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A Study on Traditional (Standalone) and Modern (Multi-client) Warehouse Management for Cost Effective Logistics Services

Mr. Shreenivasamurthy S R *1 and Dr. Vikram. V.*2

1*DHL Supply Chain India Private Limited, Bengaluru, 2*JNN College of Engineering, Shivamogga

srinivasmurthysr@gmail.com, vikram.rich@jnnce.ac.in,

Abstract

The logistics industry in India is undergoing a sea change, and has always, adapting to new technologies, methods, processes, and agility. With improved infrastructure, the Indian industry was able to plan its business activities more proficiently, moving India much closer to become a manufacturing hub for the world. This research article focuses on warehouse management system for cost-effective logistics services by shifting their standalone model to a multi-client sharing model. Majority of the business enterprises are fine-tuning their logistical operations in general and warehouse management system in particular to reap the shared cost advantage and to survive and sustain in the competitive world. The markets are keys to understand a cohesively and rapidly emerging class of real estate in the country. A growing manufacturing landscape in India with a Production-linked Incentive scheme from the Government (PLI) has led to an increased demand for space in tier-1 Markets in industrial, logistics, and warehousing space. It is a win-win situation for the manufacturer/business enterprises to move from a traditional warehousing system or standalone model to a multi-client model of warehouse management system for cost-effective logistics services.

Keywords: *Standalone, Multi-client, Warehouse Management system, Cost-effective, Logistics Services.*

1 Introduction

The last few years have seen overlapping crises – COVID-19, the Russia-Ukraine

War, rising inflation and interest rates, and liquidity troubles after a series of bank crises. In March 2023, the World Bank

warned of the makings of a ‘Lost Decade’ for the global economy. While the fear of recession is seemingly ubiquitous, some parts look more vulnerable than others. Nevertheless, select bright spots like India stand out, with negligible chances of a technical recession. India continues to be the fastest-growing major economy. Indian economy remains least susceptible to the global recession. As per the Savills research insights Spotlight “Markets in Minutes: Mumbai Industrial and Logistics study have discussed about the logistics and warehouse industry in India. Few highlights are being mentioned below:

- ❖ The land transaction sustained to yield attention with an excess of 1500 acres being exchanged ownerships for manufacturing and warehousing across India.
- ❖ India witnessed absorption of 22.4 Mn sq. ft. in H1 2023 including 17.4 Mn sq. ft. from Tier I cities and 5.0 Mn sq. ft. from Tier II & III cities.
- ❖ 3PL (Third Party Logistics) sector accounted for 44% of total absorption in H12023 followed by manufacturing at 22% and retail at 13%.
- ❖ The driving factors for warehousing demand are anticipated to be 3PL, retail, and increased demand for in-city warehousing by last-mile delivery players.
- ❖ The government of India has identified over 1,200 thousand acres of land across several states that could potentially be offered for establishing industrial & logistics hubs.
- ❖ In H1 2023, the market witnessed transactions of close to 1,500 acres of manufacturing and warehousing land in the country of which 72% was for manufacturing purposes, 22% was for warehousing, and 5% for mixed-use (both manufacturing & warehousing) development.

Glimpses of India’s Warehousing Market

India’s Warehousing market has grown at a fast pace in recent years, the Indian warehousing market is still a fraction of the size of its global, developed counterparts such as the UK, US and China, in per capita space terms. The pandemic was the single most disruptive event for supply chains across the country since the turn of the century, and caused transaction volumes to fall 23% YoY in FY 2021. Businesses that could not cope with its exigencies had to rethink their strategies and build more resilience across their warehousing footprint. Increasing input costs have led to the increased cost of construction by an estimated 10 to 13 percent across markets. Operators were

unable to increase the rentals due to weakening demand during the pandemic period. A strong recovery was witnessed in the year 2022 with an increased rental growth by a considerable 5.6 percent year-on-year. Few highlights are being mentioned below:

