

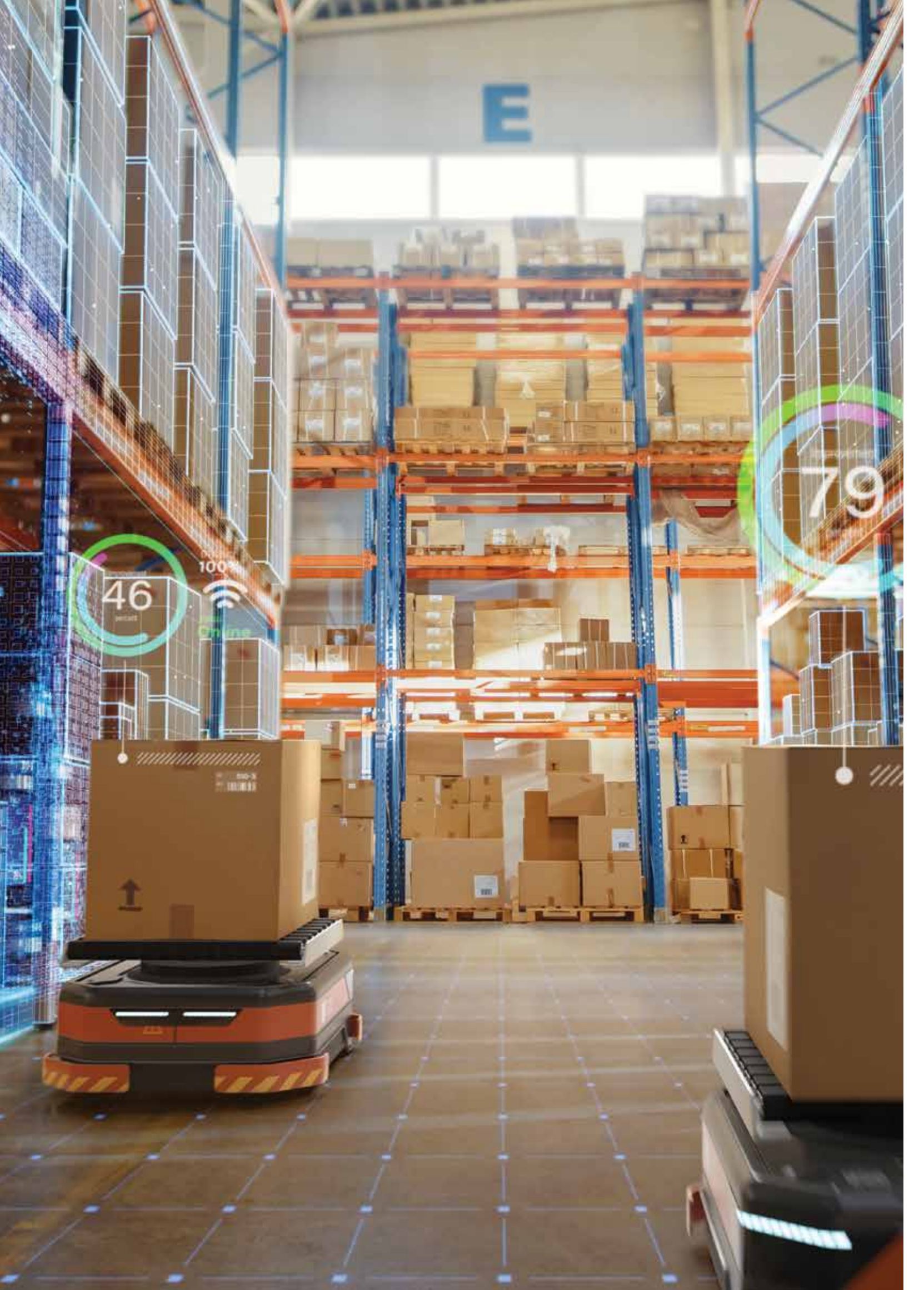


LSI FINANCIAL SERVICES



Indian Warehousing Industry

Supporting Nation's Economic Growth



E

46
percent

100%



79

OUR PROFILE

LSI Financial Services Pvt. Ltd.

LSI Financial Services Pvt. Ltd. was established in 1997 and is a SEBI registered Category 1 Merchant Banker. The vision of the company is to provide services relating to Project Finance Advisory, Techno Economic Viability Study, Financial Restructuring and Asset & Equity Valuation to esteemed Financial Institutions and corporate houses. With senior bankers and eminent industry experts, who are supported by 150 professionals in the team, the company has gathered vast experiences in almost all the sectors in the last two decades.

LSI has empowered more than 200 large corporate houses in India with its suite of financial solutions. Today LSI is present across the major Tier I and Tier II cities of the country.

The company in addition to its focus on Debt Syndication, Issue Management, PE Advisory, & M&A Advisory, lays significant stress on creating knowledge pools on economically important topics.

LSI Financial Services Pvt. Ltd. has three other group companies under its umbrella offering a gamut of services in the engineering, legal and financial advisory domains.

LSI Engineering & Consultants Ltd.

Established in 2015, LSI Engineering & Consultants Ltd. is a project management consultancy company. It has undertaken numerous large projects across India in road sector under NHA and PWD. It has a strong team of very experienced engineers having domain knowledge in road, water & other infrastructure projects.

The company is also registered with Indian Banks' Association (IBA) as an Agency for Specialised Monitoring and it is handling project monitoring/cash monitoring etc. for various large corporates on behalf of esteemed financial institutions of the country.

LSI Resolution Pvt Ltd.

LSI Resolution Pvt Ltd offers a spectrum of services related to Resolution & Insolvency encompassing the Insolvency and Bankruptcy Code (IBC 2016), which was enacted to provide the legal and legislative framework to support lenders effectively to recover or restructure defaulted debts in a time bound manner. As an entrusted IBBI registered Insolvency Professional Entity, the company has helped insolvency professionals to successfully manage & resolve more than 30 corporate insolvency resolution process of big companies across sectors.

Resolute Valuers & Consultants Pvt Ltd.

Resolute Valuers & Consultants Pvt Ltd. is a key player in valuation appraisals. Its efficient and experienced team is composed of senior bankers, technical experts, industry experts, registered valuers, experienced engineers, chartered accountants, cost accountants, etc. Registered with IBBI as a Valuer Entity, the company carries out valuation of all classes of assets i.e., Land & Building, Plant & Machinery and Securities & Financial Assets. It has undertaken valuation of very large infrastructure and manufacturing companies. The company has also participated in Government of India's disinvestment projects.

As a group to ensure consistent and high-quality solutions, LSI emphasises recruitment of premium human resources and consequently, LSI has in place a highly motivated and knowledgeable team that shapes its mantra of "Creating value, Partners in growth" into reality.

The company takes pride in being client-centric and looks forward to continuing its services to aid the economy by enabling optimal financial and technical solutions in the domestic and international arena.

EXECUTIVE SUMMARY



The Indian warehousing industry, worth INR 561 Billion in 2017, is estimated to grow at 9.5% CAGR to reach INR 968 Billion by 2024.



Major global funds have invested with warehousing developers and operators in order to expand their reach and regional footprint, being the key differentiators in the sector.



These investments are not restricted to Tier 1 cities, they are also spreading across Tier 2 and 3 cities which are now emerging as major consumption and e-commerce hubs.



Third Party Logistics (3PL) and E-Commerce have become one of the fastest growing segments in warehousing space, contributing more than 50% of total net absorption in 2021, highest among all the other sectors. COVID-19 has accelerated e-commerce adoption rates, leading to an increase in the demand for online delivery of essential and non-essential items. Demand from 3PL has increased as different sectors such as e-commerce, engineering, electronics & white goods are routing through 3PL.



The potential for developing large warehouses is primarily leveraged by the institutional Grade A developers by constructing high quality spaces to meet the specialized needs of their tenants.



As the e-commerce is deeply ingrained in the busiest commercial, retail and residential areas, in-city warehouse space is gaining importance for rapid deliveries to end users. Constrained supply of space is also driving re-positioning or change in use of existing assets such as malls, high-street retail, marriage halls, auditoriums, showrooms and workshops.



Furthermore, the advent of e-commerce has had a significant impact on the Indian warehouse scenario. Omni-channel retailing is emerging to optimize inventory management costs, operating costs, and real estate costs while increasing brand awareness and consumer base across the country.



