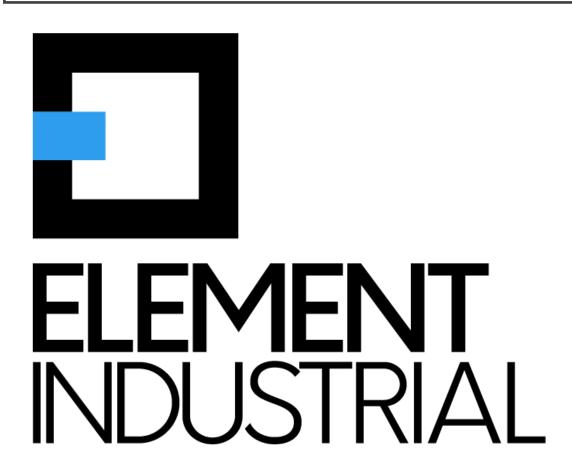
Value drivers for logistics and industrial real estate investment.

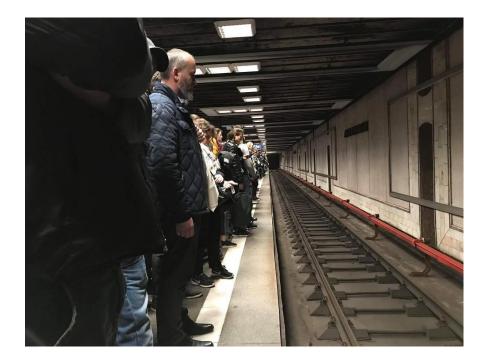
Is it a revolution?





- The people in the Bucharest Metro tapping on their phones feverishly looking for the best Black Friday deals are changing profoundly the age-old world of shops, warehouses and the flow of goods between the two. Investors and users are left grappling with the consequences.
- Globalization has been increasing the flow of goods around the world for the past decades, leading to the rise of the logistic real estate sector.
- The rise has not been uneventful, challenges being posed by increasing traffic density, demands to limit emissions and constantly rising client expectations
- Today, trends like urbanisation, digitization and, most notably, e-commerce, are rewriting the book, revolutionizing retail and transforming logistics.





MEGA TREND, URBANISATION

- By 2050, an estimated 6.3 billion people (70% of the world population) will be living in cities.
- Significant externalities arise from serving the city, initially a "space of short distances", such as traffic congestions, opportunity costs (time, fuel).
- The market and regulators are addressing the issue through city logistics concepts, road pricing, pollution taxation etc
- The trend creates sustained long term demand for logistic space.





MEGA TREND, TECHNOLOGY & DIGITIZATION

- IoT impact on logistics in US is estimated at 1.9 trillion USD
- Next generation wireless will greatly facilitate the implementation of large-scale IoT systems in logistics leading to an explosion of new capabilities in the smart supply chain management.
- Al and Blockchain are becoming more and more prominent in tracing and managing each step of production logistic, removing complexity from centuries old processes.
- Digitization in logistics sector has been the catalyst for rapid change in efficiency, new business models, better customer experiences and sustainability.





MEGA TREND, ONLINE COMMERCE

- E-commerce is a revolution that addresses the very way in which consumers are being introduced to, take decisions to acquire, actually buy products and services and finally receive them. Widespread havoc ensues, the steep growth of online retailing changing the way in which consumers experience shopping and bringing along deep structural re-thinking of the traditional distribution systems.
- As clients start to reward companies that deliver products to their doors in hours rather than days, this radical new paradigm is being pushed onto supply chains models, warehousing and logistics in general in order to facilitate the relationship between clicks and bricks, shorten delivery times and satisfy this impatient breed of young and urban new consumers.
- Change of the distribution model: China is leapfrogging the distribution model straight into the e-commerce model: 70 % of packages are delivered same day, biggest online retailers make 55% of deliveries within 12 hours.