- ❖ **Growth of Warehouses in Major Metros:** With the increased growth in e-commerce demand and the entry of big players like; Tata and Reliance groups in these highly dynamic space multi-story warehouses will become front runners.
- ❖ **Optimum land utilization in congested cities:** Cities such as Mumbai, Delhi, and other major metros with multi-story warehousing, will effectively reduce delivery timelines and transportation costs.
- ❖ **Multi-story warehousing:** Multi-story warehousing solutions are already in place in Asian markets such as Singapore, Hong Kong, and Tokyo. 3PL players have been investigating in-city development opportunities across Mumbai, Delhi and Bengaluru.
- ❖ **Growth of “Dark Stores”:** “A dark store is generally a warehouse that can either be used to facilitate a “click-and-collect” service such as that provided by D-Mart Ready, where a customer collects an item, they have ordered

online, or as an order fulfillment platform for online sales, generally in the grocery segment”. The growth of dark stores in international markets fuelled by the fast-growing demand for online fulfillment and increasingly favorable unit economics also support the growth of this format in Indian markets.

- ❖ **Multi-level in-city distribution centers in select tier-1 markets:** There is a lack of compliant facilities within cities to support the continued growth. Land availability within in city is a challenge; these modern multi-storey in-city distribution centers in select tier-1 markets are becoming popular.
- ❖ **Multi-client model of Warehousing:** Multi-client warehousing model as a solution allows flexibility while giving transporters the ability to tailor warehouse capacity to shifts in operational demands. This can meet the cost of storage by sharing resources.

Challenges in Constructing Warehouse Assets in India

- ❖ **Cost of construction:** The cost of constructing a good quality Grade A warehouse park structure varies between INR 17,761-20,990 per Sq. m (INR 1,650-1,950 per Sq. ft) based on

the delineation of the land. The cost of land in India varies by a huge margin depending on the location and quality of infrastructure near the land parcel.

❖ **Lack of organized assets:** Lack of organized assets and the strong need for warehouse and logistics spaces during the pandemic resulted in several Greenfield developments throughout

the year. Investors invested USD 1.2 bn in H1 2022.

❖ **Increased Rentals:** Rent growth has been the major hurdle of the market over the past decade with developers facing stiff resistance from occupiers who were extremely reluctant to concede any ground on this aspect.

Table showing the Average rents across various markets in India

SL. No.	Market	FY 2021 INR/sq m/ month (INR/sq ft/ month)	FY 2022 INR/sq m /month (INR/ sq ft /month)	YoY Change
1	Mumbai	218 (20.2)	238 (22.1)	9%
2	Kolkata	221 (20.6)	238 (22.1)	8%
3	Bengaluru	202 (18.8)	215 (20)	6%
4	NCR	193 (17.9)	204 (18.9)	6%
5	Ahmedabad	167 (15.5)	174 (16.2)	5%
6	Pune	248 (23)	258 (24)	4%
7	Chennai	229 (21.3)	236 (21.9)	3%
8	Hyderabad	210 (19.5)	215 (20)	3%

Source: Knight Frank Research

Traditional Warehouse operation and Management

A traditional warehouse primarily uses a labor-intensive handling system. It is not unusual to find some sort of latest automation used in part of handling, like forklift trucks or conveyors that improve the warehouse's operations.

Modern Warehouse operation and Management

Modern warehouse designs take into careful consideration not just what the warehouse is currently storing but also expected future goods and capacity. This includes taking into account the potential addition of extra loading docks, machinery, and easy access for the installation and updating of new technology. Modern Warehouse considers optimal space management like:

- ❖ The straight point: Quantify the required storage space in terms of capacity and utilization. Thoroughly understand the flow and utilization of this layout, including rack configuration, slotting/pick philosophy, receiving, put away, replenishment, inventory management, and packing and shipping.
- ❖ Usage of Vertical Space: Optimal utilization of not only available floor space but also effective utilization of vertical space.
- ❖ Understanding department space: Recognize functions that don't require high ceilings in areas where lower stacking heights are dictated by the clear height.
- ❖ Consolidate Locations: A better warehouse space utilization is possible by identifying similar articles and combining them for better space utilization.
- ❖ Aisle widths, Depth of Storage, combining doors, usage of the latest technology for loading, unloading, holding/storing the materials, etc.

