

Research



E-COMMERCE:

Implications for Industrial Real Estate

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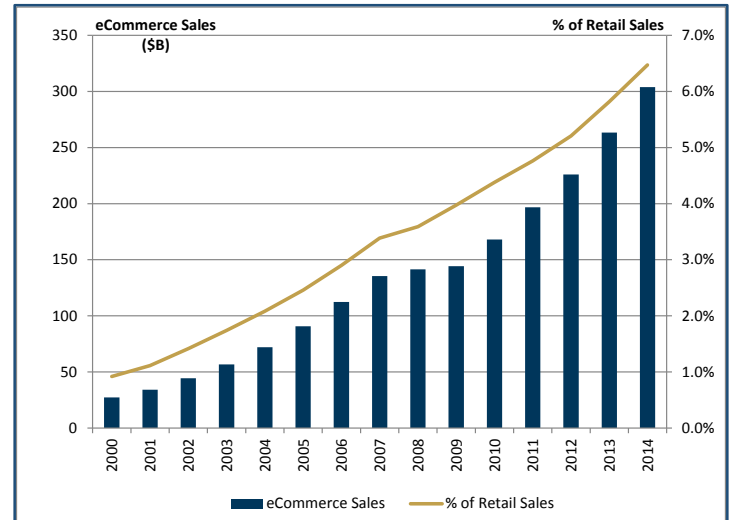
Since 2010, one-third of all industrial leases over 500,000 square feet have been for e-commerce purposes, according to CoStar. Although online sale growth is not the sole driver for warehouse space, it has led to an evolution within the industrial sector. Furthermore, many investors are just beginning to grasp how this shift in consumer behavior will influence real estate markets. This paper will highlight the impact of e-commerce's rapid expansion, identify e-commerce driven trends, and provide our near-term outlook for the industrial sector.

Then & Now

During the 1990s, the Internet became the foundation for modern e-commerce. eBay, for example, was a pioneer in the field, from its first item listed in 1995, a \$14.83 laser pointer, to its largest transaction to date – a \$4.9 million private jet sold in 2001.¹ Conversely, Pets.com was equally notable for failing. The company was exalted as the first online dog food/accessory vendor but eventually lost \$147 million in nine months, resulting in 300 layoffs.² Overall, the 1990s were a volatile period for e-commerce as more businesses failed than succeeded. By the end of the decade, online sales accounted for barely half of one percent of U.S. retail sales.

Over the next 20 years, e-commerce would reverse course en route to becoming the country's fastest growing retail channel. Online sales even maintained positive annual growth during the Great Recession in 2008 and 2009. More recently, internet sales increased significantly by 15.4% in 2014, accounting for 6.7% of total sales as shown in *Exhibit 1*. Forrester, a global research company based in California, forecasts that online purchases could reach 11% of total retail sales by 2018. We believe this growth trend will continue in the near future, particularly as millennials approach their prime spending years and more people adopt online shopping.

Exhibit 1: E-commerce as a Percentage of U.S. Retail Sales (2000-2014)



Source: USAA RealCo; U.S. Department of Commerce

Current Trends in the Industrial Sector

The industrial real estate sector has been a beneficiary of e-commerce expansion. According to CoStar, occupancy levels for distribution space increased roughly 20% from 2000 to 2013. Even though e-commerce is not the sole demand driver, the fulfillment of online shopping orders has helped revolutionized industrial warehouses.

E-fulfillment is the order fulfillment service that online retailers use to assemble and track products. This new process has disrupted traditional supply chains and enhanced warehouse requirements for many tenants. Historically, retailers only offered a limited number of in-store products, and each location facilitated the purchase and delivery of an order. With online sales, however, consumers require two separate channels: one to facilitate an online order, and another to fulfill/ship the order. This modification has challenged vendors, primarily because consumers are less predictable when shopping online. Retailers once dictated products to shoppers but now struggle to keep pace with an amplified order volume, as online sales occur more frequently and tend to be smaller – one to two items. E-commerce growth caused this shift in traditional supply chains, which coincides with consumers' demand for faster delivery.

Online retailers are redefining the product delivery process in an effort to achieve same-day delivery. Currently, few e-commerce companies have an in-house distribution network. Instead, they rely on companies such as UPS and FedEx to facilitate order shipments. These companies serve a critical role, but they have

¹ Swallow, "10 Entertaining eBay Facts You Might Not Know." August 7, 2010, Mashable, mashable.com.

