

LAST LINK

QUANTIFYING THE COST





CONTENTS

INTRODUCTION	01
OVERVIEW	03
WHY IS THE LAST LINK SO INEFFICIENT?	05
INEFFICIENCIES DRIVE UP TRANSPORT COSTS	07
ADDING THE LAST LINK OR NOT?	09
THE TLLC MODEL	10
QUANTIFYING TOTAL LAST LINK COST	11
RENTAL PATTERNS HIGHLIGHT GROWTH POTENTIAL	13
CONCLUSION	15

INTRODUCTION



Getting the last link right is critical given that it accounts for 50% or more of total supply chain costs.



As consumer's expectations with regards to delivery service and speed mount, the risk of encountering last link inefficiencies increases.

HELPFUL DEFINITIONS

OF TERMS USED IN THE REPORT

LAST LINK

Last mile (in the US and the UK), the last kilometre (in France), and urban logistics all refer to the final link in the eCommerce supply chain. We have come up with the term “Last Link” that refers to this final link whether it be longer or shorter, carried out by van or electric bicycle, urban or rural, or to a collection point or home. Within the context of eCommerce, “Link” in “Last Link” gives reference to its connection to the rest of the supply chain while “Last” indicates the end of the supply chain that concludes when the parcel is delivered. As we describe in our 2017 report on urban logistics, a general rule of thumb for last link facilities is to be within a 30-minute drive time to major city centres and as close as possible to the first delivery point. For this reason, we have moved away from terms such as “last mile” or “last kilometre” both of which invoke a measurement of distance independent of time.



These inefficiencies in turn, contribute to high transportation related costs including driver wages, van time, and fuel.



Using our Total Last Link Cost or TLLC model, we demonstrate a strong positive correlation between STEM distance and total last link cost to confirm that reducing transportation related costs rather than rent, should be the focus of any last link strategy.

eFULFILLMENT CENTRE

Dedicated XL warehouse usually between 30,000 -100,000 square metres that houses all eCommerce activities relating to fulfilling orders: sorting, picking, product storage, and may also include last mile and return activities. While these warehouses require a large workforce, they are increasingly being built with technology in mind. These assets are usually located at key multi-modal transport junctions (i.e. road, rail, and ports).

URBAN DEPOT = LAST LINK DEPOT = LAST MILE/KILOMETRE DEPOT

Dedicated last link warehouse usually between 3,000-9,000 square metres per occupant located in infill locations in or near large metropolitan areas within a maximum 30-minute drivetime to inner city delivery points.

DISTRIBUTION WAREHOUSE (DC)

A generic warehouse with an average size of 15,000 -20,000 square metres that has a pan-European, regional, or national catchment area.

B2C

Business to Consumer.

STEM DISTANCE

Time distance between the urban depot and the first delivery point.

eRETAILER

A B2C retailer selling products and services through one or more online channels.

OVERVIEW

Last Link is the costliest part of the supply chain and as previously noted, in Europe, accounts for 50% or more of total supply chain costs which explains why it remains a key focus for both occupiers and investors.

Much attention is focused on both reducing this total cost and ensuring both speed and predictability of delivery windows for goods ordered online. One could theoretically reduce cost by reducing rent, by altering transport mode, technology, or adding/subtracting the number of warehouses in a supply chain. While some of these solutions may be more obvious than others and therefore easier to adopt, they may or may not be addressing the actual factors contributing to the last link's high cost.

To avoid "shooting in the dark" while trying to reduce last link costs, let us consider why the last link is so expensive. The last link is the point of contact with consumers whose expectations on delivery service, flexibility, predictability (i.e. delivery windows), and speed are rising in tandem with more habitual online shopping. Getting the last link right is so important that Alibaba and Amazon are planning on bringing it in-house along with the rest of the supply chain. With eCommerce maturing in the UK, Western and Northern Europe and rapidly expanding in Southern and Central Europe, rising consumer expectations are showing preferences that are leading to delivery inefficiencies. Strategies for tackling the total last link cost need to focus on these inefficiencies.



