

# Fulfilling Promise

## Growth in E-Commerce Drives Demand for Specialized Fulfillment Facilities

With rapid growth in online purchases driving a need for more fulfillment accommodations, editorial director Suzann D. Silverman spoke with a variety of property and supply chain players about how the industrial real estate sector can best meet the needs of retailers, third-party logistics providers and others involved in the process. Q&A participants include John Grubor, senior vice president of engineering and implementation at third-party logistics provider OHL; Bryan Jensen, vice president & principal with supply-chain strategy and logistics consulting firm St. Onge Co.; Jim Medbery, senior vice president for industrial brokerage specialist Binswanger; Ben Peterson, senior vice president of global customer solutions for developer Prologis; and Curtis Spencer, president of foreign trade zone and logistics consulting firm IMS Worldwide Inc.



**John Grubor**



**Bryan Jensen**



**Jim Medbery**



**Ben Peterson**



**Curtis Spencer**

**CPE:** What are the top priorities that the real estate provider needs to be sure to supply or accommodate when developing e-commerce distribution/fulfillment facilities?

**Ben Peterson:** For dedicated e-commerce facilities, which often have high employee loads (when compared to traditional distribution centers), users are requesting higher car parking abilities and large power supplies—to be used for air-conditioned warehouse space and big automation systems. The dedicated e-commerce fulfillment center may also require separation within the site for auto parking and truck maneuvering, as well as numerous access points.

**Bryan Jensen:** In some ways, it's not about what else you have to worry about, it's what you may not have to worry about. ... You may not need as many dock doors. You may not need as much trailer parking space. You may be able to make do with a smaller site relative to building footprint versus parking lot requirements. ... But on the other hand, you tend to have a lot more people per unit shipped in an e-com operation than you do at a bulk retail distribution center because of the nature of the order fulfillment. ... So you will need a lot more employee parking. ... There (also) has to be enough of a power supply there. You can have some of these buildings ... that need another thousand amps (over) a standard building that might be 2,000 or 3,000 amps. You might have a building that needs 4,000 or 5,000 amps. Usually, that can be accommodated. ... It's not like I'm trying to build a refrigerated building versus an ambient building.

**John Grubor:** Your typical bulk layout is a much narrower cross-dock facility that has many, many dock doors running the length. An e-commerce facility, when properly designed, is much more of a square facility, requiring fewer dock doors and less dock space, and then they're trading off that dock space for more processing area. When you talk about the people aspect, e-commerce facilities require a lot more parking. Parking requirements are up to 1,000 at peak ... and even larger. That's one of the things that we struggle with when we try to take a traditional facility. A lot of times, we'll have to trade off trailer parking for employee parking and plan for these extremely high, peak seasons around Black Friday through the week of Cyber Monday, where we see clients going anywhere from shipping seven to 10 times the amount of goods they want in an average week. ... The other big one that I'd be remiss not mentioning ... is that the traditional 32-foot clear height is outdated. That's where most people are building their buildings, but buildings that I am selecting or designing are, ideally, 40-foot clear. ... You're able to get 33 percent more usable square footage when you create these modules. ...

Facilities for a large amount of employees. Secured entrances—laying out facilities in a way that you can bring in massive amounts of employees through pinch points or security control, because there is a lot of temporary labor, and DC (distribution center) operators want to mitigate theft. ... Break rooms and facilities. ... (And) e-commerce is going to draw on a lot more power than your traditional DCs, so making sure

that you've got proper power service in the building is also key.

**Curtis Spencer:** There are four major real estate requirements that are different. One is I've got to have a lot more parking for my surge labor pool. No. 2, I will probably have mezzanine or multi-story system operations in my e-com side of the building, which means I have to have air conditioning in that side of the building because I'm going to have 1,000 people, 800 people working in there. No. 3, I've got to have fire exits for those people—a very key issue. All of the architects now, when they're designing either a whole e-commerce building or a set of e-commerce buildings, are looking at what the fire safety issues are. And the fourth thing that's very, very important right now is many of the companies that are doing the e-com request—in other words, the RFP—are also asking for the developer to finance the equipment inside the building, which goes on a different amortization schedule. You're going to want a different cap rate, you're going to want a shorter term, but they are definitely asking for that kind of help ... because the building may be worth \$30 million and the equipment inside the building may be worth \$70 million. ... Even if you're in a non-automated environment ... you still have a heck of a lot of equipment in e-com, plus mezzanine.

