enVision
supply chain insight
Vol. 4
enVista

A Message from the President

Upcoming Events

Red Shift 2006 – Red Prairie User Conference

Tucson, AZ
May 9 – 12, 2006

DC Expo

Chicago, IL

May 23 – 25, 2006
Booth 635

Innovation 2006 – HighJump Software User Conference

Minneapolis, MN
August 6 – 9, 2006

Speaking Engagements

enVista's Jim Barnes will present **"Supply Chain Strategy: How to Assess, Design and Optimize Your Supply Chain Network"** at RedShift on Thursday, May 11, 2006 at 2:45pm.

enVista's Jim Barnes will present **"Wave Management Strategy: Using your WMS for Top DC Performance"** at DC Expo on Tuesday, May 23, 2006 from 2:45pm -3:45pm.

enVista's Mike Rader will present **"Upgrading Your WMS"** at DC Expo on Tuesday, May 23, 2006 from 11:30am. - 12:30pm.

What makes a company successful? There have been numerous books written on this subject, authored by executives such as Peter Drucker, Tom Peters, Jim Collins, Jack Welch and Larry Bossidy. However the best management book that I have read is *The Power of Personal Accountability* by a less obscure author, Mark Samuel. His focus and passion is driving individual accountability and, ultimately, organizational accountability.

As a Principal within a consulting firm I have had the opportunity and privilege to work with over 150 clients over the last twelve years and have concluded that companies that succeed are companies that instill and drive accountability within their organizations. Ultimately it starts with the company's leadership team, however accountability is required from the President down to the individual working on the shop floor or picking an order for a customer. Accountability is taking action that is consistent with our desired outcomes.

I had the opportunity to present at a recent Supply Chain Symposium on the subject of supply chain design success factors. I spoke about driving supply chain success through accountable organizations and team dynamics. After the presentation a participant who was the Director of Logistics for a large beer manufacturer approached me and said they had been analyzing their supply chain for the last two years. She made a comment to me that proves my point on why organizations are failing in the area of supply chain design and execution. She stated, "Your presentation was great…. it opened my eyes to the psychological aspect of supply chain. However we never seem to get anything done or accomplished."

What I did not tell her at the time is that she (her personally) is accountable for her actions because as a mid-level manager she has the greatest opportunity to drive change!

While most organizations may have streamlined processes and skilled employees, they need to practice their execution. Most organizations plan for perfection (not realistic expectations) and never achieve it. When the unexpected happens they go into crisis mode and blame others as a means for solving the problem. Recovery is the process (contingency planning) prior to performance or an event occurring.

How do you correct a situation when an individual within your organization is not taking action? I suggest reading the book, *Crucial Conversations*, by Patterson, Grenny, McMillan, Switzler, with a foreword by Dr. Stephen Covey.

In order to drive the discipline of execution and hold your organization accountable, it is necessary to have the difficult and critical conversations (when stakes and emotions are high) to break through organizational and individual conflict.

In summary, accountability equals taking action. Your organization has a decision to make and YOU can either take action or be the victim.

Passionate about logistics,

Jim Barnes
President & CEO, enVista

Case Study– WORLDPAC: Keep it Simple

We have all heard of the KISS principal (Keep it Simple Stupid), but how many times have you heard of the KISS principal actually being applied successfully? WORLDPAC, an importer and distributor of quality replacement parts for original automotive equipment, wanted to apply LEAN distribution techniques and keep their new distribution facility design of 235,000 square feet simple. WORLDPAC chartered enVista to design a distribution center with one goal in mind; one touch – right time the first time.

WORLDPAC's primary customers are automotive repair shops that specialize in import and domestic automobiles. WORLDPAC has two US distribution centers that support their North American supply chain network. This network consists of approximately 46 local branches throughout the US and Canada. enVista initially performed a supply chain network analysis project at WORLDPAC to determine the most cost effective supply chain network in North America to support the continual sales growth and product growth through the year 2013. The analysis determined that WORLDPAC's East Coast distribution center was 100,000 square feet undersized and therefore was not supporting the company's continuing growth and was impacting current supply chain costs. The analysis validated that a third distribution center located in the South East was required to support the future sales demand. WORLDPAC chartered enVista to design their new East Coast distribution facility, which is located 10 miles south of their current facility in Edison, New Jersey. The new facility is 250,000 square feet and has the capacity to meet their estimated growth through 2009.

The WORLDPAC and enVista project team established the following goals of the design:

- Design a facility that is not complex.
- Design a facility with a one-touch concept, eliminating non-value added steps.
- The design needed to sustain sales growth and product growth through 2009.
- The design needed to meet the customer service levels that were established.
- The design needed to maximize the labor force, maximize the material handling equipment, and maximize the current system capacities.
- The design had to be flexible enough to support changes in business practices.

enVista documented all the current business processes. The design team interviewed management personnel and the operators who perform the actual tasks in the processes to ensure an accurate picture of the business process. This was important to understand the existing processes in order to find opportunities for improvement and to make sure that the design would support both current and future processes.

