

Outline of Logistics and Supply Chain Management

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Abstract—This paper gives in depth knowledge of what happens in logistics and supply chain industry and how it works. The complete understanding of theory and work that is carried out in the supply chain process and the innovations made. The paper gives details about how transportation, time and raw material form the basic part of supply chain industry and its importance to carry out the process within decided time. The data focusses on the inventory, transportation details and timely delivery of the final product to the clients. This model is used to carry out the product delivery to the customers all over the world in good condition and in the stipulated time span. The topic gives a brief idea of how supply chain works and how the products are transferred to their respective destinations.

Index Terms—Quality; Inventory; Production; Transportation; Just-in-time; Consumers.

I. INTRODUCTION

The importance of information technology in supply chain has brought drastic change to this market. The agri-food industries make use of this technology. Electronic commerce is widely used these days for selling different products. Agri-food company also uses it. This opens wide choice for consumers and they can choose for best providers from all over the world. Thus article informs about the effects of e-commerce on today's supply chain industries [1]. Statistical explanation of effect on inventory due to bullwhip is explained. Bullwhip indicates bad inventory management. In Bullwhip effect, orders for storing goods change so drastically as compared to the demand for it. The article proves that reducing this effect by using inventory policies does not reduce the costs of supply chain. Two different policies of replenishing inventory are explained [2]. There has been less research on dependability of supply chain as compared to other topics. The paper gives the models and algorithms of dependability of supply chain. The failure in this field is caused at the same time with suppliers and distributors. This is called common cause of failure which has become an important task to deal with, in supply chain [3].

II. RESEARCH METHOD

This paper basically gives a detail explanation of methods used by 'HP' in their supply chain. This method is used to fast-track the profits especially by enhancing inventory and thus reducing inventory costs [4]. The research tells us about the centralization system of inventory. The products are stored at one common place and used by all retailers in

quantity where they give discounts to customers. They decide the price of goods either prior to market demand research or after the market value is decided [5]. Supply chain industry today has various impacts on working class and production. These days, the work time has been made flexible to meet day-night working environment but this has caused problems to employees. They are expected to work more than their stipulated time and still are not paid for it. The old making process has been replaced by logistics now [6]. Improvement in information technology has made it necessary for all supply chain firms to cooperate with each other, to exchange information which would help them to progress in this field. It will help them to improve quality, decrease inventory and content their customers. Considerable collaboration is anytime better and preferred [7].

III. SUPPLY CHAIN MANAGEMENT AND IMPACT ON VARIABLES

Supply chain industry was first named as logistics. Logistics further developed as the companies started collaborating to carry out business and became a big process or chain called 'supply chain'. Today, every business must have a manufacturing and supply chain management team. It depends on inventory management, keeping a check on quality, rate of production and main is transportation of goods to desired destinations in best conditions and within decided time.

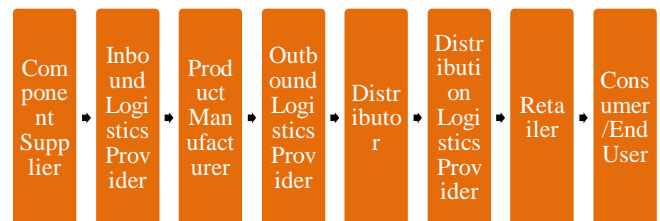


Fig. 1. Flow of activities in supply chain management

A. Supply Chain Management

Globalization and collaboration of markets internationally has given importance to value-added activities which has started including interesting research topics like global branding, pricing, global logistics and supply chain management and account management [8]. Logistics and supply chain management go together. It is a process in which we have to manage resources and products and see to that it reaches the end user in time [9].

B. Production

While orders are placed even when products are out of stock, this has effect on different aspects of supply chain, customer services, sales and production performance [10]. Making deliveries on time and to maintain the quality standard is very important for supply chain members. Uneven and problems in proper delivery of products causes increase in production costs or lost sales due to lack

of stock [11]. In production planning, quality management and service more importance is given to innovative-product supply chain as compared to functional-product supply chain [12]. I agree that sometimes due to problems in production process at supplier, bad weather or due to low quality of product delivered to the customer leads to uncertainty in supply chain management [13]. Nowadays, the firms are trying to make all their activities more public. They are approaching to combine their traditional operations and internet. They are putting all the information of product life-cycle and prices online which definitely is gaining importance [14].

C. Inventory

Inventory is the basic and main term in logistics and supply chain management. In this the supplier decides the wholesale price and the retailer decides how much quantity to purchase from supplier and also determines the retail price i.e. the cost at which the product is to be sold to the user [15]. I agree that to gain benefit in supply chain management we need to lessen the inventory cost, reduce the production time and should have exact knowledge and estimation about relation of supply with its demand [16]. Like in supply chain management, even in inventory management we need to match supply with demand. Excess supply leads to increase in costs and unnecessary investments while excess demand produces cost of lost margins [17]. Author has given an example of Dell's vendor-managed-inventory arrangement in which suppliers decide about the quantity and time of inventory and Dell decides the target inventory level and records suppliers' deviations from the targets . [18]. At every level of supply chain, steadiness and inventory control policies go hand-in-hand [19].



Fig. 2. Processes involved in Inventory Management.

D. Transportation

ERP i.e. enterprise resource planning is one more important term in logistics and supply chain management. ERP systems also look after the management of transportation and warehouse processes [20]. Transportation is the main and fundamental resource in supply chain which comprises of roads, rails, ports along with trains, lorries, ships, etc. [21]. Due to improper planning and shipping rates, the cost of raw material also increases. It also includes unplanned purchases of supply, transportation costs, inefficient utilization and overtime which leads to increase in costs [22]. Internet is widely used to manage transportation system. Almost 50 percent of the respondents make use of internet to manage transportation systems [23].

E. Quality

Buyer should have knowledge of inspecting the products delivered to him. If they are 100 percent capable of inspecting the product then he has perfect understanding of the product quality and so can separate the bad lot from the good lot of products [24]. To gain profit, firms must maintain the quality of their products and also provide good customer service and this can be achieved by efficiently obtaining the raw material for production [25]. I agree that in supply chain design and management, maintaining product quality and delivering value products to customers is the most important and difficult task [26]. I agree that to provide a certain standard quality product to the customers, all the people linked in the process should work hard to maintain this standard. It does not apply only to the immediate supplier but also to suppliers' supplier and his supplier and so on [27].

IV. DISCUSS RESEARCH

The research tells us about a detail study in field of supply chain and how important it is for organizations. It also tells us its academic growth and how they manage the just-in-time delivery and manufacturing. Supply means the company decides to manufacture products and get them in market for the consumers. In case of demand, the customer preference is most important and market survey is carried out. Then accordingly the product is manufactured. Demand and supply both are basic factors in production [28].

V. RESULT AND DISCUSSION

Logistics is carried out in an organization and supply chain is the work done by various organizations together to get final product. While doing this activity, organizations hardly take into consideration the environment and social life and focus only in the economic gain. The study of this field has come up with a justifiable supply chain strategy where profits can be gained while maintaining the environment and social aspects involved thus increasing the standard of the company [29].

VI. CONTRIBUTION AND NEW INSIGHT

Every company or industry's basic need is to maintain their production and inventory and to manage to successfully bring their product in the market or to deliver it to consumers at best prices, good condition and within time. All this is possible and important, so we need to study and enhance our supply chain management skills [30].

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