**CPE:** Are they committing to these facilities for the longer term? And who owns the equipment?

**Spencer:** Those are all to be worked out through the process. But let's say that you get someone in a million-square-foot e-com with three levels of mezzanine. You say, "Well, if I'm going to put that much extra in this building, you've got to give me a 15-year term." You may want that equipment to cash you out in nine years or 10 years, and at a higher cap rate than you're getting on the building. So there are differences that are being played out in the field about who owns it at the end and who's on the line—all sorts of things—but usually shorter with a higher return on investment of equipment.

**CPE:** What kind of retailer demand is out there? Is every retailer expanding their sales and fulfillment methods?

**Jensen:** Every retailer is expanding to some degree.

**Spencer:** E-commerce right now as a percentage of entire retail sales in America—including grocery stores and stop-and-go, 7-Eleven retail sales—is only 9 percent. Every single retailer who doesn't have an e-com physical facility platform is working on it. They are either doing delivery from the store, they're doing direct delivery from an e-com facility or they're converting bulk distribution to multi-channel facilities. Every single retailer has got to have e-commerce.

**Grubor:** They're pursuing it in different ways. We help retailers who don't want to necessarily have the operations under their own control, but we're seeing a lot of retailers pursue it. ... We're seeing (that) they have a certain amount of DCs that they operate and then they want to outsource the others. We receive and respond to RFPs from all of the major retailers. We're in constant discussions with them around how we can maybe help their supply chain.

**Peterson:** Demand is being driven in two ways in today's marketplace: increases in total consumption from the overall market recovery and increases in the shift of sales from bricks and mortar to e-commerce. More retailers are shifting capital expenditures away from store development and into e-commerce platforms to provide an omni-channel supply chain that can be optimized to deliver to stores while also delivering directly to consumers. As the industrial markets have tightened around the U.S. in the past two years, there have been fewer and fewer modern facilities in excess of 250,000 square feet available. Demand for e-commerce facilities has been rising and resulted in an increase in build-to-suit developments.

**Jim Medbery:** A lot of companies are using third-party fulfillment providers. There's a company called GSI Commerce ... they now go by eBay, so they've changed their name, but they do Internet and e-commerce fulfillment for retailers. They have about 70 partners—clients—companies like Sports Authority and Crate & Barrel and name retailers like that. If you go to Crate & Barrel's website to order a set of dishes, you're not really going to Crate & Barrel's website. It looks like Crate & Barrel's website, but it's owned and operated by GSI Commerce on behalf of Crate & Barrel. ... And they actually ship it out of their warehouse on behalf of Crate & Barrel. So those are third-party logistics providers, and they specialize in e-commerce fulfillment.

