In examining their supply chains, more and more companies are identifying opportunities to incorporate cross-docking – the process of receiving product and shipping it out without putting it into storage. Cross-docks are generally used for “hub-and-spoke” arrangements, consolidation, or deconsolidation.

While not a new practice, cross-docking has seen a resurgence of interest in recent years. What is attracting companies to the practice? How is it being implemented? How are practitioners leveraging outsourcing? The following report offers answers to these questions and more.

**Why Cross-Dock?**

Companies find that cross-docking gives them an opportunity to take costs out of their supply chains and gain transportation efficiencies, so they can get their products to customers more quickly and economically.

Typically, cross-docks can be developed using a variety of strategies such as (but not limited to) the following arrangements:

- Consolidating LTL into truckload to reduce the number of deliveries to retail outlets
- Breaking larger loads into individual orders for home delivery
- Pre-picked orders transferred to LTL through the use of a third-party warehouse facility to handle the cross-docking process
- From multiple plants (deconsolidated) into a third-party cross-dock that, within hours, picks and consolidates all products from all plants into customer or route orders and then delivers
- Either pre-picked to a customer order or bulk-picked to a pooling location to handle the last-mile shipment to the customer

**Improved customer service is the primary reason that most companies consider cross-docking.**

*Tom Patterson*
Senior Vice President, Transportation Services

**ENHANCED SERVICE**

Cross-docking allows products to reach their end destination more quickly and economically, ensuring that products are available when needed and supply chain costs can be reduced. This is particularly important for omnichannel operations challenged to meet increasing demand for same-day or next-day deliveries.

Recently, Patterson observes, there has been expanded use of cross-docking to support a direct-to-consumer business model – specifically for home delivery. The practice allows omnichannel companies to have a smaller representative inventory of products that can be quickly deployed to meet customer demand.
Cross-docking can also be used to get the right mix of products to the customer. Some operations break apart pallets into individual orders—layer picking or even case picking to get stores what they need. Store-ready orders can be prepared by suppliers for shipment to the cross-dock, then routed for delivery utilizing the most cost-effective mode of transportation.

COST SAVINGS
Cross-docking offers opportunities for cost control in many areas, most notably warehouse space, labor and transportation.

› Warehouse Space: The inherent simplicity of a traditional pallet-in, pallet-out cross-dock makes it a relatively inexpensive way to handle product. Since inventory is not stored in a warehouse, companies can avoid the major brick-and-mortar investment of a huge warehouse and reduce their inventory carrying cost. Cross-docking does require a somewhat larger footprint in an omnichannel environment where order sizes are much smaller and short-term storage may be needed.

› Transportation: The biggest opportunities for cross-dock savings are transportation related, Patterson says. Considerable freight savings can be achieved by consolidating LTL shipments into full loads. Cross-docking also enables companies to ship full truckloads of products close to the customer, reducing the distance (and cost) of final-mile deliveries. Taking advantage of transportation efficiencies also allows companies to mitigate the impact of rising fuel costs.

› Labor: Because cross-docked products are not put into storage, less handling is required. Companies save on labor costs when they accumulate freight coming in, mix and match it, and put it on trucks.

Considerations for Effective Cross-Docking
While the benefits of cross-docking may be appealing, potential practitioners should consider the following factors before adopting the practice.

FACILITIES
In order to reap the full benefits of cross-docking, companies should consider utilizing facilities designed specifically for the practice. A cross-dock facility typically has truck or dock doors on two or more sides with little or no storage space. These facilities are designed to accommodate factors such as product movement requirements, dock-area layout and capacity, yard management and material handling equipment.

Today, many companies add a cross-dock facility to an existing DC, Patterson says. “Trying to cross dock within a traditional DC can be disruptive, but it’s helpful to have the function in a separate building on the campus because there’s more flexibility for labor and transportation,” he explains.
When designing cross-docks for direct-to-consumer operations, Patterson advises companies to anticipate the increasing Uberization of freight by creating more vendor-friendly facilities. For example, home delivery operations might involve product pick-up via cars or vans instead of delivery trucks, and the cross-dock facility design should take that into consideration.

**PRODUCTS**

“Just about any type of product can be cross-docked, but the practice is particularly effective for companies that are moving heavy volume on any given day and need to do it in a precise way where service is critical,” Patterson says.

Durable goods are the most common products for cross-docking. Products that are not easily sent via parcel carrier (appliances, furniture, toys, etc.) can be especially good candidates.