GETTING THE LAST LINK RIGHT IS SO IMPORTANT THAT ALIBABA AND AMAZON ARE PLANNING ON BRINGING IT IN-HOUSE ALONG WITH THE REST OF THE SUPPLY CHAIN

Cushman & Wakefield in partnership with P3 Logistic Parks, have developed the Total Last Link Cost or TLLC model that quantifies the total last link cost based on an urban depot's rent and time distance to the first delivery point (referred to as STEM distance). The TLLC model takes into account all of the variables that contribute to total last link cost for any given property. Using the TLLC model and existing properties in four of Europe's largest cities, we demonstrate significant cost savings by adding a last link depot to an eCommerce supply chain.



WHY IS THE LAST LINK SO INEFFICIENT?

Surveys show that consumers across Europe overwhelmingly prefer home delivery over other delivery methods. As consumers become more accustomed to purchasing online, their expectations with regards to delivery service and speed mount.

Compounding difficulties with the last link further, home delivery means multiple destinations that require faster service within a tighter delivery window. According to the most recent survey by PostNord, Italians prioritise both home delivery and time flexibility, while Poles indicate a strong preference for delivery flexibility and are less focused on home delivery. With 73% of Europeans living in urban areas, its no wonder that the European Commission has found that congestion in the EU is often located in and around urban areas and costs nearly €100 billion, or 1% of the EU's GDP, annually.



1% GDP

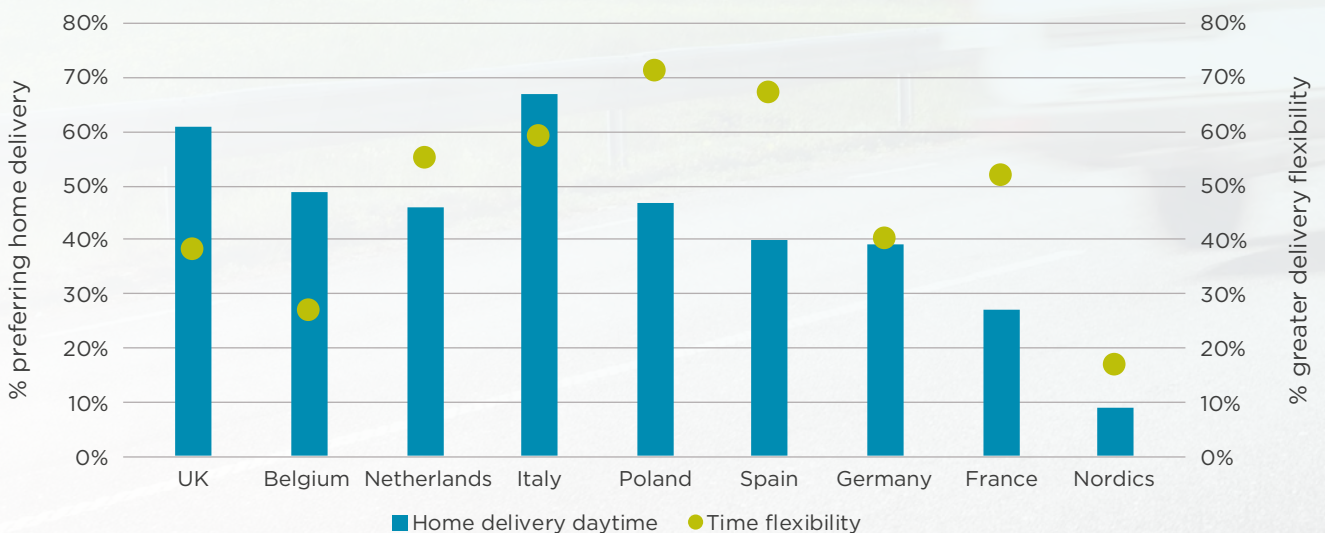
1% OF THE EU'S ANNUAL GDP IS SPENT ON CONGESTION IN URBAN AREAS



