

Role of Freight Forwarding & Logistics Firms in Supply Chain Management

Hanson Obiri-Yeboah¹ | Eric Ekow T. Ghansah¹

¹Procurement & Supply Chain Department, Accra Technical University

¹PGhana Institute of Management & Public Administration (GIMPA)

Abstract

Global Logistics Scene is dominated by a handful of ten to twelve multinational Companies followed by smaller companies altogether numbering below fifty. Entire global trade is facilitated by these service providers. Major players in the field are led by DHL, Kuehne + Nagel, Schenker/BAX, UPS, Geodis, Expeditors, Agility, CEVA Logistics, Hellman worldwide logistics, etc. The last two decades have seen the emergence of multinational companies having acquired and bought out local and smaller players to acquire the multinational status coupled with the global network. The entire logistics field is filled with mergers and acquisitions in quick succession in the recent past. Most of the logistics players have been traditionally freight forwarders dealing with cargo bookings coupled with origin and destination services. However, as the global business practices changed, and supply chain managements started gaining ground, these companies realized the potential of being able to offer multiple services including ground transportation, warehousing, and contract logistics under one umbrella as the future trend and quickly turned themselves to acquire the required capabilities and have managed to become single window service providers on global scale. In any supply chain, these 3PL Service Providers further outsource certain functions and segments to many other local service providers. Any Supply Chain Management expert would naturally wonder if it is possible to deal directly with the other service providers and cut out the 3PL Lead provider and thereby save some cost.

Keywords: Role of Logistics, Freight Forwarding, & Supply Chain Management

1.0 INTRODUCTION

In a global scenario, this would not be possible for many reasons. 3PL Service Providers can offer you standard operating processes and procedures across all locations and countries. If you are dealing with a 3PL office in Europe and another in Japan besides your local office in Houston for example, all three offices will follow the same methodology, documentation, and processes. Secondly, 3PL providers know the local situations and can adapt international processes to suit local situations better. A principle company may not be able to get into the local situation be it with transportation or customs or legal compliance and is better left to the 3PL to deal with it effectively. By the size of these companies 3PL logistics providers have built core competencies and capabilities in all of the functions namely Freight, Customs Clearance and Contract Logistics and are equipped with cutting edge technology to support international operations and provide visibility to the customers at all time. 3PL companies rely heavily on electronic exchange of data and information in their businesses. Today 3PL companies not only provide highly specialized inventory management and warehousing operations, but they also offer another value adds like Purchase Order Management, Semi, and Light Manufacturing, other value added services designed for niche segments called as Integrated Logistics Services.

3PL service providers are today investing in building distribution networks and facilities to cater to the client's requirements wherever required. They are building in-house capabilities with employing Supply Chain Management Experts to specialize in Automotive Logistics, Aero Spares, Medical & Environmental Logistics and other specific segments. Supply Chain Management strategy of the company today aims at converting logistics cost to transactional cost and thus avoids any investments into managing Supply Chain. It would not be possible for a principal company to invest in setting up and managing logistics services and facilities in origin and destination locations for its Supply Chain and manage local regulations etc. It is best left to the best Service Provider as the partner and leverage on his competencies and skill sets as is being done today.

2.0 LITERATURE REVIEW

2.1 3PL Contract Logistics Operations

While Freight Forwarding is an important function of 3PL Service providers to facilitate the Supply Chain, another equally important function managed by 3PL Logistics Companies is Contract Logistics. Under the broad umbrella of Contract Logistics, 3PL providers provide services of setting up consolidation centers, distribution centers, warehouses and inventory management services. European network of transportation and warehouses stand apart from the rest of the world and are highly evolved regarding supply chain capabilities. America too has similar capabilities developed in recent years. Normally warehousing facilities are built and rented out as real estates. Warehousing Parks or Distribution Facilities are designed with complete layout and infrastructure for truck parking, yard management,

and security systems, etc. Warehousing buildings of sizes ranging from 1000 sq. mtrs to several hundred sq. mtrs come equipped with all-weather docks, dock levelers, and dock platforms to facilitate continuous loading and unloading activities and quick turnaround of vehicles. These facilities include office facilities and other utilities too as a complete stand-alone facility.

