Zone Skipping Strategies to Reduce E-commerce Shipping Costs
How to Leverage Warehouse Sortation Systems to Streamline E-commerce Delivery
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Zone Skipping Strategies to Reduce E-Commerce Shipping Costs

How to Leverage Warehouse Sortation Systems to Streamline E-commerce Delivery

By Tim Kraus, Director, Product Management, Honeywell Intelligrated

E-commerce companies compete across many parameters, including product variety, price and delivery options. While online shoppers ultimately make decisions based on all of these factors, research consistently indicates that free shipping is a critical incentive. Low total delivered price, fast shipping and order accuracy are critical to winning and retaining customers, especially with competitors a mere click away. According to the 2016 UPS Pulse of the Online Shopper study, of the more than 90 percent of buyers who reported abandoning shopping carts, at least half cited unexpectedly high shipping costs as the reason for doing so.

Whether or not the true cost of shipping is visible to buyers, finding ways to reduce shipping costs is key to profitability and customer retention. This is more difficult than ever, as operators face dimensional weight (DIM) and other pricing pressures from parcel carriers. While some answers may lie in evaluating current transportation and logistics costs, operations should rethink the efficiency of all operations throughout its supply chain network, including third-party parcel carriers.

Implementing a sortation strategy known as zone skipping allows fulfillment centers to assume some of the handling steps typically required of carriers. The more sorting done at the fulfillment center, the less handling and sorting required of the parcel carrier – thereby reducing shipping costs and increasing delivery speed. This white paper explains the zone skipping strategy and outlines the sortation technology best suited for operations, based on criteria like packaging type, footprint and throughput rate.

What Is Zone Skipping?
The traditional delivery workflow starts with the parcel carrier picking up all shipments from an e-commerce fulfillment center. Orders are then sorted at the carrier’s local parcel handling facility, again at a regional hub, and one final time at the local or regional destination facility before final delivery to the buyer. Each phase of this multi-step process accumulates costs and time – enemies of an efficient supply chain.

However, with zone skipping, orders are pre-sorted at the e-commerce fulfillment center according to final destination before being turned over to the carrier. This enables orders to bypass parcel carrier sortation at local or regional hubs close to the fulfillment center and instead be delivered closer to the final destination. This practice reduces the burden on parcel carriers and improves delivery speed by getting items as close to the final delivery location as quickly as possible, thus producing real cost savings – between 25 and 75 percent per parcel.
Sortation Is the Foundation

Successful implementation of zone skipping starts in the warehouse, with automated sortation systems separating orders based on carrier and destination. Operations must consider all requirements, including throughput rates and future demands, to make the right technology choice for their sortation system. The solution must allow for sufficient divert destinations within the fulfillment facility’s available footprint and reliably handle the required product and packaging mix.

Building the Right Sortation System for Your Zone Skipping Initiatives

Selecting the best-fit sortation technology requires analysis of key performance indicators, service level expectations and business requirements. However, the system design also depends on the determination of common delivery locations to show which areas are best suited for zone skipping. For example, if an operation has a high concentration of regional deliveries, then zone skipping may make sense in some areas but not others. Making the right zone-skipping sortation decision requires analyzing operational characteristics one at a time, starting with order volume.

Order Volume

Getting the most out of a zone skipping strategy requires a sortation system with sufficient capacity to handle a fulfillment center’s throughput requirements. Understanding peak to average order volumes helps build a full picture of sortation equipment needs. For rates in the 6,000-item-per-hour range, a sweeper sorter is a simple, reliable option. Other technology can serve higher rates, such as a high-density configuration sliding shoe sorter, which can handle volumes of up to 10,000 items per hour, and push tray and traditional dual-sided sliding shoe sortation systems, which can serve up to 12,000 items per hour.
As throughput requirements increase, other technologies become viable solutions. Single-sided sliding shoe sorters can handle 24,000 items per hour and offer a lower cost than other maximum throughput sortation options. Cross-belt, tilt-tray, push tray and bombay sorters can serve higher volumes (27,000 items per hour), with options such as split- or quad-tray designs for even higher performance.