CONTINUOUS GROWTH OF E-COMMERCE

- Online shopping is a couple of decades old concept but efulfilment became increasingly important during the past 5 years. The strain on the supply chain and the need to modernize came about recently due to dramatic increases in volumes.
- Currently, e-commerce comprises about 20 percent of new leasing, up from less than 5 percent five years ago. There is widespread consensus that this revolution is still in the early stages of expansion. (Prologis, the global e-commerce revolution)
- Online sales impact is growing across the board. UK, one of the most developed e-commerce networks, continues to grow and forecast are for even more increases in volumes. Romania, with the lowest impact of online sales in EU, has a lot of potential.
- BNP Paribas found that e-commerce has been growing across Europe at above 10% per year. (BNP Paribas, 2019)





CONTINUOUS GROWTH OF E-COMMERCE

- Cushman & Wakefield expects a 77% increase in logistics space requirements for Germany by 2021 compared to today.
- E-commerce sales in Asia Pacific are increasing from US\$1.89 trillion in 2018 to a projected US\$2.3 trillion in 2019 (JLL)
- E commerce deliveries in US are forecasted to grow from the current 50 million per day to around 100 million packages by 2026. In China, the deliveries are already at close to 100 million each day.
- A study of the German parcels market concludes that the number of parcels transported will double by 2025.
- Online trading volumes in Switzerland have risen by 8.7% annually over the past three years. (report by Credit Suisse, 2018).
- In Australia, three years ago, 93 per cent of retail revenue came from purchases at bricks and mortar shopfronts. By 2021 that's predicted to drop to 81 per cent, with some retailers estimating the drop could be even greater. (E&Y Oceania)
- In Romania, revenue from online sales is expected to show an annual growth rate (CAGR 2019-2023) of 10.0%, resulting in a market volume of US\$4,077m by 2023 (Statista).





STRUCTURAL RE-THINKING IMPACTING REAL ESTATE

- What's in a name? a rose by...
- Darkstore, Dark supermarket, Dotcom centre
- Is the store just a store?
- Is it only a hub store with higher and more diverse volumes of inventory? Is it a darkstore? Is it a micro logistical operation? In trying to answer these questions companies are reimagining not just resource allocation and business model twitches, but they are rethinking their entire real estate footprint.





STRUCTURAL RE-THINKING IMPACTING REAL ESTATE

- Omnichannel is here to stay: Brick and mortar, Service centre, Website, Mobile app. Social media. Email. A mix of channels in seamless integration.
- The game is afoot: E-fulfilment solutions are evolving at a fast pace and retailers are deploying ever newer go to market strategies especially in the on-line space.
- We are seeing "buy online and pick up in store" and "ship from store" recipes. These are experimental strategies with important challenges to be overcome (inventory tracking, scalability of the solutions etc). The flexibility required from retailers to respond to omichannel requests in a nick of time is making them push harder their supply chains.
- Demand for shorter delivery times determines owners of industrial, logistic and retailing space to reorganize their own business models. **The nature of warehousing is changing.**





CINDERELLA. LOGISTICS AS STRATEGIC EDGE.

- In retail, shops used to be important and warehouses not. They were far away, in places where labour and real estate were low cost. The dull boxes of the past have morphed into technology enhanced complex facilities.
- In e-commerce, buyers choose the company that allows for the fastest stress-free delivery. Logistics is **no longer a repetitive and mechanical** function **but a strategic edge**, as it directly **impacts the decision to buy**.
- Increasingly, **real competitive advantage** is generated by the ability to offer same day delivery, or even delivery under two to four hours.
- As an example of blurring lines, in areas where penetration of online is high and competition strong, some shops have converted parts of the space to warehousing in order to create mini fulfilment hub operations close to their customers.
- There is a distinct possibility that in the near future, more retail stores
 will also take the role of critical logistic hubs for click and collect in order
 to reach customers that are difficult to reach through other channels.





TREND: AUTOMATION

- Inside the big bulky buildings where logistic inventories are moving about, driverless vehicles, robots and increasing automation in general is taking hold. We are seeing new solutions for picking, inventory systems, environmental scans etc.
- The cost of automation has been decreasing fast. Medium sized companies understand now that they need automation in order to survive in the new normal. The fragmentation of picking orders for drop shipping has dramatically increased the cost of manipulating goods in the warehouse. Higher labour costs means that the only way to address the matter in a competitive manner is to spend on automation.

