply



Purpose: A purpose can be made between efficient and responsive supply chains. Efficient supply is primarily concerned with reducing the cost of operations, as in lean supply chains.

- These work best when forecast accuracy is high and product variety low. Responsive supply chain are primarily concerned with minimizing the delivery circle time, as in agile supply chain. These work best when forecast accuracy is low and product variety high.
- Products supply chains vary widely according to the end product. Examples are build-to-forecast and build-to-order supply chains and ones for innovative and functional product.

VALUE CHAINS ANALYSIS

Value supply chains is concerned with a detailed examination of each subsystem in a supply chain and every activity these subsystem with a view to delivering maximum value at the possible total cost, thereby enhancing value and synergy throughout the entire chain.

Porter (2007) states that there are two ways in which an enterprise can obtain a sustained competitive advantages: fist cost and, second, differentiation. Cost analysis with regard to value chains is performed by assigning costs to the value chain activities. The approach of activity-based costing (ABC) is, as stated above, of particular relevance in this context. Porter (2006) identifies ten major cost divers that determine the value or cost of activities.

- **Economic or diseconomies of scale:** Fixed costs spread over a large volume of production are more cost-effective than producing small quantities of an item. Diseconomies of scale in procurement can occur if large requirements meet an inelastic supply, forcing up input prices.
- **Learning and Spillovers:** learning can reduce costs and can spill over from one industry to another via suppliers, ex-employees and reports of representative.
- **Capacity utilization:** Changes in the level of capacity utilization will involve costs or expanding or contracting.
- **Linkages between activities:** The cost or value of an activity is frequently affected by how other activities are performed. Linkages with suppliers centre on the suppliers products design characteristics, such as service and quality. The way in which a supplier performs activities within the value chain can raise or lower the purchasers' costs.
- **Interrelation Sharing:** A value activity with another business unit can reduce costs. Certain raw materials can be procured more cheaply by combining units requirement.
- **Degree of vertical Integration:** Every value activity employs purchased inputs and thus poses integration choices. The cost of an out bound logistics activity may vary depending on whether or not the enterprise owns its own vehicles.
- **Timing of market entry:** An enterprise may gain an advantage from being the first to take a particular action.
- **Firm's policy of cost or differentiation:** The cost of a value activity is always affected by policy choices firm makes independently of other cost drivers. Policy choices reflect a firm's strategy and often deliberate trade-offs between cost and differentiation.
- **Geographic factors:** Location relative to suppliers is an important factor in inbound logistical cost.
- **Institutional factors:** Government regulations, taxation, unionization, traffic and levies constitute major costs.

An enterprise that controls the above drivers better than its rivals will secure a competitive advantage can also be gained by reconfiguring the value chain so that it is significantly different from those of competitor. Such configuring chains can derive from deferring production processes, automation, direct instead of indirect sales, new raw materials or distribution channels and shifting the location of facilities relative to suppliers and customers.

DIFFERENTIATION

Porter (2006) states that a firm differentiates itself from its competitors when it provides something unique that is valuable to buyers beyond simply offering a new price. A differentiation advantage can be obtained either by enhancing the sources of uniqueness or reconfiguring the value chain.

The drivers of uniqueness are often similar to the cost drivers listed and include:

- **Policy choices:** about what activities to perform and how to perform them, such as what product features to include, services to provide, technology to employ or quality of outputs.
- **Linkages** between activities such as delivery time, which is often influenced not only by outbound logistics but also by the speed of order processing.
- **Timing** being the first to adopt a product image may pre-empt others doing so.
- **Location** convenience of use for customers and other such factors.
- **Interrelationships** sharing technologies or sales effort, for example
- **Learning and spillovers** learning how to perform an activity better-Porter (2008) observes that only proprietary learning leads to sustainable differentiation.
- **Integration** providing a service in-house instead of leaving it to supplier may mean, that the organization is the only one to offer the service or provide the service in unique way.
- **Scale large –scale** operation can allow an activity to be performed in a unique way not possible at a smaller volume.
- **Institutional factors** goods union relationships may avoid losses in production time due to strikes and so on. Reconfiguring a value chain to create uniqueness can involve deservicing a new distribution chain or selling approach, forward integration to enhance quality and the adoption of new production technologies.

