Urban infill: the route to delivery solutions

Industrial Research
With growth in e-commerce sales expected to double over the next ten years, the competition for consumers continues to heat up. And now, same-day delivery expectations have forced many companies to consider a number of different urban infill options in order to reach consumers in and around major U.S. cities. When these factors intersect in densely populated urban areas, many complicated variables are at play—and they drive a new “last mile” logistics cost paradigm.

Comparing general population demographics to the very specific demographics of e-commerce consumerism, site locations aren’t always where you would expect. Sometimes, they are in suburban areas. Last mile facility needs will be where the population nodes and density intersect with the optimal demographics for e-commerce.

Having the right urban infill locations will be a big boost to efficiency and keep total landed or delivery costs as low as possible—all while meeting e-commerce delivery strategies. However, there is rarely a one-size-fits-all solution when it comes to logistics real estate, and increasingly it involves an integrated network of functional ‘last mile’ facilities.

What is urban infill? Where is the opportunity?
Logistical complexities in cities

While each city is different, most share similar logistical challenges. As population density and economic activity grow, the demand for goods and services within a city increases, leading to the expanding demand for transportation infrastructure and for land for logistics activities and warehousing. According to an April 2017 CityLab article, e-commerce sales have gone up 15 percent every year since 2010.¹

Congestion

Congestion is negatively impacting urban delivery timing. Due to the sheer amount of delivery points (from brick-and-mortar retail stores once being the only delivery points to now potentially every single household as one), the increase in deliveries is causing more roadway congestion and reducing transit speeds, which lowers delivery predictability. *Truck traffic represents only 7 percent of urban traffic in the United States but 17 percent of the total U.S. congestion costs (totaling $28 billion) in terms of wasted hours and gas.*¹

Warehousing isn’t seen as a priority for urban land

Owners and developers can usually get higher rents from other sectors, like retail and office. The older supply that could be perfect urban infill is often scooped up and transformed away from warehouses. *For example, in Silicon Valley since 2010, approximately 15 percent of the existing industrial inventory has been repurposed to residential and office product.*

Higher costs

Higher costs come with the increased volume of e-commerce: fuel, more delivery drivers and implementing new technology, to name a few. Another is parking for delivery drivers—time lost on finding parking and navigating big complexes, as well as the possibility of fines. *The International Parking Institute states that in New York City, delivery vehicles rack up 20 to 30 percent of the 10 million annual tickets written; FedEx and UPS alone amassed nearly $3 million of fines in the city in just a single quarter a few years ago.*² With the continual increase in e-commerce activity each year, one can only imagine the proportional increase in opportunities for parking violations.

Municipal restrictions on logistics operations

Many communities are placing municipal restrictions on logistics operations. Users and developers are then required to educate communities on the importance of logistics operations and the minimal impact they have on congestion, as well as the quality of the jobs associated with the operations.

Environmental concerns

Environmental concerns are largely seen in increased emissions and pollution. Direct impacts can include noise and carbon monoxide emissions, leading to indirect impacts, such as health issues, smog and diminished air quality. *According to the EPA’s most recent report, the transportation sector accounted for 34 percent of total U.S. CO₂ emissions in 2016.*³

Reverse logistics

Reverse logistics is causing big hiccups in the supply chain, which is exacerbated in an urban environment. *According to the Reverse Logistics Association, e-commerce purchases have three to four times higher return rates compared to brick-and-mortar stores, and that rate is expected to grow.*⁴

Faster delivery times

All the while, consumers want for faster delivery times. This only adds to transportation cost pressures. *Having the right real estate in the right urban locations can help alleviate those logistical pains.*

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² https://www.parking.org/2016/01/20/ppp-2014-07-paying-the-freight/
³ https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#transportation
Driving through the complexities

our analysis

So many variables haze the landscape of urban infill real estate right now—it can mean a lot of things, in terms of building features and functionality. So how do you identify last mile opportunities? Where are the customers? Does a location enable urban fulfillment that meets consumer demands, or do transportation and logistics costs hinder it? Getting closer to your customers can be costly—urban industrial properties near population nodes often tend to have higher land values and in the end compete for alternate uses or redevelopment, like multifamily or creative office adaptations. However, having the right last mile location could potentially have enormous savings, realized by delivery and transportation efficiencies. It also presents a huge opportunity for investors and developers to find value in the current, very tight industrial market.

Our study sheds light on these locational issues. We look at where the online demand is coming from—not just e-commerce orders but also the frequency and types of goods that are really putting pressure on urban infill delivery.

We look at how the urban infill supply is competing with the more traditional industrial properties. And we look at areas of growing demand and new innovations that combat e-commerce complexities.
It all begins with demographics

In this study, we dove extensively into urban infill demographic indicators in every MSA (metropolitan statistical area) in the United States and were able to identify the highly urbanized markets most able to support robust last mile infill real estate. We drilled down even further to find the specific areas in those markets with urban infill needs. We answered this question: in the major U.S. metropolitan markets, where are the people and who likes to shop online? It’s where population nodes and density meet e-commerce consumerism.