€100_{BN}

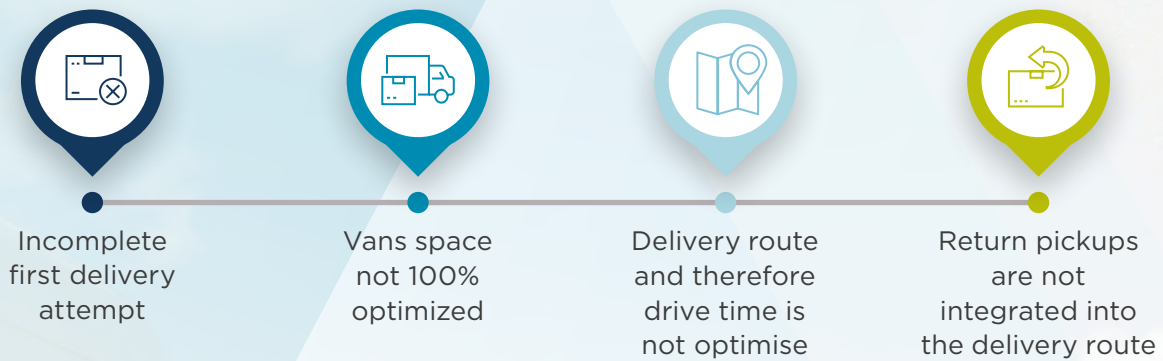
URBAN AREAS HAVE THE HIGHEST CONGESTION IN THE EU, COSTING NEARLY €100 BILLION

SURVEY OF CONSUMER PREFERENCES, 2018



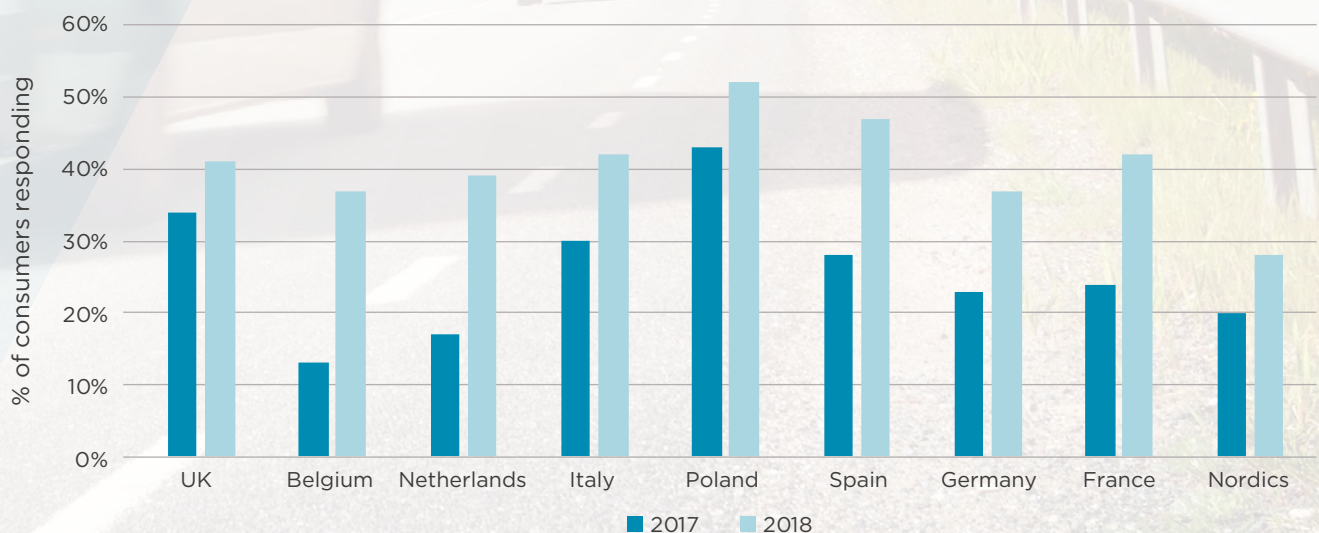
Source: Ecommerce in Europe 2018 by PostNord, Stockholm, Sweden

Consequently, rising home delivery expectations enhance the risk of encountering inefficiencies that in turn, drive up last link costs. Last link inefficiencies that most likely occur in association with deliveries constrained by both speed and tight delivery windows include:



More specifically, lack of delivery guarantee, partial van loading, inefficient delivery routes, and separate return trips all directly contribute to higher transportation costs by increasing driver wages, fuel costs, and the number of vans used for daily deliveries.