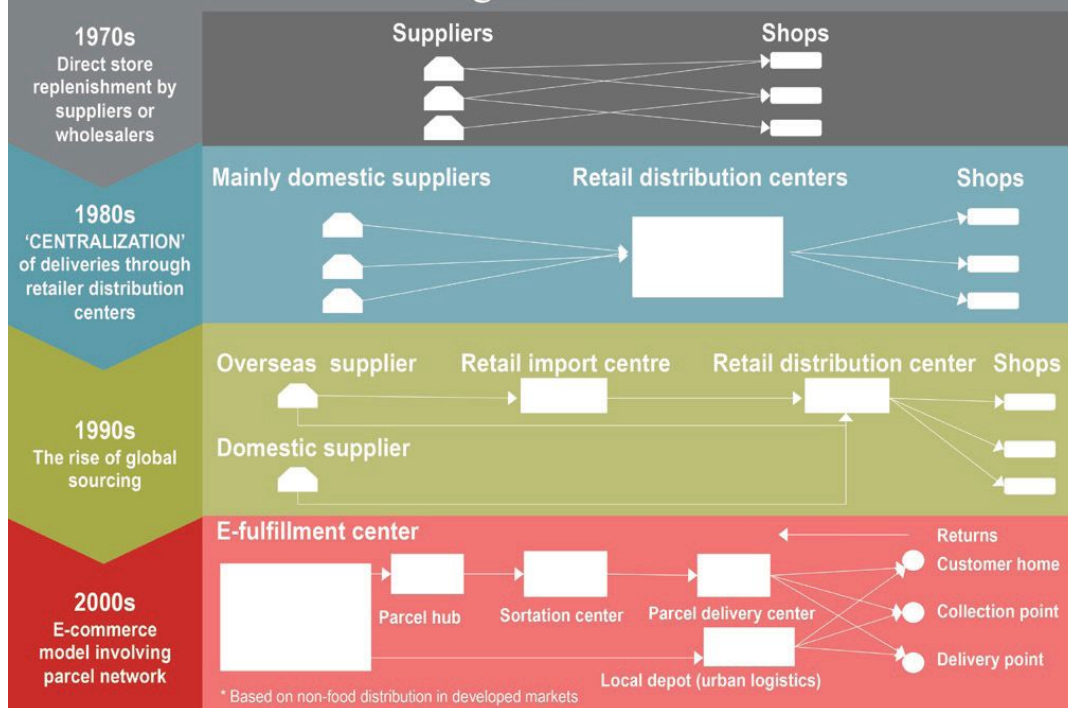
**CPE:** How much of an immediate need is there for additional distribution sites—for retailers or third-party providers?

**Jensen:** I think there is an immediate need for more sites that can support e-commerce or more space to support e-commerce. The question is, how much of it is being converted from bulk retail distribution space? And how much of it is new-build or expansion of an existing site in order to accommodate both under one roof? And unfortunately, that's as much a factor of the retail you're talking about. Do they already do piece pick? They could put it in the same building. Are they already saturated in their current distribution network? You know, Wal-Mart's not going to necessarily do a multi-channel building because they've already got up to dozens of buildings servicing their stores, and they're all at capacity. So when you add the e-com channel, you've got to add more distribution points to do that effectively. There is certainly more growth in e-commerce distribution space than there is in bulk retail distribution space as a percent of existing space of each type right now.

**Spencer:** Go back to 2011, 2012, and look at how many existing buildings got snapped up by Amazon versus build-to-suits. Then move to the end of 2012, 2013, when there aren't any million-square-foot buildings left just about in the whole country, and they're now doing all build-to-suits. That tells you right there when existing stock was available, at a rate less than replacement costs, Amazon went in and took the existing buildings and then retrofitted them.

**Grubor:** Unfortunately, there are just not a lot of e-commerce-conducive facilities out there. We're trying to put a square peg in a round hole. ... The benefit of (being e-commerce conducive) far outweighs every

## The evolution of retail logistics\*



Source: Jones Lang LaSalle Inc.

other building. While (a retailer) may position it that they're looking at other buildings as a competitive process, they're really homing in on one building. So having e-commerce-ready or e-commerce-focused buildings, spec buildings on the market, I think there's just a lack of supply.

**CPE:** How do you balance bulk distribution to stores with individual fulfillment? Can they share a distribution site?

**Jensen:** They absolutely can share a distribution site no matter how disparate they are, providing the site's not already saturated and at max capacity, and (that they're) in the areas that best support e-com. And they can more amenably share a distribution site if their pick methodology is similar. Small boutique shops picking single units out to their stores works very well.

**Grubor:** You can absolutely design fulfillment for all the different channels from the same facility. The advantage there is that you'd have fewer piles of inventory and you'd be able to aggregate demand. So I do believe that the DCs or fulfillment centers can be designed so that they are channel agnostic.

**Peterson:** The majority of retailers doing e-commerce (ones who also have brick-and-mortar stores) are already balancing their bulk distribution to stores with individual fulfillment within their warehouses. While there certainly are some retailers who are beginning to build dedicated e-commerce fulfillment centers within their supply-chain system, the vast majority of retailers have been blending store distribution with individual fulfillment from the same space. We see this continuing in the future, especially as inventory management software

systems continue to advance in technology.

**Spencer:** You should always segregate the two functions, the two infrastructures, the two sets of equipment and the personnel. But it is absolutely, positively done, which is why there are omni-channel or multi-channel buildings being built now for all of those whose scale is not large enough to have an individual network of e-com-only facilities. This is the new model, the omni-channel building.