TABLE OF CONTENTS

Chapter Number	Chapter Name	Page Number
1	Warehouse Market Dynamics in India	5
2	Government Initiatives and the National Logistics Policy, 2022	11
3	Drivers and Challenges in the Warehousing Industry	17
4	Current and Future Trends in Warehousing	21
5	Warehousing in India – The Way Forward	29

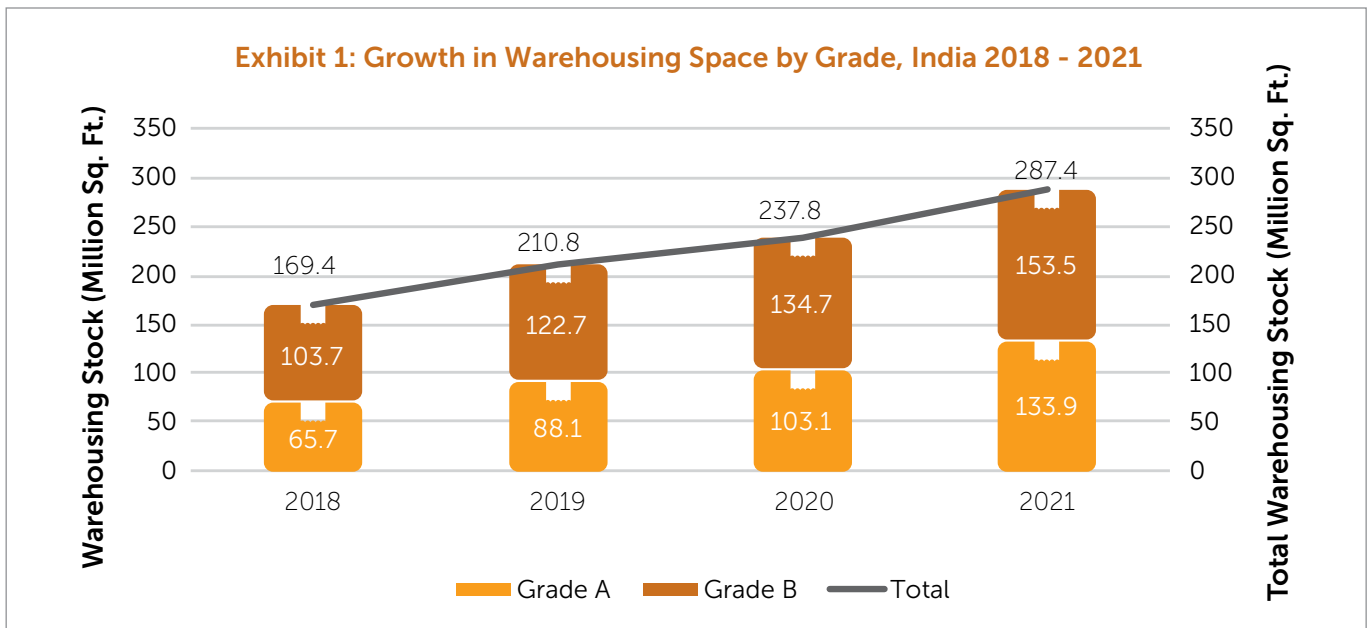


CHAPTER 1:

WAREHOUSE MARKET DYNAMICS IN INDIA

India is one of the fastest growing economies in the world, with promising business opportunities. The Government of India has taken various proactive and conducive business initiatives. Over the years, the warehousing industry in India has evolved from mere storage space to highly sophisticated warehousing and logistics systems. Backed by the continuous expansion in the manufacturing sector and increased private and foreign investments, warehousing demand in India is on the rise. Warehouses have become one of the most crucial elements of the Indian logistics industry.

In 2021, India witnessed a 21% y-o-y growth in total stock in Grade A & B warehousing space in top eight cities¹. Grade-A warehouses are essentially gigantic spaces that allow storing, facilitate efficient operations of the supply chain of any business, and are built with modern amenities, state-of-the-art infrastructure & technology to provide competencies. The overall warehousing space stands at 287 million sq. ft. at the end-2021 compared to 238 mn sq.ft. in the previous year. **Interestingly, Grade A stock in India stood at 134 mn sq.ft. translating to a 5-year CAGR of 29.9%.** Among the eight major cities, more than half of the warehousing stock is contributed by the three largest cities of the country including Delhi NCR, Mumbai, and Bengaluru.



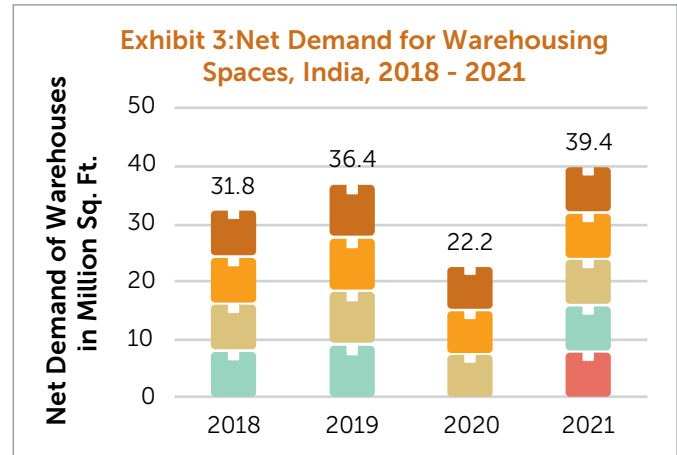
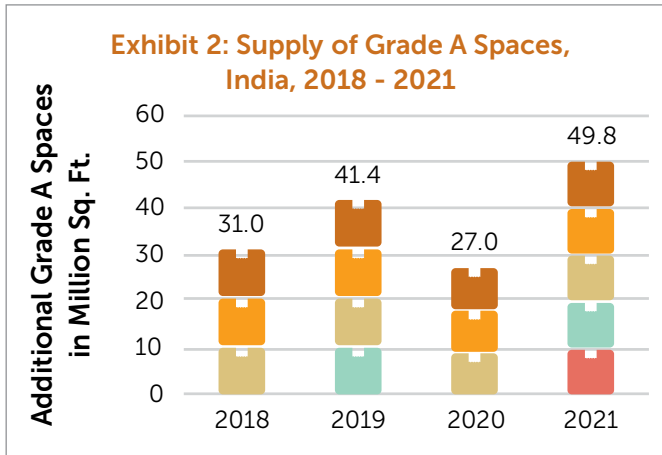
Source: JLL Logistics & Industrial

¹ Top 8 Cities include Ahmedabad, Bangalore, Chennai, Hyderabad, Kolkata, Mumbai, NCR Delhi, Pune



New Supply Addition

Growth in supply of Grade A spaces over the years is due to high demand for spaces with high specifications and introduction of new players in the market. Indian Warehouse Stock to reach nearly 500 mn. sqft. by 2025.



Source: JLL Logistics & Industrial

Warehouse Net Absorption²

The warehousing sector has shown robust recovery in 2021 with the industrial demand reaching pre-COVID times with the net demand recorded at 39.4 mn sq.ft. In addition, more than 76% of this net demand was observed in Grade A space showing shift in occupiers’ preference towards quality spaces due to adherence to additional hygiene and safety norms during COVID-19.

Warehouse Gross Absorption³

In 2021, gross absorption of warehouse is 49.0 mn.sft. Overall, India Vacancy Level for A & B was at 12% in 2021 and is expected to witness huge dip to fall below 9% by 2025.

Third Party Logistics (3PL)/Logistics has remained the largest segment based on warehousing space demand over the last 5 years. Space demand due to e-commerce has gained traction as e-commerce penetration has increased over the years. Many e-commerce categories such as retail, grocery, pharmacy, and food delivery are expected to grow even further, as people make a behavioural shift from making offline purchases to online ones. COVID-19 has accelerated e-commerce adoption, leading to an increase in demand for online delivery of essential and non-essential items. Demand from other consumption-based sectors such as Retail and FMCG have also increased while the share of manufacturing demand from Auto & Ancillaries and Engineering sectors have decreased during the pandemic.

²Net Absorption is the warehouse space occupied excluding renewals & churning

³Gross Absorption is all transactions that happened in the market including renewals & churning

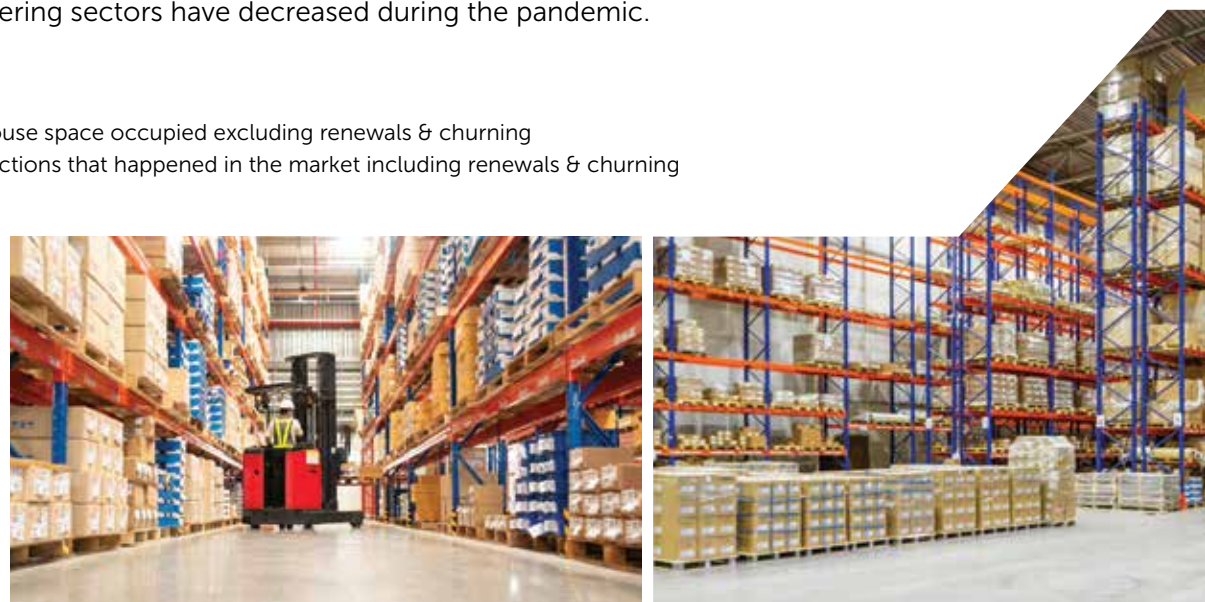


Exhibit 4: Sectoral Share of Warehousing Space Demand, 2017 - 2019 (Pre-Pandemic)