3PL companies rent out such facilities or in some cases invest in building their facilities in strategic locations in the transportation network or near major markets or in some cases in specific locations close to customer facilities.

3PL Warehousing is used for managing inventories of both raw materials and finished goods including spare parts, consumables, and promotional materials as the case may be. Depending upon the need and size of operations, a 3PL may set up completely dedicated facility for a client specific requirement or provide dedicated storage space and services in shared facility or provide pallet wise storage on rental basis. All these modes are used depending upon the particular need of the logistics plan. Normally the warehouses consist of vertical racks with levels anywhere from five levels up to ten and above with a carrying capacity of one ton per pallet position. Depending upon the storage need, racking design will vary from pallet racking to block stack, deck racking, shelving, bins, etc. Material Handling equipment used include Hand Pallet Jacks, Trolleys, Battery Operated Fork Lifts and various types of Reach Trucks used in racks.

The entire warehousing operations include Receiving Process involving unloading, de-skidding, inspection, in awarding and put away. Delivery or shipment includes receipt of shipping order from the customer along with invoice or sales documentation, picking materials, consolidation, packing, marking, preparing outbound documentation and shipping out by loading into containers. Besides these functions, the other main functions in the warehouse include inventory management that involves location management, managing storage capacities and bulk and loose inventory, carrying out inventory counts to ensure accuracy of inventory and stock takes. The entire warehousing operations are dependent upon documentation and systems that manage operations and inventory. Warehouses use WMS - Warehouse Management System as the backbone. The system manages inbound transactions, location management and generates and controls warehousing operations for both inbound and outbound transactions coupled with maintaining inventory in detailed level and managing inventories. For any principle employer, the support of a good 3PL is necessary because its entire inventory amounting to a huge amount regarding value is in the custody of a third party. Inventory management operations are core to any operations. Hence it is necessary for every Supply Chain Management Expert to understand nuances of 3PL Contract Logistics operations before taking decisions to outsource these functions.

2.1.1 Finished Goods Supply Chain

Buying a Desktop computer for your home or a Laptop for your use is very easy. You browse the internet to see the latest models and configurations, decide on your specific requirement and click to place an order. At times, of course, you might go into an electronic supermarket and check out the physical product before you buy. Immediately on payment, you cannot wait for the delivery and expect to be serviced on priority. Ever wondered how companies like HP, Dell, and IBM manage to place just the right products in all point of sale not only in your city but all over your country, all over the world where the product availability and standard processes are made available? If u start thinking back about where the products came in from? Where were they manufactured? Where were they stored and finally how and who brought it down to your door step, you are in fact tracing the logistics of the supply chain.

Finished Goods supply chains are very dynamic and are the backbone of a good sales organization.

Some departments are responsible for working in coordination and seamlessly to ensure Finished Goods reach the markets and the customers. Logistics and supply chain departments have to work in tandem with or aim to be ahead of Marketing and Sales and ensure that when a product is announced for sale by marketing, the products are made available at all nook and corner of the city, state, and country. A situation where the customer goes to a sales counter to place an order and the product is not available cannot and should never happen as a rule.

Taking customer as the starting point, let us trace back the journey of finished goods and the functions.

While Marketing departments work on marketing and advertising the product and are focused on reaching out to the customer to sell a product to him, Whenever a customer places an order, further coordination and deliveries are managed by order fulfillment teams that are responsible for sales order processing who place orders on the distribution centers on the backend to pull materials for forward stocking points or to effect deliveries to the customers. Customer Fulfillment teams are the internal customers to the FG Logistics team. Logistics team is the department that is responsible for stocks and FG inventory held in the pipeline across multiple networks of distribution centers and the inventory in the pipeline in various transit points. In other words, Logistics teams own the inventory from the point

they leave the plant until delivery is effected to the customer who may be a distributor, retailer or end user as the case may be.

