

How the World's Grocers are Harnessing the Booming Micro-Fulfillment Trend

With more and more consumers ordering online and picking up at the store, grocers are rethinking their fulfillment approaches. Here's how micro-fulfillment fits into the picture, how it has evolved, and where it's headed in 2020 and beyond.



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IT WAS ONLY A FEW YEARS AGO THAT CONSUMERS knew that when they tapped “place order” online the goods would show up on their doorsteps in a week (or more, in some cases). Previously relegated to visiting a physical store to find those goods, customers were happy to hand the task over to a third party and waited patiently for their orders to arrive.

Fast-forward to 2020 and the scenario couldn't be any more different. Not only do buyers of consumer product goods (CPG) expect their stuff to show up within one to two days, but grocery shoppers want to be able to place an order and either have it delivered within a couple of hours—or, have it placed in their trunks in the store's parking lot.

With the COVID-19 pandemic accelerating demand for online ordering, in-store/curb-side pickup and grocery order delivery, the need for better fulfillment options is escalating. The same level of urgency has extended to food delivery, ride-sharing services, and even the B2B world, where customers across all sectors have come to expect quick and free delivery as the norm.

The buzz around fast fulfillment and delivery is particularly loud in the grocery industry, where Walmart, Instacart, and Amazon are leading the pack in terms of customer retention.

Shipt, FreshDirect, and Peapod round out the leaderboard, but Walmart's lead was substantial by last count (August 2019). Offering grocery pickup and delivery across most of the U.S., the retailer has 62% more

grocery customers than its next nearest rival, according to TechCrunch.

“Amazon Prime launched memberships in 2005, and then a few years later really stepped up its offerings, making two-day delivery commonplace,” Progressive Grocer points out. “Fast-forward to a short time later, and there's now a whole generation of online consumers who haven't known anything but this speedy service.”

Forced to either jump into the quick-fulfillment game or fall out of favor with this “new generation” of buyers, the grocery segment is using more technology to help gain an edge in what has always been an extremely competitive business segment. Recently, more of these companies have been leveraging automated micro-fulfillment centers that combine artificial intelligence (AI) and robotics at a location near their physical stores.

In this white paper, we explore the key challenges that grocers are facing in the online world and show how automated micro-fulfillment centers are helping them close these gaps and more effectively compete against some of the world's largest e-tail grocers.





WHY MICRO-FULFILLMENT?

THE PRESSURE IS ON FOR RETAILERS TO SATISFY CONSUMERS' E-COMMERCE DEMANDS in a cost-effective manner. After experimenting with methods like fulfill from store, goods-to-person picking, and even having completely separate warehouses manage their e-commerce operations, grocers are turning to a concept known as micro-fulfillment to help them meet the ever-changing demands of today's consumer.

The strategy of situating small-scale warehouses and DCs in locations that are close to the end customer, micro-fulfillment blends technology and real estate like no other warehousing approach does. By combining AI and robotics, for example, micro-fulfillment centers help maximize the efficiencies of online grocery delivery and pickup.

"This is a very interesting time in the grocery market, which is quickly transforming itself into the online world," says Lucia Brower, chief of staff at Boston-based Takeoff Technologies, Inc., maker of an automated grocery fulfillment solution. "We're seeing double-digit sales growth in the online grocery space, and retailers are quickly trying to discover the best methods to fulfill online orders."

The solution isn't clear cut in the grocery segment, where companies have quickly learned that having store associates pick orders from brick-and-mortar stores is a highly unscalable model. "It's costly and not very efficient," says Brower. "This is just one of several reasons why automation was on the radar rather quickly for grocers."

ARMING THEMSELVES WITH THE RIGHT TOOLS

Using micro-fulfillment, grocers can speed up order fulfillment times, increase productivity, improve inventory management, and reallocate their human labor forces to more business-critical tasks.

As two-day delivery turns into same-day or even one-hour delivery—offered by some grocers plus Amazon, Walmart, and Target (on certain items)—retailers like Sedano's, ShopRite, Albertsons, and Stop & Shop are just some of the stores using micro-fulfillment centers to satisfy

those demands in a cost-effective manner.

"Smaller, regional grocers are trying to arm themselves with more tools and capabilities to compete against Amazon and Walmart, and micro-fulfillment is one option that's coming up repeatedly for the sector," says Leslie LeMair, VP of sales and marketing, Americas, for Georg Utz, Inc., an Indianapolis-based manufacturer of returnable plastic containers, pallets, component holders, and custom solutions used in micro-fulfillment centers.

Aside from having to meet ever-shrinking delivery windows, grocers in the pre-COVID world were also grappling with a decline in store traffic and the need to fulfill smaller and smaller orders (sometimes as small as a single tube of Chapstick). Now they're struggling with a different type of traffic—while keeping their staff and customers safe.

To keep their current customers happy while also attracting new ones, these grocers need bullet-proof omni-channel strategies that get the goods to consumers how and when they want them.

On a positive note, the same stores that have seen foot traffic decline have been left with more "shoppable space" that can be transformed into back-of-the-store micro-fulfillment centers where ship-to-home orders can be picked and packed.

"Grocers can utilize that free space without having to make new investments in real estate or automated storage and retrieval systems (AS/RS)," says LeMair. "With micro-fulfillment, smaller, regional players can rethink their business and compete using their existing resources and assets."