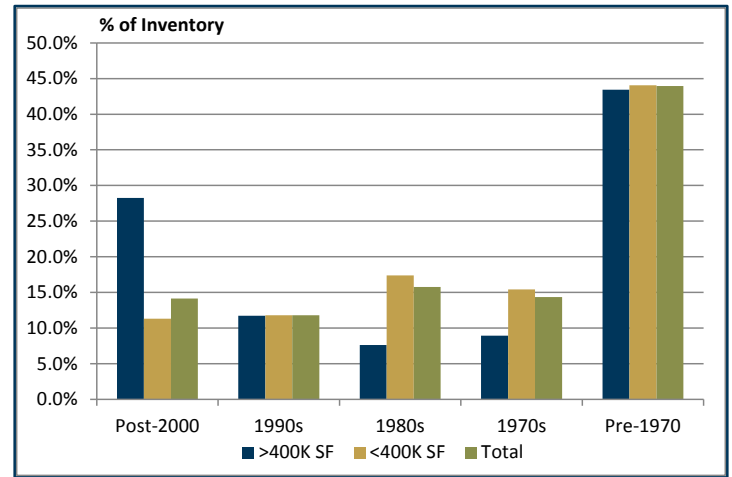
² Goldman, "10 Big Dot.com Flops." March 10, 2010, CNN Money, money.cnn.com.

struggled to meet deadlines, particularly during peak seasons. UPS, for example, publicly recognized some of their challenges in a recent statement, “It (forecasting E-commerce) is both hard for our customers and for us.” This situation was evident during the 2013 holiday season where nearly 2 million holiday packages (between UPS and Fed-Ex) did not make it to customers by Christmas Eve as promised.³

Internet retailers have considered other delivery methods, but none of these alternatives has reached critical mass. Drone deliveries made news headlines in recent months, but this technology has room to mature before it is a viable solution. It also faces several regulatory hurdles before government officials will deem it safe for public use. Some online companies are also flirting with Uber-like delivery options that would use individual contractors to expedite shipments. In the near term, parcel-delivery companies are likely to remain an integral component of the delivery infrastructure. While alternative delivery methods have yet to gain traction, online retailers are focusing on efficient space utilization to reduce costs, which we expect to increase demand for smaller, smarter, and more flexible warehouses.

Most industrial real estate built prior to 2000 is obsolete for today’s e-commerce tenants. By this measure, as shown in *Exhibit 2*, roughly 86% of national industrial stock does not meet the needs of e-commerce tenants barring considerable capital improvements. Technology requirements range from automated warehouse management systems to sustainable power and alternative climate control systems. In addition, e-commerce warehouses tend to necessitate higher clearance heights (32-36 feet versus 24-28 feet for traditional warehouses) to accommodate multiple levels of storage, and we expect 40-foot clearance heights to become standard features in the near future. These spaces often have specific requirements including: (a) increased parking, (b) additional trailer storage (c), land for expansion, (d) extra restrooms and offices, (e) a larger information technology and physical security presence. In order to accommodate these requirements, construction costs, in some cases, can be more than double the price of standard facilities.

Exhibit 2: Industrial Inventory by Decade as of Q4 2014



Source: USAA RealCo; CBRE-Econometrics

Rising development costs have tempered construction in some markets where real rent rates, or inflation adjusted rents, are too low to support new construction. According to CBRE-EA, nominal rent rates have been on the rise nationally since 2010, but remain 4% to 5% below where they were at the peak of the previous cycle (on an inflation-adjusted basis, they are 14% to 16% below the previous cycle peak). Even though many developers are cautious about starting construction without a prospective tenant, RealCo is considering speculative “e-com ready” warehouses that can support either e-commerce or traditional tenants. Build-to-suit opportunities with high-credit tenants are still attractive investments as well, but yields have compressed recently on large build-to-suits due to increasing amounts of capital in this space. Meanwhile, smaller online retailers are sensitive to occupancy costs and generally prefer short-term leases, which is counter to investors’ desire for long-term commitments. As a result, the industrial market seems to be under-built at a time when demand has outpaced supply. We believe these challenges will resolve themselves, as strong demand should eventually push real rent rates high enough to justify expansion in most markets.

Industrial Outlook

Solid growth prospects should continue to advance the industrial sector, as modern warehouse demand surges. Same-day delivery will likely propel demand for smaller urban warehouses as online retailers compete for market share. Mega-size distribution centers, one million square feet or larger, will continue to play an integral role in the industrial market. Several retailers with strong online sales, such as Procter & Gamble and TJ Maxx, constructed or broke ground on one million square feet build-to-suit warehouses in 2013, with prospects for more expansion over the next several years.⁴

RealCo’s development team tracks a broad section of the market

³ Carey, “UPS Warns E-commerce Volume Hard to Forecast, to add Surcharge.” February 3, 2015, Reuters, www.reuters.com.

⁴ Cushman & Wakefield, “E-Commerce Boom Triggers Fundamental Changes In the Industrial Sector.” May 13, 2014, cushwakenm.com.

with deals ranging from 150,000 square feet up to 1.5 million square feet. We expect two particular issues might temper construction of mega-size distribution centers: 1) such large projects are often difficult to locate near population centers, 2) and only a select group of online companies can afford such large warehouse facilities due to extensive capital requirements. Consequently, we think small to mid-sized warehouses (150,000 to 350,000 square feet) will be in high demand in the near future. This segment of the market has been under-capitalized in recent years, and there is an opportunity for investors to deliver institutional quality assets at a time when new supply is below the long run average and tenant demand is on the rise.

