



Driving Retail Warehousing Excellence with Prescriptive Analytics



Zebra
Prescriptive Analytics™
Powered by Zebra Savanna™

Prescriptive Analytics in The Distribution Center

The distribution center (DC), or warehouse, plays an integral role in a retailer's success. Beyond their traditional role of keeping stores stocked, new services and activities such as buy online pick up in store (BOPIS), buy online return in store (BORIS), and omnichannel fulfillment have created new levels of demand, which only increase every year. This has placed enormous pressure on DCs to reach -- and sustain -- progressively higher levels of productivity. A single delay in fulfillment can have a downstream ripple effect, causing issues with on-shelf availability in stores, or longer-than-expected shipping times for e-commerce consumers.

The modern retail warehouse manager needs an advanced analytics solution that can track every aspect of warehouse productivity, and identify how and where to make improvements. The ideal analytics solution should provide actionability; in other words, it should translate the results of its analysis into key insights empowering retailers to take prompt action. Numerous retailers have achieved this by leveraging prescriptive analytics, which uses AI and machine learning to determine:

- **What** is happening
- **Why** it happened
- **How much** it's impacting the business (\$)
- **What** to do to optimize the outcome
- **Who** should solve it

With prescriptive analytics' actionability, retailers can drive operational excellence throughout the warehouse. Here are some of the biggest challenges in retail warehousing and how prescriptive analytics can help conquer them:

Rising labor costs

Wages are typically a retailer's biggest single expense, and will likely increase soon, given recent movements to raise minimum wage. Labor can account for as much as 50 percent of a DC's total operating costs, which has a huge impact on the retail industry's already razor-thin margins. Thus, DC and warehouse managers are constantly under pressure from the corporate office to "do more with less." The supply chain industry's notoriously high attrition rates only compound the challenges of satisfying corporate's expectations.

Numerous DCs are driving labor optimization with prescriptive analytics. The solution's AI and machine learning capabilities analyze demand patterns, order fulfillment execution, inventory movements, and more to inform managers how to efficiently allocate DC labor based on the latest trends. DC operators have always seen high attrition rate, prescriptive analytics greatly accelerates the new-hire onboarding process by enabling on-the-job training. In addition to its daily prescriptive actions, the solution can remind new employees about standard operating procedures via training videos and other materials, which can be sent to any enabled mobile device. Routine, automated compliance checks further ensure knowledge retention.

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In addition, prescriptive analytics improves the value and ROI of robot and other hardware investments, by collecting and interpreting the data they gather and translating it into actionable opportunities. The result is new levels of efficiency and productivity with existing staff, driving increased revenue, margins, and profits.

Ever-increasing productivity expectations

To continually increase productivity, it's critical to monitor fulfillment rates for any anomalies, and investigate and correct them promptly. This is a remarkable challenge due to the number of variables that affect productivity. For example, if overall DC productivity appears to be down, the spotlight tends to fall first on the pickers. But what if the DC layout is too complicated for the pickers to navigate efficiently? Is the slotting system unintuitive? Even if a DC manager does pinpoint pickers as the root cause, she faces an extensive investigation (likely involving countless hours sifting through paper reports) to identify the specific pickers bringing down productivity.

Prescriptive analytics is the ideal solution to help DC managers identify and address the root causes of low output in real time. It firstly analyzes productivity data from across the DC to determine benchmark performance averages. It then monitors productivity at the picker, date, SKU, slot number, and/or DC levels, and alerts managers in real time to any opportunities for improvement (i.e. productivity metrics that are below the established benchmark). Its root cause analysis traces any issues back to their source, leaving no room for bias or finger-pointing.

In the event that a training gap is identified, the solution can either direct managers to deploy training, or send employees reminders about company standard operating procedure. Built-in accountability makes it easy for managers to verify employee compliance and knowledge retention.

If the root cause does not seem labor-related, the solution will instead analyze slotting distances based on specific orders (i.e. the time it takes for a human or robotic picker to travel between any two slots). If travel times are excessive, the solution will send the relevant managers specific adjustments to improve efficiency (i.e. consolidate lanes, move items closer together, etc.).

Allocation of inventory by DC

With shipping costs increasing annually, DC allocation is just as important as store allocation. To avoid margin erosion, retailers need to ensure each DC holds the right amount and assortment of product for its region, enabling it to fulfill orders and replenish stores quickly.

Through its advanced, detailed analysis of demand patterns and product movements, prescriptive analytics can determine the inventory to allocate to each DC. It can adjust these forecasts based on the latest real-time trends and inform allocators exactly what is needed and when. In times of unanticipated high-demand or supply interruptions, it can also direct intra-DC transfers to areas of high demand by informing the appropriate personnel. Prescriptive analytics can detect these needs faster than any human with a report, helping to maintain on-shelf availability during sales streaks.



Storage space usage

Retail inventories are only getting larger and more complex, and DCs must manage their limited space and slotting carefully to accommodate it all. A particular challenge for DC managers is seasonal items, which can take up a huge amount of space (i.e. Easter grass, lawn decorations, artificial Christmas trees, etc.) and yet sell at very slim margins. Worse, when the season ends, DCs are still clogged with huge amounts of unsold merchandise, which takes space away from higher-margin items.

Prescriptive analytics empowers DC managers with a more detailed understanding of their inventory from a sales efficiency perspective. It analyzes inventory movements to determine benchmarks for various items, and then compares them to existing stock to identify overabundances. For example, Zebra's DC's prescriptive analytics solution, sensing that Easter grass is occupying too many shelves, may dispatch an alert to a picker, directing them to send more of the grass to the stores. The product is much more likely to be sold if it is in the back room of the store, versus the DC. As an added bonus, the DC now has more space in which it can store higher-margin items.

Source: Zebra Prescriptive Analytics

Zebra Prescriptive Analytics™ leverages pattern detection and machine learning to identify opportunities that impact sales and margin. This robust analytics solution analyzes retail and CPG data and identifies opportunities for improvement in key areas like: inventory accuracy and availability, pricing accuracy, labor efficiency, compliance, and store profitability. Zebra Prescriptive Analytics customers typically realize 2-5% increase in sales, better consumer experience, 10-15% basis point margin improvement, and labor productivity improvement within 6 months.

Act on your retail data. Visit zebra.com/prescriptiveanalytics



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