\$50,000 AGV- virtual grid pattern

- In the past automation meant spending **20 to 40 million** Euros for a large facility. Nowadays with **1 to 2 million** Euros a decent level of automation can be achieved for the logistic operation of a medium sized retailer.
- Less human labour + more automation and robots = smarter spend on space (JLL)

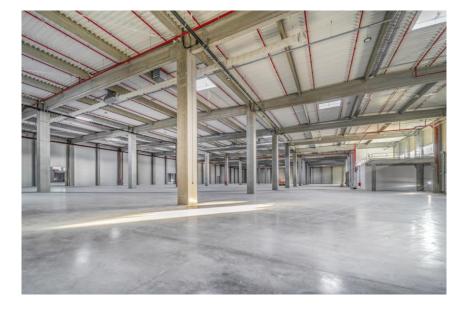




REAL ESTATE AS VALUE DRIVER

- The big scale disruption of supply chain models is pushing companies to reconsider the allocation of resources between transportation, labour and real estate in the logistic equation.
- Currently the cost of real estate is estimated at a mere 5% of total supply chain costs. This creates room in the budgetary envelope to re-allocate resources in order to reposition logistic real estate closer to high density urban areas and therefore offering better service to customers. ProLogis has identified that 1% savings in transportation is equal to 15 to 20% of real estate cost. From a pure cost consideration real estate is becoming a value driver.
- What it means to occupiers: growing demand of logistic space leads to increasing competition for inner city space and in certain markets increasing rents. Market vacancy levels are at historical lows in Europe and other developed markets. Companies with a taste for careful planning and flexibility to act fast can reposition and use these abilities as relevant competitive advantages.





WHAT IT MEANS FOR INVESTORS?

- Globalization has put logistics on the map of institutional investors and contributed to the increasing volumes in the capital flows to logistic assets. We are now witnessing a shift from logistics as a simple cost to logistics as opportunity generator and strategic differentiator, hence generating renewed interest for investors.
- Reverse logistics spaces for the newly invented 3PL genre, new last mile locations made economically viable by tectonic changes in values, redesigning and adapting traditional spaces for e-commerce are new potential areas of exploration for the astute investors.
- In terms of older properties, with the requirement for more specific buildings comes the need for investment flows directed at re-fitting. Investors will need to carefully analyse the potential increase or retention of value set against the cost of works and the lag between outflows and realisation of value through rent.





A NEW BREED OF ASSETS

- Undersupply: The volumes generated by trigger happy millennial spenders lead to opportunities for investors to develop and own built to suit facilities for companies such as Amazon and Alibaba. Across the continent it is evident that we are seeing a significant undersupply of the type of high specifications assets required by online operations.
- **New locations**: An analysis of supply chain cost drivers points to the fact that on average transport costs impact the total as much as 50% whereas rents have an influence of around 5% of the cost. Hence, being close to your buyers is paramount.
- Fragmentation of demand: BNP Paribas found out in a 2019 study that demand for e-commerce spaces is not made up of large units only, but corresponds to a wide variety of sizes and specifications.
- The good (?) news is that only **60% of logistics properties** currently used can meet the requirements of such picky clients (Prologis Research). This is unfortunate for holders of sizeable portfolios of unfit buildings, however on the whole paints the picture of a lively industry, with great potential for new development and creation of value through both refitting and new construction.





TREND:BOOST IN DEMAND

- In terms of logistics real estate, the demand from online merchants is about three times higher compared to bricks-and mortar retailers for the same retail turnover. (Prologis study)
- Increased demand from reverse logistics: the growth of the reverse logistics sector is driven by consumer disappointment, with 63% of consumers saying that the most negative aspect of online shopping is returning goods (AMP Capital)
- Strong demand for separate facilities to handle distribution and returns (JLL):

30% return rate -> Online retailers

10% return rate -> Brick and mortar retailers





GROWING DEMAND

- Inventory technology = less in-store storage + more warehouse square meters. (JLL)
- Last-mile facilities have seen huge growth in demand (Cushman& Wakefield).
- In terms of fresh products, buyers are increasingly shopping online for groceries, and the percentage is expected to reach to 70% over the next 5 years in Western Europe. This will lead to dramatic increases in the need for flexible refrigerated units.