GROCERS TURN TO MICRO-FULFILLMENT

SELLING HIGH VOLUMES OF FAIRLY LOW-VALUE/LOW-MARKET PRODUCTS—many of them perishable, heavy, bulky, and kept at different temperatures—grocers face some unique challenges on the fulfillment front. Throw in the fact that customers tend to have an emotional attachment to their food, and aren't too keen on "product substitutions," and the need for good inventory management and visibility become table stakes for grocers in the online world.

Matt Walker, program manager for micro-fulfillment at Dematic, says the micro-fulfillment trend emerged several years ago but has really amplified over the last year. Demand is coming both from small-scale warehouse facilities and large supercenters—and all points in between. Much of the trend was spurred on when Amazon acquired Whole Foods, effectively pushing itself in to the grocery space.

"At that point, we immediately saw the emergence of Instacart, Shipt, and other types of online fulfillment models," says Walker. "Concurrently, grocers began looking at how they could use automation to leverage their existing store footprints."

Estimating that 15-20 active micro-fulfillment sites are currently up and running, Walker says the concept is in "experimental mode," but on track to grow over the next few years.

"We're living with the impact of COVID-19, and that's increased demand for online ordering at the grocery level," says Walker. "That's pushing micro-fulfillment to the forefront of the conversation." In most cases, those micro-fulfillment systems are based on automated storage and retrieval system technology (AS/RS); shuttle systems; and/or mobile robotic shuttles.

"At the end of the day," Walker explains, "the technology is all rooted in the concept of leveraging automation to bring goods to a person instead of a person having to go get the goods."

Designed to address these needs, micro-fulfillment centers are usually set up as small, standalone sites located in the rear quadrant of a grocer's location. Within that space are numerous racks and a host of robots moving about, picking products off those racks and delivering them to an employee for packing.

"We call it the beehive," says William Odom, Takeoff's fulfillment lead, "with the bees being the robots, and tasked with handling most of the hard work."

In this goods-to-person scenario, efficiencies are gained because individual workers aren't traversing the space in search of individual products—the robots handle that heavy lifting. The micro-fulfillment center also includes cases where refrigerated and frozen food is stored, neither of which are folded into the "automated" environment (yet there is still a benefit to housing them within that environment, Odom adds).

Within the beehive, containers serve as the "honeycomb that stores the honey," Brower explains. "They facilitate the movement of goods on the conveyor and on the robots themselves throughout the micro-fulfillment center."

For optimal performance, those containers must be flexible by nature and able to manage multiple different configurations. "The more cube of the tote that the grocer can use," says Brower, "the more items it can put into the fulfillment center and ultimately improve the overall picking efficiency within that space."



BOASTING 99%+ ACCURACY RATES

IN THE U.S., STEVEN DUFFY, SENIOR VP OF DESIGN AT CUHACI & PETERSON (C&P), says micro-fulfillment gives grocers a low-cost, automated mechanism for fulfilling orders while keeping costs down. Current iterations include 15,000-square-foot fulfillment centers equipped with automatic robotic picking and situated within 10-15 miles of a customer's home.

With COVID-19 increasing demands on grocers and other retailers, Duffy says interest in micro-fulfillment has grown exponentially. Key drivers include the reduced amount of human handling of food products, the systems' automated nature, and the lower labor costs associated with micro-fulfillment.

"We're seeing grocery aisles jammed with personal shoppers, with many cities have huge waitlists for those services," says Duffy, whose firm is currently working with a grocer that's launching an AutoStore-based micro-fulfillment approach. "With micro-fulfillment's 24/7 automated picking capabilities, grocers are seeing improvements in both speed and efficiency."

Looking ahead to a post-COVID world, Duffy expects the micro-fulfillment trend to grow significantly over the next 12 months. And while some early innovators encountered challenges because the technology vendors didn't understand complexity of the grocery space, Duffy says that has since changed. "We're at a point where the reliable micro-fulfillment grocery-picking platforms boast 99%+ reliability," says Duffy, "versus 70% or less when other options are deployed."

FULL SPEED AHEAD

Because they allow grocers to leverage automation at a very small scale—versus just in very large warehouses and DCs—micro-fulfillment centers are helping companies of all sizes adapt to this "new normal" of the grocery world. As an added bonus, micro-fulfillment centers can be implemented and fully operational within a matter of weeks, in most cases, versus the typical two to three years for a full-scale automation project.



As we're seeing in many industries right now, Amazon is leading the charge in the online grocery space, where the e-tailer is not only breaking the mold, but also being extremely disruptive and intentional about it.

"Amazon is pushing everyone else to deploy faster fulfillment models," adds Odom. "To survive this disruption, the grocery industry has to wake up and take notice. It also needs to be able to compete directly with Amazon in terms of on-time fulfillment and accuracy, both of which will become even more critical as more and more consumers do their grocery shopping online."



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ABOUT UTZ

Georg Utz is a globally operating specialist for the development, manufacture and distribution of plastic-made reusable packaging systems for transport, warehousing, and intralogistics, as well as for technical parts for professional applications. Utz's vision is to be the leading manufacturer of containers, pallets, component holders and technical parts from recyclable plastic. Simply stated, Utz creates solutions to deliver goods from point A to point B, and into consumers hands more profitably and sustainably.

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