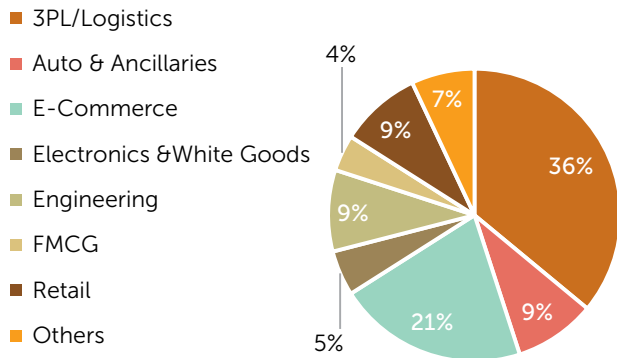
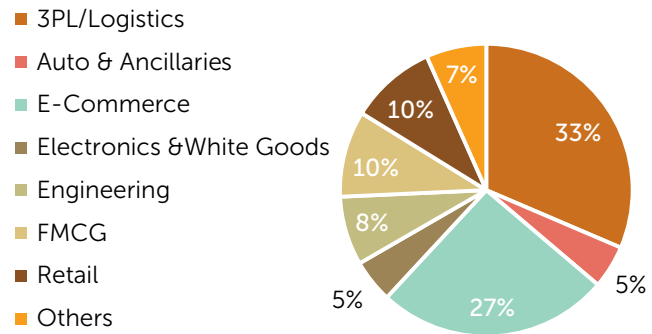


Exhibit 5: Sectoral Share of Warehousing Space Demand, 2020 - 2021 (Post-Pandemic)



Source: JLL Logistics & Industrial

With steady surge in demand from the third-party logistics companies, net absorption in the country’s warehousing market is expected to touch a record high in 2022. Net absorption in 2022 to grow to a record 42.5 million square-foot (sq.ft.) - up 17 per cent from the pre- COVID highs of 36.3 million sq.ft. in 2019, said the global real estate services firm JLL.

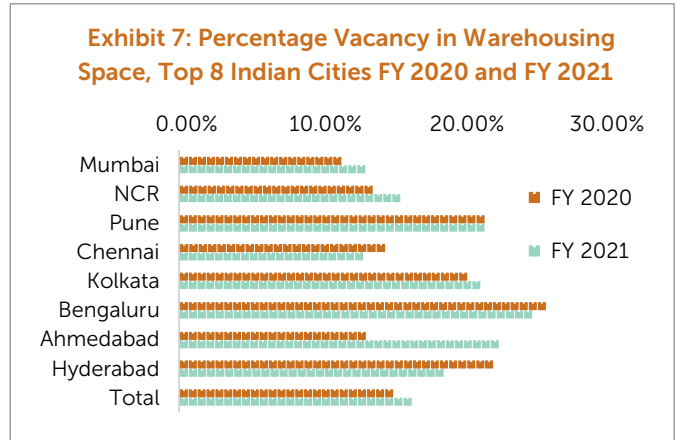
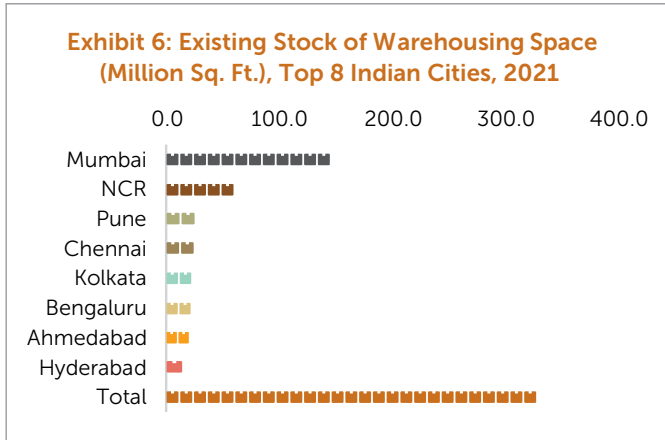
There are three main drivers in the logistics and industrial sector: the growth witnessed in manufacturing, and warehousing sectors, and the keen interest shown by investors as they continue to remain bullish. Within the manufacturing sector, the Government of India continues to incentivise growth via attractive policies, wherein we have seen significant investments from MNCs as well as domestic companies who have ambitious plans to ramp up. In terms of the warehousing sector, we have witnessed unprecedented growth driven by third party logistics and/or logistics players, retail, and e-commerce in Tier I as well as Tier II cities. The average sizes of Grade A warehouses have increased by two times - from 80,000 sq.ft. in 2016 to 160,000 sq. ft. in H1 2022.

Top 8 Cities - Stock and Supply Development in the Warehousing Space

The eight primary markets of India held an estimated 329 mn sq ft of warehousing stock at the end of FY 2021. The Mumbai market accounts for 42% of this stock and along with NCR accounts for 60% of the total stock. The vacancy levels in the Mumbai and NCR markets are relatively low and their high weightage in the total stock keeps the combined vacancy level of all eight cities at a comparatively healthy 16.6%.

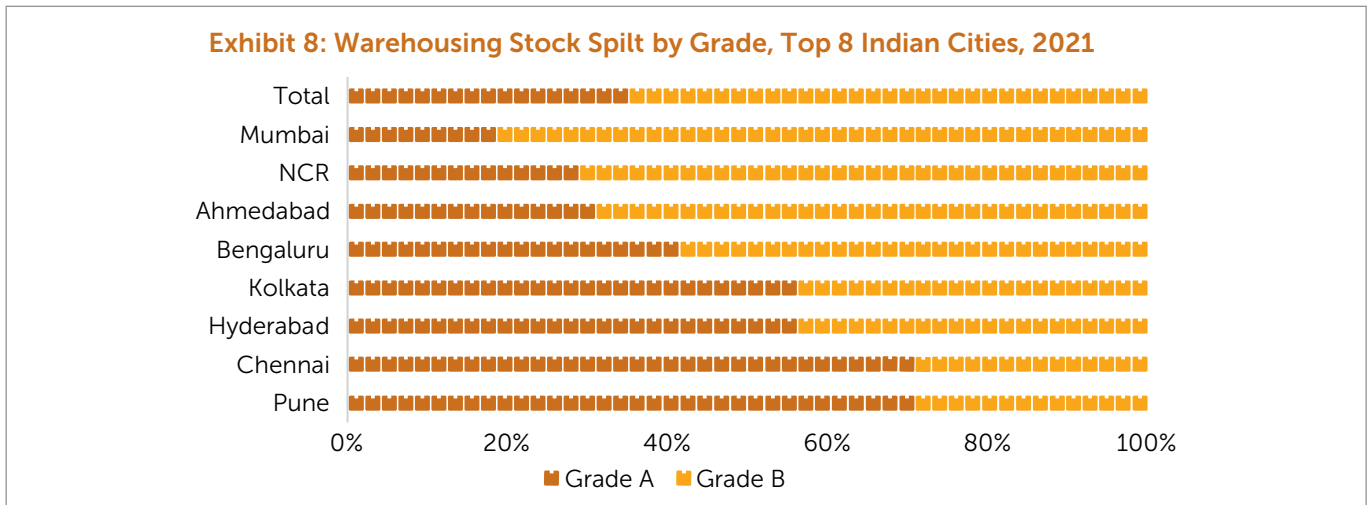
However, the vacancy level has moved up by 130 basis points YoY in FY 2021 due to weaker transaction activity during the year.





Source: Knight Frank Research

It is estimated that the total land committed to warehousing development amounts to 22,488 acres in the top eight markets and translates to a total buildable potential of almost 531 mn sq ft, after factoring in property level Floor Space Index⁴ (FSI) dynamics. Given that 329 mn sq ft of warehousing stock already exists on this committed land, this leaves nearly 202 mn sq ft of potential warehousing space that can come up on these warehousing land parcels.



