



Amid a hyper-digital retail world, a low-tech solution is delivering breakaway results

The legend of the “space pen” is well known. The story of the U.S. Space Program spending large sums of money to develop the antigravity pen while the Soviets simply used pencils provides a rich illustration of the modern tendency to overengineer solutions. While this legend is strictly of the urban type*, its lessons are no less valid. Many people in the business world accept this story without skepticism because they have seen so many manifestations of it in their own experience. This is especially true in the explosion of innovations happening now in the hypercompetitive retail industry.

Hardly a day passes when we do not become aware of some new feature or convergence of digital technologies—mobile, cloud, social, tracking, data visualization, analytics, virtual currency, photosensing, event monitoring, etc.—that can enhance the shopping experience, along with what precedes it and follows it. These technologies are also being enlisted to lower the cost of operations and deliver a more affordable shopping experience. But underneath all of today’s digital “buzz,” there are still breakaway solutions emerging in retail that rely on not a single fiber of digital DNA.

One-Stop Maintenance is a Deloitte approach to stocking the physical store enabled by mobile storage vehicles designed to align with shelf configurations. The approach facilitates simplified and frequent recovery at the zone level. It is already showing profound results in mass merchandising, simultaneously improving sales, in-stocks, and store inventory turns—three performance indicators that are usually assumed to trade off with each other. The solution is enabled by high-quality engineering built on three concepts: mobility, configurability, and visual transparency. It is also demonstrating its value in the critical relay leg of the retail supply chain: the “final 100 meters” from store door to shelf.

*In reality, both programs eventually used space pens because of the dangers of exposed graphite in a capsule full of electronics.

The neglected “final 100 meters” in retail and its challenges

Many supply chain practitioners in retail would define the scope of their controllable domain as “source to shelf.” Of this continuum, the source-to-store segment has seen the most innovation over the last two decades: driver standards, GPS, dynamic routing, task interleaving, dynamic routing, event management, and more. But it is the last leg—store door to shelf or the “final 100 meters”—that deserves increasing focus, as process inefficiencies here are often multiplied across the entire store base. Only now are innovations, such as One-Stop Maintenance, emerging that address this area in a way that can truly be called “breakaway.”

The final 100 meters can absorb more than 10 percent of store labor hours (even leaving out any receiving, marking, finishing, or other activity not directly related to moving the product to the shelf). But this percentage may still be understated as this average accounts only for initial stocking off the latest truck load and back-stocking off back-room storage, leaving out the occasional restocking and shelf conditioning done incidental to an associate’s assigned tasks. However the number may be calculated, it is still large enough to represent a significant opportunity for reduction, as this time is not directly customer facing.

The final 100 meters has historically been a balancing act between three objectives:

- In-stock rate; driven by shelf-holding capacity, inventory, and stocking effectiveness
- Inventory productivity; driven by replenishment effectiveness, presentation stock requirements, and back-room reserve
- Stocking labor efficiency; driven by travel times, seek times, and merchandise handling

One of the biggest challenges to managing all three is the slower-moving product. In a mass merchandise consumer products environment, these could include health and beauty care; over-the-counter; cosmetics; candy; and similar categories that turn slower than 10 times a year in the store. Slow movers require disproportionately higher safety stocks and more travel and seek time due to more partially stocked cases. This works against the latter two factors above (inventory turns and labor efficiency), if the retailer wants to maintain the first (in-stock level).

How the One-Stop Maintenance process gets beyond the “balancing act”

To simplify, as well as to set definitions for the description that follows, many mass merchants populate the shelves through three activities:

- Initial stocking: Sequential passing of store aisles to stock product off the most recent load
- Restocking: Exception-based, one-off shelf filling from back-room reserve, based on system alert or sight examination. This is driven by ad hoc shelf needs.
- Back-stocking (or “purging”): A process designed to clear the back room of any inventory that can fit on the shelves. This is driven by the presence of stock in the back room.

In the above classifications, restocking is the least productive of the three, requiring far more travel and seek time per unit than the other two. While travel and seek times are essential to stocking, they add little value to the ultimate placement of stock and entail no dimension of customer interaction. Therefore, they should be reduced to the absolute minimum levels needed.

One-Stop Maintenance is designed to significantly diminish restocking by making back-stocking a more productive form of stocking. It employs a more proactive approach in back-stocking to reduce the need for restocking exceptions, and thus results in fuller shelves overall.

