Third-Party Logistics (3PL) Warehouse Management Systems: What's Unique About Them?

Adjenim Boateng Adjei
School of Finance & Financial Management
Business University of Costa Rica
Email: abadje@yahoo.co.uk

Abstract
Global business models are rapidly changing. Shorter life cycles of products and new business need exert pressure on Supply Chain managers to keep pace with the new scenarios. They are often faced with the target to reduce logistical costs and establish new supply networks. It has now become a common practice to outsource all logistical activities to third party vendors both in procurement side of logistics as well as finished goods, spare parts and reverse logistics areas too. Opening a warehouse in another country requires significant investment and could even end up not drawing a profit. That's why many businesses turn to 3PLs to run their overseas warehouses for them. And with the use of proper third-party logistics (3PL) warehouse management software, the chances of success go way up. Integrating a successful 3PL warehouse management system is a guaranteed way to help save time and money. It's well-known that including 3PL service providers can boost warehouses' success rate and simplify your supply chain. While many companies use 3PL providers, some problems can still arise in the process. One such pitfall is the lack of direct control over the warehouse management processes. This lack of control can lead to client companies having to settle for little to no knowledge over the way that a warehouse is run. Luckily, with the software solutions that are available today, it's much easier for 3PL companies to provide extensive visibility to shippers that use their services. As 3PL management companies implement modern technology, a rise in their adoption is sure to become a trend. When a 3PL company provides services to multiple clients (known as multi-tenant warehousing), the complexity of their warehouse operations rises. Implementing a comprehensive warehouse management system grants a 3PL company organized data on warehouse stock, and an easy way to keep track of goods belonging to multiple clients. Integrating one of these software solutions makes this process manageable and helps 3PL companies increase productivity and client satisfaction.

Keywords: 3PL, Warehouse Management Systems, Supply Chain Management, Inventory Management

1.0 INTRODUCTION

A 3PL (third-party logistics) provider offers outsourced logistics services, which encompass anything that involves management of one or more facets of procurement and fulfillment activities. In business, 3PL has a broad meaning that applies to any service contract that involves storing or shipping items. A 3PL service may be a single provider, such as transportation or warehouse storage, or it can be a systemwide bundle of services capable of handling supply chain management.

1.1 How third-party logistics work

Here is an example of how 3PL arrangements operate: A book publisher hires writers, editors and graphic designers to produce publications, but it may not want to handle the consumer ordering process or transportation of book shipments. Instead, the book publisher uses a fulfillment center to process its online orders and hires a trucking carrier to haul its freight. The fulfillment center and carrier both act as 3PL providers. It's possible for a single 3PL provider to fulfill and ship book orders, too. By contracting with a 3PL provider, the book company can use supply and distribution services only when needed, thus controlling costs more effectively while focusing on its core competency of producing books.

1.2 The growth of 3PLs

Aspects of 3PLs probably date back hundreds, if not thousands, of years. The Council of Supply Chain Management Professionals traces the actual 3PL abbreviation to four decades ago. "The term *3PL* was first used in the early 1970s to identify intermodal marketing companies … in transportation contracts," the council wrote in a glossary. "Up to that point, contracts for transportation had featured only two parties, the shipper and the carrier." The Motor Carrier Act of 1980 deregulated the trucking industry, which reduced trucking rates and also increased the amount of competition, all of which fed into 3PL concepts. The term *3PL* got bandied about more by consultants and during conferences in the 1990s, likely tied to evolving technology, including the rise of the internet.

2.0 LITERATURE REVIEW

2.1 An overview of levels of logistics service.

The Consumer Product Safety Improvement Act of 2008 legally defined *3PL*: "The term *third-party logistics provider* means a person who solely receives, holds or otherwise transports a consumer product in the ordinary course of business but who does not take title to the product." According to a frequently cited 2017 report from Armstrong & Associates, a supply chain consultancy, 90% of domestic Fortune 500 companies rely on 3PL providers to handle logistics, compared to the 46% Armstrong reported in 2001. The growth in online sales and increasing consumer demand for faster delivery and lower prices have spiked demand for 3PL services. 3PLs have also bloomed thanks to tracking technology, such as radio frequency identification (RFID) and global positioning system (GPS), both of which offer extended supply chain visibility. Meanwhile, internet of things (IoT) technology has improved tracking metrics for trucking and other carriers.

2.1 The Benefits of 3PL

The primary benefit of using a 3PL service to handle logistics, such as packaging, warehousing, fulfillment and distribution, is cost savings -- for example, not having to maintain a warehouse or the staff to monitor supply chain operations. A 3PL service likely offers better performance on efforts such as shipping while also enjoying an easier ability to scale its operations. If the publishing company in the example above suddenly needs to ship more copies of a popular title, a fulfillment center will have an easier time meeting that demand than if the publisher itself had to ship additional copies of the book.

