

Effective Putaway and Picking Operations

Achieve Optimal Results leveraging Putaway and Picking Strategies

When looking for ways to optimize operational efficiencies within your distribution environment, it's imperative to evaluate your picking and putaway processes. Both picking and putaway have a variety of best practices that should be taken into consideration, such as order mix, facility layout, customer demands, vendor compliance, and product characteristics. All of these factors will help determine which solutions work best in your environment.

Putaway Considerations

There are two primary product sourcing points in a distribution environment: one is from a vendor via purchase order; the other is via warehouse transfer from within your organization. The most common method of receiving is against the purchase order (or warehouse transfer). This process can be done either manually or via radio frequency (RF).

If tracking is needed for purchase order payment (or inventory levels for warehouse transfers), the preferred method is through advance shipment notice (ASN). Rather than sorting the product for each individual purchase order on the truck, receiving by ASN eliminates dock sortation and allows for more effective putaway. This process is effective for containers with multiple purchase orders, provided the container information printed on the purchase order has been accurately managed.

The putaway process is generally handled in one of three ways. The most common method is to stage all products listed on the purchase orders as they are received and match them to the packing list. This method ensures that the entire shipment is validated prior to the product being placed into distribution operations. While this process identifies discrepancies and is easier to manage, it requires larger staging areas and increases the time the product spends on the dock instead of in its picking location.

Another method is to stage products by item. This allows some putaway to occur prior to receiving every item on the purchase order. It requires less storage space and reduces the time it takes to get a product to its final location; however, some vendor compliance rules must be in place for this option to be effective.

To increase the speed it takes for a product to arrive at warehouse locations and to utilize smaller staging areas, products can be received from the truck and placed directly in its final destination. With this process, the product is received where it's needed more quickly than the previous two methods, however, it requires a more sophisticated operation and warehousing system.

Putaway Decisions' Effect on Picking

While the putaway process is critical, it's equally important to consider slotting, as it does have an impact on overall efficiency. Picking requirements can be based on either velocity or size by unit of measure. For example, fast-moving piece-picked items should be stocked in primary locations for quick picking and to reduce replenishment runs. A process based on size occurs best in environments where the product is picked onto the actual shipping container. In this situation, heavier products should be slotted earlier in the pick sequence to prevent damage.

Picking Processes

Prior to picking, customer service rules should determine which orders have priority for certain products. Rules may consider a fair share method on orders, prioritize customers based on classification, or ensure that an order can be filled 100% prior to being released to the floor. Once orders have been effectively released, then a picking process is selected.

Single Order Picking is the most common method, performed using a radio frequency (RF) device or standard paper picking. It allows an order to be picked together, minimizing additional merchandise handling. With this method, the product can be picked onto the appropriate shipping container and potentially never touched again.

The *Batch Case Picking* method maximizes the process by allowing multiple orders to be picked with one visit. It requires additional sortation handling after picking, but works extremely well in a case-picking environment that uses automated conveyor sortation. With batch picking, picking and transit times may be dramatically reduced, though it should be noted that shipment preparation time will increase.

Consolidated Piece Picking, which is similar to the batch case approach, also allows multiple orders to be picked in one visit. This is often done using a cart (e.g. cart picking) or cartons on a conveyor (e.g. pick-and-pass picking), allowing items to be picked directly into shipping containers. It can also be performed by picking the product and moving it to a consolidation area. While this option dramatically increases picking productivity, it does require additional labor for sortation.

To determine the most effective method, calculate the order fulfillment rate by evaluating selection time during picking, travel time, and batch size. Then compare this information to a Single Order Picking fulfillment rate, determined by pieces picked, packed, and shipped with total man-hours.

The *Order Consolidation* concept is similar to Single Order picking, but has the added feature of grouping individual orders that are going to the same destination. The product is handled one time while completing multiple orders with one pass through the warehouse.

The *Kit Picking Method* (also known as Bill-of-Material Picking) is best used in environments where items are shipped as kits. It works by building the final assembly of the product during picking rather than using a finished kit inventory. With Kit Picking, parts are “built” into a set (or kit) at picking, providing flexibility in component inventory and reducing overall inventory totals.

Wave Picking involves picking orders based on routing or shipping groups. For example, all parcel carriers may be shipped in one wave; a specific carrier may be in another.

Impact of Automation

An equally important consideration when evaluating operational effectiveness is to ensure that warehouse automation is in line with picking and putaway processes. Two common putaway



processes include automated conveyor systems and automated storage and retrieval systems (AS/RS).

With an automated conveyor system, the product is routed to the appropriate zone, thereby reducing travel time. The amount of time it takes for a product to travel from a receiving area to storage can have a significant impact on operations, so it's critical to have a seamless system in place to ensure efficiency at all levels.

AS/RS provides several benefits: maximized storage space, increased productivity, reduced labor requirements, and improved accuracy. AS/RS technology is especially effective when working with narrow aisles and extremely high racks. While AS/RS requires significant up-front costs, it may well be worth the investment in certain environments as it eliminates manual product handling and significantly reduces human error.

When evaluating automated picking processes, one should also consider pick-to-light and voice-recognition technology. Pick-to-light technology creates a paperless environment and enables a picker to more efficiently pick a product through lights and LED displays strategically placed on shelving, carton flow racks, and other storage devices. Pick-to-light requires confirmation of each item as it is picked and provides the ability to carry out inventory checks while also indicating replenishment needs. This technology can dramatically increase speed and accuracy.

Voice recognition allows workers to achieve manual sorting/picking through normal speech. This technology translates spoken words to the system while communicating directed tasks by voice commands to the picker. The benefits are similar to pick-to-light, but the ergonomic advantages are greater with even easier training.

There are a variety of choices one can make to achieve operational efficiency, but some will be easier to make than others, as it will be based on available capital, corporate culture, and order mix, as others will require a more thorough examination of the operation. You can rest assured that with common sense and calculated analysis, you can achieve outstanding operational efficiencies within your distribution environment.

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