IMPORTANCE OF FAST DELIVERY AMONG SURVEY CONSUMERS, 2018

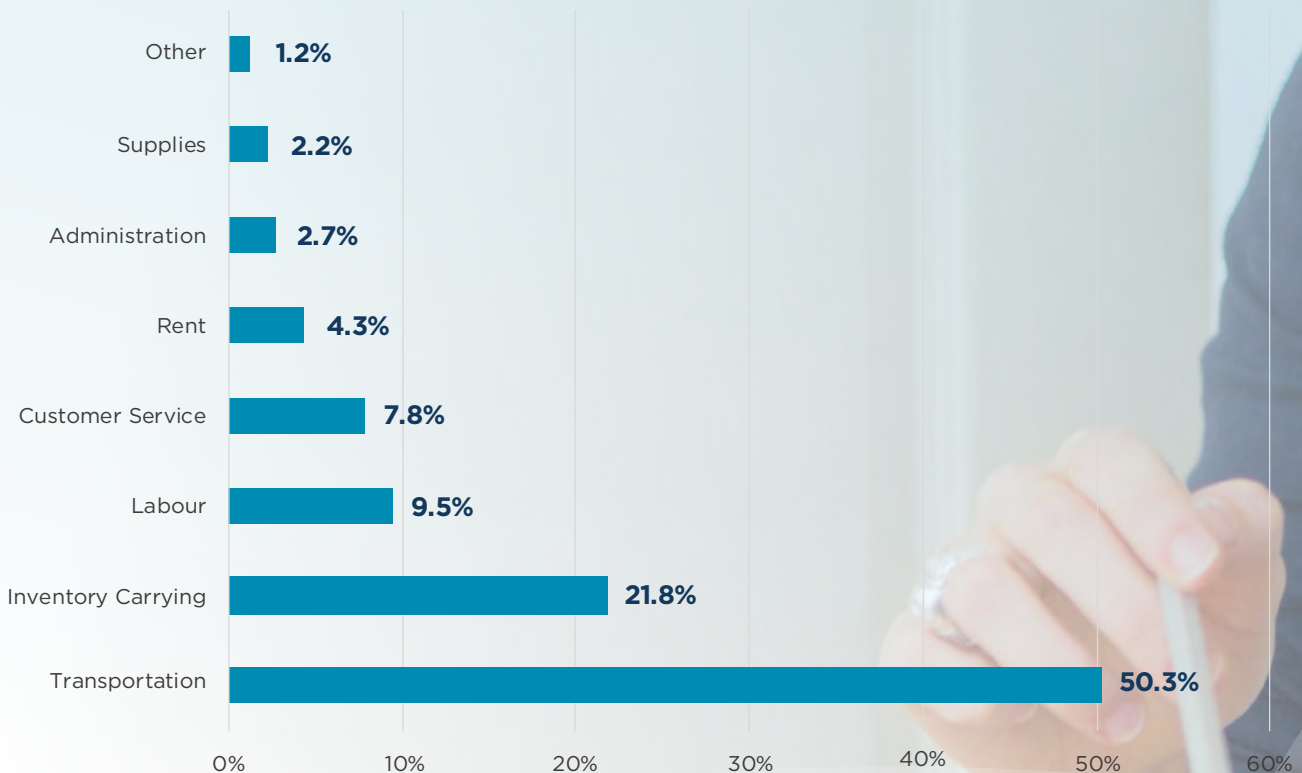


Source: Ecommerce in Europe 2018 by PostNord, Stockholm, Sweden

INEFFICIENCIES DRIVE UP TRANSPORT COSTS

Transportation costs account for half of total logistics costs, making it the focus of any strategy aiming to reduce supply chain costs. In the case of the last link, inefficiencies converge around transportation, especially in dense urban areas like those found across Europe.

COMPOSITION OF LOGISTICS COSTS



Source: Establish, Inc./HWD
Transportation costs include driver's wages



ADDING THE LAST LINK OR NOT?

While transportation accounts for half of total logistics costs, real estate's share is relatively small (between 4-5%).