THE MAIN STEPS IN VALUE CHAIN ANALYSIS

Porter (2006) provides lists of the main steps in strategies cost analysis and differentiation analysis.

- [1] Identify the appropriation value chain and assign costs and assets to it.
- [2] Diagnose the cost drivers of each value activity and how they interact.

- [3] Identified competitor's value chains and determine the relative costs competitors and the sources of cost difference.
- [4] Develop a strategy to lower your relative cost position by controlling cost drivers or reconfiguring the value chain and/or downstream value.
- [5] Ensure that cost reduction efforts do not erode differentiation or make a conscious choice to do so.

Test the cost reduction strategy for sustainability.

Porter report the following rang of expenditure as percentage of sales dollar for sample of USA manufacturing organization.

- Purchasing 55-65 percent
- Transport 3.5 percent
- Labour 2.5 6 percent
- Inventory 3-9 percent
- System and Administration 1.5 -3 percent
- Facilities 0.7-2 percent

Porter observes that, although c costs could be reduced in almost every category, most paled in comparison to purchasing, Dramatics results were recorded as organization focused some of their best talent on this, most costly segment.

Supply Chain Optimization

Supply chain optimization is different from SGM. The latter concentrates on controlling the various elements in the supply chain. Optimization is about removing the non-value added steps that have infiltrated or been designed into the link or process that constitutes a particular supply chain. Optimization is concerned with the removal of supply chain inefficiencies and been defined as:

The management of implication supply chains in their entirety with the objectives of synchronizing all value-adding production and distribution activities and the elimination of such activities that do not add value.

The objectives of Supply Chain Optimization

The above definition emphasizes the importance of:

- Synchronizing all value adding production and distribution activities.
- Eliminating activities that do not add value.

Other objectives include the following

- Providing the highest possible levels of customer service. Research shows a strong relationship between customer satisfaction and customer loyalty. Customer service levels should aim to create delighted customers by exceeding customers expectations. Such expectations include responsiveness and value.
- Achieving cost- effectiveness: Cost effectiveness is also referred to as value for money and may be expressed as ratio:

$$\frac{\text{Value of benefit received}}{\text{Cost of the benefit}}$$

- Achieving maximum productivity from resources expended or assets employed. Productivity is also a ratio, relation, outputs to one or more inputs. An increase in output per unit is an increase in productivity. Thus, the total productivity of a supply chain is:

$$\frac{\text{Total output}}{\text{Total input}}$$

The challenge is to increase the value of output relative to the cost of input. Productivity also increase when the same output is achieved with less inputs.

- Optimizing enterprise profit Cudahy, (2007) points out that the logic and aim of enterprise profit optimization (EPO) is the simultaneous optimization of the supply and demand sides of a business both within an enterprise and throughout its trading network. Thus by simultaneously improving operational efficiency and achieving profitable growth, EPO can enhance revenue and thereby complement cost reduction and asset productivity as a means of enhancing profitability.

Cudahy (2007) states that the introduction of a pricing and revenue optimization (PRO0 system involves the following four basic steps:

- **Step 1:** Segmenting that market identifying from historical transaction data the selection of groups of people who will be most receptive to a product. Frequent segmentation methods include demographic variable, such as age, sex, race, income and occupation, and psychographic variable. Such as lifestyle, activities, interest and opinions.
- **Step 2:** calculating customer demand use of pricing software to predict how a customer or micro segment will respond to products and prices based on current market and other conditions.
- **Step 3:** Optimizing prices. This is concerned with deciding what prices to offer to a particular customer to maximize a particular profit objective, market share on other strategic goals. Based on an analysis of cost, demand, market position, price elasticity and competitive pressures, it recommends optimum- not lowest prices to achieve these goals.
- **Step 4:** Recalibration prices: This is the fine-tuning of prices to customer buying behavior.

Cudahy (2006) observes that pricing and revenue optimization are not about competition on price but extracting the maximum value from a company's products and capacity.