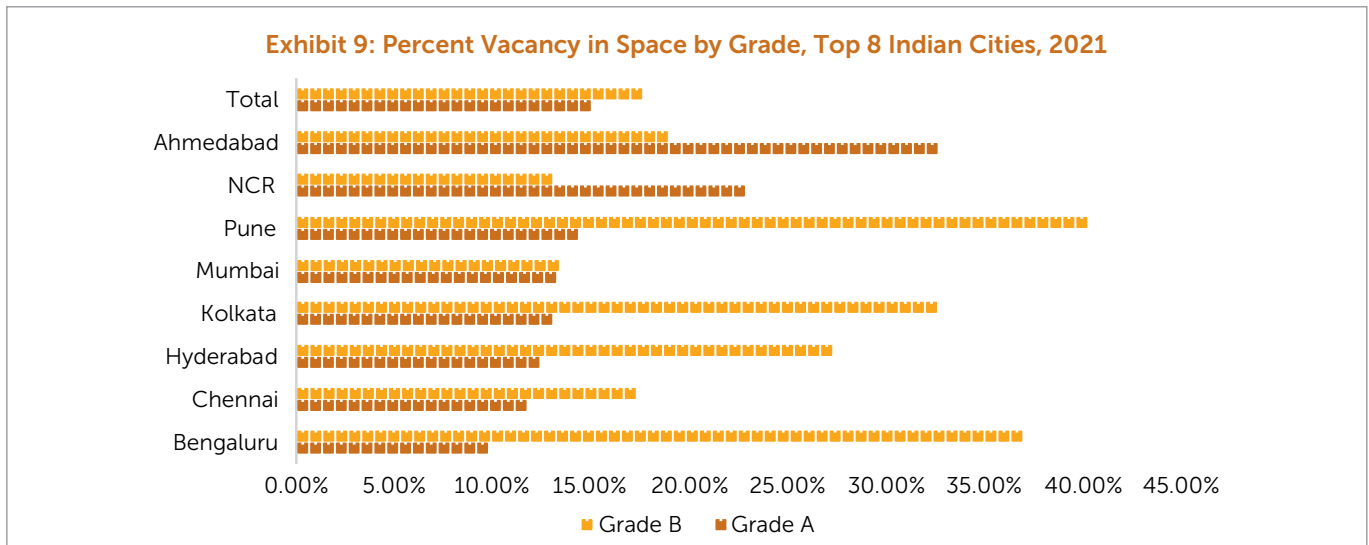
Source: Knight Frank Research

The eight markets can potentially add 61% more to the warehousing stock currently operational there, so they are said to have a total development potential multiple of 1.61. Compared to other property types, warehousing development takes relatively less time. A high-quality Pre-Engineered Buildings⁵ (PEB) warehousing facility can be fully developed from the ground-up within a period of one year, depending on the extent of treatment such as filling and levelling that the land requires.

⁴FSI is the maximum permissible floor area, that a builder can build on a particular plot/piece of land. FSI is the ratio of building floor covered area to area available on the land.

⁵Pre-Engineered Buildings are designed in advance and manufactured in a controlled environment.





Source: Knight Frank Research

The development of Grade A warehousing facilities has been increasing in recent years, currently constituting 35% of the total stock compared to 34% in FY 2020. The larger warehousing markets of Mumbai and NCR have a significantly lower proportion of Grade A warehouses as they are much older markets and a bulk of their stock had been built before the demand for Grade A warehousing gathered momentum. Pune and Chennai have the highest concentration of Grade A stock due to their primary demand base of auto and auto ancillary occupiers. Notably, Mumbai, NCR, Bengaluru and Ahmedabad have more than a 50% share of Grade B properties. Interestingly, despite having a high proportion (82%) of Grade B stock, the fact that Mumbai still enjoys market level occupancy of close to 87% underscores the strength of the market and need for quality supply.

Vacancy in Grade A properties is significantly less than the total vacancy for the eight primary markets under coverage. In fact, Grade A vacancy has also reduced or stayed the same YoY for all markets except Ahmedabad which saw a significant speculative development during FY 2021.

More than \$6.5 bn have been committed by private equity players in the warehousing market since the GST reforms were applied in 2017. However, the relative dearth of supply of high quality warehousing facilities that conforms to contemporary compliance norms, continues to be a challenge. The availability of suitable land is the biggest impediment in creating supply as lands with clear title continue to be scarce and digitisation of land records which can address this issue is still a long way from becoming a reality. Bhiwandi and the Nashik Highway in the Mumbai market are a case in point where there is very strong occupier demand but issues with land titling curtail institutional interest. Additionally, persistently high land prices and the complexity and time taken for acquiring regulatory approvals continue to impact the viability of warehouse projects and are significant impediments in creating warehousing capacity.

Market traction was seen improving toward the end of FY 2021 as vaccine availability improved and occupiers looked to revive expansion plans. However, the second wave of COVID-19 infections in FY 2021 have again slowed the momentum. Occupier activity in FY 2022 will clearly be dictated by the intensity of the pandemic and should regain lost momentum as vaccine deployment improves and restores normalcy to economic activity.





CHAPTER 2:

GOVERNMENT INITIATIVES AND THE NATIONAL LOGISTICS POLICY, 2022

A well-functioning logistics sector forms the backbone of domestic and international trade in any country. It connects all vital industries and ensures a smooth supply chain of goods and services. A logistics sector requires efficient transportation systems, inventory management (warehousing), quick & easy flow of data, and reliable customer service.

During strict lockdowns amidst the Covid-19 pandemic, our logistics sector rose to the occasion and delivered essential goods and services with limited resources. Now, the Indian government has introduced an important policy that aims to bring much-needed changes to the logistics sector.



On September 17, Prime Minister Narendra Modi announced the National Logistics Policy (NLP) 2022. It aims to ease the movement of goods and boost the trade sector in our economy.





A dive into the challenges faced by the Indian logistics sector will be helpful to understand how this new policy plans to address them.

History of the policy




-  Finance Minister Nirmala Sitharaman first addressed the national logistics policy in her statement discussing the budget in 2020.
-  According to the government, efforts are being made to put into place an integrated and technologically advanced approach to logistics operations that will be efficient throughout the entire process and be helpful in reducing logistics costs in the country from the current levels of 13–14% of GDP.
-  Export-import logistics, sectoral plans for efficient logistics, integrated digital logistics systems, a unified logistics interface platform, facilitation of the development of logistics parks, standardization of physical assets and benchmarking service quality standards, state engagement, human resource development and capacity building, and export-import logistics were all important components of the newly introduced national logistics policy.

National logistics policy 2022: Key Points




-  One of the seven departments whose 30 different systems will be digitally connected as part of the Industrial Development Scheme (IDS) is the ministry of commerce. The others are the ministries of roads, rails, customs, aviation, and international trade.
-  It will be better to convey the stuff more quickly.

-  The Unified Logistics Interface Platform, sometimes known as ULIP, will make cargo transfer simple.
-  Ease of Logistics (ELOG) will be present. The policy will be implemented in order to simplify the rules and facilitate the logistics sector.
-  All logistics-related initiatives must be frequently assessed to identify any obstacles, and those obstacles must be removed by the System Improvement Group (SIG).
-  Giving young people the chance to work and develop their talents is the policy’s main objective.

What is the Significance of the Policy?




-  The National Logistics Policy’s introduction will give PM Gati Shakti a further push and complementarity.
-  As it encompasses all aspects of the sector, streamlines regulations, and addresses supply-side restrictions, the Policy will assist in transforming the industry into a cohesive, economical, resilient, and sustainable logistics ecosystem in the nation.
-  The goal of the policy is to expand employment possibilities, boost economic growth, and promote the competitiveness of Indian commodities.

Indian efforts to advance logistics include the following:


-  Physical infrastructure improvement through programs like the Pradhan Mantri Gati Shakti Yojana, Bharatmala and Sagarmala yojanas, a dedicated freight corridor, the development of waterways, and multi-modal transport hubs, among others.
-  Enhanced interstate transit of goods through improved state collaboration.
-  Facilities for warehousing and storage should be improved.
-  States developing their own logistics regulations.
-  The application of digital technology in the logistics sector. A) With regard to the logistics industry, ULIP – United Logistics Interface Platform will serve as a centralized platform for the resolution of all questions and regulations.
-  Reforms to improve the ease of doing business in the import and export sector. A) E-LOGS stands for easy logistics services. Industry sector associations can work together to effectively interact with the government. B) Paperless import and export procedure: E-Sanchit. In the customs segment, an anonymous evaluation mechanism.



National Logistics Policy: Objectives

-  To cut logistics costs.
-  To make sure that items are transported smoothly in order to reduce the time spent doing so. The fundamental goal is to have time-bound commodities transportation.
-  Introduces a digital system that is integrated to combine digital information from linked departments. This will make it easier for the government and the country to have a single regulatory environment and policy.

Why does India Need a Logistics Policy?

-  Organization and formalization of the sector are required because the Indian logistics market is incredibly disorganized and fragmented.
-  lowering the expense of logistics in contrast to industrialized nations like Singapore and the US, which leverage logistics to boost exports, costs in the country might reach 14–15% of GDP. The NLP hopes to bring India's logistics expenses down to 8% during the next five years.
-  Increasing perishable loss prevention and cold chain effectiveness: preventing the loss of perishables. Some estimates state that 16% of the agricultural products from India are wasted throughout the supply chain.
-  Development of warehousing and storage capacity: Additional factors like capacity constraints and a dearth of suitable facilities drive up the cost of a transaction.
-  Integration of Multimodal Transportation: The new policy will emphasize technology, simplification, and a multimodal strategy that combines all modes of transportation, including train, sea, and air.
-  Generation of Employment According to the Economic Survey 2017–18, the logistics sector in India provides a living for more than 22 million people and has the potential to create more jobs.
-  Promotion of exports: Improving this sector will allow indirect logistics costs to be reduced by 10%, which will lead to a 5–8% increase in exports.
-  Commitment to combat climate change



Government Initiatives for the Logistics Sector

-  GST implementation: It is anticipated that the GST system will speed the formalization of informal logistical arrangements and the flow of freight over state lines because checks will no longer be necessary.
-  A national committee working under the Cabinet Secretary is creating a nationwide trade facilitation strategy for India.
-  The Department of Commerce has created a new division called Logistics to oversee integrated sector development through changes to policies, improved practices, the identification of bottlenecks and gaps, and the use of technology-based solutions.
-  Integrated Logistic Portal: The Ministry of Commerce and Industry (MoCI) has developed an integrated logistics portal in order to establish a transactional e-marketplace. This portal will connect customers, logistics service providers, and relevant governmental organizations like customs, port community systems, port terminals, shipping lines, and railways.
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-  LEADS Index: The Ministry recently unveiled a new Logistics Ease Across States Index that rates states based on how supportive they are of improving the logistics infrastructure inside their boundaries.
-  Infrastructure Status: The logistics sector is now included in the Infrastructure Sub Sector Harmonized Master List. The logistics industry has profited from this inclusion as it will now have access to more cheap, longer-term financing.
-  The establishment of cutting-edge, large-scale warehousing facilities for various commodities that are carried by rail, road, and inland waterways is the goal of the Multi Modal Logistic Park project. It also aims to become a one-stop shop for services including truck repair, customs clearance, parking, and warehousing that are associated with freight movement.