**CPE:** Is it better for developers to build speculatively and market the capacity to accommodate e-commerce or do users prefer build-to-suits?

**Spencer:** There are a lot of developers out there that are into building spec. And there are a lot of them that say, "I'm not building any spec." Right now, we're in a perfect balance because we don't have a screaming economy. We don't have retail sales growing at 4.5, 5 percent a year. We're not in a hugely growing rising market, where everybody starts building spec.

We're in the middle. Half of it's spec. But that's not to say that when things increase and as demand grows, the e-com, just like bulk distribution, is not going to look for existing first. Why? Because how many people have an 18- to 24-month planning horizon? They may say they do, and then you get down to the site selection and they say, "OK, we want to move in in 30 days." It's unrealistic because people don't have a long enough framing horizon.

**CPE:** So it's best to be building the buildings and just—?

**Spencer:** And put in whatever strategic kinds of infrastructure you know can be used for (e-commerce): Have enough land with a permit to build 1,000, 1,200, 1,500 parking spots. Have enough structural integrity and building walls to add the mezzanine, if you need to. I'm not saying in every building, but at least have a plan.

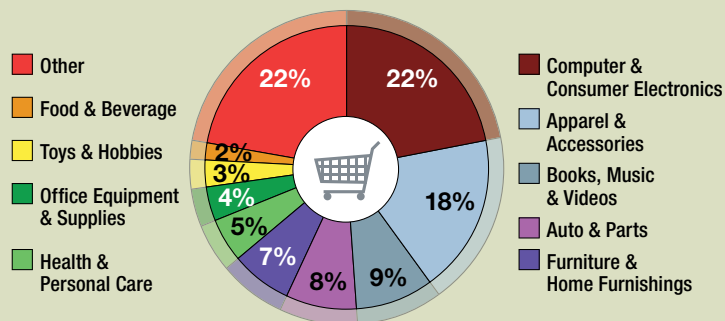
**CPE:** Jim, do the retailers prefer to build to suit or retrofit existing buildings? Or does it matter?

**Medbery:** Most of these big communities, where a lot of these buildings are going, are big enough markets where there are going to be spec buildings available. Like Atlanta. There are probably 20 buildings between 400,000 square feet and 1 million square feet that are currently sitting available and empty here in Atlanta. (And) it's way less expensive than building a new one.

**CPE:** Even with having to accommodate more employees and so forth?

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## Where Online Retail Dollars Go



Source: Cassidy Turley/U.S. Department of Commerce

online are branching out to brick and mortar. No one is yet contending that this demand for space is enough to directly affect occupancy or pricing, yet a new niche appears to be forming. A favorite example of retail real estate veterans is Warby Parker, which started out four years ago as an exclusively online retailer of fashion eyeglasses. “They are embracing the power of the physical space to help empower their virtual business,” noted Jones Lang LaSalle’s Kornberg.

To reach more of its target market—young, upscale and sophis-

ticated—in 2012 the company started leasing showroom space at compatible stores like Apartment No. 9 in Chicago and Art in the Age in Philadelphia. Last year, Warby Parker opened the first store of its own, a 2,500-square-foot-space in Manhattan’s hip SoHo neighborhood. So far, the retailer’s portfolio extends to seven showrooms and five stores in nine cities.

Another entrepreneurial brand that started life as an internet retailer, the men’s clothing company Bonobos, made its first foray offline in 2011. Since then, the company has expanded to eight shops of its own, and has showrooms hosted by Nordstrom in 22 states.

Still other tantalizing possibilities are in the air. “Rumors continue to circulate that Google might actually be doing a deal with Best Buy for a store within a store,” Brown pointed out. Even the online avatar itself, Amazon, has been said to have mulled the creation of a brick-and-mortar platform.

Intriguing as that thought is, Amazon’s current rollout of a national network of distribution centers may be a more reliable sign of its intentions. As Green points out, “I have trouble understanding what those (Amazon) stores are going to look like.”

Whether real or rumored, however, these examples show that the interchange between brick-and-mortar and online retail is very much a two-way street.