More sensitive products are also cross-docked regularly. Food and beverage with a short shelf life (i.e. baked goods, snack foods, beer) are good examples. The system works well for perishables that need to be delivered within 24 to 48 hours to preserve quality and freshness.

One client has seen the value of cross-dock-related transportation savings first-hand, according to Patterson. The perishable manufacturer couldn’t afford to let product sit in the warehouse because of shelf life. Initially, the company shipped truckloads from a single plant to as many as 25 different locations, but costs associated with stop-offs and out-of-route miles became prohibitive. “By consolidating LTL shipments into full loads at dedicated cross-dock facilities, the manufacturer justified the expense of a dedicated cross-dock based on the transportation savings alone,” he explains. “In addition, they realized incremental labor savings and were able to take one day out of their cycle.”

High-value/high-security goods such as electronics or pharmaceuticals are good candidates. The high turn rates and reduced handling associated with cross-docking minimize risk of loss from theft and opportunities for damage. Cross-docking also helps companies avoid added carrying costs for high-value inventory.

Today, many high-value retailers incorporate automated cross-docks as part of their supply chains. At a regional location, high-value items, such as electronics and small appliances, are unloaded directly from inbound trucks onto conveyors where the products’ UPC codes are scanned along with the full point-of-purchase carton. Both the UPC and camera scan of the carton are verified in a data table against that day’s retail store requirements. Product is then conveyed directly to a sorter, routed and loaded onto outbound direct-to-store delivery trucks and sent to the store to be placed on the shelves for sale later that day. Any remaining inventory is then put into stock at the distribution center.

This process reduces the number of product touches by as much as 70 to 80 percent, depending on how well demand planning and transportation can be controlled, Patterson says. Moreover, inventory carrying costs are dramatically decreased, as product arrives the day it is put on the shelves.

**SHIPPING PRACTICES**

Historically, a limited number of SKUs and full truckload shipments have been a solid recipe for success with traditional cross-docks. This is most effective when the product turns consistently to avoid a backlog at the final destination.
Truckload and LTL shipments are the most common modes for inbound and outbound shipments. When materials are not time-sensitive, some companies use rail in order to reduce shipping costs.

Truckload products that are typically full-pallet-in, full-pallet-out are most easily cross-docked, less-than pallet quantities and individual orders also can be cross-docked although they are more labor intensive.

Strong cross-docks require reliable transportation programs. “Companies lacking experience in transportation management can suffer in a market already tight on capacity. Predictability and timeliness are critical since there is not stock inventory to pull against,” he says.

PRODUCT TOUCHES
The number of “touches” products receive during the cross-dock process can vary significantly, depending on the objectives for the operation. Some companies practice “pure” cross-docking (product is received and loaded outbound without being placed on the warehouse dock), a “two-touch” approach is more typical. Products are received and staged on the dock and loaded outbound without being put into storage. Other operations are “multiple touch”—where product is received and staged on the dock then reconfigured for shipment and loaded outbound directly from the warehouse dock.

“Obviously, greater efficiency can be achieved the less the product is handled,” Patterson says. “It really comes down to how much freight you want to put through and how long you want it to dwell.”

For example, one company has inbound loads every day, yet consolidates and ships just twice a week, says Patterson. This arrangement allows the manufacturer to reduce transportation spend yet make deliveries that meet the end-user’s requirements.

DISTANCE TO DESTINATION
The distance from the cross-dock to the customer can vary greatly. For some companies, it is important to have a cross-dock operation in a centralized location.

For others, a typical shipment travels less than 100 miles once it has been cross-docked. Companies with cross-docks far from the end-delivery point are overlooking the opportunity to reduce short-haul miles and save on freight costs, Patterson cautions.

Companies with omnichannel cross-docks tend to situate facilities in very close proximity to the consumer in order to dramatically shorten the distance required for home deliveries.

Companies that are shipping multiple items to multiple locations consistently are prime candidates for cross-docking. Some store chains bring them into one location and split them up for multiple locations, combining multiple product types to reduce the number of deliveries to their retail outlets.

Cross Docking Challenges
While cross-docking offers a strong value proposition, it does present some degree of difficulty, particularly in these key areas:

CUSTOMER COMMITMENT
The biggest challenge for most companies is unpredictable customer demand. Companies often overlook the need to have their customers committed to working in a cross-dock environment. “Cross-docks are a demand-driven model, but the demand needs to be predictable,” Patterson explains.