Logistics teams comprise of multiple competency centers including inventory planners, freight managers responsible for transportation leg and warehousing operations experts who are responsible for the inventory and warehousing operations including documentation control and statutory process compliance. Logistics teams work in close coordination with finance teams, the procurement team, plants, and manage operations through a chain of third party service providers who run the operations of inventory handling and distribution. Logistics is never an event free operation. While multi-tier third party service providers are handling the cargo across various borders, locations each with its unique local situations, there are very many other vagaries of nature and events that can keep disrupting the smooth flow of supplies and the situation is every dynamic. Managing multiple product lines, and vast distribution networks coupled with managing third party partners calls for the Logistics Managers and Supply Chain Managers to be always thinking on their feet and constantly innovating new processes and finding new ways to keep operations happening smoothly.

2.1.2 Finished Goods Supply Chain Operations

FG Supply Chain consists of all activities involved in movement, storage and distribution of Finished Goods from the Delivery point of Plant to the Point of Sale. In the case of global supply chains, Supply Chain Management gets more complicated with the variations arising out of different countries regulations and logistical practices. Computer Hardware supply chain is a good example for students and Supply Chain Management professionals to understand the dynamics. The life cycle of computers is very short, and frequently models and technology keeps changing all the time. This factor needs to be kept in mind while drawing up the supply chain strategy for Finished Goods to ensure that obsolete inventory does not clog the pipeline and that the inventory maintained is lean. Manufacturing practices have changed drastically over the last decades. With the help of ERP systems, manufacturing has JIT system of manufacturing.

Computer manufacturers have established the strategy of setting up assembly plants in various countries to service global markets. Computer manufacturing is built on two models. While certain fast moving desk tops are built on BTS - Build to Stock model, most of the laptops and other products are manufactured on Build to Order Model, wherein manufacturing of a batch quantity is taken upon confirmation of orders from the customers. HP has multiple business divisions managing different product lines. While one division manages PSG Group - Printer and Consumables section of the product, two other divisions separately manage laptops, desktops and servers. Manufacturing of all the products is spread across various countries for each of these products. Common Supply Chain Division and Logistics services departments manage the functions of all business divisions.

Managing multiple product lines under common logistics network provides challenges in ensuring process compliance. To add to the complexity, a set of Desktop or Laptop includes the main module assembled at HP Plant and other items like monitors, keyboard, mouse, etc. which are bought out from third party vendors. Third party vendor items are supplied to the designated FG warehouses that are managed by 3 part Logistics Providers and held as HP inventory. Finished goods are received similarly from HP Plants across countries. Normal Supply Network consists of 3PL Owned Country Depot in each country and further regional distribution centers and stocking points which ship out goods to distributors who maintain their logistical network to reach to the customer point of delivery. On receipt of all items at the warehouse, process is designed to kit or bundle all the items together, re-label the cartons at the distribution center and move out as one item.

Such an activity involves managing inventory processes where the items are received as individual items with SKU description and after the kitting or bundling is done, all SKUs get converted into a separate SKU as the final product. The inventory management and transaction of conversion needs to be managed both at the warehouse level in the warehouse management system and simultaneously in HP Systems. In few cases the bought out items are kept in stock at the warehouse as vendor managed inventory belonging to the vendor and only at the time of kitting, the transfer of ownership happens using a sale. In such cases, the 3rd Party Logistics provider maintains HP inventory and Vendor inventories in the same system and managed operations accordingly. In FG Distribution, ensuring FIFO is essential for all items and capturing serial numbers at the point of dispatch from distribution center to ensure updating in warranty tracking database. A culture of drilling down processes, active participation and interaction with 3PL service provider with frequent audits and training goes a long way in ensuring that service levels are met by the 3PL service provider which reflects on the Supply Chain Management division's performance too.

