BARRETT DISTRIBUTION CENTERS

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Item Activity Profiling
By Bob Willert, Director of Operations

In May of 2002 I had the opportunity to attend a weeklong class offered by the Logistic Institute at George Tech. The class was designed to teach the principles of establishing "World-Class" warehousing and material handling techniques. There were many topics discussed such as benchmarking, case picking systems, and order picking operations. However, Item Activity Profiling is the technique I learned about and shared at Barrett that has had the most significant impact on Barrett Distribution Centers' operations.

Profiling strategies can be used to improve each functional area in a distribution center. (Figure 1). Item Activity Profiling is a subset of this broader category. Item Activity Profiling is the process of analyzing item and order activity to identify areas of process improvement, and to identify root causes of process flow issues in an objective manner.

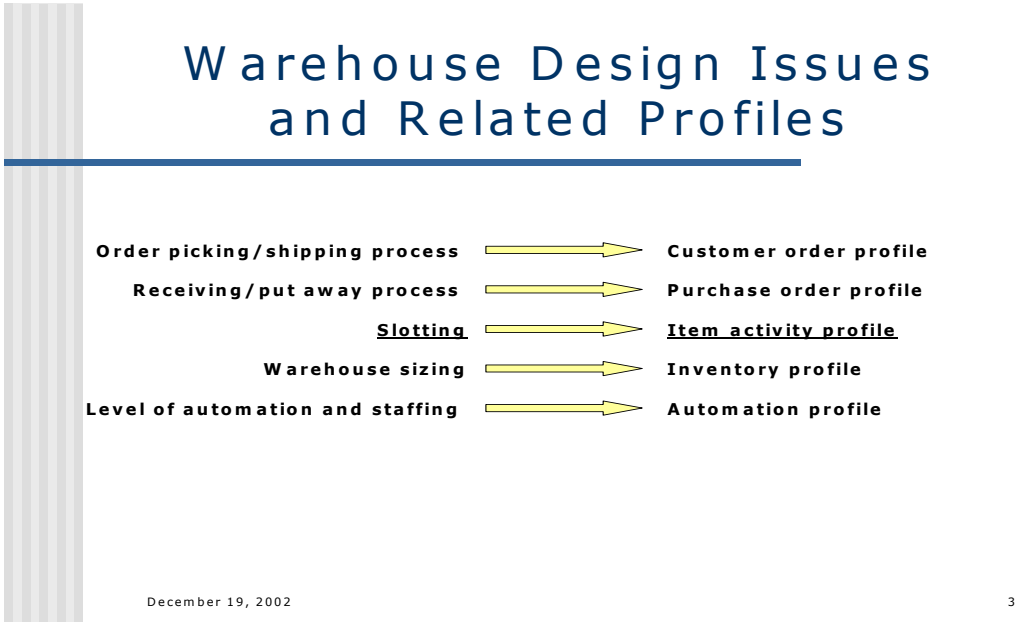

Figure 1

Proper slotting of items for both new and existing accounts in warehouse design has added significant positive efficiencies to our operation. The profile used to properly slot items into location is item activity profiling. Item profiling helps decide what storage mode the item should be assigned, how much space the item should be allocated in the storage mode, and where in the storage mode the item should be located.

We utilized this technique to properly slot items for Lagoon Games, a high volume pick and pack account. Lagoon sells novelty merchandise and books directly to national retailers and was profiled in our July issue of the Barrett Bugle.

Item Activity Profiling, continued

The first step in our analysis was to determine the popularity distribution for the items. What we discovered was that Lagoon items followed a Pareto Distribution where 20% of the items were picked for 80% of the orders (Figure 2). Consequently, those items were assigned to the most accessible locations.

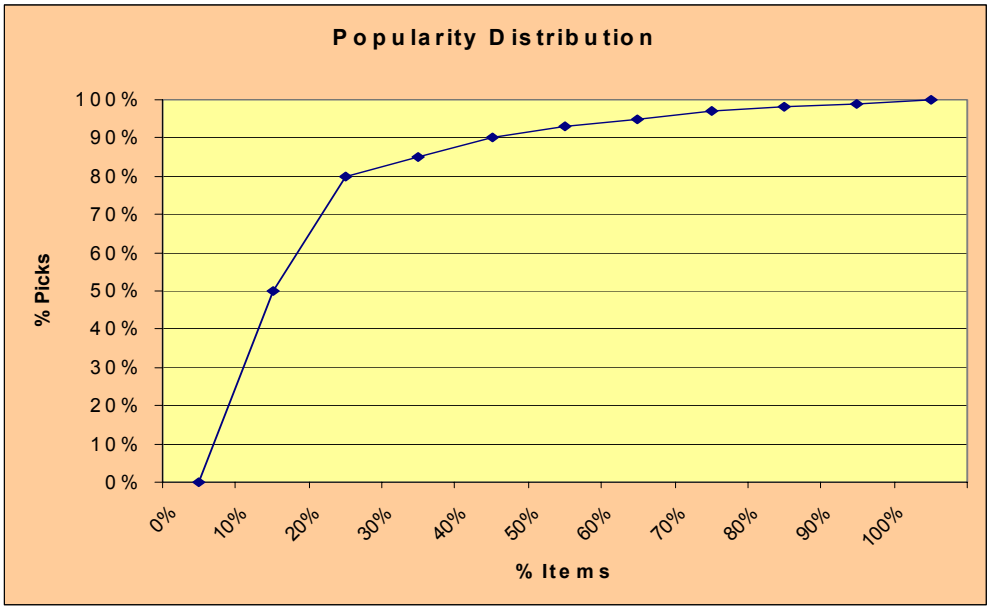

Figure 2

Secondly, we looked at Item Order Completion. Item Order Completion identifies small groups of items that can fill a high percentage of the outbound orders. , This technique ranks items from most too least popular.

Thirdly, we analyzed the demand correlation among items. The goal of this analysis is to determine the relationship between different items or groups of items. In our Lagoon example we determined that there were several SKUs of books and games that were consistently ordered together. Therefore, we slotted these items next to each other.

Lastly, we analyzed the demand variability of each item. The objective of this technique is to limit the need to restock in the middle of a picking shift. There were several items in our analysis that we determined needed two slot facings to avoid having to restock in the course of a day.
The end result is that we were able to increase order-picking productivity by 9%, obtain better equipment utilization, tighter inventory control, increased employee satisfaction, and better ergonomics.

To learn more on the subject of warehousing techniques, please reference “World-Class Warehousing and Material Handling” by Edward Frazelle.

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