In a warehouse situation, for example, if a customer wants to delay shipment, there’s space for it. But in a cross-dock there’s nowhere to put it. An average cross-dock has just 40,000 to 100,000 square feet of space.

SPACE
The growth of ecommerce has rendered industrial real estate in short supply, with availability rates hovering around 7%. With such limited inventory, it can be difficult for companies to find space to build cross-dock facilities.
LABOR
An ever-tightening labor market makes labor management a serious challenge – and drives up median wage rates. Employee training can also be an issue. Typically with the launch of a cross-dock, there is a training curve that must be addressed to prevent service issues.

TECHNOLOGY
With the fast pace of a cross-dock environment and its demands for an efficient and responsive flow of information, systems support can be another pain point.

“Cross-docks require a disciplined process as they are driven by exact scheduling, product tracking and trailer placement/yard management,” Patterson explains. “A good planning mechanism and impeccable scheduling are vital. It is important to know how much product customers will require, how many associates are needed for a given shift, or how many trucks will be required, for example. Business processes and IT support go hand in hand.”

Outsourcing as an Option
Given all the variables of cross-docking, many companies look to 3PLs to help manage the process, using a 3PL either exclusively or in addition to in-house resources. Third-party providers offer a number of advantages, including:

1. Reducing Costs: Cross-docking is less costly than a traditional warehouse, it still requires a significant investment in necessary resources, including space, staff and technology. Outsourcing helps companies to minimize that overhead commitment while still realizing the value of cross-docking.

Distribution network changes may require changes in location, or product flow may change from full pallet to case picking. A third party enable clients to adapt to changing needs.

2. Flexibility: A 3PL can right-size an operation to meet business fluctuations. Sharing a cross-dock facility with multiple shippers, for example, not only helps to defray the overhead costs but also accommodate peaks and valleys in the shipping cycle. This flexibility can be helpful for promotions and seasonality.

Of course, if a company has sufficient volume, a dedicated cross-dock facility may be most effective. If cross-docking is not an internal core competency, third-party providers can build and manage a dedicated facility as well.

As a business evolves, so may its cross-docking needs. For example, distribution network changes may require a change in location, or product flow may change from full pallet to case picking. A third party enable clients to adapt to changing needs without a long-term commitment.
3. **Advanced Technology:** Systems that provide real-time visibility can be useful, given the need for forecasting, demand planning and order accuracy. Staying abreast of technology can be cost prohibitive for companies, so leaving the overhead investment to a third-party provider can be beneficial.

4. **Service Integration:** For many, there is also value in the integrated service offering of third-party providers. Often companies seek out 3PLs that offer inbound/outbound logistics, traditional distribution services and value-added services.

5. **Experience:** Typically, those who outsource opt to seek the expertise of a provider for whom cross-docking is a core competency instead of building that proficiency internally. They may have products with special needs – i.e. high-value/high-security products, temperature-controlled products and perishable items – and want to tap a 3PL’s proven processes and knowledge of industry best practices.

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**Cross-Docking Outlook**

When used effectively, cross-docking can play an integral part in the value chain—improving service levels, increasing efficiencies and controlling costs.

A growing number of companies are recognizing these benefits and making cross-docking part of their distribution solution. For many, using a 3PL to help manage the process allows them to minimize or avoid some of the pitfalls with the practice.

Regardless of how the operation is handled, it is important to establish clear objectives up front. If goals include streamlining the supply chain and getting products to customers more efficiently and economically, cross-docking may be the right answer.

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**About Saddle Creek Logistics Services**

We specialize in designing and delivering omnichannel logistics solutions for manufacturers, retailers and ecommerce companies. Our approach is solution based and data driven, leveraging the most advanced operational methods and sophisticated technologies.

Clients utilize our warehousing, fulfillment and transportation services as stand-alone offerings or as part of an integrated logistics solution. They have access to our nationwide network of strategic locations totaling nearly 18 million square feet of warehouse space. We’re committed to delivering the speed, service and scalability our clients need to compete in today’s omnichannel marketplace.

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**SERVICE EXCELLENCE**

Since 1966, we’ve been driven by strong core values and a keen sense of entrepreneurial responsiveness.

We optimize performance by focusing on key areas:

› Solution Design  
› Business Delivery  
› Systems Integration  
› Continuous Improvement

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