The new National Logistics Policy will undoubtedly be a positive step. However, ongoing work is required to boost logistic cost performance. The government’s dedication to sector development that incorporates policy upgrades, infrastructure expansion, tax reforms, and technology adoption will undoubtedly have a positive impact. It will improve India’s capacity for global competition, create jobs, improve its standing in the international community, and pave the road for it to grow into a logistics superpower. Such initiatives would help India become a New India by 2025.





CHAPTER 3:

DRIVERS AND CHALLENGES IN THE WAREHOUSING INDUSTRY

The Indian warehousing industry, estimated to be worth INR 561 Billion (excluding inventory carrying costs, which amount to another ~INR 4,340 billion) in 2017, is estimated to grow at 9.5% CAGR to reach INR 968 Billion by 2024. Riding high on the structured reforms wave, including the recent infrastructure status granted to logistics, and the implementation of GST, the Indian warehousing and logistics sector is estimated to attract nearly 10 Billion USD investments over the next 4-5 years. With addition of around 200 million sq ft warehousing space across India, total supply is expected to nearly double by 2022, estimated JLL India. It accounts for ~5% of the Indian logistics market (excluding inventory carrying costs, which amount to another ~30%).

Warehousing Industry Growth Drivers:

Steady economic growth: India's steady and consistent growth over the years has opened the doors of opportunity not only for key sectors of the economy but also for the general well-being. Blessed with increased revenues, companies are increasingly ploughing back their riches in expanding capabilities and building capacities meeting the future challenges. Greater inflow of FDI, globalization and foray of international players has made India a safe haven for investment and a hotspot of economic growth.

Government policies and simplification of taxes: With the government's announcement of "infrastructural status" to logistics sector, there is an increase in investment in the warehousing domain. Furthermore, free trade warehousing zones and logistics parks are no less than a shot in the arm for the warehouse and logistics industry. It has also helped exceed the warehousing demand nation-wide. Greater relaxations and liberalised outlook on trade coupled with rationalised and simplified tax regime has turned India into a single unified marketplace. Availability of land near industrial hubs along with the speedy allocation of land through an efficient single window clearance system alongside easy loan disbursement at lower interest rates has also facilitated mushrooming of the number of warehouses pan India.

Infrastructure and transportation: Government's reformist and proactive stance, characterizes its resolve in building robust and well-connected infrastructure. It has bolstered the growth of the warehousing sector exponentially. Besides infrastructure, an efficient transportation system has further boosted its prospects immensely. Now, supply and distribution channels are inter-linked and well-connected, even, in the interiors and the remotest part of the country. Sound infrastructure backed with agile multi-tier transportation system has accelerated inter-city and inter-state mobility with reduced transit time.





Technological advances: Technology helps in neutralising the lacunae and in amplifying the efficiencies of any system. Not so long ago, warehouses were just as dingy, ill-lighted storage places. However, with the advent of modern technology solutions and evolving sophisticated tools, the term “warehouse” is being rediscovered and redefined. With state-of-the-art facilities accompanied with requisite global standard, green, well-ventilated, spacious, well-lit and optimised warehouses, it is now conceptualized and built than ever before. Integration of well-built warehouses with modern technological solutions like Automation, real-time tracking, RFID, Internet of Things (IoT), Robotics and Artificial Intelligence (AI) will further catapult them into a higher trajectory of growth.


Net potential sectors for growth: Indian economy is primarily a service-sector economy which is well-supported by agricultural and manufacturing sectors over the years. However, the government’s big push towards Infrastructure, “Make in India”, “Digital India” and a slew of other sweeping measures for boosting economy has paid rich dividends as other sectors as information technology, telecommunications, healthcare, FMCG have triggered a rise in consumption which further resulted in augmented warehousing space demand.

Geographical Trends: Rise of Tier-2 and 3 cities: Indian warehousing industry is experiencing a watershed now and a corresponding paradigm shift in swamping it across geographies. Moreover, government initiatives combined with Covid-19 induced e-commerce boom and rise of tier 2 and tier 3 cities – as the possible warehousing alternatives – on the horizon, are the reason for the surge of high-end warehousing space demands equipped with A-grade facilities.

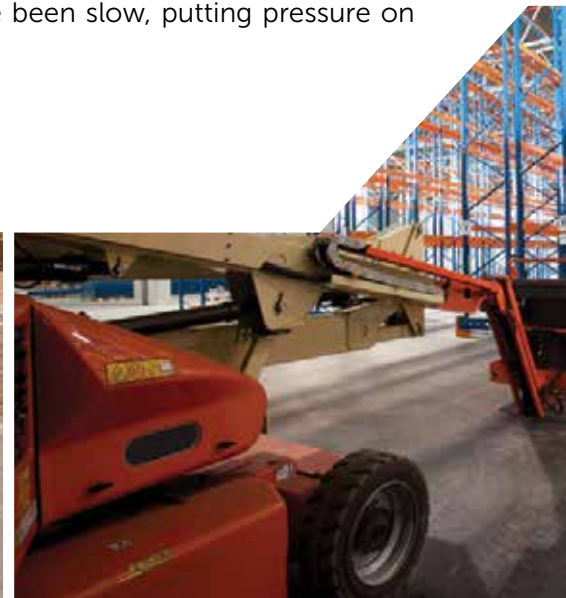
Key Challenges Faced by the Logistics Sector

 The Indian logistics market is worth over \$200 billion as per government estimates. However, the sector is extremely complicated and inefficient. There are 20 government agencies, 40 government partner agencies, 36 logistics services, 129 inland container depots, 168 container freight stations, and many other intermediaries in between. So, it takes a lot of time and money to clear all paperwork in order to transport goods.

 Currently, if the logistical cost of moving a product from one location to another is \$100, customs, paperwork, insurance, and administration costs account for nearly \$12. The logistical cost in India is about 13% of our gross domestic product (GDP). This figure is higher than that of the US, Europe, and China.

 Due to high logistical costs, the competitiveness of India’s exports has fallen. Poor infrastructure across our country, increasing fuel costs, and legal complications continue to severely affect the transportation of goods. There are constant delays, and some of our existing networks are under-utilised.

Financing issues in warehousing: Although the demand and supply sides remain robust, the last two years of the pandemic and global supply-chain disruptions have resulted in significant escalation in construction costs for the warehousing industry. In comparison, rent corrections have been slow, putting pressure on developers’ profitability.



Warehousing developers typically eye an entry yield of 9%-10% and IRR (internal rate of return) of 18%-20%. Given the current circumstances, builders have an entry yield of round 7%-7.5% depending on the location, land rates, etc. and IRR would not be more than 14%.

Some of the Key Factors impacting the yield are:

Land cost: Cost of land, a key input in warehousing, has increased across key markets since there is a lot of capital chasing the preferred land parcels.

Increasing land prices and unavailability of suitable land parcels with good connectivity are creating stiff challenges to the Indian warehousing and logistics sector. The increasing competition for a suitable land parcel with different state-specific land laws is increasing complexities for institutional funds and warehouse developers. It has been observed that any new institutional entrant would result in a 1% increase in the existing good land. So, if there are three more players, the prices will rise by 3%.

Construction cost: The average cost of constructing grade A warehouses has gone up from INR 1,600 per square foot in pre-Covid-19 times to INR 1,800 - INR 2,000 now. This is because of steep cost escalation in major commodities such as cement and steel, which has gone up by 30%-35% and 45%-47% respectively.

Warehousing Rents: Amid the rising costs, the current rentals for Grade A facilities across key markets are becoming less sustainable. Rents in key warehousing markets have grown by less than 3% CAGR from 2018 to 2021. Considering the increasing construction costs and land rates, most developers expect a correction in rents by 2023 and the new supply coming up is expected to attract higher rentals.

The yields in warehousing assets have dropped to 7.5% from 8.5% in the last two years, as more global players are investing in such assets amid the Covid-19 pandemic.

The Indian warehousing sector has been witnessing increasing interest from institutional investors, with over \$5 billion funds committed by private equities and pension funds such as Canada Pension Plan Investment Board (CPPIB), Warburg Pincus and Ivanhoe Cambridge over the past five years.

The demand for the warehousing and logistics sector has stood out in the past few quarters, with an expansion of e-commerce and growth of third-party logistics.

India's Grade-A average rental of \$36 per sq m per annum or Rs 21 per sq ft per month is 50-55% lower than the Asia Pacific region's average of \$75-80 per sq m per annum. The warehousing and logistics of the real estate sector, facing challenges due to the Covid-19, is expected to gain momentum and attract more investment in 2022. The transactions in the warehousing sector are estimated to increase at a compound annual growth rate (CAGR) of 20%, from 31.7 million sq ft in 2020-21 to 45.9 million sq ft in 2022-23. The share of e-commerce entities in transaction volume is projected to increase to 36% from 31% during this period.