2.2 3PL vs. 4PL

The term *4PL (fourth-party logistics)* often pops up in discussions about 3PL. In brief, when 3PL providers outsource any of their own contracted services, they become a 4PL provider. In the example of a book publisher, if the fulfillment center subcontracts out its shrink-wrapping and freight weighing to other companies, then the center acts a 4PL provider. Some observers view 3PLs providers as managers of a particular outsourced service, while 4PL providers oversee services across an entire supply chain. Another way to look at a 4PL service is as a provider that acts as a client company's single point of contact in the supply chain; the 4PL provider selects and manages various 3PL activities 4PL is also known as lead logistics providers (LLP).

2.3 3PL vs. Freight Forwarding

Freight forwarding and 3PL may come across as similar, but there are noticeable differences. Freight forwarders do not actually ship materials, and instead function as a liaison between a client company and shipping firms. The freight forwarder negotiates prices, determines the best modes of transportation, establishes economical shipping routes and works on other logistics concerns. As noted earlier, 3PL providers handle a broader range of services compared to forwarders.

2.4 3PL Warehouse Management System

As a whole, warehouse management systems (WMS) are intended to streamline the many time-consuming processes of running one or more warehouses. As with all warehousing systems solutions, there is no one size fits all. Integrating WMS with 3PL in mind leads toward different packages than something meant for a single warehousing enterprise. Multi-client architectures, 3PL billing functionality and other value-added services are examples of additions that mesh well with 3PL integration. Before making any decisions, find out what you need to supply your 3PL with to keep them running smoothly. 3PL companies are there to make your life easier. Any time you can provide them with updated tools and efficiency upgrades you should. Smoothing out any bumps they may experience sets you up for success in the future. What can a WMS bring to third-party logistics companies? Well, there are numerous vital features that can be very beneficial. Here are a few stand out features:

Real-Time Visibility: The ability to see data in real time is an essential feature required of any serious third-party logistics company. Shippers using 3PL services want to have the opportunity to access reports, view progress easily and track inventory remotely with the help of web portals. Providing access to customers is beneficial to 3PL companies as well. According to the 20th Annual Third-Party Logistics Study, 80 percent of third-party logistics service providers and 84 percent of their customers agreed that it would be helpful to have an automated way for shippers to log in and see requests from their 3PL management system to approve of decisions, activities and documents. It's clear that a big part of 3PL services revolves around providing 3PL inventory management visibility to their clients. Luckily, many of today's warehouse management solutions seamlessly integrate with enterprise resource planning or enterprise accounting software solutions, which can provide visibility through a web portal. These portals allow clients to view inventory levels, place orders and perform other tasks. This type of software

provides warehouse visiblity, displaying multi-state warehouses with inventory shown. The easy access that's made possible with 3PL web portals eliminates the need for time-consuming tasks such as manually generating customer reports. Instead, clients can log in securely and access the data at any time, using any device. Added functionality such as in-advance shipping notices (ASNs) and the ability for customers to schedule picking and shipping demand by themselves makes the portal not only convenient but necessary.

Inventory Tracking by Ownership: While third-party logistics WMS are a tool for management, these warehouse manager systems serve another critical role in customer service. Because of the need for constant interaction between freight shippers and 3PL companies, a WMS that can instantly provide information such as the location of the goods is essential. If a 3PL company can't tell a customer where their goods currently are, customer retention will drop. With the inclusion of comprehensive 3PL warehouse management software, it becomes much easier to track and manage goods. Many of these solutions allow tracking via UPC, SKU, batch, package, parts and serial number. While so many options seem excessive, having multiple tools available is valuable in a multi-tenant warehousing situation. Such complex inventory control systems show why a barcode system to track goods is essential. It streamlines warehousing and tracking tasks, reducing the number of manual tasks and increasing the efficiency and accuracy of operations. A report by Auburn University RFID Lab showed that inventory accuracy at the stock-keeping unit (SKU) level is about 65 percent, while an RFID can get this number up to 95 percent or even higher. Another important part of inventory tracking is the ability to log all the inventory activity in and out of the warehouse, including in-warehouse transfers. Data about these in-house movements can be very beneficial when the need to perform a complete audit arises. To quickly identify and correct any errors, especially in multi-tenant warehousing, extensive record keeping is critical. Luckily, today's warehouse management systems provide many benefits to improve efficiency and excellent customer service.