When only thinking about population location and density, the first thing that comes to mind is urban cores. Looking at maps of the demographics of various cities, however, you can see that the areas of interest do not always fall in the urban core. Sometimes these areas are in more suburban locations. In those on the top row, the markets’ demographics do align with the urban core. However, the bottom row of maps highlights more suburban areas, due to both affluence and family structure.

We’re not always looking at the city center. In more geographically spread-out markets, suburban populations drive last mile demand, too.

Urban core demographic examples

Suburban demographics examples
In this competitive retail environment, getting closer to the customer may mean leasing space in older, less functional warehouses that do not have all the features or automation of a large, modern regional distribution facility, though they are well-located for a large contingent of prime consumers. While having a network of regional distribution centers strategically placed throughout the country is still important, the routing of e-commerce orders and fast-moving consumer goods through a more complex series of facilities is driving demand for all kinds and all qualities of industrial real estate. Outdated and underutilized non-industrial properties are beginning to see reinvention. And markets with higher land values, like the New York, Seattle, Bay Area and Los Angeles metro areas, are starting to turn to multi-story industrial development as a means to meet delivery needs.

Delivery demands vary widely based on the retailer and the shipper. What is the fast, frequently moving inventory? What is bulky and expensive to ship by delivery truck? Where is the demand for more white-glove services? Some companies are already starting to answer these questions. From reducing traffic congestion by utilizing alternative vehicle options and off-hour deliveries, to diversifying warehouse supply with urban consolidation centers (smaller warehouses closer to urban cores), to employing technology (Internet of Things and machine learning), those involved with the last mile are getting creative.

Several major cities in the United States are initiating “Smart City Logistics” innovations and protocols, with Europe and Asia leading the way.
EagleRail is an electric overhead conveyance system that takes containers offloaded from ports directly to intermodal yards, completely bypassing trucks. The company is piloting the system in China.

If one thing is obvious, urban infill and last mile aren’t just old warehouses. And they aren’t just at the urban center. E-commerce companies are thinking of a lot of creative new places and methods for delivering goods faster.

JLL has been engaged on the redevelopment of an under-utilized urban parking deck into a last mile distribution center, right in the heart of Downtown Chicago. The Millennium Mile project will allow e-commerce companies to reach both daytime and evening populations within hours or even minutes.

Flexe, Flow Space and Warehouse Exchange are on-demand, peer-to-peer warehousing start-ups that aim to help users lease up their underutilized space by linking together operators that have too much space with those that don’t have enough. Often, they are connecting warehouse users with on-demand or seasonal space needs – a retailer with a big holiday push paired with a home gardening supplier, for instance.
What we're seeing
Urban infill supply in the U.S.

In the current tight U.S. industrial landscape, urban infill is providing new avenues for developers and investors—opportunities are opening up outside of the traditional big-box industrial landscape. Even though it seems risky to buy into the older, less-functional product, retailers are more and more willing to lease up this previously undesirable product due to prime locations, not to mention lack of overall supply.

In fact, so far in 2018 urban infill supply has an 18 percent sale price premium over all warehouse and distribution supply. This trend has picked up pace, with only an 11 percent premium on average over the past five years. In our JLL-defined U.S. urban infill markets, the last mile supply is on average 106,400 square feet, was built in the 1970s and has less than 8 percent available space (compared to over 9 percent availability for the total supply in those same markets).

With the growth of e-commerce, we’re seeing higher demand for logistics property. Rather than using only traditionally industrial areas, logistics and e-commerce companies are moving into areas with a higher mix of uses. Last mile distribution centers are popping up next to creative office next to residential next to retail, allowing e-commerce companies to reach their consumers more quickly. With these choice locations, real estate is now seeing rising rental rates and sale prices for properties that have only seen decline in recent years.

Urban infill by the numbers

- **106,400**
  - average size (s.f.) of a last mile building

- **1976**
  - average year built

**Availabilities**
- across the U.S. are down in general, but the urban infill supply is lower than the total average.
- **7.7%** Urban infill available supply
- **9.5%** All available supply

**Conversions & demolitions**
- in the urban infill supply have decreased 2 percent over the past 5 years. Developers and investors are more often keeping industry supply for industrial use.
- **36.9%** 2013
- **2%** 2018
- **34.9%** 2018
With these new, varied locations throughout markets, urban infill building options can take on many forms as well. From the urban core to a metro’s periphery, location can determine the type of building that may match a particular last mile requirement.