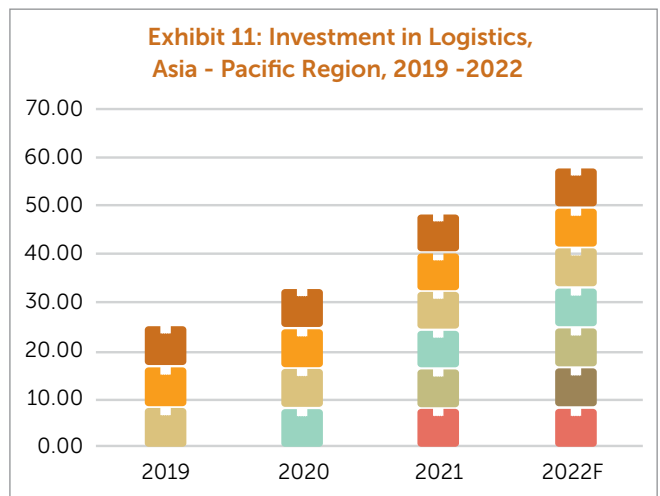
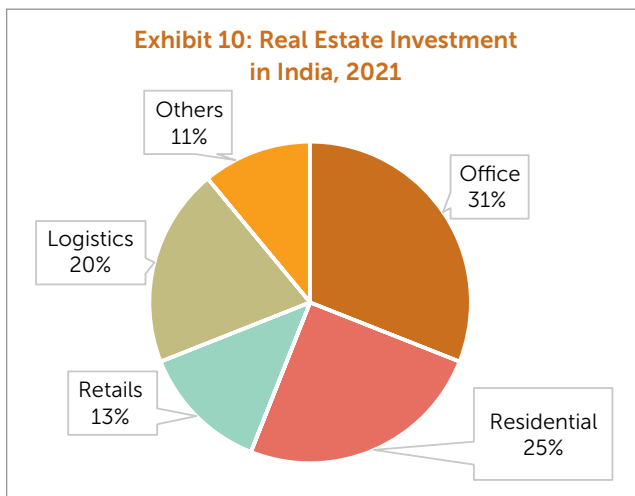
CHAPTER 4:

CURRENT AND FUTURE TRENDS IN WAREHOUSING

1 CURRENT TRENDS

i. Global Investments in Logistics and Industrial Real Estate

Interestingly, investment in the logistics and industrial sector for the Asia-Pacific Region was USD 48 Billion in 2021 which was almost a 50% upsurge from the previous year. This investment represented nearly 27% of total real estate investment in the region, a superior performance when compared globally.



Source: JLL

In markets with a stronger economic recovery, sectors such as logistics and industrial have scaled up the wish-lists of investors looking to diversify their portfolios.

The warehousing and logistics sector has been the largest beneficiary during the COVID-19 pandemic and the share of the sector has increased from 2% in 2020 to 20% in 2021.

This sector emerged attractive during the pandemic due to the increasing shift to online shopping from discretionary to essentials. Major global funds have invested with are housing developers and operators to expand their reach and regional footprint, being the key differentiators in the sector.

Although Tier 1 cities are the key focus investment hubs for investors, the increasing expansion needs steered by e-commerce and 3PL players have led to the development of Grade A warehouses in Tier 2 and 3 cities, attracting investments in these cities. This is due to the increased internet penetration, government's push for Digital India, rising levels of disposable income, young population which is cognizant of brands and a higher standard of living.

Tier 2 and 3 cities including Rajpura, Anantapur, Sri City, Coimbatore, Nagpur, Lucknow, Siliguri, Jaipur, Bhubaneswar, Guwahati, Hosur, etc. are attracting investments from institutional investors and developers such as Indo Space, ESR, LOGOS, Welspun, Blackstone, etc. as they expand their footprints across the country.



ii. Sectoral Shift Driving Warehousing Demand towards Larger Storage Space

Over the years, the warehousing industry in India has evolved from storage space to highly sophisticated warehousing and logistics systems. The warehousing sector in India was highly fragmented with smaller boxes having limited scope of automation or mechanization. Now, warehouses have become one of the most crucial elements of the Indian Logistics Industry. The evolution of organized e-commerce, 3PL, retail and other sectors as well as increased traction from global investors/ developers have pushed the growth of organized warehouses. This market is now at a pivotal point in the evolution from manual warehouses to organized automated/ mechanized warehouses. The spread of e-commerce, retail and 3PL sectors in Tier 2 and 3 cities have also transformed the warehousing market in these cities.

This transformation towards sophisticated state-of-the-art warehousing has resulted in the increase in average size of Grade A warehouse by 2x in India. Interestingly, the warehouse size has not just increased in terms of area, the average height has also increased from 9 m in 2016 to 12 m in 2021 as per JLL assumption which has increased the average volume of Grade A warehouse by 3x.

Exhibit 12: Change in average size and volume of Grade A warehouses



Source: JLL Logistics & Industrial

The demand from 3PL/ Logistics and E-Commerce players have increased from less than 30% in 2016 to more than 50% in 2021. These sectors have specialized requirements in terms of warehouse layout, operations, and customer experience.

Demand from 3PL Logistics Players

The size of individual warehouses is growing, and they are now becoming cargo hubs to store goods for multiple clients.

The warehousing and distribution strategy has changed with the introduction of Goods and Services Tax (GST) in 2017, and warehouses are built on supply chain efficiency since then rather than considering the benefits from tax saving. Subsequently, the trend moved towards consolidation from multiple smaller warehouses to larger fulfilment centers. A fulfillment center is the hub for all the logistics processes required to bring a supplier’s product to his customer and is designed to enhance the customer experience around the process of ordering and having products delivered on time.







iii. Transforming the Urban Logistics Sector

Urban Logistics Sector is highly attractive in tier 1 cities primarily in grocery & agricultural products, pharmacy, fashion & retail (clothes and garments) and Fast Moving Consumer Durables (FMCD). The market is shifting more towards on-demand solutions which has further increased the demand for faster delivery. Hence, the last mile distribution of goods and urban logistics spaces attain critical importance by developing warehouses close to cities.

Dark Stores: An Infrastructure in Urban Logistics

Dark stores are the 'go-to' solution which can adapt to the complex supply chain involved in the workings of various formats that offer service options to the end customer. Consumers can make digital purchases through dark store online shopping platforms with the goods, either home delivered (same-day delivery) or collected by the consumer from the dark store. The concept is rapidly gaining interest in India because of the post pandemic effect, where some of the retail outlets have also converted partially or fully to dark stores to leverage their assets.

Why are Occupiers Moving Towards Dark Stores?

-  Higher space optimization and stock management can be achieved with lower delivery times and reduced shipping costs
-  The FMCG / FMCD sector has a higher requirement of Stock-Keeping Units (SKUs). Dark stores focus primarily on click-and-collect functionality, thereby optimizing SKU management
-  Dark stores are efficient as they do not require dedicated space or cost for the shopping experience
-  They cater to multiple online retailers simultaneously, facilitating retailers to save real estate expenditures

Global E-Commerce companies and e-grocery companies such as Blinkit (more than 25 in-city warehouse transactions), Big Basket are occupying in-city warehouses in major Tier-1 cities including NCR Delhi, Pune, Bengaluru, Kolkata etc. which are also the major distribution hubs in their respective regions.



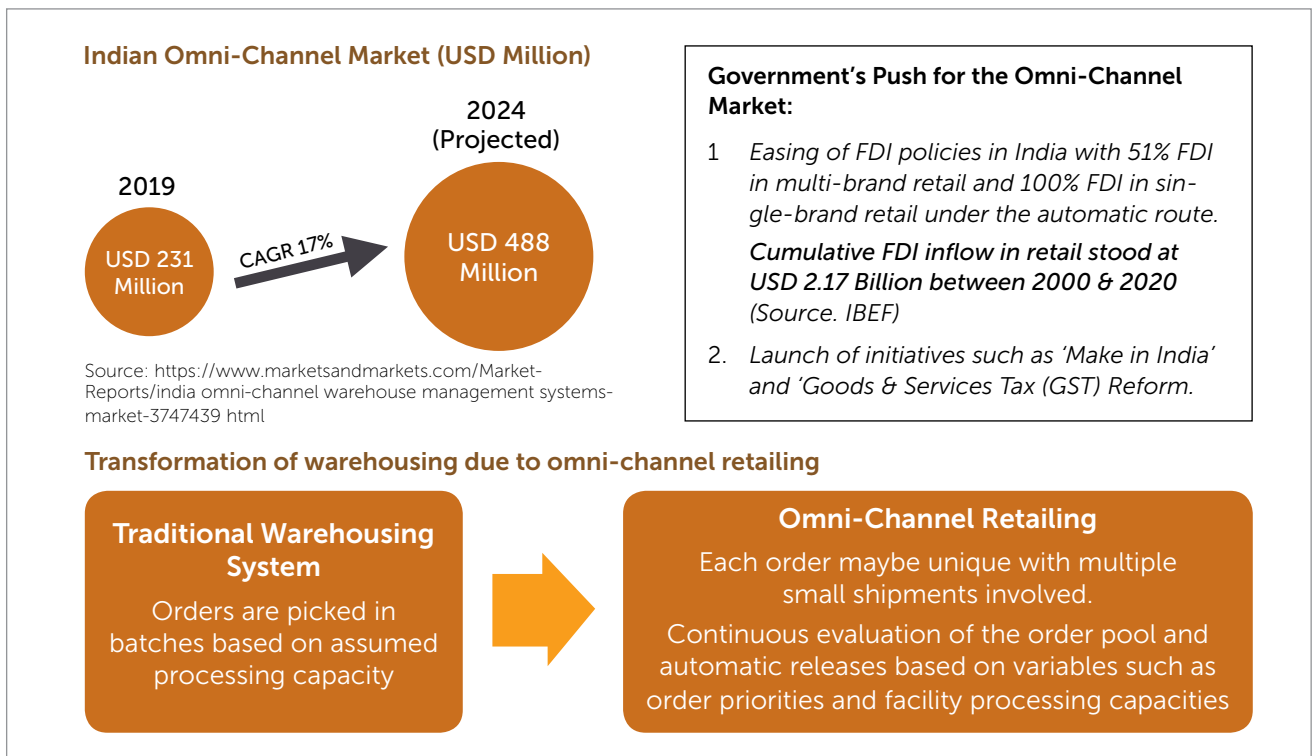
iv. Transformation of Warehousing at the Advent of Omni Channel Retailing