Advanced 3PL Billing: When providing 3PL services for multiple clients, billing becomes a very complicated process. Manually tracking transactions and compiling them into bills is a process that can take days to complete. Such an undertaking wastes time and can even strain customer relations. With so many transactions needing to be processed errors are bound to appear. Mistakes in billing look very unprofessional and can even seem dishonest, which is a critical error when building trust with a client. That's why a comprehensive 3PL warehouse system is so important. It provides all the tools necessary to establish an accurate billing system that dramatically cuts the time that billing takes up, while simultaneously improving its functionality. Accounting accessibility is often in important feature in 3PL WMS. Because of the way that a 3PL WMS can use barcode scanners, it becomes much easier to track every single transaction, as well as every movement in, out of and within the warehouse. With this ability, accurate invoices can be generated at any moment using real-time data.

Fulfillment Practices: 3PL companies are fulfillment experts. They take on many headache-inducing fulfillment practices to save their clients time and hidden fulfillment costs that come with running their own operations. Integrating a WMS with the intention of streamlining fulfillment processes makes these cumbersome duties easier on your 3PL partner. When responsibilities such as replenishing shipping supplies, purchasing equipment for the fulfillment services center and leasing new warehouse space fall to a 3PL, a WMS with fulfillment options is a great choice. E-commerce 3PL assistance is on the rise as demand for products continues to grow. Integrated 3PL WMS solutions allow all electronic sales channel points to report directly to the 3PL for order fulfillment when orders come in. This data is then compared against real-time inventory stocks and can help with the shipment automation process.

General Purpose or Niche: 3PL companies come in many different shapes and sizes. Some provide general solutions, while others narrow their focus on more specialized solutions. Your business and client partnership can help guide you to a specific WMS choice. A general 3PL company focuses on just that, general logistics. Many of the topics above are necessary inclusions for general third-party logistics providers. A niche 3PL provider specializes in a particular industry or market. For example, a niche 3PL provider in the hazardous materials (HAZMAT) market needs MSDS (material safety data sheet) functionality. Cold storage warehouse operations can implement a WMS that allows FIFO and FEFO picking to suit their needs better. It would be best if you always kept your general or niche needs in mind when choosing a WMS. Please spend some time defining your particular requirements, and then take a look at our requirements template to narrow down the best solution for you.

By 3PL, for 3PL: A recent study has shown that an estimated 86 percent of Fortune 500 companies and 96 percent of the Fortune 100 use 3PL services. With such explosive growth in the usage of 3PL warehouse and inventory management software, 3PL companies are taking steps to create the best possible software solutions. One significant benefit to this is that 3PL companies know what they need to be successful. Instead of waiting for new software to come out, they are taking the initiative and creating software suites that tackle the many problems they face. Expect increased efficiency, intuitive design, and advanced services from emerging 3PL management software as time goes on. 3PL companies stepping up to the plate and designing software offers many other significant benefits. One such advantage is the reduction of downtime when integrating these new solutions. With intuitive software built specifically

for the use of 3PL companies, you can expect less downtime when orienting around the implementation of new software.

3.0 SELECTING 3PL SERVICE PROVIDER FOR WAREHOUSE MANAGEMENT

Today the 3PL service providers market is filled with players of all sizes and competencies, from single owner driven local service provider to multinational companies. Most of the companies have traditionally been transporters or freight forwarders and over the years have acquired warehousing and contract management capabilities keeping in line with the growing needs. Selecting a 3PL service provider to provide warehousing services needs careful considerations on the part of the SCM manager responsible for the decision. The right partner selection is important because you are handing over the company's assets to someone else's custody and secondly any performance hindrance can seriously affect the sales and revenues of the company in case of FG Supply chain or effect the plant production in case of Raw Material supplies.

Size of company, Structure & Responsiveness: The business volumes and size of the project will determine the selection of the Service Provider. Most of the Multi-National Companies can offer integrated logistics services to manage the entire supply chain including freight, transportation and warehousing; you will also find companies at regional or local levels that offer warehousing as a core competency area. The size of the company is important as a key parameter as one would not want to deal with a small company that does not have the capability to invest or a fly by night operator. The Management structure of the company holds a clue to their focus on the various businesses and customers. This will enable you to find out the kind of management focus that the service provider has in warehousing or CL as a product. A multinational company being able to invest into your business does not necessarily make the best choice. They can more often turn out to be expensive. Besides the availability of CL expertise in another location or country does not necessarily ensure competence locally. However, Multi nationals are preferred as partners most of the times due to many other advantages like integrated services, global standards, ability to invest, etc. Responsiveness measures the quality and speed with which the service provider company responds to your bid request and engages with you to offer a solution. The nature of response and interaction hold key to the company's culture and enables us to evaluate options of investing into a relationship or partnership possibility.