CPE

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**Medbery:** That’s a problem you run into a lot of times. ... Not very many of them have anywhere near the amount of personnel parking that’s needed. So that can be an issue. Just think about an Amazon building: They probably have 1,500 parking spaces at the warehouse, which was unheard of years ago. Usually, for a building that size, for a bulk warehouse, you might have 300 employees. And that would be in several shifts. So you have to find a property that can accommodate that. ... A lot of these companies will bus employees in during that peak season of November to Dec. 25. They might get a contract with the University of Louisville stadium where people can park there and they bus them back and forth to the facilities because of the parking issue.

**CPE:** What are the biggest challenges to developing the new distribution/fulfillment centers e-commerce requires?

**Jensen:** There are a couple of items: One is understanding whether it can be an expansion of your bulk distribution or it needs to be a separate, standalone center. ... If all you do in your building is full-pallet or full-case distribution, then doing e-commerce distribution in that building as a multi-channel operation becomes very difficult, where you literally have to set up a whole new process, a building within a building or a pick line within the building, and that’s additive. It may require a building expan-

sion, whereas perhaps, depending upon volume, if you’re already picking less than case quantities for your stores, you can pick those volumes out of the same pick cases for your direct-to-consumer customers. ...

The other challenge for e-com centers is, in general—and it varies based on product line—most e-com businesses have a much greater peak when it comes to seasonal selling than a retail replenishment center, in part because the retail center is replenishing another inventory position—that’s the store. So there’s another buffer. You can build inventory in the store as well as in the DC, so you can flow it out prior to the demand for the sale of the store, thereby kind of chopping the top off of your peak. At e-com, you’ve got to ship it when the customer orders it, and the customer orders drive higher and higher and higher toward Christmas. Therefore, you’ve got a much larger peak to deal with than you do in a retail replenishment center, when you look at a peak-to-average ratio. That said, you have to make sure you’re in an area where you have enough labor to get the people in the building in the seasonal times of the year so that you don’t fall behind with your customer order demand just simply because of the lack of labor. So a big challenge for especially a high-volume e-com center is to make sure you have the labor available in your market where you’re building and locating this building to support those peak labor requirements with seasonal help.

**CPE:** What are the most critical site selection factors that have to be considered now?

**Jensen:** The most critical factors in identifying the right locations for distribution fulfillment sites are always the same: It's a combination of cost and service. And so many things go into both of those factors. When you talk about cost, you're talking about your transportation costs, proximity to parcel hubs, the center of the country. ... (And) the location drives the labor cost. Different areas of the country have different labor costs. It'll drive the real estate costs. It'll drive your transportation costs. On the service side, if you can't get the labor in, it will drive how responsive you can be to customer orders. The distance from your customer not only drives cost but if you keep all your costs the same, i.e. ground service or something like that for all customers, then your service levels are going to suffer. If you're on the East Coast trying to service West Coast customers, it's going to be a five-, six-day total lead time to get to them in the best case without expediting the freight or adding costs to the outbound freight to go by air as opposed to ground.

**Spencer:** No. 1, proximity to major markets, so it's going to be population driven. It's going to be UPS and FedEx truck hubs within very close proximity—I mean, really close. They'd like them to be within five miles, but it could be within 20 miles, 50 miles. A very wide and ample surge labor pool. "Surge labor" is a term we've created here at IMS that means labor that is seasonal. How do you define that? Well, a lot of colleges in the area, lots of early retirees—those who are 65 to 75 make really good surge labor employees. A higher incidence of moms who need a second job in the evening.

And then really important is the FTZ, the foreign trade zone, and tax breaks. The reason our company, which has been around for 40 years, got involved in e-commerce so much was because a lot of the clients that we were working with in the foreign trade zones wanted what we're doing in an e-commerce facility. And in states like Ohio and Texas and Arizona, there are huge additional benefits for those foreign trade zones. I (also) think it's still important to avoid the sales tax. ... (although) that's getting to be less and less of a deal. After you get the proximity to major markets, truck hubs, surge labor and tax breaks, FTZ, then you want to look for access to interstates, inexpensive land, et cetera.