Rise of Omni Channel Retailing in India

- India is the world’s fifth-largest retail market accounting for over 10% of its GDP.
- The Indian retail industry market size: USD 950 Bn in 2019 forecasted to USD 1,750 Bn by 2026.
- The retail sector growth is expected not just in the traditional brick & mortar stores, but also in e-commerce. The E-Commerce market is projected to grow from USD 45 Billion in 2019 to USD 99 Billion in 2024.

Omni-channel retailing is expected to help in optimizing inventory holding costs, operating costs and real estate costs, while increasing brand prominence and consumer base across the country.

Exhibit 13: Omni-Channel Market Size in India



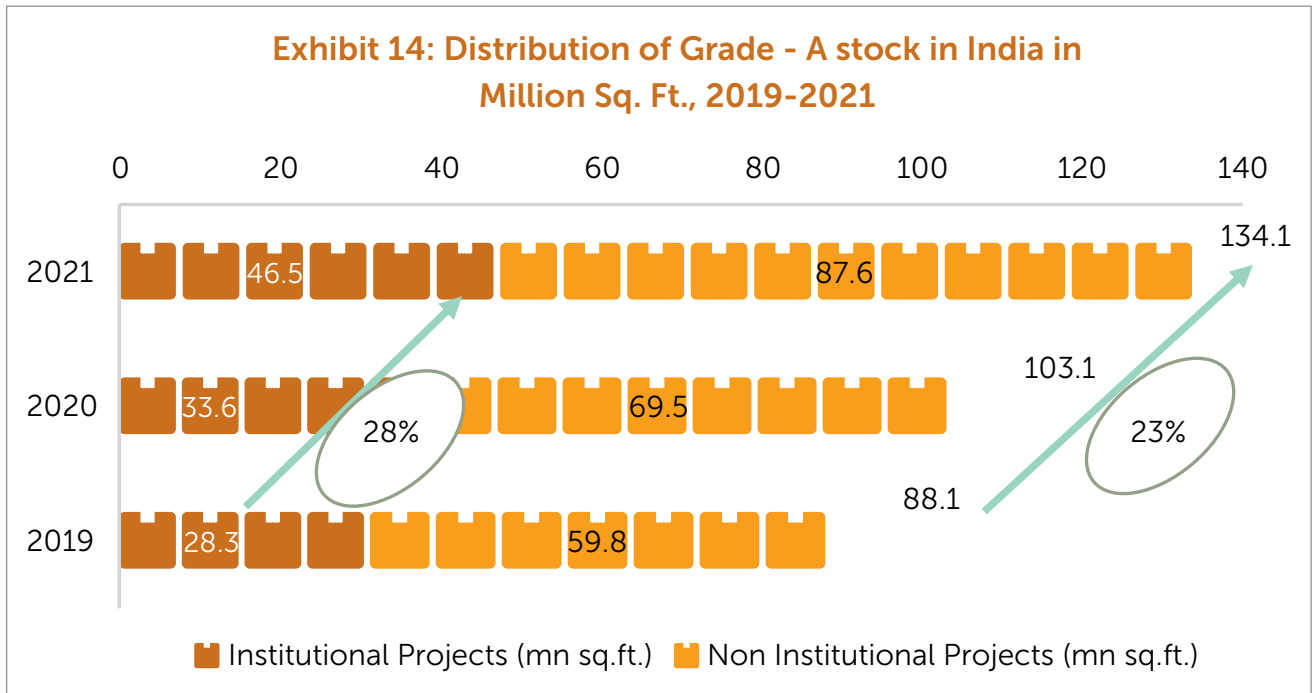
Customers expect new alternatives: buying online and pickup in-store or ship from store Effectually, this transforms a traditional retail store into a fulfilment center. This demands for optimization of store inventory and flexible fulfilment options that meet profitability targets too. Some of major omni-channel retail players including Decathlon, Pepperfry, IKEA, Reliance, etc. are occupying warehouses of size varying from 2 lakhs sq.ft. to 1 million sq.ft. in different Tier 1 cities (NCR Delhi, Bengaluru, Pune, Chennai, Kolkata, etc.) in the last two years.



2 FUTURE TRENDS

i. Private-Equity Investors Pushing the Warehousing Rents in India

Private equity-backed warehousing companies are capturing a substantial part of the overall growth in the warehousing sector with investors such as ESR, Blackstone, IndoSpace, LOGOS, MapleTree, Ascendas, Morgan Stanley, Xander, Welspun, etc. contributing to major warehousing transactions. While the Grade A stock grew at a CAGR of 23%, institutional funded projects grew at a CAGR of 28% showing a higher number of projects from institutional funds adding to the supply y-o-y.



Source: JLL Logistics & Industrial

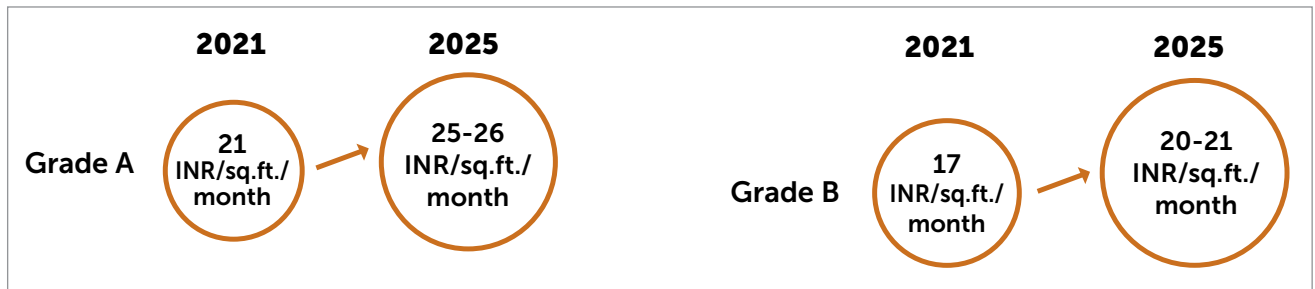
Indian Grade A Warehousing Market Reaching Global Standards

Grade A warehouses in India are becoming at par with global standards in terms of quality and specifications, which encourages more investors to invest and attract occupiers who require such facilities. These private equity-backed warehousing companies are bringing global standards to India and have developed state-of-the-art facilities in metro cities such as Mumbai, NCR Delhi, Chennai, Pune, Bengaluru, etc. Moreover, the same is being explored by the Indian developers and investors as well. These projects have warehouse box size of more than 1 million Sq.ft., height of 12 m, FM2⁶ (Free Movement) compliant flooring with loading of 5 MT/ q.m., internal docking and other features including skylight, fire hydrants, dock doors, etc.

⁶ FM2 floors reduce the operations time and increase the speed and productivity of the warehouse. These floors are Jointless, High Quality and are placed faster and more accurately. This leads to low maintenance, minimal downtime and maximum productivity.