Differences between Traditional Warehouse and Modern Warehouse

Sl. No	Traditional (Standalone) Warehouse Management	Modern/Multi-client Warehouse Management
1	The warehouse's original function was purely for storage.	Modern warehouses serve many more purposes, storing goods remains a primary function. This is where organizations can store their goods, equipment, inventory, and other items.
2	These warehouses are typically characterized by manual processes and labour-intensive operations.	It is the outsourced management of warehousing operations to a facility that is typically shared with multiple clients but includes value-added services such as kitting, bulk packing, cross-docking, etc.
3	Outsourcer and 3PL provider enter into a contract for various elements within a	Multi-client warehousing often involves a far more flexible contractual agreement,

	warehouse operation including, the building, the labour, and all operational processes & systems. In the dedicated warehousing model, the physical facility is owned or leased by either the customer or the 3PL provider.	typically on a month-to-month or year-to-year basis. Multi-client warehousing involves the 3PL provider owning the facility which is typically equipped with infrastructure and systems including WMS, RF/RFID technology, racking, and materials handling equipment.
4	A multi-year commitment of between 2-5 years.	Flexible month-to-month basis for both short- and long-term agreements.
5	Cost plus, transaction-based, or hybrid.	Transaction-based, fixed storage, pallet in/pallet out. Some multi-client contracts may involve cost-plus elements for certain solution components.

Source: Compiled by the researcher

Multi-client Warehouse

“A multi-client warehouse is a warehouse that is shared by multiple clients, allowing shippers to tailor warehouse capacity to shifts in operational demands while defraying the cost of storage by sharing resources”.

Advantages of Multi-client Warehouse

Several smaller companies are looking towards multi-client (shared) warehousing to fulfil their discrete requirements. Sharing warehouse space with other customers/clients is a flexible and cost-effective method of storage, and provides a wide range of advantages such as:

❖ **Greater Flexibility:** Multi-client warehousing offers shorter, more flexible contracts than those of a

single-user (contract) arrangement.

Multi-client warehousing is also the perfect solution for businesses that require several smaller locations, offering multiple distribution points, rather than one large space.

- ❖ **Improved Service and efficiency:** Multi-client warehouses are managed by logistic specialists, using analytic tools, which maintain greater control over inventory. This maximizes space management and reduces costs.
- ❖ **Reduced Cost:** As the model multi-client is of sharing the space with other businesses, which will facilitate reducing costs like labour, operational costs, and other costs that will be spread out among all customers, which will result in significant savings.

DHL Supply Chain India

DHL supply Chain India is one such company, which is into the services of offering Real estate and multi-client sites. Warehousing services are provided in DHL designed multi-Client and standalone sites as well as DHL run campuses.

Multi Client Sites (MCS)

Facilities and services are shared with multiple clients. An MCS site is designed by DHL however the site is leased from the developer, proactive leasing of large multi-client sites for ready solutions to customers’ requirements. DHL is catering to a wide range of clients which is divided into verticals like **Automobile, Consumer, Electronics and Machinery, Chemicals, Life Science & Health Care, Fashion & Retail and Technology**. The concept of multi-client can be classified into two methods by logistics companies namely; **1. Same Vertical wise customer profile and**

2. Multiple Vertical wise customer profile.

Same vertical wise customer profile will give larger extension of mobility as process and methods of Storage and operations are almost same, which will give more advantage of cross utilization of warehouse resources and optimize the cost. Multiple vertical wise customer profile will have a unique multi-client business model as each vertical logistics concepts are different, from a prospect of Storage to Operation methodology, however this will also help in optimizing the cost by space optimization and fixed cost sharing with multiple customers in multi-client facility. Below shown is the comparative cost-benefit advantages of standalone and multi-client warehouse arrangement of logistics companies like DHL.