2.1.3 Spare Parts Supply Chain

When you buy any Computer or Electronics Hardware or equipment, normally one of the questions asked to the sales person is "What is the Service Support" provided by the company. Today the brand image or market demand

rides not only the quality of the product but on the quality of service support too. Service support is critical in industries like Computers, Telecom, Aero spares, etc.. In all cases the response time and availability of the spares become critical. In all cases corporate installations demanding onsite support coupled with critical downtime service level measurements have pushed the suppliers to set up an efficient spare parts supply chain. Take the case of an installation of a server in a bank's central processing division cannot afford to be down at all. The company who installs the server is required to ensure that service engineer is available at site during normal hours and on call basis on 24 × 7 basis. It is not enough to have the engineer attending to or being available at site; the required spare parts need to be available.

Critical and high value spare parts have to be made available in a nearby warehousing location and logistical arrangements are required to be made to reach it to the site in a fastest and quickest reach time, which is a few hours in most of the cases. The site engineer most often can perform diagnostic functions and report back to the service team. The service support team would then escalate the matters to the technical experts who get involved in solving the problem. All of the coordination and problem solving along with logistics arrangements is required to happen in a matter of hours. Such critical performance levels are documented in the service agreements and in most cases 99% up times are required to be committed by the company supplying the server.

Similar situation exists in aero spares parts supply chain too. Airplanes can develop snags in any location and not necessarily at the base where they operated from. Therefore, the logistics of having to locate the defective part, requisitioning the part besides the request being directed to the central spare parts warehouse by the 3PL service provider and managing to airlift or courier the part in the fastest mode is the normal requirement in this industry. Most of the parts are high-value parts and cannot be stocked or warehoused in all locations as inventory. Airplanes cannot be grounded for a long time which would result in heavy losses to the airlines. The down time allotted for preventive maintenance itself is very less. Aero spare parts supply chain has also been built around processes to ensure fastest lead times and ready availability and immediate retrieval of the right component. In most cases the essential spare parts are kept in stock at the country level based on the number of installations or volumes of sale under each category of product. In case of non-availability the parts are called for an urgent basis from a regional distribution center normally available at a regional level servicing a continent and flown down on urgent courier mode. In all cases ensuring minimum downtime is the key factor that drives the spare parts process which involves logistics service providers, warehouses, customer service teams and technical teams working in tandem to ensure customer satisfaction.

2.2. Spare Parts Logistics

In a computer spare parts supply chain, usually the network consists of the country depot that stocks all the parts required to support the field. The number of parts in such depots run very high depending upon the volume of sales and can range from 15000 SKUs to 35000 SKUs. Depending upon the model and vendors. In a country, regional locations are housed in all states or major markets normally in all major cities. At the regional and local levels, the parts supply warehouse is often combined with test repair centers where customers can walk in and submit their laptops or products for repair. Spare parts are delivered out of these outlets in two modes. One is under warranty service where the customer has bought a warranty contract with the company including free replacement of spare parts. In such situation, the good part is issued by the warehouse instead of receipt of a defective spare part. The other mode is sale of part where the customer pays for a spare part and makes the purchase. Besides the Test Repair Centers, larger markets also have authorized service agents and dealers located all over the city. The regional warehouse receives orders for parts from these dealers who service the end customers. The orders can be under warranty free replacement or sale of part. Warehouse accordingly services orders and delivers parts locally to the dealers and collects the defectives back. The regional warehouses, in turn, requisition parts from the country depot based on their forecast and stocking pattern.

In case of parts supply warehouses, commonly they contain two different warehousing divisions' namely good part and defective parts store. In case of good spare parts, the warehouses maintain and manage two separate inventory lines as well as separate processes to manage original spare parts procured from vendors and refurbished spare parts repaired locally through third party repair vendors. Against each good part supplied, a defective part is taken back which travels through the various stocking points to the warehouse's defective parts store. The defective parts stores issue parts to identified vendors for repair and once repaired issue back the refurbished parts to good store for inventory.

