



## Effective Putaway and Picking Operations

### *Achieve Optimal Results leveraging Putaway and Picking Strategies*

When looking to best optimize operational efficiencies within your distribution environment, significant consideration should be given to your picking and putaway processes. There are multiple best practice solutions that will need consideration across both areas. Factors such as order mix, facility layout, customer demands, vendor compliance, and product characteristics all will help determine which solutions will 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. Often receiving against the purchase order (or warehouse transfer) is the most basic and appropriate method. This process can be done through a manual or radio frequency (RF) approach.

When appropriate tracking is needed for purchase order payment (or inventory levels for warehouse transfers), receiving by advance shipment notice (ASN) is used. Rather than sorting product for each individual purchase order on the truck, receiving by ASN will eliminate dock sortation and allow for a more effective putaway. This process is extremely effective for containers with multiple purchase orders if the container information 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 on the purchase orders as they are received and match them to the packing list and other documents. This method ensures that the entire receipt is validated prior to 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 product spends on the dock instead of in its picking location.

Another method is to stage product 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 product to its final location; however, some vendor compliance rules must be in place for this option to be effective.

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

#### **Putaway Decisions Affect on Picking**

While consideration for the putaway process is critical, it is as important to recognize that slotting of product at putaway significantly impacts 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 reduction of 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 product damage.





## Picking Processes

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

*Single Order Picking* is the most common method. It is performed using a radio frequency (RF) device or standard paper picking. It allows an order to be picked together, which minimizes 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 does require 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, but shipment preparation time will increase.

Similar to Batch Case Picking, the *Consolidated Piece Picking* method also allows multiple orders to be picked with one visit. This is often done using a cart (e.g. cart picking) or cartons on a conveyor (e.g. pick-and-pass picking), thus 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 going to the same destination. Product is handled one time while completing multiple orders with one pass through the warehouse.

In an environment with items shipped as kits, the *Kit Picking method (Bill-of-Material Picking)* builds the final assembly of the product during picking rather than using finished kit inventory. When picking a kit that is inventory, a product that comprises several parts is stocked as a set. With Kit Picking, parts are “built” into a set (or kit) at picking, providing flexibility in component inventory and reducing overall inventory totals.

Any method of picking can also be utilized with *Wave Picking*. This involves picking orders based upon 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, product is routed to the appropriate zones, thereby reducing travel time. Operations can be significantly impacted if transit time from receiving areas to storage zones is significant.

AS/RS brings 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 is capital intensive, it can be extremely cost-effective in certain environments as it eliminates manual product handling and significantly reduces human error.

When evaluating automated picking processes, considerations should include pick-to-light and voice recognition technology. Pick-to-light technology creates a paperless environment and enables a picker to more efficiently pick product by means of lights and LED displays 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 and indicate replenishment needs. This technology can dramatically increase speed and accuracy. Voice recognition allows workers to achieve manual sorting/picking through normal speech. The 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 and training is often easier.

Although many choices exist as you attempt to achieve optimal operational efficiency, you will find that some decisions are fairly simple based upon available capital, corporate culture, order mix, and other key factors. Other decisions will require more complete examination of the operation, but rest assured that through common sense and calculated analysis you can achieve outstanding operational efficiencies within your distribution environment.

#### **About the Author**

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