- **Achieving maximum time compression:** Time compression is an important aspect in achieving customer satisfaction, cost effectiveness and productivity. Welding (2008) rightly observes that while cost and transfer price comparisons are across all supply chain partners. Speeding up the flow of materials productivity, provides competitive advantage by virtue of rapidly responding to customers requirement and eliminates non- value adding process time. Beesley (2007) claims that at least 95 percent of process time is accounted for by non-value –adding activities. The compression has implications for all aspects of the supply chain but is of particular importance as, unlike material, time waste cannot be replaced. In general, non-value-adding activities relating to time can be categorized as:
 - **Quenching time-**material s waiting to be processed]
 - **Rework time-** rectifying errors
 - **Time wasted** due to managerial decisions (or indecisions)
 - **Cost of inventory** in the supply chain.

Regarding inventory, Beesley (2007) claims “as a general rule the volume of inventory held in a supply chain is proportional to the length of time expressed as the total time to customer.” If the supply chain is compressed work-in-progress, cycle and buffer stocks are reduced, with consequent lower overhead, capital and operating costs.

Factors In Supply Chain Optimization

The important factors in supply chain optimization are described below:

Reduction of Uncertainty

Davis (2006) refers to three distinct sources of uncertainty that plague supply chain:

- Suppliers failure to fulfill delivery promise
- Manufacturing machine breakdown, computer foul-ups that route materials to the wrong place and so on.
- Customers uncertainty regarding order quantities and the bullwhip effect or increase in demand variability further up the supply chain,