In some cases the defective parts if still under warranty are grouped together and re-exported back to the vendor overseas for free replacement under warranty. The entire supply chain network of spare parts involves the Logistics department of the principle company, inventory planners, test repair center teams and outsourced 3PL warehousing partners who manage to warehouse and local logistics and designated dealers, authorized service representatives and repair vendors. The entire supply chain rides on a strong backbone of IT application that manages sales order fulfillment on one end and inventory management at the other end. The applications are robust with

enhanced features to be able to manage and track warranties and also SKU wise stocks and serial nos. Defective parts collection and management is as important as good part management and carries the same value as it becomes a refurbished good part once again after repairs.

2.3 Reverse Logistics

As Supply Chain Activities are evolving and partnering changes in business models, the focus and activities are not restricted to the management of raw materials and finished goods from point of origin from the vendors to plants and further on to the end customers. There is another extension to Supply Chain Process called as Reverse Logistics. Reverse Logistics as the name denotes, deals with the planning, process and flow of finished goods inventory, packaging materials and parts of finished product back from end customer to the product company as sales return or warranty return or unsold inventory with trading partners. Reverse Logistics planning further re-captures value from these materials as much as possible by way of re salvaging, repair, refurbishing, recycling etc. Globally awareness about Hazardous waste generation and disposal is increasing and leading to legislations being passed by the various countries. Europe has been the leader to implement legislation about ensuring that the product companies take responsibility for reverse logistics of all product wastage arising out of any supply chain activity. The European Union has passed bills on Waste Electrical and Electronic Equipment and Restriction of Hazardous Substances. **Green** Logistics initiative has outlined a detailed process for the suppliers and manufacturers to adapt color coding systems to identify different kinds of waste reusable, recyclable, green waste, etc. Packaging retrieval, salvaging and scrapping process have been well developed with the entry of many small and medium sector companies investing in setting up scrap salvaging activity as commercial ventures.

Awareness has further pushed companies to adopt standards and measures in ensuring recycling and e-waste in a bid to take responsibility towards minimizing environmental impacts and reducing scrap besides ensuring complete recovery of waste materials. Automotive After Market and Electronic Equipment and Computer Hardware industries have developed successful Reverse logistics practices and have managed to integrate reverse logistics as an important marketing strategy to project the company's social responsibility in the area of waste management as well as to contribute to the developmental activities in society by donating funds arising out of scrap disposal and recycling. While many developing countries are yet to pass legislation concerning environmental safeguards, recycling, e-waste disposal processes, the Multinational Organizations have already adapted processes of reverse logistics and implemented them in all countries wherever they have operations.

Automotive after Market industry has developed the successful practice of producing refurbished parts and recycled components that are sold through the spares markets. A lot of value has been unlocked from the reusable parts of vehicles especially starters and alternators. Re-engineering products with re-used material has yielded in the saving of tons of raw materials, besides providing and generating employment to hundreds of people involved in setting up small outfits to dismantle the parts. As per industry estimates, this activity has employed over 12000 in the US alone and the reused auto parts make up for over 36 billion dollars as estimated by Auto Parts Re-Manufacturers Association.

In the computer hardware and peripherals industry case study, HP makes for a good example. HP has developed supply chain model of collecting the used cartridges and other consumables through e-bins prominently displayed with the retailer outlets. The reverse logistics for this particular process is designed to collect the waste locally from all e-bins, consolidate and ship out to regional centers that are located at gateway ports in the country. Such consolidated waste is further forwarded to recycling plants identified within the country to another nearby location overseas. Recycling plants manage to salvage metals and other materials before using the plastic raw material as the raw material to manufacture some other items such as bottles etc. It is reported that HP has allocated the funds generated out of such activity to sponsor events directed at fulfillment of its social responsibility and community development projects.

Today taking responsibility to take back the packaging and products has been found not only to yield scrap and salvage value but is increasingly being looked upon as corporate responsibility and part of corporate governance and good practice adopted by responsible companies. No doubt this provides value to marketing strategy too and improves stature business.