The next step for the project was to perform Material Flow Analysis to look at the business in a mathematical way, identify any problems in the material flow and informational flow, and at the same time identify opportunities for improvement. The analysis also gives the project team the ability to make objective decisions for the design of the new facility.

Once the project team reviewed the Material Flow Analysis, the next step was to set the design criteria which included the following:

1. All picking locations were to be at a maximum height of 96". The design team wanted to minimize the need for mechanized equipment to pick product. The height of 96" was the limit at which an operator could pick the product without need of mechanized equipment.
2. Minimize the number of SKUs that have more than one location. There should only be a limited number of SKUs that have overstock (reserve) locations.
3. The new facility needed to store 56,000 SKUs. These SKUs will be the same as the SKU stored in the West Coast Distribution center.
4. The SKU growth used for the design should be 15 percent per year. This presented a challenge because in 5 years the number of SKUs will double.
5. Identify the different zones in the warehouse. For this design, the zones were based on 1) the container that items are picked into, 2) the physical characteristics of the parts, and 3) the product velocity.
6. Set the criteria for the required inventory levels for each item. Once all the design criteria was set, the storage medium type was selected and the criteria was based on the zone, velocity, physical characteristics, and inventory levels

of each item. The storage medium type selected was single deep selective racking which is used to store pallets and can be used as decking. The next step was to identify a set of standard storage configurations. The storage configurations included the storage medium type and the specific physical dimension for the location in the storage medium. The design team decided to establish 20 standard storage configurations. The design team looked at each zone and evaluated each item in that zone. It looked at its physical configuration, the inventory levels required and then compared that against the 20 standard storage configurations. The design team selected the smallest storage configuration that met the item's requirements.

After the storage configurations were selected for each item, the next step was to design bay configurations that would maximize the number of locations, minimize the amount of area used while maintaining the restriction of the 96" high picking window.

Prior to developing conceptual layout space, requirements were developed in receiving, returns, putaway staging, order consolidation and shipping and had growth factors built into them.

Once all the area requirements and zone bay configuration requirements were completed, the design team started putting lines on paper (ACAD). The design team considered the growth requirements for the different areas as different concepts were developed. enVista developed designs that could meet the design criteria and allow for growth in the coming years.

The design team met to evaluate the designs, this time including the cost, and selected the design that would best meet the requirements set by WORLDPAC's executive team.

After the design was selected, enVista provided WORLDPAC with an RFP document, which outlined all the equipment requirements in the new facility. WORLDPAC selected a MHE provider and with the RFP document, they developed detailed engineering designs. WORLDPAC also chartered an internal project team to validate the design to ensure a smooth transition from one facility to another. One of the biggest concern about moving into the new facility was the possibility of having to relocate 56,000 SKUs. When the product was moved to the new facility however, only about 1.5 percent of all the SKUs had to be relocated to a different location.

At the time of go-live WORLDPAC already had a performance measurement program that had been in place for several years. They used benchmarks from their performance measurement program to measure the performance of the new facility. The first week of performance in the new facility produced great results. In the second week of production they saw an eight percent increase in performance, measured from the baseline with a goal to improve performance by 15 percent in the next six months.

The true measure of success of the new facility has come from the positive feedback of WORLDPAC's customers. They have noticed an improvement in order accuracy and in the quality of the product.

The success of this project was due to several things:

1. Involvement of WORLDPAC's management team in the design processes made every aspect of the project flow smoothly. Any decisions that had to be made or any assumptions that had to be validated were addressed immediately.
2. The data analysis that was done for this project (Material Flow Analysis, Inventory Analysis, and Returns Analysis) gave the design team valuable information to support all the design assumptions that were made. Patrick Healy, Vice President of East Coast Distribution, said "enVista, on a whole, put a lot of effort in understanding our business." It was this understanding of the business that enabled the design team to make solid design decisions.
3. The internal project team that WORLDPAC chartered did a great job in validating and adjusting any of the design specifications.

In summary, LEAN distribution concepts are powerful. More importantly, the KISS principal can be applied not only in everyday life but in business as well. The most effective solutions are simple and do not require complex solutions. In the case of WORLDPAC they are racing faster and crossing the finish line first with their internal and external customers.

New Clients

Art.com

Belden CDT

Cookie Lee Homedics

HPI Racing

Lamps Plus

Motorsports Authentics

Mens Wearhouse

Portal Publications

Sportman's Warehouse

Efficiency Gained with Continuous Batch Picking

Productivity improvement through picking strategies has seen vast improvements to this day with numerous advances in modern technology. Warehouse Management Systems have made these strategies possible with less of an impact on clients in regards to cost and implementation time. In addition to these tactics, efficient methods on the warehouse floor have proved to boost productivity since the days of single order paper picks.

