Eyeing, Embracing Key Visual Indicators Across the Distribution Center

Building on conventional KPIs, distribution managers can apply visual cues to quickly discover and diagnose issues that can yield significant operational improvements with minimal capital investment.

Executive Summary

If you are responsible for managing day-to-day operations in a distribution center (DC), you are intimately familiar with the term “KPI,” or key performance indicator. KPIs are the critical metrics that DC managers use to determine how they are performing in areas such as CPU (cost per unit), PPM (defects per million units shipped, received, etc.), order cycle time, units per hour, etc.

The difficulties with KPIs, however, are two-fold. First is the sheer number of metrics that exist today. Trying to determine which ones are most applicable to your specific environment is a major conundrum. Many organizations operate under the philosophy of, “if you can’t measure it, you can’t improve it.” As a result, they measure everything under the sun, with very little understanding of why a particular metric is important—and even less understanding of what to do with the results.

Second, the amount and accuracy of data required to generate meaningful metrics is staggering. The methods of collecting data vary, from the arcane spreadsheet method of manually collecting, entering and reporting data, to the sophisticated utilization of labor management systems to systematically collect data on transactions and labor hours and generate reports. In the first method, data accuracy is highly variable; in the second case, the level of investment can be significant.

This white paper offers a novel and pragmatic approach for diagnosing opportunities to improve operational performance. Based on our collective experience leading DC operations, this paper will discuss visual indicators in detail and highlight potential root causes for KPI disconnects and the resulting operational impacts. We will also provide recommendations to correct these issues and enhance operational performance.

Measuring What Matters

To be clear, we are not advocating eliminating KPIs. When identified and managed appropriately, KPIs provide an effective “lens” into how your operation is performing. Rather, we are suggesting an augmentative approach to identify quick wins, with little to no capital investment and minimal data requirements. Here are five bylaws of our approach to using KVIs in conjunction with KPIs:

1. **Empty forks on powered industrial vehicles.**
   As you walk through your DC, stand in an area where vehicle traffic is high, and count the number of powered industrial vehicles that pass with empty forks. Divide this into the total number of vehicles that pass to compute your
utilization percentage. Anything less than 80% points to an opportunity for improvement. Typical root causes include overstaffing forklift drivers and not designing the building layout/flow to take advantage of roundtripping.

One example is supplies. Typically, supplies are managed with a dedicated forklift driver that is considered to be a “utility” function (that’s fancy wording for indirect labor). A different approach is to locate your supplies in an area that fits into the natural vehicle flow, so your driver can put away product in a racking/module, then retrieve supplies (pallets, slip sheets, etc.) en route to the inbound dock. If you look hard enough, these types of opportunities are abundant in your DC. Addressing this has multiple impacts. Lift truck drivers are typically the highest paid employees and the hardest to find/train/retain, so increasing driver utilization has a direct impact on cost-per-unit. Lift trucks are also expensive to procure and maintain, so it is critical that your organization optimizes its fleet to minimize capital expenditures and maintenance costs.

2. **Reconfigure where frontline supervisors sit.**

   If your supervisors sit in an office, move them to the floor immediately. The typical pushback is that they need privacy for personal meetings with employees, or they need a space to do paperwork. This contention is simply untrue.

   To address the first concern, convert offices into conference rooms that are available for private meetings. To address the second concern (and listen carefully), if your supervisors are doing paperwork or admin functions, stop! Hire someone to do time and attendance, enter production data, etc. – your first-line supervisors are your first-line leaders. They are the ones with whom your associates most closely identify, and their primary responsibility should be to engage co-workers and focus on eliminating barriers and obstacles that prevent effective job performance – not pushing pencils or punching keys on a keyboard but leading. The cost of getting someone to perform these administrative functions will pale in comparison to the increased productivity and morale of having your leaders visible, accessible and focused on identifying and removing performance barriers.

3. **Instill a housekeeping conscience and culture.**

   If you walk through your DC and see pieces of wood, paper backing or just trash in general, you don’t just have a housekeeping problem; these conditions are usually symptomatic of a much larger problem regarding organization, commitment and the overall discipline of your management team. In the best organizations, ownership is a key theme. The mantra: Treat the facility like it’s your own. Ownership is reflected in the way the facility is maintained, orders are managed and individual workstations are maintained.