**Layout Flexibility**

One of the key challenges of zone skipping is finding sufficient warehouse space to house the volume of diverts necessary to enable the strategy. Destination pitch indicates how closely together divert chutes can be located for effective sortation. The lower the pitch, the higher the chute density, meaning operations can fit more divert chutes into a smaller amount of floor space. For operations with limited floor space, this metric is critical. System designers should also keep in mind that the maximum order size that needs to be handled directly affects what divert centers are possible – larger items simply cannot fit into small divert centers.

Sweeper, push tray, bombay and cross-belt sortation systems can offer the greatest chute density, with destination pitches of less than or equal to 24 inches. Tilt-tray sorters and high-density configuration sliding shoe sortation systems have less than 30-inch destination pitches. Other dual- and single-sided sliding shoe sorter configurations offer a higher throughput capability but lower chute density, requiring at least 60 inches of destination pitch.

**Fast Delivery, Fast ROI**

Investing in the necessary sortation infrastructure for zone skipping delivers fast returns. In fact, a company can completely recoup $1 million spent on a sortation system in less than a year.

This calculation assumes an average savings of $0.20 per item and order volumes of 20,000 per day in non-peak quarters and 30,000 per day during peak quarters, typical of a small- to mid-size, e-commerce operation.
**Product Handling Capability**

Sortation technologies are capable of handling a wide range of package sizes and types. Divert centers, throughput rates and equipment all dictate what is considered “conveyable” and “non-conveyable.” The greater the mix of non-conveyables, the lower the payback on the zone skipping sortation system investment. This is a critical assessment to make upfront, as operations must consider building in the flexibility to adapt to a wide variety of e-commerce packaging types.

For example, DIM pricing has led operations to implement smaller, more malleable packaging like polybags. While these lack the well-defined, solid bases of traditional corrugate cases, they do result in reduced shipping costs. Sortation technology best suited for polybags, bubble mailers and other small, difficult-to-handle items include sweeper sorters, high-density sliding shoe sorters and tilt-tray and cross-belt sortation systems. Bombay sorters offer even greater product handling capability with their ability to reliably handle items as small as pill bottles. Though unable to handle smaller items quite as well as the other technologies, push tray sorters along with single- and dual-sided sliding shoe sorters are also capable of handling large cartons and totes.

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**Zone Skipping in Omnichannel Operation**

Competition in modern retail involves meeting consumer preferences to research, buy and receive merchandise in the manner of their choosing. Therefore, retailers are often required to consolidate supply chain operations for their brick-and-mortar and e-commerce businesses for greater efficiency. This means running e-commerce fulfillment and retail replenishment from the same facility.

These retailers already have trucks running regular delivery schedules for retail replenishment. Leaving room in replenishment trucks to carry gaylords full of e-commerce orders allows retailers to take advantage of latent delivery capacity and avoid redundant shipping costs. By pre-sorting e-commerce orders based on carrier and destination, retail replenishment trucks can deliver orders to regional carrier facilities located nearest to the final destination, thus reducing sorting and shipping burdens on parcel carriers.

Assuming a conservative savings estimate of $0.20 per item in shipping costs, multiplied by 200,000 to 500,000 orders per week, operations can generate $40,000 to $100,000 in weekly savings.
Putting it all Together

The best-fit zone skipping sortation system balances cost while meeting requirements for throughput and product handling flexibility in a space-efficient package. Beyond that, operations must coordinate with internal logistics operations and parcel carriers to properly execute a zone skipping initiative and realize its full potential.

To better understand the effect of DIM pricing on automated fulfillment operations within the four walls of the warehouse, read Honeywell Intelligrated’s DIM white paper. For help developing an ideal zone skipping solution, contact a representative.