Maximizing Time and Space Utilization

Create definable business rules that drive putaway activities in your warehouse.

Using an advanced warehouse management system to assess the available space in the warehouse and direct warehouse workers to locate the product from receiving, replenishment or by a move to the bin that best meets the rules that the warehouse manager has established.
MAXIMIZING TIME AND SPACE UTILIZATION

Automate warehouse operations in the areas of labor, physical space, and inventory.

In the tough global economy that we find ourselves in, companies are increasingly looking for tools to help them do more with less. It’s not OK anymore to simply get the job done, we have to find ways to continue to increase responsiveness, drive down cost and not grow resources at the same time. Not a job for the faint of heart!

Automating operations in your warehouse attacks many of the variable costs that a distribution company or center controls:

1. Labor
2. Physical space
3. Inventory

This white paper addresses how automating warehouse processes can help companies like yours do more with less. It focuses on how system directed processes, like put away, can allow you to maximize the use of your warehouse labor pool, improve the utilization of your warehouse space and assist you in stocking and locating your high velocity items.

Fundamentals Of Warehouse Automation

Let’s start with ensuring that we’re speaking a common language. Many people view the use of a handheld computer as warehouse automation. In some respects, it is hard to argue with that definition as they are unquestionably taking intelligence to the warehouse floor. But, it doesn’t truly provide the gains that can be achieved through the use of a fully featured warehouse system. Generally, warehouse automation falls into three categories:

1. Automated data collection – the use of handheld computer to “record” manually assigned activities on the warehouse floor. Examples would be picking, receiving and counting

2. Warehouse management – the use of business rules and algorithms to determine the optimal way of picking, receiving, storing and counting and the subsequent of assignment of those tasks by the system to individuals using handheld computers in the warehouse

3. Warehouse control or automation – the incorporation of sophisticated hardware, such as conveyors, diverters, carousels, vertical lift stations, etc, to supplement the capabilities of warehouse workers in completing system directed tasks

System Directed Putaway

We’re going to focus on the benefits to be gained through the use of definable business rules that drive putaway activities in the warehouse. Putaway is normally thought of as the process of moving received inventory from its current location (the dock, kitting area, or production department) to a bin or overstock location. The putaway process is also used to relocate inventory within the warehouse and to replenish dedicated bins with inventory from overstock. System directed putaway is when the system recommends or chooses the optimal destination bin rather than the operator selecting it.

While the benefits are numerous, from better management of returns to improved customer service, these are the areas that users typically find:

1. Improved use of labor
   a. By utilizing predefined business rules, the system eliminates the guess work that a warehouse worker goes through today to locate a bin
2. What partially full bin could this item fit in?

3. How close is this bin to other locations for this item?

4. Based upon the velocity of this item, where should it be located to minimize picking time?
   a. The picking process becomes more efficient because all products follow the business rules developed to maximize utilization AND effectiveness of storage
   b. The time it takes a new warehouse worker to become effective dramatically diminishes. They don’t need to fully understand nor appreciate the physical layout of the warehouse nor do they need to be familiar with the extensive product catalog that a company may have

5. Maximized use of physical space
   a. By following the predefined business rules, the system will better allocate physical space to allow for more products and if needed increased quantities of existing products within the existing space available
   b. The system will create a better plan for sensitive items like those that are lot-controlled, serialtracked, hazmat, etc.

While most directed putaway systems allow for a virtually unlimited set of business rules to be defined, there are typically a few key factors that drive the rules:

1. The product or product categories utilization
   a. Is the product a raw material that is used in kitting or production? If so, locating it near the production facility along with its peer products will drive better effectiveness in the warehouse
   b. Is the product a replacement part used in a warranty and repair operation? Same logic as production. Locate it near the repair facility and minimize the physical movement of the goods within the warehouse
   c. Is the product typically sold in “eaches?” If so, locating it in a high velocity location such as a carousel would be advisable
   d. Is the product generally shipped on a sales order? And, do sales orders usually include a mix of vendors? If shipments are usually homogeneous by vendor, organizing your warehouse around vendor specific guidelines will net positive results. And, directed putaway rules can systematically enforce that organization

2. The type of packaging and storage requirements for a product
   a. Does the product require special handling such as refrigeration?
   b. Is the product stored in large spools or in bundles (i.e. lumber)?
   c. Is the product typically sold by the case or by the pallet?
   d. Does the product have specific weight characteristics that require specialized racking or storage?

3. The product or product category’s sales velocity
   a. Does the product have a high number of bin hits, but a limited quantity sold?
   b. Does the product have a minimal number of bin hits, but a high quantity sold?
   c. Is the product “held” for one specific customer or group of customers?
   d. Do different packages of a product exhibit different sales velocity?

A warehouse manager’s job is to ideally locate all of the products within a warehouse taking all of these factors into consideration. You can imagine the level of difficulty when you try to accomplish this manually. A directed putaway system allows you to build rules by product, product category or product and packaging to accommodate the parameters that we’ve just discussed. It allows the warehouse manager to nest rules – meaning that there is a primary rule that would ideally be applied, but in the case where that rule can’t be adhered to there can be secondary or tertiary rules that apply.
Summary

At the end of the day, the directed putaway systems’ job is to assess the available space in the warehouse and direct the warehouse worker to locate the product (either initially from receiving, from replenishment or by a move) to the bin that best meets the rules that the warehouse manager has established. The net result will be a warehouse that is organized to maximize the effectiveness of both the storage space available and the labor necessary to manage it.

iCepts Technology Group, Inc.
1301 Fulling Mill Road
Middletown, PA 17057

www.icepts.com | 717-704-1000 | info@icepts.com

Supply Chain & Technology Experts | 100% Employee Owned