Consistent with the approach that has been used for the rest of the supply chain whereby increasing real estate costs through multiple warehouses has been an effective way to reduce transport distances, a growing number of eRetailers and parcel companies are discovering the same advantages of using this strategy for the last link. Indeed, adding another link to the supply chain when the STEM distance increases, effectively reduces drivers' time and therefore, wages, uses less fuel, and even optimizes van usage.

In our [blog](#) posted after the release of our Urban Logistics report, we make the case that the last link is only necessary for large, congested cities that are more difficult to access from distribution warehouses located along outer ring roads.



TO THE EXTENT THAT eFULFILLMENT CENTRES CAN BE CONSTRUCTED WITHIN A 30-MINUTE DRIVE TIME TO CITY CENTRES, THERE IS LESS OF A NEED TO ADD A LAST LINK TO SUPPLY CHAINS.

Last link deliveries in smaller cities and towns can be effectively served from eFulfillment centres that house these activities under the same roof as storing, picking, and sorting. Whether or not a last link is necessary must be determined on an individual market and property basis.

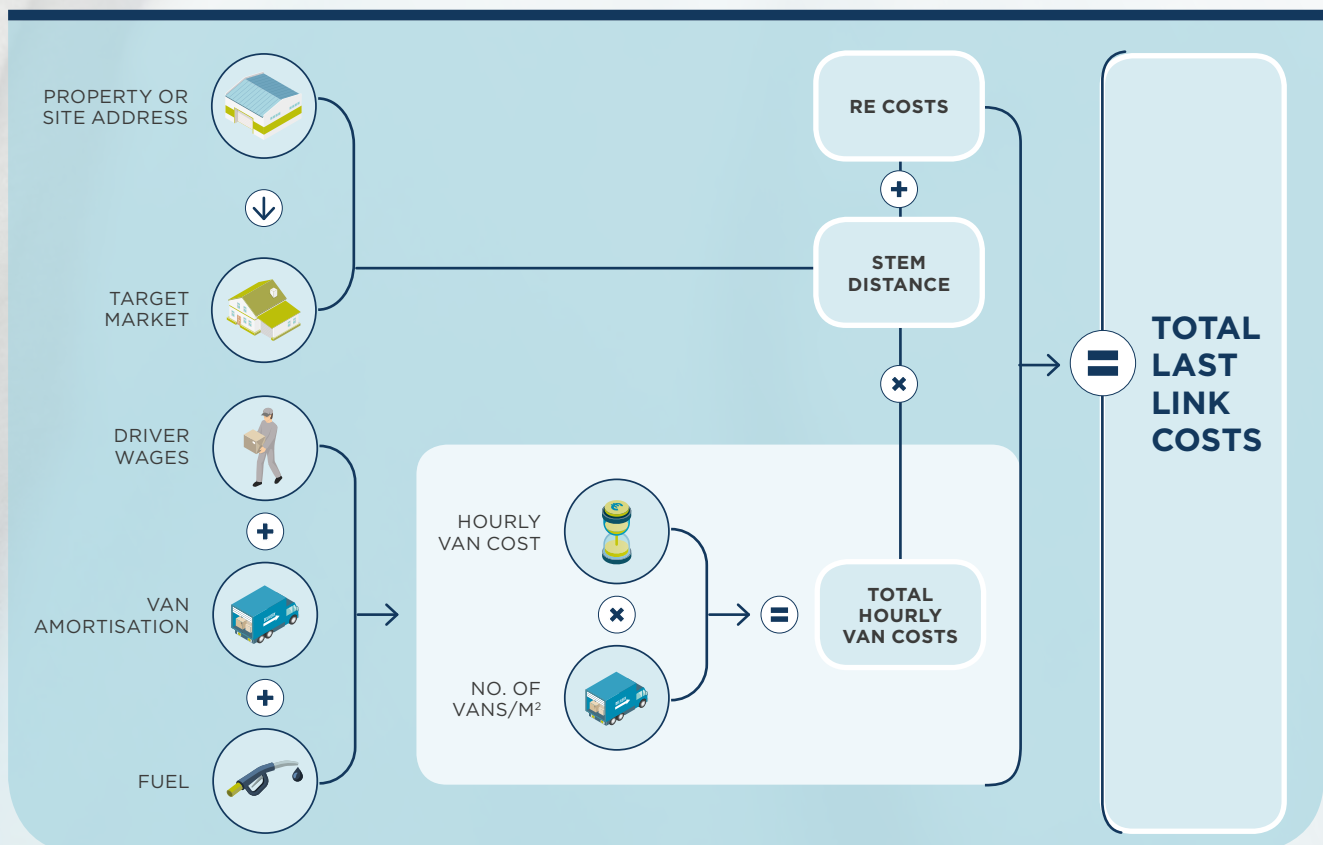
THE TLLC MODEL

The TLLC model¹ is an analytical tool for developers, investors, and occupiers alike. The capability to quantify both total last link cost and savings for any property means that the model is applicable to portfolio management and restructuring, site selection, optimizing a delivery zone, last link decisions, and market research.

The model is designed around the component costs - rent, building size, STEM distance, and the hourly cost of the van - that together, make up total last link cost. As noted above, the STEM distance is measured in drive time minutes from the urban depot or site to

the first delivery point. Since avoiding peak traffic hours is the easiest way to reduce transportation costs, our model assumes that delivery vans start their daily routes before 7am. The hourly cost of the van is the sum of all the elements contributing to using the van which are fuel, driver wages, and the amortisation of the value of a typical delivery van.