Table Showing comparative cost-benefit analysis from Traditional/standalone model to Multi-client Model arrangement of Warehouse Management system

		Standalone	Multi-client 1	Multi-client 2	Multi-client N
Warehouse	Rental per month	*10000	5000	5000	The cost will be reduced further
	Int Deposit	5000	2500	2500	-do-
	Maintenance per sq. ft INR 7	7000	3500	3500	-do-

	Racks	Actual basis	Sharing	Sharing	-do-
Capital Expenditure Non-IT	Pallet	Actual basis	Sharing	Sharing	-do-
	Pallet Jack	Actual basis	Sharing	Sharing	-do-
	Ladder	Actual basis	Sharing	Sharing	-do-
Capital Expenditures IT	Computer System	Actual basis	Sharing	Sharing	-do-
	Printer	Actual basis	Sharing	Sharing	-do-
	Scanner	Actual basis	Sharing	Sharing	-do-
	CCTV	Actual basis	Sharing	Sharing	-do-
Operational Expenditure Non-IT	Office Chair	Actual basis	Sharing	Sharing	-do-
	Fan	Actual basis	Sharing	Sharing	-do-
	AC	Actual basis	Sharing	Sharing	-do-
	Water Dispensers	Actual basis	Sharing	Sharing	-do-
	housekeeping materials	Actual basis	Sharing	Sharing	-do-
	Refreshments	Actual basis	Sharing	Sharing	-do-
	Fire extinguisher	Actual basis	Sharing	Sharing	-do-
License	Windows Licences	Actual basis	Sharing	Sharing	-do-

Resource	WMS	Actual basis	Sharing	Sharing	-do-
	TMS	Actual basis	Sharing	Sharing	-do-
	Program Manager	Actual basis	Sharing	Sharing	-do-
	Warehouse Manager	Actual basis	Sharing	Sharing	-do-
	Supervisor	Actual basis	Sharing	Sharing	-do-
	Data Entry Operators	Actual basis	Sharing	Sharing	-do-
	Material Handlers	Actual basis	Sharing	Sharing	-do-
	Material Handler specialist	Actual basis	Sharing	Sharing	-do-
	Security	Security Supervisor	Actual basis	Sharing	Sharing
Security shift wise		Actual basis	Sharing	Sharing	-do-
HR	Attendance Machines	Actual basis	Sharing	Sharing	-do-
Overheads	Country overheads	Actual basis	Sharing	Sharing	-do-
	Other ops expenses INR 5 sq. ft.	Actual basis	Sharing	Sharing	-do-
SLA	Average Margin	High	Moderate	Moderate	Proportionate

Source: Researcher Compilation

*10000/- approximate (not accurate)

*SLA – Service Level Agreement, HR – Human Resource, WMS – Warehouse Management System, TMS – Transport

Management System, RFID – Radio Frequency Identification.

Conclusion

A developing country like India, which is rapidly expanding its horizon in manufacturing landscape with a Production-linked Incentive scheme from the Government (PLI) has led to an increased demand for space in tier-1 Markets in industrial, logistics, and warehousing space. It is a win-win situation for the manufacturer/business enterprises and logistical companies to move from a traditional warehousing

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system or standalone model to a multi-client model of warehouse management system for cost-effective logistics services. Multiple vertical wise customer profile will have an exceptional multi-client business model as each vertical logistics concepts are different, from a prospect of Storage to Operation methodology, however this will also help in optimizing the cost, space and fixed cost sharing with multiple customers in multi-client facility. By doing so, the logistical cost can be reduced by the company. The supply chain surplus which is generated may be shared among all the stake holders.

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