



# Distribution Center MANAGEMENT

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Managing people, materials and costs in the warehouse and DC

## From the Golden Zone

### Five facility design principles for e-commerce order fulfillment

By Kelly Reed

E-commerce has grown rapidly over the past several years. Last year, it exploded. Many retailers saw their e-commerce sales increase by double digits in 2012 and are projecting strong growth through the e-commerce channel for the foreseeable future. Amazon is clearly leading the pack when it comes to e-commerce, but traditional brick-and-mortar retailers are working hard to capture a bigger slice of an expanding e-commerce pie.

To compete and thrive in this new environment, these traditional retailers are building strategies to provide greater service, selection, and prices in all channels. Competition, which has always been fierce, is getting fiercer. Consumers now have many more ways to spend their hard-earned dollars. For example, in today's world, who hasn't heard of showrooming — customers browse through products in a brick-and-mortar store, compare prices for like products using their smart phones, and then place orders through a competitor's e-commerce channel.

Success in a multichannel world requires the right order fulfillment strategy, and the order fulfillment strategy is likely different from the store replenishment strategy currently being used to stock store shelves.

Consider the following factors for e-commerce order fulfillment:

- **Shipping times:** Peak shipping days tend to be more intense and more concentrated than store order replenishment. For example, customers are buying closer to the actual holidays causing much sharper sales spikes. Same-day fulfillment of these orders is becoming necessary to compete.

- **Order and shipment size:** Order size (typically one or two SKUs in a box) and shipping unit of measure are smaller than the order size and unit of measure for store replenishment. Consider the impact on picking and packing a glass item shipped in a master case to a store but shipped individually to an e-commerce customer.

- **Endless aisle:** Many products sold through an e-commerce channel are not sold through stores and may not be stocked at the DC, providing the customer with an endless aisle experience. The number of SKUs sold through the e-commerce channel may also be growing faster than the SKU count sold through the store channel.

- **Utilizing stores:** To build a stronger multi-channel approach, brick-and-mortar retailers can define how they can capitalize on their stores to

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meet customer demands. Store fulfillment, pick up in store, and return to store are becoming more common to keep up with the competition.

For companies with growing e-commerce operations that are challenged to keep up with the demand, here are some ways to improve order fulfillment capabilities.

- **Strategy before structure:** The business strategy drives the fulfillment network structure. There is no one-size-fits-all approach. Customize strategy to the specific needs of the business. In developing and communicating the business strategy, define the following:

- Target market
- Products
- Services
- Value proposition
- Capabilities needed to deliver the products and services to your target market.

- **Design considerations and best practices:** Once the strategy is clear, proceed to infrastructure — planning the network of fulfillment centers, DCs, direct delivery centers, forward fulfillment centers, direct special services centers, depots, forward picking locations, crossdocks, and other processing/shipping locations.

Make decisions with respect to doing fulfillment internally or outsourcing to logistics service providers. Another key consideration is whether to perform fulfillment operations in the store replenishment DC or to open separate fulfillment centers that are dedicated to fulfilling e-commerce orders.

Some best practice design principles for today's e-commerce fulfillment include:

1. Develop flexible solutions for shorter time horizons. Traditionally a five- to 10-year time horizon has been used for DC designs. That

approach is no longer viable since uncertainty about the future is much greater. A much shorter time horizon (two to three years) is essential to build capabilities that meet core requirements — but be sure it is scalable to meet future needs.

2. Plan for same-day order fulfillment. Customers are demanding instant gratification. Build fulfillment systems to pick, pack, and ship customer orders the day the order is received. And remember to size the operation to accommodate the order volume expected during the peak season.

3. Automation is not a guaranteed solution at high volumes. Automation may experience constraints with a greater peak to average ratio. Certainly the right amount of automation plays a key role in fulfillment center design but strong business cases are built with the investment fully justified.

4. The order fulfillment process normally consists of multiple flows to optimize productivity and efficiency and reduce order cycle times. For example,

- a. Batch pick single-line orders and send directly to packing
- b. Some multi-line orders that are not easily batched or consolidated may require a discrete order-picking process
- c. Some multi-line orders should be batch picked and consolidated in a downstream order consolidation process

5. Packing quite often becomes the throttle for the entire fulfillment process. Take special care to properly size packing.

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