An Innovative Approach to Pick Optimization for Chaotic Storage

With e-business economy on the rise, the pressure builds up on warehouse management systems to reduce the order-to-dispatch cycle times. There are numerous methods used to decrease the time of picking, but almost all of them fail to find an optimum solution, mainly because of the enormous size of the problem space. Hence, efficient algorithms are designed to find a good and feasible solution which may not be optimum, but will eventually serve the purpose.

With the advent of emerging technologies, warehouse management systems are being revolutionized to deal with complexities such as random or chaotic storage. Coupling WMS solutions with chaotic storage management capabilities provide an array of benefits, such as:

- Better space utilization
- Increased flexibility
- Faster slotting
- Faster picking
- Less pick errors
- Shorted fulfillment times

The main challenge to reach these benefits is to create an optimum picking list in a reasonable time so that the picking waves can be generated in a seamless manner. The experts in Business Analytics Team of SELCO developed an innovative approach which utilize pure optimization techniques running on IBM CPLEX software that can generate solutions in single-minute run times, even for very large order-line & inventory matrices.

The approach developed by SELCO Analytics team utilize a chain of optimization models, search algorithms, and reduction techniques to produce very fast picking order lists which reduce picking workloads by 10-15 %. The performance is especially valuable for e-business warehouses, where faster fulfillment times and lower operational costs increase competitiveness and customer service levels.

SELCO is a recognized consulting company with distinguished capabilities in supply chain and logistics management, delivering outstanding results and helping clients to use their resources more effectively by combining leading information technology and advanced analytics.

If interested, contact the SELCO Analytics team for more information.