2.4 Reverse Logistics & Supply Chain Management

Supply Chain Management is concerned not only with the flow of raw materials and finished goods, but scope extends beyond this to include reverse flow of unsold finished goods, parts and packaging materials from the point of consumption at customer's end back to the organization or to rework/refurbishing vendors. Today reverse logistics has been adopted in a big way by automotive aftermarket spare parts field as well as electronics and computer hardware markets. Retail and book publishing too have implemented reverse logistics schemes, but the volumes that

are returned are relatively lesser than the other fields. Reverse Logistics offers several advantages to the company in terms of both tangible and intangible benefits. In the first instance, companies can retrieve defective equipment and parts which are either salvaged or refurbished and thus reclaims value out of the defective parts. Secondly, the packaging and defective materials are collected and recycled thereby generating scrap value back for the company. Thirdly unsold and obsolete equipment are collected back from the point of sale which encourages the distributors and stockiest to buy confidently stocks from the company knowing that he can always return unused inventory and not stand to lose in the bargain. Distributors are more likely to be open to stocking all fast moving as well as slow moving stocks. In the eyes of the customer and society, the organization stands to gain a good standing and reputation of being a responsible company that takes care of the e-waste and hazardous waste generated and thus stands out for its corporate governance policies.

Reverse logistics has been successfully adapted as the marketing strategy. Refurbished computers are sold at lower prices by all leading brands and the demand for such laptops seems to be growing. The spare parts used by the computer manufacturers to service the laptops and computers on warranty or sale include refurbished parts. Many electronic and consumer durable manufacturing companies offer to buy back or exchange offer for the old equipment instead of the customer purchasing a brand new product. In consumer electronics and white goods, the exchange offers are a big hit during discount sale seasons.

Managing reverse logistics process is as operations intensive and complex as FG supply chain and demands the same focus and involves multiple logistics partners. Companies like IBM, HP, Dell and other equipment manufacturers like Xerox have established processes and network of refurbishing centers together with spare parts distribution centers. Unlike managing good parts inventory, defective spare parts require more handling and processes at the logistics providers end. Commonly it has been noticed that the good parts are handled neatly by all involved in the supply chain including distributors and retailers. On the other hand, while the process demands that the defective part be returned in good condition, both users and retailers do not give enough attention to handling defective parts. Statistics has shown that the defective parts are found to have suffered more transit damage and handling damage than the good part. A lack of understanding that the defective part has value to the organization is noticed in few cases of the sales staff of the organizations as well as retailers, who treat defectives as scrap. However the reverse logistics processes followed by the computer and electronic equipment industry is a good example for other industries to begin looking at adopting similar strategies in their markets too.

3.0 CONCLUSION

Supply Chain Activities constitute multi-modal transportation, customs clearance, and warehousing activities in one or more locations in the entire network. Supply chain activities may be local referring to within the country or regional meaning within a continent or region and global which is essentially intercontinental. Global operations are the order of the day as businesses follow markets and also look for cheaper conversion costs that are achieved by setting up manufacturing facilities in countries where costs are cheaper. Take the case of Pharmaceutical industry. High cost of manufacturing led the companies to shift manufacturing out of Europe and US to South Africa, India, and other cheaper nations.

While inbound supplies from these countries may be consolidated in each country by the freight forwarder and shipped out, they may also be shipped out by the supplier to a third party warehouse in the destination country for VMI inventory replenishments. Inbound supplies may be running into thousands of part numbers and hundreds of shipments from a few hundred suppliers. Finished goods, on the other hand, would be dispatched from the plant directly to a distribution center in the country or exported to another distribution center abroad. Similarly, each country distribution center would receive finished goods from the local plant, imported finished goods from other distribution centers. They would also receive the bought out items that are procured for integration with finished goods at the distribution center. The distribution center manages the inventory, completes any in-house process, etc. Further movement of cargo goes happens from the mother distribution center to subsidiary or secondary warehouses from where they finally reach the distributor.