This article discusses the methods of continuous batch picking. Batch picking, or batching orders, has been the mainstay of many large distribution centers. The basis of a batch pick is that multiple orders are filled simultaneously thus a reduction in associate travel time. An order picker will pick all orders in the "batch" in one pass. This proves to be beneficial to the operation and the associates because throughput is increased and travel time is reduced.

Generally there are two types of batch picking methods, fixed and continuous. The fixed method is picking a fixed amount of cartons until all original cartons are filled to capacity or the order is complete. For example, an associate is to pick a fixed batch order for cartons A through F, a total of 6 cartons. When a carton is filled to capacity, no more items will be picked to that carton. The fixed batch study is complete when the last carton in the batch has been filled to capacity. At this point all 6 cartons will be placed at a drop point.

Building on the idea of a fixed batch pick, a continuous batch pick method has the same strategy except the batched cartons are all completed in one pass regardless of the amount of cartons an order picker goes through during their assignment. To illustrate an example of this type of batch pick we can use the same cartons A through F as in the previous example. This time in the instance when a carton has been filled to capacity, the associate will place the completed carton at a drop location and begin a new carton for that same assignment. Multiple drop locations for continuous batch picks are usually located along each aisle of the pick path.

For clients who use the method of fixed batch picking, the potential benefits of a transition to continuous batch picking can be demonstrated through time-study analysis.

The following is an outline of a performance productivity comparison between the two types of batch picks.

1. Select a controlled pick zone to time-study.
2. Breakdown the activity into simple elements for a detailed study.
3. Setup and time both fixed and continuous batch picks.
4. Perform the time studies. Capture the time to perform each element using a stopwatch or any time study software.
5. Rate each associate on the elemental level according to skill and pace.
6. Analyze the data. Calculate average fulfillment rates (lines/hour, units/hour) for both fixed and continuous batch picks.

A case study was completed at a large retail distributor who had just recently made the jump to continuous batch picking. The elements in the study included (figure 1.1):

ELEMENT	DEFINITION
Setup carton	Time taken to open and setup an empty carton.
Travel to first pick location	Travel time
Pick item	Time taken to retrieve an item, scan information and place in a carton.
Travel to next pick location	Travel time
Change carton	Time taken to close a carton and setup a new carton in the middle of an assignment. (Continuous batch study only)
Travel to/from change carton	Travel time (Continuous batch study only)
Travel to complete truck	Travel time
Complete truck	Time taken to close and drop cartons at the end of the assignment.
Hold	Time taken for activities unrelated to the engineered time study. Ex) talking to a supervisor, breaks, etc.

Figure 1.1 (Elements and Definitions)

In Figure 1.2 and 1.3 Total Time is the summation of all elements after performance ratings were assessed minus the "Hold" element. The fixed batch studies were taken throughout the entire pick zone so that no set of SKU would skew the data comparison between the two batch picks. Total Positions Used represents the number of positions used at the start of the assignment. Total Cartons in Batch represents the total number of cartons at the end of the assignment. Note in a fixed batch study Total Positions Used equals Total Cartons in Batch.

TIME STUDY	FIXED 1	FIXED 2	FIXED 3
Total Positions Used	6	6	6
Total Cartons in Batch	6	6	6
Total Lines	52	56	68
Total Units	55	106	236
Total Time, Min.	12.954	17.323	23.364
Lines/Hour, Avg.	241	194	175
Units/Hour, Avg.	255	367	606

Figure 1.2 (Fixed Batch Pick Summary)

Through time study analysis an average rate of 203 lines per hour was calculated for a fixed batch pick.

TIME STUDY	CONT. 1	CONT. 2	CONT. 3
Total Positions Used	6	5	6
Total Cartons in Batch	11	18	16
Total Lines	103	168	152
Total Units	196	326	331
Total Time, Min.	25.849	42.862	42.083
Lines/Hour, Avg.	239	235	217
Units/Hour, Avg.	455	456	472

Figure 1.3 (Continuous Batch Pick Summary)

Analysis of a continuous batch pick showed an average of 230 lines per hour.

The production efficiency increase between the two batch picks was 13 percent for this client.

In conclusion, a 10-25 percent increase in productivity is a very normal expectation to expect from a change from a fixed to continuous batch pick. Moreover, for increased productivity, a look into changes in rack layout, material flow analyses and slotting tactics can prove to also be beneficial for your pick stratagem. Take the next step in running an efficient operation by making the change to a continuous batch pick today!

enVista
enabling logistics excellence

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