WHAT KIND OF BUILDINGS-DIVERSE

- E-commerce buildings can come in large chunks, like big retailers Amazon, Walmart or Alibaba prefer (they can ship more than 250,000 orders per day). These giants prefer larger buildings that can fulfil many functions.
- 3PL companies and parcel delivery players are fighting for the best locations close to their clients.
- Smaller companies and brands are satisfied with smaller facilities, parts of bigger warehouses.
- Showrooms and next-day delivery benefitting from the use of inventory technology need less warehousing space.
- There is great experimentation and there are varying concepts competing for dominance.





CLOSER TO THE CITY

- The ideal location is closer to the high density urban areas due to the need for fast delivery time, lower transportation costs and the need for scaling in retail. This is a trend that will continue growing due to the fact that more consumers are choosing next day and same day delivery.
- Proximity to urban centres is key for hiring fulfilment workers.
- Despite great growth in developed markets, ecommerce infrastructure is still underdeveloped, especially in close proximity last mile locations.





HIGH INTENSITY OF USE. FLEXIBLE

- Online order fulfilment has four unique business characteristics: extensive product variety, greater inventory levels, larger outbound shipping space requirements, and increased reverse logistics (process returns).(ProLogis study)
- Different e-commerce strategies and constant evolution drive a high variety of needs —-spanning both new and older infill buildings, and there is **no industry consensus on size or building features**. Prologis has some 400 e-commerce customers occupying more than 4.6 million square meters of logistics buildings. Across this portfolio, considerable variability exists in customer size, industry, geography and building requirements.
- More specific buildings. Robots like multi-storey DCs.





IMPACT ON SUSTAINABILITY

- Technology enhancements leads to a better management of environmental impact.
- Green fleets and smart containers are increasingly part of the priorities for logistic companies.
- For example DHL wants to become a zero emissions company by 2050.





LOGISTIC INVESTMENT TODAY

- Current investment cycle is dissimilar with past cycles.
- The occupier market fundamentals are very strong and are fuelled by growing e-commerce, with a robust outlook for continued growth in online sales.
- The supply of new stock particularly on the speculative side is generally good.
- Deep investor market with a higher level of capital compared to the previous cycle and investors are genuinely less reliant on debt.
- Out of all the asset classes, logistics will perform among the best. As consumers shop more online, occupier demand for logistics real estate will increase, which in turn will make investors feel safe investing in the sector as it provides a genuine underlying drive for expansion (BNP Paribas, 2019)



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WHAT IT MEANS FOR INVESTORS: CHANGE IS COMING

- Traditional warehouse space still has an important role, demand will not drop immediately.
 However, older assets will become increasingly harder to re-lease and hold value. If landlords
 decide to re-fit them for new automated use there is uncertainty connected with chasing
 future uptick in rents and valuations.
- Operational models of industrial real estate landlords and developers displays considerable historical inertia built in. In general the sector has enjoyed less volumes and volatility in sales and leasing compared with other sectors which have been more responsive to population growth, consumer sentiment or availability of capital. This relative immobility of business models is being challenged by the restructuring of supply chains.
- What is the impact on current sites and landlords with large holdings of industrial assets?
 Brownfields would take 12 to 24 months to be re-fitted for different use (with investment in automation), the question is how to account for this changes in valuations and assessment of future value proposition.
- Existing space will need to be able to withstand **higher floor loads** associated with automation technology. Large automated distribution centres will certainly continue to be in big demand.
- Owners of older spaces are now looking into re-dividing big units for smaller more flexible partitions and others are trying to simply sell their outdated assets.





WHAT IT MEANS FOR INVESTORS: MORE RISK

- "If tenants require more specialised facilities, this may not only drive up costs but also make assets less flexible when it comes to a change of tenant. For landlords, that means they have to accept a larger risk being tied to the incumbent tenant." Lucas Meaney, Associate Director, EY Oceania, Real Estate Advisory Services.
- For the time being it is obvious that the demand will benefit from the expansion of e-commerce. Occupancy rates and rent levels across the sector have recovered faster than expected as a result. The changes in the supply chain remain to a large extent experimental and more sustainable trends need to be recognized by investors, such as the trend to favour last mile locations close to high density urban areas.
- The entire value chain of the logistics industry is opening up new investment opportunities.





WHAT IT MEANS FOR INVESTORS: MORE RISK

- One of the investment model for landlords and developers of industrial buildings and parks has been to benefit from urban expansion by repurposing close city locations to other uses (residential, office etc).
- Given the need for more last mile logistic facilities this trend is likely to continue and will have an increasing influence on the today's value of such sites.