If you plot the above two supply chains, you will see that at any time, the highest amount of inventory is held at the warehouse that holds supplier parts and the distribution center and subsidiary warehouse. The amount of shipments in the pipeline would be very small compared to the inventory at the warehouses. Plants do not hold inventories at all. Therefore, warehouses are critical to supply chain networks. Warehouses are the main links in the supply chain and their location and functioning in terms of operations affect the rest of the supply chain efficiency. Distribution Centers, VMI Centers, Parts Centers and various business models of warehousing activities are now outsourced to 3PL Service Providers. Many companies do manage these as critical functions in-house, but the increasing trend is to outsource these activities. A warehousing operation encompasses many value added processes and critical operations. In the case of plant logistics, these activities involve the complete responsibility of managing

inbound traffic management, yard management, and inbound shipment receiving, warehousing and inventory management.

In-house processes can include kitting; sub-assembly and any other value-add processes to be managed before parts are supplied to the plant. Any wrong transaction or mistake in the transaction will affect the production line and result in an increase in downtime. Other responsibilities managed include scrap management, packing material management, etc. In the case of automotive plants, these warehousing activities are very big and complex in size and word as independent companies on 24 x 7 basis with senior management being present at the site to manage the small company. Hypothetically In typical small size operations, a logistics facility could be receiving over a hundred shipments a day, unloading around 50-60 containers a day, maintaining inventory anywhere between 20000 to 35000 SKU part numbers, held in various modes in 8000 to 10000 rack locations and many more block stock locations. Outgoing supplies to plant may happen on call basis - every two hours and supplies can consist of a few hundred parts kitted as per the Bill of Material. All this activities needs to happen continuously on a shift basis. Contract Logistics companies have further extended their services into managing semi manufacturing processes within the plant.

Many multi-national companies have invested into building Contract Logistics capabilities. The management structure consists of supply chain managers, engineers and other technical staff required managing specific segments. Development of core competence in managing warehousing operations and supply chain network was perfected in Europe in automotive, retail and many other industries. In cases where the operations size and processes involved are more than just a warehouse; normally it is referred to as Contract Logistics. The business is driven by a Contract Manager at the site with administration support staff and operations teams. Such sites normally call for a lot of investments in infrastructure including material handling equipment, racking, building, etc. The size of operations and investments being large, the contracts usually run for some years. The projects involve integration and building interface with IT applications of both companies to facilitate day to day transactions.

References

- Bailey, P. (1994) Purchasing principle and management (7th Edition), Pitman Publishing UK.
- Dobler, W. D. & Burt, N.D. (1996) Purchasing and Supply Management, Tata McGraw – Hill.
- Fearon, H. E. (1993) Purchasing Handbook, McGraw – Hill. Inc.
- Fearon, L. (1993) Purchasing and materials management, (10th Edition), U.S A Richard D. Irwin Inc.
- Ghana Commercial Bank Brochure.
- Gun, D. (1999) Essential items of purchasing.
- Lysons, K. (1996) Purchasing and materials management (4th Edition), Pitman Publishing.
- Tactics and Operations (2011) – an unpublished book
- Zenz, G.J. (1987) Purchasing and the management of materials (6th Edition), Malloy. Lithographing Inc.
- Fisher, R. and Ury, W. (1991). Getting to yes: negotiation agreement without giving in: Penguin Books, 2nd edition.
- Hocker, J.L. and Wilmot, W.W. (1991). Interpersonal conflict. Dubuque, Iowa: Wm.c. Brown publishers.
- Putnam. L.L. and Rolloff, M.E. (1992). Communication and negotiation. Newburg Park, California: Sage Publications, Inc.
- Silversin, J. and Kornacki, M.J. (2000). Leading Physicians through change. How to achieve and sustain result. Hillsboro Printing Company, Tampa, Florida. An ACPE publication.
- Ury, Williams (1993). Getting post No. New York: Bantam Books.