Exhibit 15: Grade A & B Warehouse Rents in INR per sq.ft. per Month (2021 – 2025)



Source: JLL Logistics & Industrial

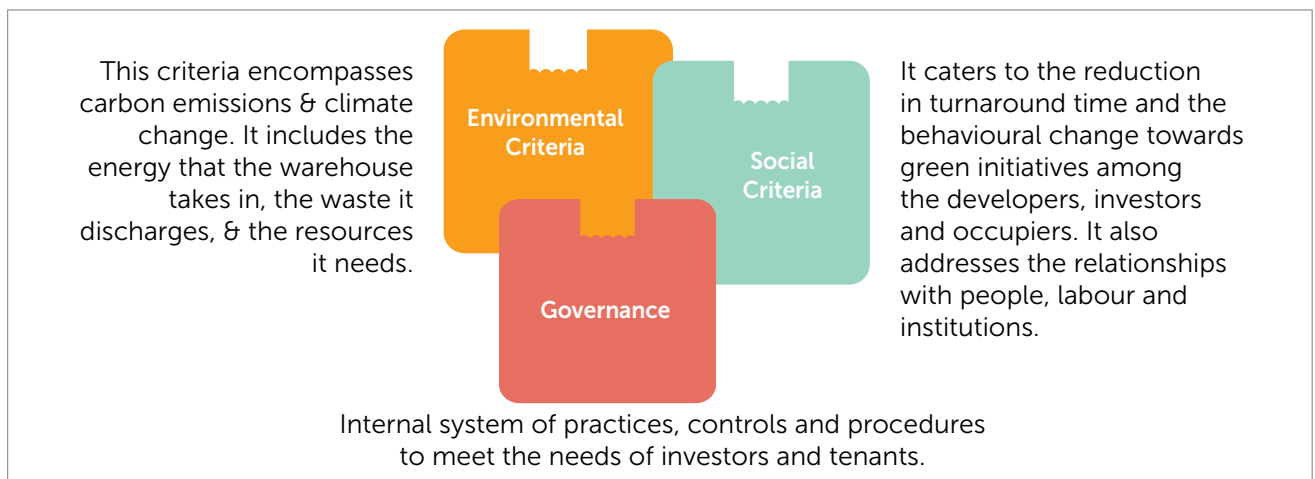
For high quality Grade A warehouses, there is little scope of reducing costs, resulting in upward pressure on rents. With the increasing interests from the PE investors in the Indian Warehousing Market, the warehousing rents are expected to witness revisions and grow at ~5% annually in the next 4 years.

ii. ESG (Environment, Social & Governance) in Industrial & Warehousing






Globally, the industrial sector accounts for 23% of the global carbon emissions (Source: United States Environmental Protection Agency) and freight transport currently accounts for around 30% of all transport related CO2 emissions (Source: ITF). Therefore, the carbon footprint associated with transporting and storing goods is under assessment.

ESG has therefore become a priority for industrial and logistics real estate developers, who are increasingly focusing on environmental and social issues along with business profitability. The opportunity now exists for land-owners and developers to review the sustainability parameters of their assets

Exhibit 16: Key elements of ESG



Attributes of Sustainable Warehousing

 Location: Distribution centres close to cities & transportation hubs to minimize transportation costs & carbon emissions	 Interior: Sustainable construction materials: specialized paints, adhesives, wood products, sealants, etc. Use of LED lighting & HVLS fans for regulating temperature	 Exterior: Cool roofing (light-coloured reflective materials) & solar power panels	 Infrastructure & Park Operations: Environment friendly landscaping practices, waste-water treatment plants & rainwater harvesting	 Labour Friendly: Location, work environment & pollution-free workplace are the major success factors for a labour friendly environment.
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iii Cold Chains in India

The cold chain industry in India is still at a nascent stage. There are approx. 8,260 cold storage facilities with a capacity of 39.5 million MT (source: PIB by Ministry of Agriculture & Farmers Welfare on Cold Storage Facilities in the Country, MOFPI Annual Report 2021-22) available in the country in 2021 which are largely used for storing perishable horticulture produce (83%) such as fruits and vegetables. The Indian cold chain market was estimated to be worth USD 20.4 Billion in 2021 and is further projected to reach USD 47 Billion by 2027, growing at a CAGR of 15%

Although cold storage contributes 43.7% of the total revenue from the Indian cold chain industry, 36% of the cold storages in India have a capacity below 1,000 MT. The cold chain potential remains untapped due to the following reasons:

1. High share of single commodity storage
2. High initial investment for land and refrigerator units
3. Lack of necessary enabling infrastructure
4. Lack of awareness for handling perishable goods
5. Lapses in service by storage and/or transportation providers leading to inferior quality goods

Cold storage facilities are hugely capital intensive but can fetch yields of around 12% and higher rental premium of 3 to 4 times than that of conventional warehouses.

iv Multi-Storey Warehouses as the Next Step in Logistics

Multi-storey warehouses in urban areas, enable companies to mitigate the high cost of land, and maximize the potential of land as well as built-up area, making it an attractive proposition for occupiers who want easy access to their end consumer base. The boom in e-commerce has led to the increase in demand for urban warehousing & logistics spaces; hence to developers and investors looking at multi-storey warehouses as the next step in urban logistics. Ramp-up access multi-storey warehouse is winding up as the future of warehousing, which is built vertically with wide ramps and docks on multiple floors for the easy navigation of trucks and trailers to upper floors.

Future of Multi-Storey Warehousing in India

Potential for Multi-Storey Warehousing: Indian warehousing market has the potential to shift towards the multi-storey warehousing on back of the increasing demand from the e-commerce sector to be located close to their consumer base and to efficiently utilize the land area. This can kick-start the demand for tech-enabled multi-storey warehousing, which can facilitate maximum land utilization in cities having limited land supply as well as help companies to reduce transportation costs and time. Cities such as Mumbai, Bengaluru and Kolkata have the potential to attract Multi-Storey Warehouses as they have constrained land supply and higher land rates.

Challenges and Future: The permissible FSI for warehousing is lower than the desired FSI for multi-storey warehousing in Indian cities. Lower permissible FSI restricts warehouses from going higher which does not allow cost optimization. But, with growing population, space constraints and increasing land prices, multi-storey warehousing systems can emerge in the Indian warehousing market soon.





CHAPTER 5:

WAREHOUSING IN INDIA – THE WAY FORWARD

The Indian warehousing industry has garnered attention from global and domestic institutional investors over the years. In recent times, it has been on a high growth trajectory. Since the outbreak of COVID-19, the usage of warehousing facilities by e-commerce platforms has risen sharply as demand for goods has been at an unprecedented high, boosting the e-commerce market and warehousing space requirements alike. The organised food delivery segment has also grown because of the pandemic, augmenting cold chain warehousing space requirement. As a result, the warehousing industry has emerged as a resilient asset class and continues to show an uptrend within the real estate sector. A lot of capital is allocated to the technological infrastructure of the warehouse, to ensure automation and efficient operations.

Warehouse construction costs are much lower. As a result, the asset is a more affordable choice in the domain of commercial real estate. The occupancy rate for warehouses is also high because of their low cost. The tenants of a warehouse typically spend around nine to 15 years compared to commercial office leases, which have a lock-in period of around three to five years. A warehouse investment is, therefore, more reliable and stable.

E-commerce expansion: The Indian e-commerce industry is playing a major role in this growth. Due to the pandemic-induced lockdowns, consumers started to rely on e-commerce players for the delivery of food and grocery items.

There was more focus on the same-day delivery model. Consequently, e-commerce companies are trying to stock more inventories closer to customers' locations to improve the quality of products upon delivery, and optimize efficiency. This, in turn, increases their demand for warehousing in tier-1 and tier-2 cities.

3PL revolution: The growth of third-party logistics is the second-largest incentive causing the rise in demand for warehouses. In 2021, the 3PL (third-party logistics) sector acquired the maximum warehousing space, succeeded by e-commerce. Due to increasing Foreign Direct Investments and relaxed policy reforms, the agriculture and manufacturing sectors will continue to increase 3PL warehousing demand. The newer industries like e-commerce with 30 minutes and 10 minutes deliveries in the last-mile segment, telecommunications,

healthcare, and IT will be other stronger driving forces for 3PL warehousing. Warehouse construction costs are much lower. As a result, the asset is a more affordable choice in the domain of commercial real estate.

After the government introduced the Production Linked Incentive (PLI) scheme, many sectors, including food processing, mobile devices, pharmaceuticals, and automobile components, poured large investments into setting up manufacturing plants in India. The country’s ‘Make in India’, ‘Atmanirbhar Bharat’, and ‘Vocal for Local’ campaigns have also led to a positive response with a rise in demand. Moreover, the government’s Bharatmala Project focuses on establishing 35 multimodal logistics parks throughout the country, with four proposed for development in Maharashtra under the Public-Private Partnership. Such a mix of logistics operations is expected to boost the logistics and warehouse operations in the country.

Reforms and logistics: In addition, with India’s significant policy changes, the interest of foreign investors to increase their footprint in the country by way of investments in the warehousing and logistics sectors has witnessed an uptick. Systematic reforms such as the introduction of goods and services tax (GST), tax benefits to FDI investments, interest rate cuts, and corporate tax reforms have made investors keen to explore the new industrial asset class. A minimum investment of ₹ 2 crores is needed. Investors can buy standalone warehouses, which require higher capital allocation. They can also buy units/galas, which are demarcated areas of the warehouse (lower ticket size option).

The industrial and warehouse real estate market in India is witnessing a steady growth and expansion and this is likely to continue. The investment is more stable in terms of the consistency of rental as opposed to office spaces. Considering the potential of online sales, many businesses are switching to omnichannel business models and scrambling for additional warehouse capacity across cities. 3PL, the government’s tax benefits to FDI investments, the growth potential of e-commerce, and India’s cost advantage are all driving forces attracting a sizable foreign investment into the logistics, manufacturing, and warehousing sectors.

The resilience of the industrial and warehousing market was tested as the COVID-19 pandemic hit India’s economic growth trajectory. After showing resilience in 2020, the warehousing market has recovered in 2021 with the demand reaching pre-COVID times. Warehousing in India is currently in the process of transformation due to improved quality of warehousing spaces (primarily Grade A space), demand for larger boxes and positioning of warehouse location.



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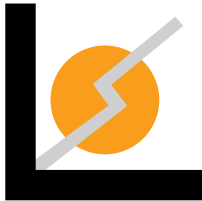
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