Technical & Operational competency of Vendor: A vendor should be able to demonstrate the competency regarding its experience in managing functions for other customers and products. Besides the competency can be demonstrated and seen in the solution building process or document prepared and presented by the vendor. A company with experience in managing distribution center operations would have the team comprising of people with sufficient experience in the operations at management level, supervisory and staff levels. The company needs have to have a strong IT management and functional operational competence and capability in managing the IT system at site as well as being able to support the site with IT administration at management level.

Service provider's interest and attitude towards your business proposal: The capability, interest and attitude of the vendor would help you to choose the vendor who is interested in your business with long term prospect and is willing to invest time, money and effort and not somebody who is chasing business as a sales target and doesn't have the required interest, organizational and operational capability to service your business.

3.1 Selecting 3PL Service Partner

When an Organization chooses to outsource its inventory management services, the project success hinges on choosing the right partner because the stakes in a warehouse management projects are very high. Besides the impact on the other functions like manufacturing or markets, the third party service provider is the custodian of your inventory which meaning your money is in someone else's hands. So the question one needs to ask for is - What are we looking for in a 3PL Partner? The answer to this question will take you through few of the important factors that are to be considered.

3.1.1 Choice between Multi National 3PL Service Provider or Local Service Provider

This is often a dilemma faced by SCM managers while choosing the partners. Dealing with Multi-National Companies has its advantages. Normally the MNC service providers provide integrated logistics services that give you value addition besides seamless service coupled with lower costs. Strategically it makes sense to go with Multi-National companies who can leverage on their competence available across the network and provide standardized processes across various locations. However, on the flip side, these companies may not have the same management focus and competence in all countries and all locations. Besides many companies have been traditionally transportation providers who have acquired warehousing competence and skill sets and are not warehouse centric or focused players. Domestic Service providers, on the other hand, would know the laws of the land better and know how things work.

They will have the local expertise and capability to manage operations and resources better. By virtue of them being local and small players, one can expect better focus and attention. The choice is a difficult one to make. At the end it depends on the size of the project, the number of locations and the company's policies besides any local specific situations to decide on the above. Global companies prefer to tie up with Multi National Players to be able to leverage on their network as well as operate with a global agreement. With a lot of business in transportation and warehousing being given to an MNC, the buyer can have a better bargaining power with the 3PL provider. Contractual obligations, third party obligation, and local statutory compliances can be easily owned and managed by MNC 3PL providers.

3.1.2 Service Provider Capability Evaluation

Evaluation of a 3PL service provider involves understanding of their capabilities both regarding technical competence, operational capabilities and Management Culture. The evaluation normally consists of Detailed Response document to RFQ from the 3PL service provider, followed by a presentation by the 3PL and subsequent site visits to the proposed location, site visits to other locations /operations of 3PL, coupled with customer references. Detailing these processes becomes important especially in the case of a bigger project depending upon the criticality of the project.

3.1.3 Management Focus / Involvement and commitment at corporate and local level

Often the face to the markets from the 3PL side is the marketing and BD teams. As contract logistics is capital intensive and operations intensive, it is important to understand the company management's focus and commitment towards this part of the business, especially in cases where 3PL is an Integrated Service Provider with other logistics businesses. A management interested and focused on CL business is likely to invest in building a long term relationship and enhance its competence and deliver the better value proposition to the buyer. Company profile and meetings with management will enable one to assess this criterion. The other important and relevant areas to be evaluated are the IT Backbone and capabilities of the 3PL and its experience and expertise in deploying and managing WMS systems. Expertise in Operations and inventory management as core functions coupled with project management capability, local expertise availability and quality programs, etc. can be judged from the response document and subsequent personal

4.0 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.

5.0 CONCLUSION

The cost drivers play a major role in vendor selection for the project. An RFQ document should seek information on above criteria from the vendor, and the process of selection should be based on evaluation, demonstration coupled with site visits to vendor's site to assess overall suitability. Third-party logistics are here to stay and provide a wealth of benefits for companies that integrate their services. Freeing up time and resources while maintaining efficiency and customer satisfaction are paramount in healthy supply chain management.

As the shipping and warehousing demands rise 3PL centric warehousing, inventory and transportation management solutions will continue to grow in accessibility and strength. If you have not considered adopting a 3PL focused WMS solution, now is the time 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 SCM Expert to understand nuances of 3PL Contract Logistics operations before taking decisions to outsource these functions.

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