One-Stop Maintenance is enabled by mobile back-room storage, configured to align with retail shelf positioning. Back-stocking thus is simplified both in the back room (no need to seek and load transport vehicles with product off back-room fixtures) and at the shelf (all product preconfigured in retail units). The ease of this activity opens its potential frequency, turning it into a day-time fill-in activity and not a once-a-week grinding ritual.

One-Stop Maintenance is built on the concept of periodic zone-by-zone full recovery, versus exception-by-exception hole filling. Retailers that have converted have seen spot-count exceptions diminish almost to nothing, and have realized up to 15 percent labor reduction in their overall replenishment activities.

Unraveling the paradox of inventory accuracy

The advantage of reducing exceptions is not just in labor productivity. For those store environments relying on perpetual inventories for their replenishment models, we have observed an unmistakable reverse correlation between frequency of inventory adjustments and accuracy of related balance on hand. That is, the more inventory balances are touched, the lower the accuracy.

One-Stop Maintenance, where implemented, has fairly consistently accompanied a rise in inventory accuracy. While we described earlier the features of the approach that increase labor efficiency and in-stock rates, it is through this improved accuracy (among other factors) that inventory turns are enhanced as well.

The fruits of superior engineering

We call attention to three qualities of One-Stop Maintenance that stand out from approaches we have seen in the past:

- **Mobility:** The mobile storage vehicles we have worked with are ergonomically designed in size ranges that fit almost any retail aisle. They are designed vertically to align with fixture configuration. This is not your father’s u-boat or rocket cart, which were designed specifically for transport only. These vehicles virtually eliminate complexity in converting cart contents to shelf facings. Also, because they double as storage space in the back room, they eliminate the need for static fixturing, which usually impedes back-room movement and product visibility.
- **Configurability:** The carts that enable One-Stop Maintenance are both horizontally (partitions) and vertically (shelving) configurable. They can accommodate almost any size retail pack that can fit on a standard retail fixture. This reduces travel distances as it can accommodate nearly all retail shapes that might occur in a single aisle.
- **Visual transparency:** The configurability and precision of the carts enable the holding, storage, and transport of all merchandise in retail units. Under this approach, once a case is broken, the residual retail units go to a cart tied to its shelf position, and not back into a case box or tote, where it has to be sought. This is a significant factor in reducing seek times by making the back rooms much more manageable and accessible (see Exhibits 1 and 2 for a before-after comparison). In terms of labor, cases are broken once and retail units are stored in back-room open displays aligned with shelf positions on the floor.

Demonstrated value of One-Stop Maintenance

Recently, a large national retail chain was challenged with higher-than-industry average days of supply. Many of the markets they served drove volumes that justified nothing more than a very lean labor model, requiring the associates to multitask—from receiving to stocking to customer service to front end. Labor productivity in this environment was especially critical. In a constrained labor environment, the company hoped to lower days of supply inventory at the store level, enhance sales through higher in-stocks, and improve labor efficiency without major capital investments.

Deloitte tested One-Stop Maintenance, replacing the existing procedures that required multiple passes and up to five resources servicing the same item in the same zone in the span of a few days. One-Stop Maintenance, however, used the mobile carts to fully service each section of the store once per week. By bringing carts organized to mirror the planogram directly to the sales floor, One-Stop Maintenance also limited travel, search, and prep time, while enhancing value-added activities, sales, and accountability.

Within a four-month time frame, the client reduced days of supply by 3.3 percent. Seasonally adjusted sales increased 2 percent from better in-stock position, and the labor requirement for maintenance and replenishment was reduced by an average of 15 hours per week per store.

This represents just the impact from an initial four-store test. The client has proceeded to roll out and refine the process further.

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Summary: The future of the final 100 meters

The full potential of One-Stop Maintenance and its transport methods is yet to be fully assessed and realized. As competitive pressure in mass merchandising continues to increase, labor-saving and sales-increasing solutions will become necessities, not competitive advantages. One-Stop Maintenance has started to revolutionize an area of store operations that was long overdue for a step change, and this is just a start.



Exhibit 1: Image of back room before implementation of One-Stop Maintenance approach.



Exhibit 2: Image of back room after implementation of One-Stop Maintenance approach.

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