**Peterson:** Speed to market. It all depends on how quickly they can get their building built and open for business to be ready for the added capacity needs from e-commerce. An increasing number of facilities are being designed to achieve last-mile/same-day delivery, which can only be made possible by selecting infill locations close to large population centers. From a real estate perspective, the factors have not changed much: Companies are still looking for a combination of lowest transportation costs—both inbound and outbound—adequate labor availability, competitive real estate costs and easy access to major freight corridors.

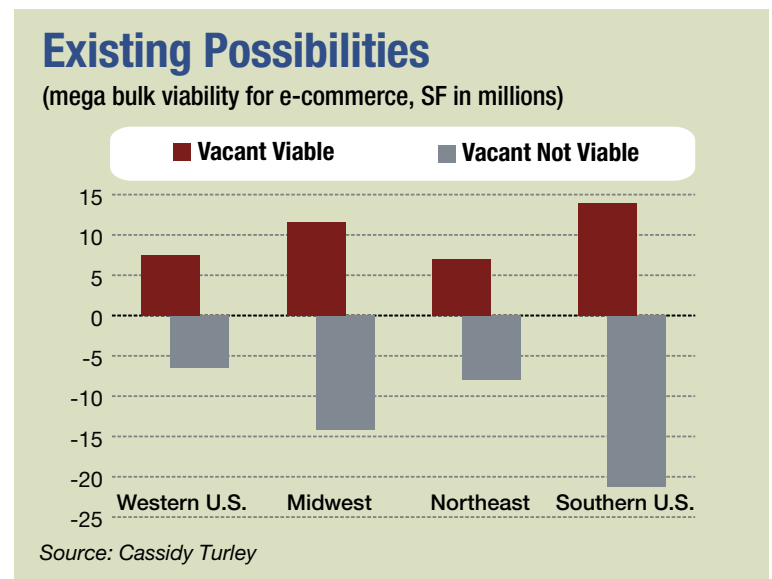
**CPE:** How much of a factor are the parcel delivery hubs?

**Jensen:** The later the pickup, the more competitive you are. And sometimes, the more profitable you are, because you can spread your

workload out over the day. You don't need to buy as much equipment. You don't need to force more people into the building over a short period of time. ... Now, what some of the more sophisticated folks are realizing is, maybe I need to split the difference and make sure it's close to two parcel carriers, so if FedEx annoys me or raises rates, I have a viable option of going in another direction.

**Medbery:** You're seeing a ton of e-commerce fulfillment in places like Louisville, Cincinnati, Indianapolis. The reason being is that you've got major air hubs. Louisville: UPS's biggest air hub in the world is located there. And Indianapolis and Memphis both have major FedEx hubs. It behooves them to be in those locations because if they're close enough to the airport, they're in the same market as that airport, they can actually continue shipping product until 11:00 at night.

**Grubor:** I believe that there's going to be more of a drive to have more distribution centers to be able to do next-day delivery at low to no cost to the consumer. Amazon's pushing the market in that direction; they're resetting customers' expectations. And I think the consumer is going to expect that in the long term. With that said,



there'll be a need to actually have multiple distribution centers across the country. And at that point, having the proximity to that DC near the hub will be less important because you'll no longer be going through these hubs. You'll be infusing your packages more into the local hubs for distribution in a localized area. ... It's (also) going to be extremely important to make sure that we're placing these distribution centers in areas in which there are ample people to employ because they are going to require a lot of staffing. One of the challenges that we're seeing more and more is that outside these metropolitan areas, there's a certain part of the area that has space to build DCs, so everyone's putting their DCs up there. Well, if Amazon puts in a DC and Wal-Mart puts in a DC and Target puts in a DC, you have a tremendous drain on the number of employees you have to hire in that small area.

**CPE:** Especially, as you mentioned, since you have that factor of the seasonal workers.

**Grubor:** Yes, absolutely. What's the access to public transportation? If you're going to pull people from the metro area, a lot of times they don't have their own transportation. So what's the access to buses or rails or other modes of transportation that would allow the company who was going to operate the DC to have a hiring strategy that would focus on inner-city population, and then be able to extract them out using low-cost transportation to the DC?

**CPE:** Are there more layers of distribution facilities for e-commerce—for instance, major superregional centers delivering to smaller, more localized centers?