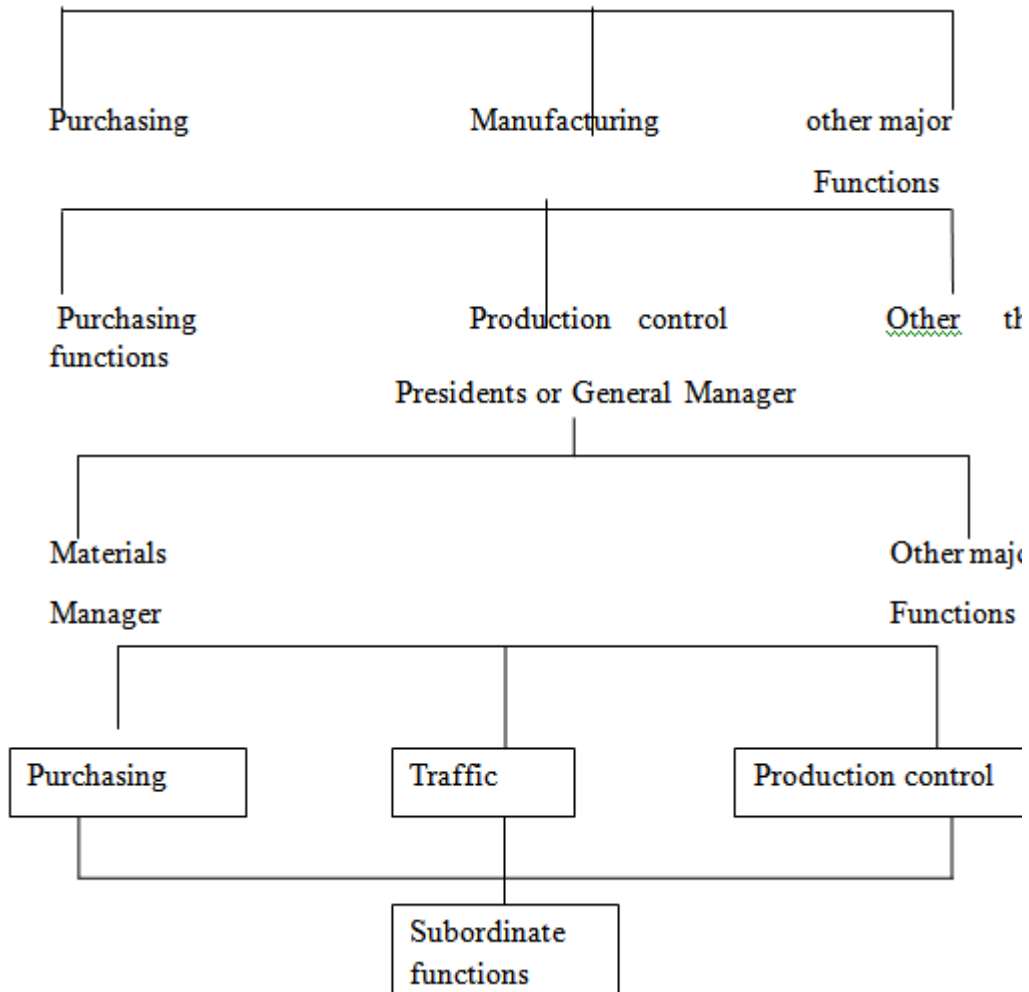
III. MATERIALS MANAGEMENT

(a) **Introduction:** A close analogy exists between materials management (MM) and marketing. With the latter the aim is to co-ordinate effectively a number of related activities. i.e market research, product, sales analysis, forecasting, promotion and selling, under one executive. MM seeks a similar co-ordination of activities relation to materials. The essence of the MM approach is shown by Dean S. Ammer in Figure 3.12, where (a) and (b) represent the pre-MM and MM approaches respectively.

(b) **Definitions**

(i) Materials management is concerned with the flow of materials to and from the manufacturing department.’ (Dean S. Ammer) (16)

- (ii) Materials management is a co-ordinating function responsible for the planning and controlling of materials flow. Its objectives are as follows:
- Maximize the use of the firm's resources
 - Provide the required level of customer service (Arnold) (17).



- (iii) The management process which integrates the flow of suppliers into, through and out of an organization to achieve a level of service which ensures that the right materials are available at the right place at the right time, of the right quantity and quality and at the right cost. It include the functions of procurement, materials handling and storage, production and inventory control, packaging, transport and associated information systems and their application throughout the supply, manufacturing. Service and distribution sectors.’ (The institute of Logistics (GB)).

(c) **Activities assigned to materials management.** The above definitions confirm Ammer’s statement that there is no general agreement about precisely what activities are embraced in materials management (16). He restricts the activity as extending to the point where manufacturing converts it (material) into a product’, although he later concedes that the materials manager may also provide warehousing, traffic and transportation services for manufacturing and purchasing. The institute og Logistics includes ‘finished products’ and distribution sectors’.

Some aspects of MM that may be included under one or other of the five principal stages of the materials ‘flow’ are:

Materials flow	Typical activities
Planning	Preparation of materials budgets, product research a development, value engineering and analysis, standardization of specifications.
Procurement	Determining order quantities, processing of work and

	stores requisitions, issue of enquiries, evaluation of quotations, supplier appraisal , negotiation, pacing of contracts, progressing of deliveries, certifying payments, vendor rating.
Storage	Stores location layout and equipment, mechanical handling, stores classification, coding and cataloguing, receipt of purchased items, inspection, storage or return, protection of stores, issues to production, provision of cost data, stock records, disposal of obsolete, surplus or scrap material.
Production control	Forward ordering arrangements for materials, preparation of production schedules and sequences, issue of orders to production, emergency action to meet material shortage, make or buy decisions, quality and reliability feedback and adjustment of suppliers flow to production line or sales trends.
Distribution	Warehousing, packaging, external transportation. Some factors influencing the activities assigned to MM include the following:

- (i) Purchasing is frequently the 'key' activity.
- (ii) Production planning and control may be assigned to MM or manufacturing. The former tends to apply when production is material oriented, e.g in an assembly factory; the latter when production is machine/process oriented.
- (d) **Appraising materials management.** In general, the MM approach is especially applicable when:
 - Materials costs make up a large part of total costs
 - Purchasing is regarded as a profit-oriented rather than a service

The advantages claimed for MM include the following:

- (i) Improved co-ordination of related functions and a reduction in conflict between activities which, if departmentalized, might have differing objectives.
- (ii) The MM approach facilitates the introduction of data processing and operational research techniques which improve decision-making, co-ordination and control. The growth of materials administration as a development of the increase in computer-oriented thinking in a large part of industry' (Ericsson).
- (iii) Materials management encourage the co-ordination of materials 'flow' from the supplier to the plant once within the plant.
- (iv) Reduction in costs of purchased items, inventory, materials handling, transportation, clerical procedures and staff.
- (v) Improved supplier relations.
- (vi) Improved customer services due to smoother scheduling of requirements and purchases.
- (vii) Improved morale, especially for smaller subfunctions which recognize more clearly their contribution to the effectiveness of the organization.

