

## Viewpoint

# The Oracle Speaks

## Improve Your Dock Management

My name is Isaac Edwards (IE) and it is my second week working for a mid-market, multi-channel specialty retailer. Our distribution center fulfills catalog, e-commerce and retail orders. After two weeks on the job as the new industrial engineer my boss Mr. Bosswick (The BOSS) chartered me to improve our facility's inbound and outbound dock management. At first, I was overwhelmed. I thought, "where do I begin, what information do I need, and who has the information I need to begin this project?"

At my past job my mentor Mr. Oracle (The ORACLE) told me that prior to starting any continuous improvement project I needed to perform the "Three Actuals."

### The "Three Actuals" are:

- (1) document the **actual** process from start to finish,
- (2) go to the **actual** place and observe it and
- (3) talk to the **actual** people that perform the process.

I spent the first week on the distribution floor observing and documenting the processes, developing flow charts and validating the processes with the receiving and shipping associates and supervisors.

Our facility is 180,000 square feet with eight receiving docks and six shipping docks. We currently pick our product by multiple methods and from varying storage mediums (bin shelving, carton flow, single deep pallet racking and bulk locations). We are fortunate to have a Warehouse Management System (WMS) that we use to release our different order types and to receive our product.

During my review process, I noticed that we designed the inbound receiving dock area without the appropriate staging space and that we had inbound trailers sitting in our yard. The ORACLE once told me that most companies do not provide enough staging space for receiving. At a minimum there should be 60 feet from the dock leveler to the first cross aisle. This provides the receiving personnel an eight-foot cross aisle between the dock leveler and the first staged pallet plus additional room to stage and receive 24 (48" x 40") pallets. I proposed to split the staging lanes into two separate staging locations per dock. This would provide us the flexibility to round robin our unloading and receiving.

I found out that our freight is delivered in an inconsistent manner and this created a lot of chaos in the receiving area. We were using a freight forwarder to manage our inbound freight, but it was not providing our company with any visibility to inbound shipments. There had to be a simple solution. I called The ORACLE for some advice on the situation.

The ORACLE told me that my new company should develop an inbound shipping schedule based upon the number cartons/units required to meet outbound demand. I met with the Director of Merchandising and he informed me that we could control the fluctuating inbound carton demand by giving all the merchants visibility to open purchase orders organized by delivery date. We could then set a maximum number of cartons/pallets per day and use the freight forwarder to buffer the inbound volume with their reverse pull points. Reverse pull points are consolidation terminals that the carriers use to consolidate inbound less than load (LTL) to full trailer load (FTL).

We also discussed giving our freight forwarder the ability to schedule trailer and dock appointments using our WMS and let it schedule our appointment and dock door assignments. Because the company spoke to our suppliers and consolidated our freight for us on a regular basis, it had all the information but did not have the ability to use it effectively. This way we wouldn't bring in \$100,000 of merchandise a day when we were only selling \$80,000. We needed to balance the flow of inbound with outbound and use the distribution center to buffer the variation.

As for managing the dock doors we used our WMS to schedule the inbound appointments in two-hour increments. We decided to give the carriers a one-hour delivery window and the receiving teams a standard of 30 minutes to unload, palletize and stage the freight. If the carrier did not show up on time we would have to turn it away. In order for this to work I told The BOSS that we would have to be disciplined.

The ORACLE always told me that "things that are measured are things that get improved." We required key performance metrics: cartons unloaded/man hour, inbound trailer turns/hour, open purchase order dollars unloaded but not received.

I completed a simple calculation to determine the number of trailer appointments per day. There was a total of 32 trailers per day. This seemed impossible. The inbound supervisor told me her best day was 24 trailers in one day. When we looked at the constraints on the receiving dock, we recognized that we needed more staging space and that we did not have the advanced visibility of pallet/carton counts to plan our labor. In addition, our carriers were showing up at our dock whenever they wanted. We lacked a plan and discipline and we were not working together as a team. The receiving supervisor was open to the concept of dock work teams. I suggested that we develop teams that consist of four to six associates. The team members would be required to be cross-trained in off-loading freight, staging, palletizing and receiving. I also suggested that we establish individual and work team standards.

After spending the first three weeks on inbound dock management I had to start thinking about outbound dock management. I used the same continuous improvement and strategy methods to study this area, but in this case I needed outbound data. Our outbound processes are more complicated than the inbound. We have a fixed store delivery schedule (multiple stops per route) and a large volume of parcel shipments each day. I spent the first week with the associates and observed their working methods. In addition, I requested that the information technology group provide me with the total number of cartons per day, by carrier and by order type. Most of the information was in our WMS and Parcel Manifest System.

I noticed that there was no real plan to get our retail cartons to the dock door in an effective and efficient manner. People were busy, but there was chaos on the outbound docks and we were continuing to miss our departure times. First, we were using pallets for everything instead of live loading our cartons. We ship to 24 stores a day with an average of two stops per route (12 departures each day). I reviewed the shipping schedule and it was based upon a required departure time. This made perfect sense, but something seemed out of place because our docks were disorganized. One simple fix was that we were not allocating and spotting trailers by size the night before. Allocating the trailers in advance gave us room to load our freight immediately onto the trailer. This helped and provided relief, but it didn't solve the problem.

I spent some time with the wave planner who manages and releases the work to the floor. After spending two full days watching the process from start to finish, I noticed that he was releasing the entire store order (distro) vs. breaking the work (picks) by zone.

This caused an imbalance in the number of cartons destined for the docks. After analyzing the number of cartons by zone, by store and by route we determined that we would now release our picks by zone. We came up with a clever method to stripe our trailers by stop and by pick zone. This allowed us to increase our picking efficiency (less walking) and increase the flow of cartons to the docks. Currently we do not have an outbound sortation system. The recommended changes postponed the need for this automation.

Finally, our dock area for parcel shipments was cluttered. After reviewing a years worth of shipping data, I determined that our parcel shipments were extremely cyclical. Our busiest shipping day was Monday and our largest volume of parcels was processed between 2:00 pm and 4:00 pm. The ORACLE always told me to be careful of using averages for designing conveyor systems. In our case our conveyor was undersized (cartons/hour) because the conveyor vendor used average cartons per day vs. analyzing cartons per hour (with peak). The ORACLE would tell me "use standard deviation and determine throughput based upon one to two standard deviations from average." Had we used the ORACLE's rule of thumb our conveyor outbound parcel conveyance would have been correct. Instead we had to retro fit the conveyor motors and gears to increase our throughput. Ultimately we decreased our dock congestion by fluid loading our parcels onto the parcel carrier's trailer.

By using the simple practices of documenting and observing I was able to gain valuable information about my company's inbound and outbound practices and make valid, constructive changes that improved our dock management processes on both ends.

*Jim Barnes is the President and co-founder of enVista, a leading logistics cost management consulting company offering services in transportation, operations and strategic cost management. Mr. Barnes has several years of supply chain experience and frequently speaks at industry seminars and tradeshow.*

*For more information please call 877-684-7700 or e-mail us at [inforequest@envistacorp.com](mailto:inforequest@envistacorp.com).*

**enVista**  
23852 Pacific Coast Highway, Suite 320  
Los Angeles, CA 90265  
877.684.7700  
[www.envistacorp.com](http://www.envistacorp.com)