**Peterson:** Certain larger e-commerce providers have been driving up the quantity of 1 million-square-foot buildings in the distribution network over the past several years, but statistically there has still been a large range of building sizes that are being used or converted to e-commerce functions that are less than 1 million square feet. In fact, in 2013, we saw a spike in demand for midsize buildings (250,000 to 750,000 square feet). It is not an obvious trend right now, as there are so many different strategies being tested by retailers to see what works for e-commerce fulfillment. And what works for one company may not work for another.

Customers are increasingly mindful of service levels and transportation costs. This makes them want to locate closer to their end customers. At the same time, they are still managing inventory levels, real estate costs and labor rates, which argues for larger properties that deliver economies of scale and allow for some consolidation. What we're seeing is more large facilities within and adjacent to major population centers.

**Jensen:** One of the things that people are trying to figure out is, How close do I have to be to the consumer to be able to meet customer expectations? While next-day or two-day delivery is great, customers care more about accuracy. So if you tell them it's going to be there on this day, they want to know it actually is that date. But if you get to the point where Amazon's at a position where they can do next-day delivery for free—and that's obviously the Holy Grail—that's going to require a lot more distribution centers than what would typically make sense from an operating-cost perspective. But that client expectation is going to drive you to actually put more distribution centers up. Smaller, more agile distribution centers closer to the customers. ... I think we're going to see over the next five or 10 years an evolution where you've now got multiple distribution centers, all of them capable of hitting every number with next-day service at a relatively low cost.

**CPE:** Are you addressing that yet?

**Grubor:** We are definitely starting to think about that. ... We have a network of facilities to fulfill that strategy, and we are thinking about how we position that in the market to offer customers a network of DCs with next-day delivery. The other thing we're looking at as a company is the use of ... regional carriers, which are able to deliver packages in the

same amount of time (as UPS and FedEx) at a significantly lower cost. We are building out capabilities today that if a client wants to, we can place them in enough distribution centers across the country where they can hit all their customers in a one-day delivery using ground service.

**CPE:** Where do we go from here?

**Spencer:** Three things I see coming: I see grocery delivery requiring local, smaller distribution facilities fed by the big million-square-footer that have cold storage, freezer storage, dry stock in local neighborhoods. I see anyone chasing Amazon either working through a large 3PL network or creating another network that can really piggyback on the denser population areas. The third trend I see is that we're going to really have a lot more omni-channel buildings than we're going to have dedicated e-com buildings because the whole next layer of retailers is getting into the business in a serious way (but) it still represents only 9 percent of our total U.S. sales. And we're growing 1.1 percent a year as a population, so in three years we add another 10 million people to the country, 30 million of (whose population is) buying e-com. If you want to put it in that kind of perspective, 270 million are going to the store.

**Medbery:** There is no question in my mind it's going to continue. I think all of the retailers that are doing what they should be in terms of pursuing online opportunity are going to see their percentage of sales from that aspect of the business increase versus their typical store sales. ... Retailers aren't going away, and neither are stores. There's going to be plenty of growth in that area, as well. But it's not going to be anywhere near as astronomically fast as the online growth will be.

**Jensen:** One thing that'll happen immediately: More 3PL use, or e-com making use of 3PL, might evolve into less use of 3PLs if they find out where they really need to be and how big they're going to be. The second one is folks that have e-commerce and brick-and-mortar replenishment in one building because they had the capacity in those buildings to do it: If e-com gets too big, you'll see those buildings either start to go more sole purpose—more e-com, maybe less brick-and-mortar replenishment—or they may start to build e-com-specific sites. ... They might be across the parking lot from each other, they might be down the block from each other, but they'll end up under two different sets of four walls.

**Peterson:** The global e-commerce market is approaching \$1 trillion a year, with a continued growth trajectory of 20 percent. Distribution needs are becoming more significant, and the quality of service is increasing, either for dedicated online fulfillment or omni-channel (which adds complexities to the logistics requirements). E-commerce will certainly continue to evolve for some time, along with technology and consumer preferences. It is possible that we will see small helicopters and bicycles delivering our packages some day, with buildings containing more automation and operating at higher capacities. But the well-located, functional warehouse that can be retrofitted internally will be at the core of the companies' distribution networks for a long time.