   We have seen ownership become contagious across the DC when leaders embrace it. In one example, we have seen everyone from an employee on the receiving dock to the general manager of the building stop and pick up trash rather than walking by and ignoring it. That type of simple gesture permeates the building and manifests itself in higher quality, productivity and attendance, as well as reduced turnover. In sum, people will work harder and stay longer if they are proud of – and happy with – their work environment. Conversely, in organizations where housekeeping is lax, it is usually accompanied by poor organization in other areas of the DC, lower commitment levels from all employees in the building and a negative impact on operational performance (quality, productivity, etc.).

   Implementing housekeeping scorecards, conducting walkthroughs side-by-side with informal associate leaders in your building and making housekeeping an integral and consistent part of your building communication plan are quick, low-cost actions you can take now.

4. **Reduce frequent and excessive distance travel.**

   A long time ago, we learned there are two critical elements for running an efficient DC operation – travel and touches. There are multiple causes of frequent travel, but fortunately there are also many solutions.

   Go to an area of your DC, and observe your associates performing their job functions. Have a layout of that area in your hand when you do.
Every time an associate walks to get product or supplies or move freight to a problem area, etc., draw a line on your layout connecting where they traveled from and to. Do this every time, and you’ll have a lot of lines on your sheet. This is what’s known as a spaghetti diagram. Pay particular attention to where the lines are dense, as this indicates a disproportionate amount of travel. This is your starting point for reducing travel.

Examples include an associate traveling to a supermarket to get boxes for his pack station or walking to a problem area to drop off exception orders (wrong quantity, wrong item, etc.). In the first example, one option could be to place corrugate in the pack area based on usage, thereby decreasing the distance the associate has to walk, improving productivity and order cycle time throughout the DC. In the second example, a solution could be installing lights at workstations that an associate could flip on if she has an exception order and a designated associate can respond, collect the order and transport it to an exception processing area, thereby allowing the employee to maintain consistent throughput, improving order cycle time and overall DC flow.

Whenever possible, try to have an associate accompany you during this assessment. The intent is to train and develop as many “critical eyes” as possible; rather than engaging in a one-time exercise, opportunities for travel reduction become a self-sustaining practice that everyone on the team can identify and share. Knowledge and empowerment are indeed powerful “multipliers” in driving operational improvement.

5. **Reduce piles of merchandise/cartons, buildup of pallets, operational areas with no work, etc.** All of these are symptoms of poorly managed work flow. Merchandise flow is to the DC as blood flow is to the body. Too much or not enough, and your operation starts to clot or starve.
out of work. Flow is something that must be managed/monitored in real-time, continuously. Fortunately, many things can be done to identify issues quickly, enabling appropriate and timely reaction and mitigating the impacts mentioned above.

A simple fix is to examine units picked/packed/sorted and make sure there is balance across interdependent areas. If you pick 3,000 units, but only pack/sort/ship 1,500 units, you have the beginnings of a bottleneck. We recommend monitoring every 15 to 30 minutes in a manual system, or building warehouse management system capabilities where alerts are sent when a specific condition exists (i.e., picked units exceed packed by X%, or vice versa). This will enable quick reaction vs. waiting and having to enact “massive moves” from one area to another.

Another simple suggestion is to utilize visual controls to signal when an area is nearing a critical high or low point. An example could be to train a photo-eye on a pack line that lights up and sounds an alarm when it is unblocked for more than a set period of time, indicating your packing work queue is running low. A second example could be to install an audible alarm when your put-away queue reaches a certain number of pallets/carts, etc., indicating a need to shift labor from receiving to put-away to avoid dock congestion.

Running Better, Running Different
This paper has identified five focus areas for your DC to begin embracing KVIs in conjunction with KPIs to drive world-class performance. These are simple, low-cost and immediate impact areas that will yield tangible benefits in productivity, cost, cycle time and employee engagement.

If you are considering delaying or waiting until the time is right to take action, just remember your competitors probably are not. By acting now, you can achieve better margins, higher accuracy rates and better customer service levels, which will help your organization compete in a world where customers continue to demand product faster, cheaper, more accurately and on time, every time.

About the Author
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