Furthermore, the model uses costs in individual countries but does not take into account intra-country regional cost differences, occupiers' differing van loading optimisation percentages, van sizes, and warehouse staffing numbers.



¹ The TLLC model developed jointly by Cushman & Wakefield and P3 Logistics Parks, quantifies the total last link cost from an eFulfillment centre and possible last link depot sites. In so doing, the model can calculate the potential cost savings (if any) of adding a last link.

QUANTIFYING TOTAL LAST LINK COST

Located within proximity to delivery points inside Europe's major conurbations, urban depots typically command higher rents than distribution warehouses which suggests that real estate's share of total last link costs surpasses its 4.3% share of total logistics costs.

However, even if real estate accounts for a higher share of total last link costs, transportation's share far exceeds any other cost, especially considering that demanding consumer expectations generate inefficiencies which drive up these costs.

Using the model, we can demonstrate that despite higher rents, urban depots achieve significant overall last link savings, confirming that transportation costs also exceed real estate costs for the last link by a comparable margin to the total supply chain. In fact, based on market data for both urban depots and distribution warehouses, we demonstrate that despite significantly higher rents, urban depots have consistently lower total last link costs. Clearly, reducing the STEM distance has an enormous impact on transportation related costs that are the largest contributor to total last link cost.

To confirm that reducing STEM distance is the most effective strategy to bring down total last link costs, we have employed the model to analyse building level data collected in four top European cities, London, Paris, Madrid, and Milan. Although the urban depot sample sizes vary with the level of eCommerce maturity, in all cases, the model demonstrates a positive correlation between STEM distance and total last link costs. Using properties from our Paris sample, we were able to create the chart on page 12 which clearly shows how despite higher rents, all six urban depots generate lower total last link costs. When charted, sample data from the three other cities display the same correlation.



