Flexible Warehousing:
A Shortcut to Direct-to-Consumer E-Commerce



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Once COVID-19 is behind us, will traditional business-to-business retail stage a comeback, or is direct-to-consumer e-commerce the new normal? For an uncertain future, one strategy gaining ground is the "warehouse-in-a-warehouse."

Demand for business-to-consumer fulfillment has delivered a brutal one-two punch to warehouse operators in the past five years. Non-store retail, mostly e-commerce, has steadily grabbed market share from department stores, malls and specialty retailers — doubling since 2015 from 7% to 14% of total sales, according to consumer data company Statista. Arrival of the COVID-19 pandemic early this year pushed the trend to explode: E-commerce sales jumped 32% in the second quarter from the first quarter — and 45% year-over-year to nearly $212 billion — even as overall retail sales declined. B2C retail is now 16% of total retail sales and climbing.

Traditional warehouse management systems (WMS) designed for B2B freight assume centralized control of fewer and larger shipments; more merchant inventory at rest; full case picking; aggregated pickup and delivery; and lower cost per mile with fewer stops on truckload (TL) and less-than-truckload (LTL) vehicles. B2C fulfillment is nearly a reverse image, with its "endless aisle" of inventory-in-motion held by others; "eaches" picking and packing; higher volumes of smaller orders; multiple items per order; and higher costs for faster and free last-mile parcel delivery.

Warehouses have struggled to accommodate both models under a single legacy WMS operation. Typically it involves on-the-fly workarounds to accommodate direct-to-consumer fulfillment amid normal B2B logistics activity. Replacing legacy WMS systems has been hard to justify so long as B2C demand was incremental.

But the macro e-commerce trend, accelerated by COVID-19, is pushing B2C toward a tipping point.

"B2C drove Q2/2020 UPS volumes up 23%, including a 62% surge in B2C residential deliveries, and holiday shipping hasn't even started," says Bob Malley, managing director of parcel shipping software company Pierbridge Inc. "Moving from B2B to B2C fulfillment is a do-or-die proposition for most retailers."

Consumer surveys suggest up to 25% of shoppers are hesitant to return to a mall and aren't sure when or if they ever will. The question for all retail supply-chain participants is whether the e-commerce omnichannel fulfillment model, with its fast and free shipping and easy returns, is a sustainable model. Retailers, manufacturers, distributors, 3PLs and independent warehouses will need to manage risk and time their investment decisions carefully.

A lower-risk solution gaining ground could be called "warehouse-in-a-warehouse" — or WinW— which recognizes that one size doesn't fit all.

WinW is a software-enabled approach designed to supplement existing B2B warehouse operations with B2C fulfillment capabilities. A cloud-based WinW platform can run as a standalone solution or as an enhancement to an existing WMS. It is scalable to handle incremental B2C pick-pack-parcel business in less than 10,000 square feet of space, but can eventually replace an entire WMS in a much larger space if needed, without the integration costs associated with Tier 1 legacy software providers.

In 2019, Pierbridge and Australian WMS provider Microlistics Ltd. decided to give the WinW strategy a try. Both companies are units of WiseTech Global Ltd.

"As we were doing market research and meeting with clients, we saw a shift in the market for 3PLs that were used to dealing with pallets and full truckloads," said Martin Hespeler, vice president of sales, Americas, at Microlistics. "They were being asked to provide value-added services in pick, pack and ship at their warehouses, such as kitting and light assembly. It was related to e-commerce."

Malley was seeing similar changes among thousands of shippers.

"Manufacturers used to send large shipments to stores where people would go to purchase them," he says. "Now they're being asked by retailers to drop ship to the customer. To make that transition, warehouses need to shift from

case picks to eaches and from pallets to parcels. You need to change your inventory to open containers and control processes for pick and pack operations. ”

The approach looks like placing a Tier 1 WMS designed for omnichannel B2C inside the larger traditional warehouse, then integrating with the legacy WMS as needed to leverage advantages of both.

In the pick stage, WinW allows for wave picking of multiple orders by multiple workers covering set zones. Goods can be cross-docked from the larger warehouse for deconsolidation, replenishment and order fulfillment. The system scans product barcodes to print carrier-compliant labels and packing instructions in real time as the pick is completed.

Packing configuration and cartonization are optimized to minimize risk and shipping costs, in accordance with shipment terms and business rules governing the move. Actual versus expected weight and dimensions in the WMS are verified to ensure shipment accuracy and order entry shipping cost estimates.

There are three key use cases for this kind of parallel e-commerce fulfillment solution:

- Brick-and-mortar retailers responding to strong demand growth in online and mobile orders which they expect to translate into sustained business over time;
- Manufacturers adapting to the emerging omnichannel needs of all retailers and the need for greater operational flexibility at the warehouse; and
- 3PL service providers facing more complex order and inventory management requirements as they take on additional value-added services for goods in transit.

Hespeler estimates that a typical WinW configuration deployed in a 7,500-square-foot area of a 100,000-square-foot warehouse might entail three pickers, three to four small aisles and one packing station. Such an operation could be up and running within 45 days for around $150,000. The estimated labor-related cost savings — from system-directed pathways, labeling, packing instructions, cartonization matched to carrier rate incentives, and less duplication from human error — is in the 18-35% range.

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“The beauty of WinW is in a scalable Tier 1 solution, where you can get going at extremely low cost and build on as you go,” he says.

Optimized cartonization is also critical for B2C parcel freight savings.

“Retailers have become used to seeing parcel rate increases triple the rate of inflation,” Malley says. “COVID surcharges are driving the parcel cost per pound per mile through the roof. At least when you were shipping whole cases you paid for the transportation; now you’re dealing with the economics of free shipping. When it comes to parcel, legacy WMS solutions don’t do a good job of making complex, transportation cost-effective packing decisions at high speed that affect the bottom line.”

Time-definite guarantees require real-time shipment tracing and visibility, he adds. Multi-shipper, multi-client, multi-regional and cross-border freight — all moving under intense time and cost pressures — complicate order management and replenishment strategies. And that’s not counting returns, which occur for more than a third of apparel orders and 15-20% of online retail overall.

Discounting predictions of a global COVID-19 vaccine, retail trends favoring B2C fulfillment appear locked in for the foreseeable future. Surviving malls and department stores have already begun evolving into less of a retail experience than a visitor destination for dining, entertainment and services, from gyms and clinics to tax preparers and day care. Warehouses need to adapt, find the new sweet spot in their core markets and right-size the technologies. WinW has the potential to ease the transition.

For more information, visit www.pierbridge.com.