Some possible disadvantages are as follows:

- (i) MM may be unsuitable for some undertakings, e.g industries which process basic raw materials such as sugar where material prices are subject to frequent fluctuation and material quality is crucial.
- (ii) Co-ordination between activities such as purchasing and production can liaison personnel such as purchase liaison engineers. Such co-ordination, however, may be non-value adding.
- (iii) Materials managers having a sound grasp of all the diverse activities involved are difficult to recruit.

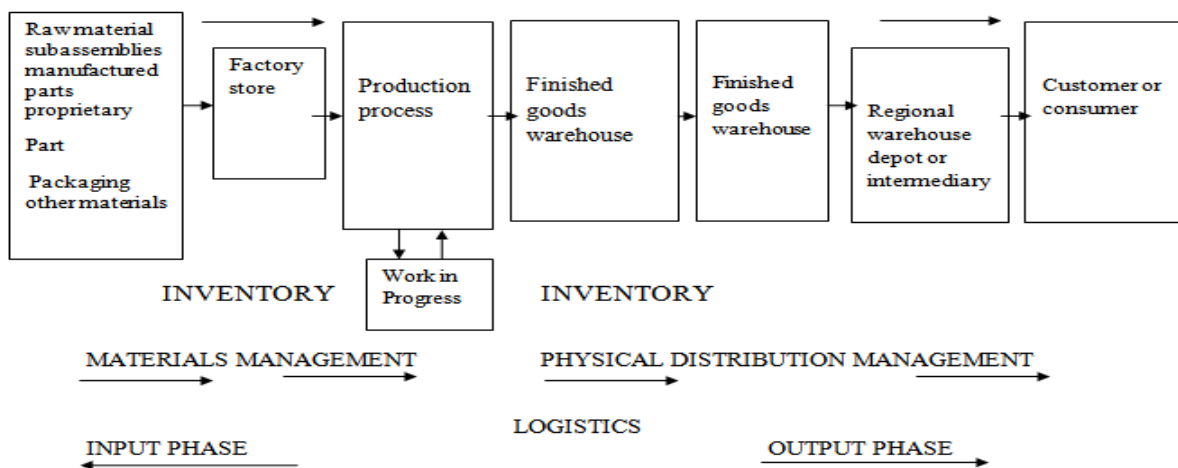
LOGISTICS MANAGEMENT

(a) **Definitions**

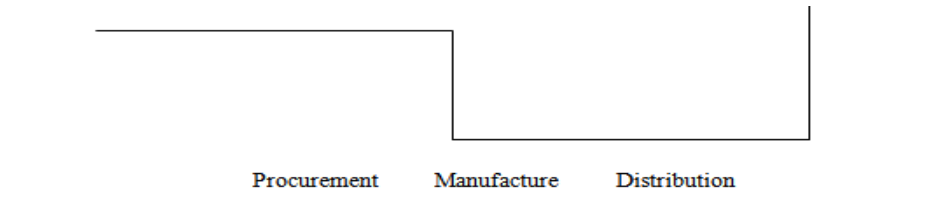
- (i) The process of strategically managing the acquisition, movement and storage of materials, parts and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability is maximized through the cost-effective fulfillment of orders. Gattorna. (18).
- (ii) Logistics is the total management of the key operational functions in the supply chain- procurement, production and distribution. Procurement includes purchasing and product development. The production function includes manufacturing and assembling, while the distribution function involves warehousing, inventory, transport and delivery. (Knight wendling) (19)
- (iii) Logistics systems consist of the integration of procurement, transportation, inventory management and warehouse activities to provide the most cost-effective means of meeting internal and external customer requirements (20).
- (iv) The process of managing both the movement and storage of goods and materials from the source to the point of ultimate consumptions and the associated information flow (21).
- (v) The time -related positioning of resources (22).

