Warehousing in supply chain

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WAREHOUSING IN SUPPLY CHAIN Introduction Warehousing is one of the most important and critical logistic activities in industrial and service systems. A few production philosophies, e. g. just in time (JIT) and lean manufacturing, propose and support the so-called ‘‘ zero stock’’ as basic and strategic pillar. Also manufacturing requirement planning (MRP), the well known and widely adopted ‘‘ push-’’ based full? lment technique, theoretically guarantees no storage quantities when the ‘‘ lot for lot’’ reorder policy is adopted.

Nevertheless, these special production systems do not operate in absence of warehousing systems that support and smooth the discontinuity ? ow of materials, products and components, at the input and at the bottom of a generic production stage. Warehousing activities and storage systems are necessary! This is true in many industrial and not industrial sectors: from automotive to tile industry passing from food industry, health care production systems, service sectors (e. g. banks, universities, hospitals), etc.

Obviously, warehousing is the core activity of logistic providers, usually specialized in distribution activities including storage and transportation issues. In special sectors, like the food industry and the health care supply chains, warehousing means storage systems in critical operating conditions, e. g. controlled temperature and/or humidity levels, by the management of fresh and perishable products. The storage systems signi? cantly affect the level of quality of products, the customer’s service level, and the global logistic cost.

Just an example: the food industry. Warehousing and transportation issues signi? cantly affect the level of quality of foodstuffs at the consumer’s

location, especially when production plants and ? nal points of demand (consumers' locations) are far away and frequently located in different countries. The mission of warehousing is the same of the discipline '' logistics'': to effectively ship products in the right place, at the right time, and in the right quantity without any damages or alterations.

Important keywords in warehousing and storage systems are: safety, quality, availability, cost saving, customer service level, traceability, picking, automation, ful? llment, travel time, etc. With increased globalization and offshore sourcing, global supply chain management is becoming an important issue for many businesses. Global supply chain management involves a company's worldwide interests and suppliers rather than simply a local or national orientation. This is the operational arena of warehouses in most complex production systems.

THE ROLES OF WAREHOUSE IN THE SUPPLY CHAIN Warehouse play vital roles in the supply chain. The warehouse is not only a facility where a company can store their products, but the warehouse offers inventory management, physical inventory counts and shipping functionality. The warehouse charges their clients for a certain rate for the goods stored, the volume of the warehouse used and the services the client wishes to use. The company using the warehouse does not have to employ warehouse staff, does not require any inventory software or warehouse equipment.

The owner of the warehouse is responsible for the costs and passes this on to their clients based on the rate they are charged. The warehousing functionality today is much more than the traditional function of storage. The main function that warehousing serves today are hold raw material at or

near the point of induction into a manufacturing or assembly process. The work-in-process warehouses hold partially completed assemblies and products at various points along an assembly or production line. Besides, the finished goods warehouse hold inventory used to balance and buffer the variation between production and schedules and demand.

For this purpose, the warehouse is usually located near the point of manufacture and is often characterized by the flow of full pallets in and full pallets out, assuming that product size and volume warrant pallet-sized loads. A warehouse serving only this function may have demands ranging from monthly to quarterly replenishment of stock to the next level of distribution. Edward Frazelle. (2001) claims that distribution warehouses and distribution centers accumulate and consolidate products from various points of manufacture within a single firm, or from several firms, for combined shipment to common customers.

Such as warehouse may be located central to either the production locations or the customer base. Product movement may be typified by full pallets or cases or broken case quantities out. The facility is typically responding to regular weekly or monthly orders. Warehouse also receive, pick, and ship small orders for individual consumers. As a fulfillment warehouse and fulfillment centers. The local warehouse, distributed in the field in order to shorten transportation distances to permit rapid response to customer demand. Frequently, single items are picked, and the same item may be shipped to the customer every day.

The value –added service warehouse serve as the facility where key product customization activities are executed, including packaging, labeling,

marking, pricing and returns processing. According to Edward Frazelle. (2001) the figure below illustrates warehouse performing these functions in a logistics network. Unfortunately, in many of today's networks, a single item will pass in and out of warehouse serving each of these functions between the point of manufacturer and the customer. When feasible, two or more missions should be combined in the same warehousing operation, and handling steps in the chain should be minimized.

Current changes in the availability and cost of transportation options make combining activities in a single location and link skipping possible for many products. In particular, small high-value items with unpredictable demand are frequently shipped worldwide froma single source using overnight delivery services. Figure : the roles of a warehouse in logistics and supply chain management. Cliff Otto (2010) is of the opinion that Cross-docking as manufacturers seek ways to move products more efficiently and cost-effectively, many are ediscovering cross-docking—moving product directly from receiving to shipping with little or no inventory and minimal handling. The process is resurfacing as a way to take costs out of the supply chain, accelerate inventory velocity, and improve service levels. While historically used for durable goods, high turn rates and reduced handling make cross-docking an effective solution for everything from perishable products to high-value/high-security goods. The process helps get product to market quickly and economically while reducing the need for warehouse space and inventory carry costs.

In simple words, warehouses are used by manufacturers, exporters, wholesalers, retailers, transport businesses, customs (exporters, Importers),

etc. They are usually large plain buildings, equipped with loading docks to load and unload consignment from trucks. Based upon the size of the goods and volume of operation they also often have cranes and forklifts for moving goods, which are usually placed on ISO standard pallets. Warehouse is a facility where the supply chain holds or stores goods, until they are needed by the customers. Warehouse can be owned by manufactures, wholesalers, retailers to store the goods.

In my opinion, the role of warehousing and storage has changed drastically as customer and vendor compliance issues have come to surface and a greater emphasis has been placed on operations and customer satisfaction. There are more demands and expectations in today’s industry. The management of warehousing operations requires a unique combination of engineering, IT, human resources and supply chain skills. Motorsense offers an integrated warehouse solution that incorporates all the above to give a cost effective solution with the added benefit of stock reworking, returns management, sub-assembly and repackaging.

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