As mentioned earlier, e-commerce demand has accounted for one-third of all new warehouse leases over 500,000 square feet since 2010. It is difficult to determine which markets have benefitted most from this rising demand due to the opaque nature of real estate negotiations. Therefore, as a proxy, we analyzed markets where construction of large distribution centers (at least 500,000 square feet) has occurred in recent years, and we did a similar analysis to

Exhibit 3: Market Ranking of Large Industrial Space (500K+ SF) Delivered as of Q1 2010 - Q2 2015

Market Name	Recently Delivered SF	Recently Delivered Buildings	% of SF
Inland Empire	32,433,887	45	14.0%
Philadelphia	23,928,768	25	10.3%
Dallas/Ft Worth	21,405,047	25	9.3%
Chicago	14,824,514	18	6.4%
Atlanta	11,200,031	13	4.8%
Phoenix	11,128,963	13	4.8%
Indianapolis	9,578,993	13	4.1%
Memphis	8,443,347	11	3.6%
Columbus	6,541,647	8	2.8%
Northern New Jersey	6,237,799	9	2.7%

Source: USAA RealCo; CBRE-Econometrics

Furthermore, the rehabilitation of existing industrial space represents a potential value-add opportunity in the near-term as well. Older space is typically closer to population centers, which improves same-day delivery prospects. However, warehouses built prior to 1980 have structural barriers and cannot accommodate conventional trucks that require 70 to 75 feet of clearance. Most of these properties are suitable only for small tenants, making them less attractive to large institutional investors, as transactions typically range from \$2 million to \$10 million. Certainly, in-fill/urban industrial opportunities have potential, but finding appropriate deals will require extensive due diligence and creativity.

identify markets with strong pipelines. It is our premise that these metros have experienced a surge in e-commerce driven demand, which has resulted in the construction of large blocks of new warehouse space.

In the following analysis, we created two market rankings based on the amount of large space delivered since 2010 (*see Exhibit 3*) and the number of large projects currently in the pipeline (*see Exhibit 4*). Six of the top 10 markets overlapped both lists, likely indicating that demand has outpaced supply despite robust development in these metros. The study also revealed that a majority of deliveries occur among the top 10 markets, as they account for 63% of large distribution deliveries over the last seven years, and 77% of the space currently under construction. In addition, the Inland Empire and Atlanta will continue to be critical distribution hubs as these markets represent roughly 40% of all large warehouse centers currently under construction in the U.S. If our base case is correct, we expect substantial e-commerce driven demand amongst these top markets.

Exhibit 4: Market Ranking of Large Industrial Space (500K+ SF) Under Construction Q1 2010 - Q2 2015

Market Name	Under Construction SF	Under Construction Buildings	% of SF
Inland Empire	18,025,969	23	19.3%
Atlanta	17,354,301	20	18.5%
Reno/Sparks	6,836,660	3	7.3%
Philadelphia	5,770,600	6	6.2%
Chicago	5,768,060	7	6.2%
Dallas/Ft Worth	5,520,913	7	5.9%
Houston	4,650,000	2	5.0%
Stockton/Modesto	2,941,758	3	3.1%
Nashville	2,839,660	3	3.0%
Memphis	2,100,838	2	2.2%

Source: USAA RealCo; CoStar

Lastly, it is worth noting the impact that large e-commerce facilities can have on local labor markets. News headlines often cite how robotics and automation have replaced many traditional warehouse jobs. Certainly, these technological advancements have alleviated some occupations, but large facilities (one million square feet or more) often require at least 1,000 full-time employees, not to mention part-time and ancillary positions.^{5,6} These warehouses tend to reside on the periphery of major employment hubs, and often become the largest employer in their respective areas. With a significant number of employees working for one company, local employment markets typically face a shortage of blue-collar labor, which puts a strain on neighboring businesses that are competing for job candidates. Despite these challenges, the incremental job growth is a net positive for many smaller towns/cities. Therefore,

⁵ Bort, "Amazon Still has More Employees than Microsoft and WAY More Robots." January 29, 2015, Business Insider, www.businessinsider.com.

⁶ Hirsch, "Hundreds Show up to Hear about Amazon Jobs." February 3, 2015, The Baltimore Sun, www.baltimoresun.com.

secondary and even some tertiary markets that are near major population centers and interstate arteries should continue to experience large warehouse development as well.

Conclusion

Online retail will likely continue to disrupt various market segments as Forrester's projects e-commerce to account for 11% of total U.S. sales by 2018.⁷ Some analysts forecast e-commerce growth will mirror a bell-shaped curve, where it expands, plateaus, and ultimately declines. Even if that prediction is correct, one can only guess how long that process will take. Most researchers agree that e-commerce is in a multi-year expansion phase that will continue to cause uncertainty in some real estate markets, but so far, it has proven to be a net positive for the industrial sector – a trend that we expect to continue in the near term.

Moreover, the industrial sector's growth prospects are strong and should continue to strengthen as e-commerce expands. Anecdotal evidence suggests that demand for Class A warehouse space has risen substantially in recent years. Even if supply levels rise in the near-term, tenant demand will likely exceed available supply. In the end, the relationship between e-commerce and industrial real estate will continue to create challenges for the industry – and success will find those who are able to convert those challenges into opportunities.

⁷ US eCommerce Forecast: 2013 to 2018. Forrester Research.



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