The generally accepted last mile concept of infill buildings in the urban core are often older, outdated warehouses, but they can be unused and underutilized non-warehouses as well—all of these have the potential to become last mile depots if by location, functionality and/or feature they present an innovative opportunity.

The urban infill facility breakdown image below gives an idea of where we’re seeing: adaptive reuse, multi-story developments and multiple other types of infill and non-infill warehousing.

Those older, less-efficient warehouses are still proximate to urban infill demographic populations and are still located along accessible transportation routes. They may not have the clear height, the dock-to-square-footage ratio or the yard space for modern logistics uses—but for fast-moving, quick-turning and frequently ordered e-commerce inventory, they make excellent urban infill properties.

Likewise, a newer, more automated or mechanized facility can still sit within close-in drive times and can be an effective delivery point for urban infill populations.

Those adaptive re-use properties represent the new vision for innovation of e-commerce within cities. A perfect example is the conceptual re-envisioning of Chicago’s Millennium Garage project. We are only in the early stages of former retail or other infill sites being turned into e-commerce delivery hubs. Not including these kinds of real estate in an urban infill concept would minimize how complex the urban last mile environment could likely become.
E-commerce delivery within urban markets also presents the opportunity for new development of urban logistics space. While long having lost real estate supply to “higher and better uses” such as conversions to loft apartments or creative office space, demand for urban last mile real estate is proving that new development in some markets is now viable.

This may come in the form of new single-story warehouse properties that service urban infill areas. But we are now seeing, for the first time in the United States, several well-located developments around the country for modern, multi-story distribution space. Land values, construction costs and achievable rents may not make this kind of development feasible in all metropolitan markets, but demand and the need to minimize urban delivery times and transportation costs make it another reason why industrial real estate is still one of the most interesting and favored asset types in the country.
Rising rents help tell the story

Starting at the beginning of 2017, rental rates for urban infill supply are steadily on the rise, surpassing the growth rate of all warehouse and distribution supply.

Full potential for urban infill supply has yet to be wholly realized. Overall, tenants are still focusing on and moving into the more traditionally-located and newer-sized supply. We see a huge opportunity for both tenants and investors to be the first to move into the currently underutilized urban infill supply to address increasingly important last mile delivery demands.
Limited supply creates opportunity

With e-commerce tenant demand on the rise, we’re seeing the opposite in supply—it’s becoming more and more limited. For instance, availabilities across the U.S. are down in general, but the urban infill availability is lower than the total average, as seen in the pie charts on page 10.

Similarly, the growth rate of urban infill supply is decreasing. Starting in 2015, we saw a sharp drop in the growth rate of urban infill supply, which is not the case for all warehouse and distribution supply—it has continuously been on the rise since 2010. From 2016 to 2017, urban infill inventory was down to 1 percent. Comparatively, all supply grew by 2.6 percent. Despite the overall trend over the past five years of increased industrial big-box distribution centers for e-fulfillment deliveries, the share of new urban infill supply to total supply delivered decreased significantly in 2017, almost by half since the prior year. Annual total deliveries have more than tripled over the past five years; however, those infill deliveries have remained relatively flat.

When looking at vacancy, the industrial rate across the U.S. is trending downward; however, urban infill vacancy rates are declining at a much faster rate than all other supply—the difference has dropped to less than 1 percent over the past five years. There is still a small window of opportunity for investors to buy in before space fills up and value increases.
Urban infill

We expect urban infill supply to continue to be more and more in demand, making available options more and more competitive to occupiers who want to be in and around urban areas or consumers. This is already being illustrated by the higher rental rate growth and declining vacancy rates as compared to non-urban infill supply, although there are still opportunities for both investors and tenants, if they act with purpose.

For investors:

• **More than making do:** Re-purposing or improving existing urban infill industrial facilities to meet the needs of modern e-commerce companies is a great way to capitalize on the last mile trend.

• **Last “where”?** Urban cores are not the only areas of interest. Close-in suburban e-commerce demand leads to more opportunities and smaller flow-through facilities that are still somewhat unrecognized and untapped.

• **Multi-story sensibility:** Which markets warrant new development, either traditional single-story urban infill product or potentially multi-story construction, based upon potential rents and land values?

For tenants:

• **More than just the box:** Existing urban infill warehouse and distribution inventory is extremely scarce. Looking to new, innovative and different types of properties for fulfillment centers will be necessary to achieve last mile delivery.

• **Fighting through, or figuring out those logistical challenges:** Higher costs, congestion problems and environmental concerns that impact e-commerce delivery efficiency will start to be remediated with appropriate urban infill locations.

• **Cities getting smarter:** Public-private partnership should begin to change perceptions about facilities, as municipalities will have to promote logistically efficient and environmentally friendly practices.

By using smart demographic analysis, we can effectively identify urban infill supply that will best serve e-commerce demand. This promotes innovative logistics in areas never before thought of for modern distribution centers.
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