10 MINUTES

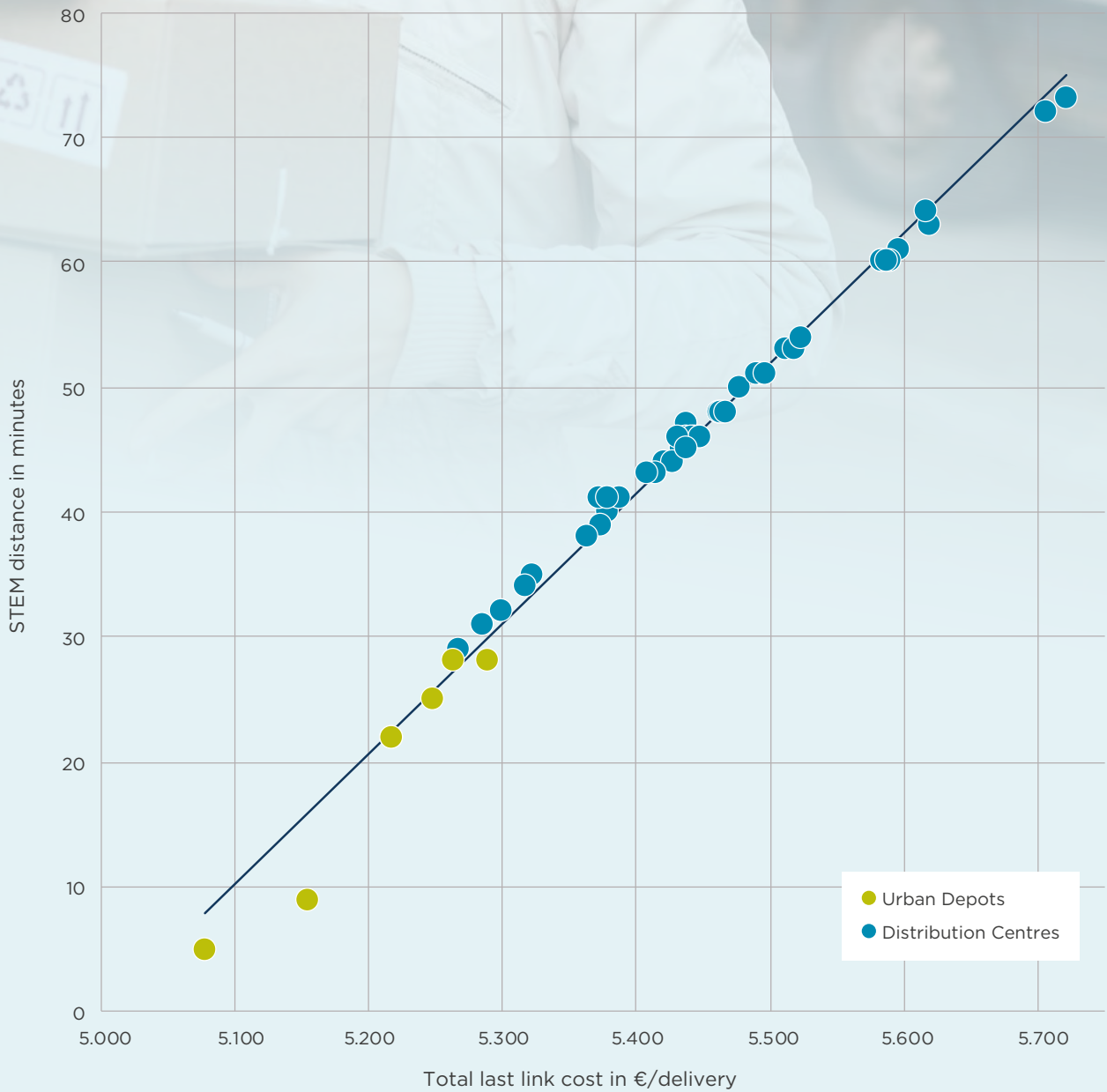
AN ARBITRARY 10 MINUTES CLOSER DRIVETIME FROM AN AVERAGE-SIZE URBAN DEPOT RESULTS IN...



€1M PER YEAR

A SAVING OF AROUND €1 MILLION PER YEAR.

STEM DISTANCE AND TOTAL LAST LINK COST POSITIVELY CORRELATED*



Source: TLLC Model, Cushman & Wakefield & P3 Logistics Parks, C&W Paris data

* Positive correlation is a relationship between two variables in which both variables move in tandem or the same direction.

RENTAL PATTERNS HIGHLIGHT GROWTH POTENTIAL

PARIS

In Paris, the gap in rental rates between distribution warehouses and urban depots is the highest when the latter is located within the city limit. Rents for urban depots located just outside of the city limits are significantly lower ranging between equal to two and a half times higher than those for distribution warehouses. By comparison, rents for urban depots located in Paris range between 33% to over five and a half times higher than those for distribution warehouses and between 36% and almost twice higher than depots located just outside of Paris.