(b) **The Logistics Concept**

Logistic, from the French verb *larger* (to lodge or quarter), was initially a military term referring to the techniques of moving and quartering armies (i.e quartermaster’s work). Later, the expression was widened to mean the organization of supplies. Some definitions of both material management (MM) and logistics management (LM) make it difficult to distinguish the activities that may be assigned to each field. It is however, useful to differentiate between MM and physical distribution management (PDM). The former refers to be input phase of moving bought-out items such as raw materials and components from suppliers to production; the latter relates to the output phase of moving finished goods from the factory through the appropriate channels of distribution to the ultimate consumer. Figure 3.13 shows that activities such as storage, inventory, control and transportation are common to both the input (MM) and output (PDM) phases and that logistics management subsumes both: It has been stated that the perspective of the logistician is what flows can be made to flow faster’. From this standpoint, the logistician studies the costs incurred, beginning with the initial input factor, spanning the production process, and terminating when the customer pays for the product or service received. The longer the time at each stage of the supply chain, the higher the costs incurred by the enterprise. A reduction in the time at any stage will provide an opportunity of cost reduction which can, in turn, lead to a reduction in price. This can be explained by the cost value curve shown in figure 3.14.



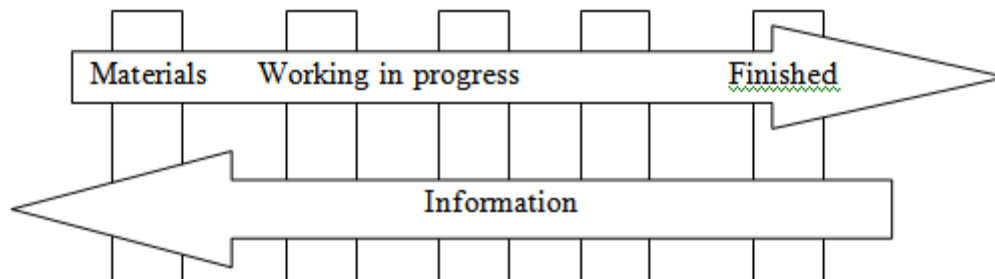
- (i) The lowest cost value is at the procurement stage when suppliers are purchased.
- (ii) During transportation of supplies, value remains low because little capital is invested until raw materials and components enter production; the only costs incurred refer to acquisition and holding costs.
- (iii) The curve becomes steeper as raw materials and components are gradually incorporated into the final product. This is because are accumulated manufacturing cost and increasing interest costs that reflect the value of the capital invested.
- (iv) The curve becomes flatter at the end of the production process because no more manufacturing costs apply. At this stage the invested capital is at its highest value and the cost of stocking finished goods instead of selling them involves higher opportunity costs than holding the initial suppliers. This shows why the logistician is, if anything, more concerned with PDM than MM, since the potential for cost reduction is the highest at this point of the total supply chain. Cost reduction by speeding flows of materials, work-in-progress and finished products is not the only concern of the logistician. Logistics management involves tow flows. The fist, as stated above, is the flow of materials and work in progress across the organization to the ultimate customer. The second, as shown in Figure 3.15, is a reverse flow of information in the form of orders or other indicators on which future demand forecasts can be based. Such forecasts, as Gatterna (2008) states, can in turn ‘trigger replenishment order which produce inventories at distribution cnetres. These order influence production schedules which, in turn, help determine the timing and quantities with which raw materials are procured.



Logistics management should be regarded as a total system rather than a function. Essentially it is a way of thinking about, planning and synchronizing related activities. Figure 3.15 also shows how logistics management crosses conventional functions.

- (c) Some important logistics concept
 - (i) Total systems management, emphasizing a total than a limited department viewpoint. Total systems management has been facilitated by the availability of information technology.
 - (ii) Trade –offs. A trade-off is where an increased cost in one area is more than offset by a cost reduction in another, so that the whole system benefits. This may give rise to interdepartmental conflicts due to different objectives. Thus, purchasing may discounts. This policy might be opposed by finance because of money tied up in working capital and by inventory because of the increased cost of warehousing. The conflict should be settled on the basis of which policy yields the greater trade-off. Similarly, purchasing may have to consider whether the security of supply consequent on having a number of suppliers is offset by the economics resulting from lower ordering costs and larger production runs obtained from single-source buying. Thus the effect of trade-offs may be assessed by their impacts on total systems cost and sales revenue.