WHAT IT MEANS FOR PEOPLE

- At first glance an increasing number of employees will be needed to pick orders, manage shipments and returns. However, since most of the tasks are repetitive in nature, they are the direct target of automation, robotization and digitization of the sector. The good news is that different jobs are created, and new work models emerge.
- Stagnating productivity and increasing costs with salaries, fuel and utilities costs (estimated at 4% annually compounded for the past 20 years in the developed countries) will mean that the push for automation in the sector is strong, unrelenting and certain. Advances in technology and improving affordability of supply chain automation will mean a lot less workers will be involved in direct low skilled labour. Five years ago the payback period for an automatic device in the field for logistics was 12 to 14 years. Today it is 4 to 5 years for an AGV (automated guided vehicle). In order to automate the operation for a medium sized DC (say, 5,000 sqm) it can cost between 1 and 2 million Euro, making the option available to most players in the market.
- There is no doubt, the familiar sound of forklifts, trucks, and hammers banging away will be replaced in the following decade by the soft whizzing sound of electric engines frolicking about in these vast buildings.



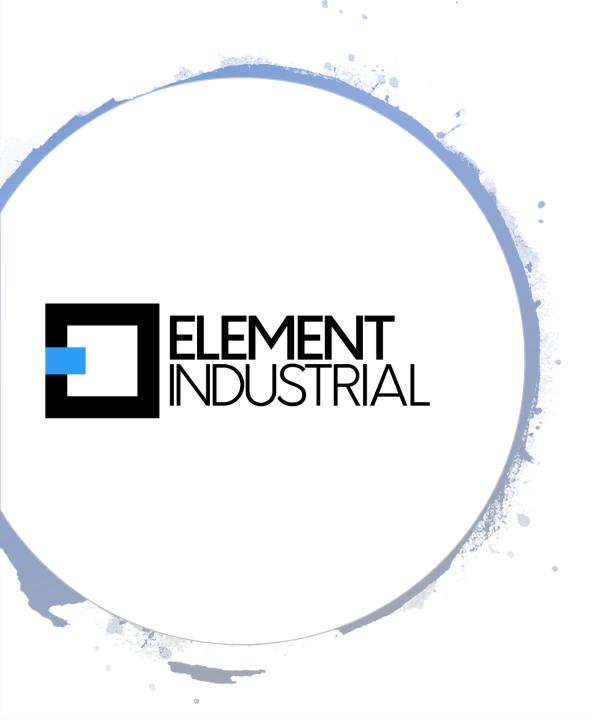


WHAT IT MEANS FOR PEOPLE

- Price is not the name of the game in e-commerce. Delivery time
 is. Extreme measures to achieve extraordinary efficiency are
 needed in order to be able to offer same day delivery.
- As e-commerce requires an increasing variety of smaller units delivered ever faster to the doorstep, robotics is the way to improve speed and consistency while in the same time reducing operating costs.
- The use of robotics in logistics sector is here to stay and it is critical in order to improve productivity. If anything, they will become more prevalent as all models of transportation and delivery aim for economies of scale. The worlds of humans and robots will have to be complimentary and adapt to each other.
- However, so far more robots in the warehouse does not mean fewer people, but a **different type of jobs**.







SOME FUTURE TRENDS

- Digitization is promising profound changes in transportation: will we have **drones** flying goods to our balconies, **AI driven trucks** or **robots** knocking at our doors? Or a combination of the above. One important question for users and investors alike seems to be **when all this will be available**. **Less certainty and rapid disruption** is the new normal.
- Digitization is heralding an era in which products will be more and more targeted and adapted to the individual consumer, much in the way Amazon website seems to effortlessly guess our deepest ,most secret, whims. **Personalized products** will drive the demand on logistics, especially in small-part logistics.
- New types of buildings are emerging, more adapted to the life and habits of the new consumer hybrid contraptions that can accommodate a mix of residential, commercial and logistics functions, as well as last-mile deliveries.
- Three models are destined to dominate distribution of the future: autonomous vehicles, drones and bicycle couriers. The first two models are predicted to encompass approximately 80 % of deliveries. Buildings will therefore need to accommodate these new delivery models. (McKinsey study)

Q&A SESSION