LONDON

An abundance of urban depots around London is indicative of a mature eCommerce economy. Our sample includes several older, often formerly obsolete properties that have been revived to function as urban depots. Rents for these properties range from equal to or almost four times those of distribution warehouses. In the case of London, with its substantial urban sprawl, differences in rents between urban depots are more likely due to property specifications and age rather than location. An analysis of urban depots with rents at or below those of distribution warehouses reveals that these are older properties with rents reflective of their legacy use rather than current rent potential. Properties that fall under this description and also meet last link criteria of time distance and functional space, should experience strong rental growth.

URBAN LOGISTICS RENTAL COMPARISON TO PERIPHERALLY LOCATED DISTRIBUTION WAREHOUSES*

	UL rents relative to DC rents	eCommerce Penetration	Expected rental growth?
PARIS	0 to 500% >	76%	Extra urban (250% >)
LONDON	0 to 400% >	96%	All locations
MADRID	30% to 200% >	63%	All locations
MILAN	0 to 25% >	48%	Strong in all locations

*Based on samples extracted from C&W's database

MADRID

Imposed austerity in Spain during the Global Financial Crisis meant that the Spanish economy's recovery lagged those in Western and Northern Europe. As a result, eCommerce in Spain is still expanding and online sales are growing at a faster rate (20% annually expected for 2019) than in more mature European markets.

In the case of Madrid, rents for the two Amazon urban depots in our sample ranged between 30% above to almost twice those for distribution warehouses. When compared to the same spread in London and Paris, Madrid urban depot rents appear low and therefore, are expected to grow as the market matures.

MILAN

Similar to Spain, eCommerce expansion to Italy trailed the rest of Europe. At 30% annually, online sales are expected to grow at a faster rate this year, even outpacing Spain. Unlike in Madrid, the last link appears to be more established in Milan which is an important European logistics hub. However, rents for urban depots in Milan are not showing a comparable spread to our samples in London, Paris and even, Madrid. Rents for the two depots in our Milan sample range from the same to only one and a quarter times above those for distribution warehouses. If these properties meet last link criteria for location and function, they clearly are not achieving their full revenue potential and therefore are expected to experience significant rental growth in line with land value increases.

CONCLUSION

LAST LINK FEVER TO SHATTER LOGISTICS LAND PRICE CEILING

Even in the case of inner-city urban depots, rent, that can account for a higher portion of last link costs, plays an almost insignificant role in total delivery costs.

Reducing the STEM distance to 30 minutes or less to be closer to consumers is critical. A rental premium paid by occupiers to gain a foothold closer to customers results in a tremendous benefit in reducing overall costs while increasing overall customer satisfaction.

Currently, shortening STEM distances is the most readily available means to reducing overall last link costs. However, longer term, to the extent that green solutions and technology offer optimism that greater distribution (including the last link) efficiency is possible, they should not be overlooked. And of course, once legalized in Europe, autonomous technology has the potential to make a transformative impact on rising driver wages. In our recently published report, **'The Changing Face of Distribution'**, we estimate that elimination of drivers has the potential to reduce transportation's share of total logistics costs from 50% to as low as 32%.



STRONG RENTAL GROWTH POTENTIAL FOR LAST LINK DEPOTS PUTS LOGISTICS IN THE SAME REVENUE BALL PARK AS TRADITIONAL URBAN LAND USES

Furthermore, current market feedback suggests that most developers still lack rental comparables to adequately underwrite the purchase of expensive industrially-zoned plots close to cities. At the same time, demand from eRetailers and 3PLs for just such locations is increasing. This paradox will end as soon as more investor/developers accept the risk to speculatively purchase these sites at prices that until now, were only affordable for developers of other asset classes. Strong rental growth potential for last link depots puts logistics in the same revenue ball park as traditional urban land uses. In fact, it is likely that we are now at the beginning of that wave and news of record logistics land prices and rents will soon become a regular occurrence.



CONTACTS

LISA GRAHAM

HEAD OF LOGISTICS & INDUSTRIAL
RESEARCH & INSIGHT, EMEA

T: +33 (0) 1 86 46 10 98

M: +33 (0) 6 72 01 53 08

E: lisa.graham@cushwake.com

ROB HALL

HEAD OF LOGISTICS & INDUSTRIAL, EMEA

T: +44 (0) 20 3296 2076

M: +44 (0) 7768 123 425

E: robert.a.hall@cushwake.com