Purchasing Production Finance Marketing Distribution



Thus, higher inventory costs may result from increased stocks, yet quicker delivery may increase total sales revenue. Obtaining the information to computer trade-off requires the breaking down of functional information sharing.

- (iv) Co-operative planning. This can work forwards to customers and backwards to suppliers. The change from product to customer oriented supply chain, and thus faster supply responses, can with alternatives such as make to stock, make to order and finish to order. Conversely, from the inward supply side, effective co-operative planning may relate to zero defects, on-time delivery, shared products and information exchanges relating to such matters as shared specification, design support, multi-year commitments, technology exchange. Overall, both supply and customer can benefit from reduced costs of inventory, capacity, order-handling and administration. This utilizes, as appropriate manufacturing and scheduling techniques including:

- Manufacturing**
- Computer Aided Design (CAD)**
- Computer Integrated Manufacture (CIM)**
- Flexible Manufacturing Systems (FMS)**
- Materials Requirements Planning (MRP)**
- Manufacturing resources Planning (MRP II)**
- Optimized Production Technology (OPT)**
- Strategic Lead Time Management (STM)**
- Production**

Just-in-Time (JIT)

Materials Requirement Planning (MRP)

Manufacturing resources Planning (MRP II)

- (d) Logistics management objectives. The whole purpose of logistics is to provide 'availability'. Everyone will be familiar with the old cliché, the right product in the right place at the right time'. If one adds at the least cost' than that is precisely the objective of logistics management.
- Apart from reduced costs and increased availability, logistics management seeks to:
- [1] Reduce conflict and promote co-operation and co-ordination between subsystems concerned with material and information flows, based on the recognition that their activities are interrelated and interdependent.
 - [2] Reduce the time spent at every stage of the chain from procurement to delivery to the customer, i.e lead time, production time, transportation time.
 - [3] Add value at every step of the logistics 'pipeline'
 - [4] Ensure the highest possible level of customer service and satisfaction by achieving the right combination of product availability and dependability.
 - [5] Control and, where possible, reduce inventory of materials, work in progress and finished goods to provide stock level at which the costs of stockholding are balanced by production requirements and customer service.
 - [6] Encourage a commitment to quality improvement so that both bought-out suppliers and the products in which they are incorporated are right first time, every time.

THE CONTRIBUTION OF PURCHASING TO SUPPLY CHAIN MANAGEMENT

Purchasing can contribute to supply chain management by:

- (a) Providing expert analysis of forecasting, servicing, delivery and supplier information throughout the supply chain.
- (b) Providing critical information to strategic management on material price, availability and suppliers issues.
- (c) Rationalizing the number of suppliers
- (d) Forging effective long term partnership with key suppliers and resolving problems that may arise.
- (e) Providing suppliers with accurate forecasts of requirements and facilitating such approaches such as MRPI, MRP II and JIT.
- (f) Securing the maximum possible value in materials cost through the implementation of value engineering and analysis.
- (g) Negotiating the best possible terms in respect of transportation and distribution.
- (h) Advising on make or buy decisions, outsourcing, leasing and similar strategies.
- (i) Reducing costs, throughout times and manual paperwork through EDI supported purchasing planning, information and disposition systems.
- (j) Ensuring that purchasing staff training provides an understanding of all the elements in the supply chain systems, and the specialized aspects of global purchasing.

IV. RECOMMENDATION & CONCLUSION

The purchasing process has four major components. One of the most crucial is the selection of the right sources. The right source provides the right quality, on time, at the right price, and with right level of service. Selection of the right source is more important now- adays than ever before, since more firms are entering into long-term partnerships with a single source of supply chain. The benefit of such partnership is many, but the risks are great. Careful selection of suppliers and the professional management of the relationships within the supply chain is very essential

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