Microfulfillment Strategies – Top Priorities for Retailers

Understanding the challenges and best practices in implementing your microfulfillment automation strategy

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I Introduction:

The COVID-19 impact on consumer buying behavior cannot be underestimated. According to the latest data from Adobe's Digital Economy Index, U.S. e-commerce sales showed a year over year increase in August of 42%. By the end of 2020, e-commerce sales are expected to reach $374.3 billion in the U.S., and $476.4 billion by the end of 2024.[1]

Online grocery helped drive the increase in sales and is expected to grow by 40% in 2020, compared to an increase of 22% in 2019. [2]

Not surprisingly, retailers have scrambled to meet new customer demands in an environment where the fastest, lowest-cost delivery and most convenient customer experience win the day. Customers want the ability to buy online, have their product delivered in 24 hours, (and increasingly within the hour), or pick up curbside at their convenience.

According to PwC analysts, this trend is irreversible. "While some consumers will return to prior behaviors, the pace of change will only pick up, requiring retailers to transform the customer journey and re-examine the role of a brick-and-mortar presence."[3]

For retailers and grocers alike, microfulfillment automation promises to meet these "changed customer expectations" while reducing final mile delivery costs and allowing for faster order picking and any time curbside pick-up and delivery. However, compared to other retailers, grocers face some unique challenges — like expiring inventory and storage requirements, peak shopping times for curbside pick-up, available back-of-house space and ambient vs. chilled products.

> **"The effect of COVID on online shopping is that every day is now Black Friday."**
>
> Alex Haines, Bastian Solutions

In this playbook, we will examine the extent to which retailers can benefit from adopting microfulfillment automation technologies, the challenges particular to the grocery sector and how to choose the right microfulfillment strategy to maximize the benefits of automation.

Readers will:

- Learn the benefits of microfulfillment automation in their enterprise
- Understand the challenges unique to the grocery sector
- Learn about the key considerations when determining a microfulfillment automation strategy (back-of-store, dark store)
- Understand what to look for in best-in-class automation technology

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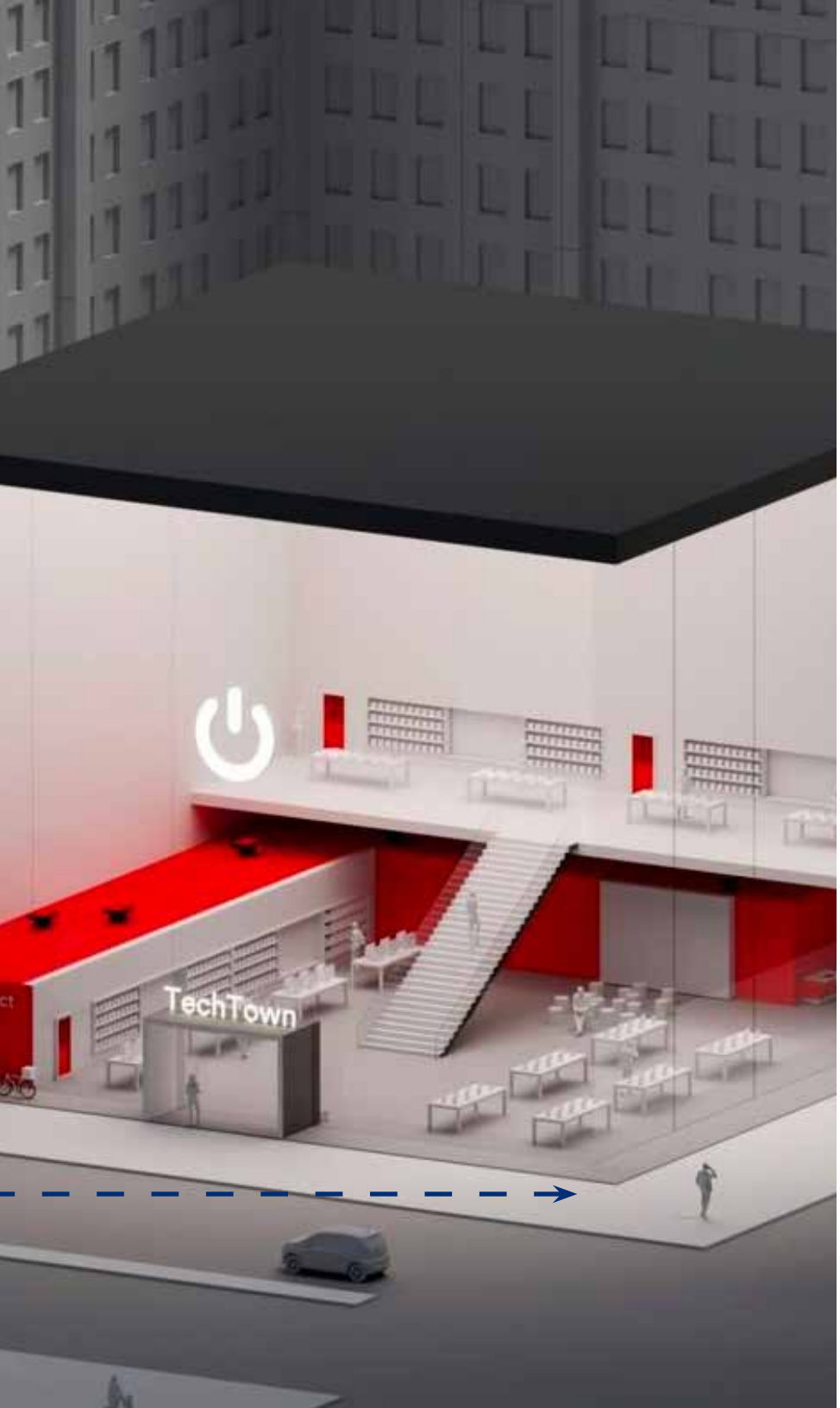
II Why microfulfillment?

Order fulfillment is the process of picking customer orders for shipment to stores for customer pick up or shipment direct to customers from large, automated distribution centers and warehouses. Microfulfillment accomplishes the same goals, but takes place from either store shelves, dedicated back-of-store space in a retail facility or in local centers (hubs or dark stores) that can serve a number of retailers at the same time.

So why microfulfillment as opposed to shipping goods from larger distribution centers?

It's all about speed of delivery and order availability for pick-up, reducing picking costs and times, and reducing final mile costs, says Alex Haines, business development consultant at Bastian Solutions. "For retailers, microfulfillment meets the change in customer expectations for fast delivery or pick-up locally any time, while reducing preparation, delivery costs and sometimes inventory carrying costs depending on a retailer's strategy." And this isn't necessarily a new strategy, he adds. "For example, Target has been fulfilling online orders directly from their stores for years, and same day delivery and pick-up has doubled since 2019."

"While buying patterns will likely normalize to some degree over time, I don't believe consumer expectations will ever completely change back to pre-COVID levels. Why would customers ever accept slower delivery…and less convenience?" said Haines.

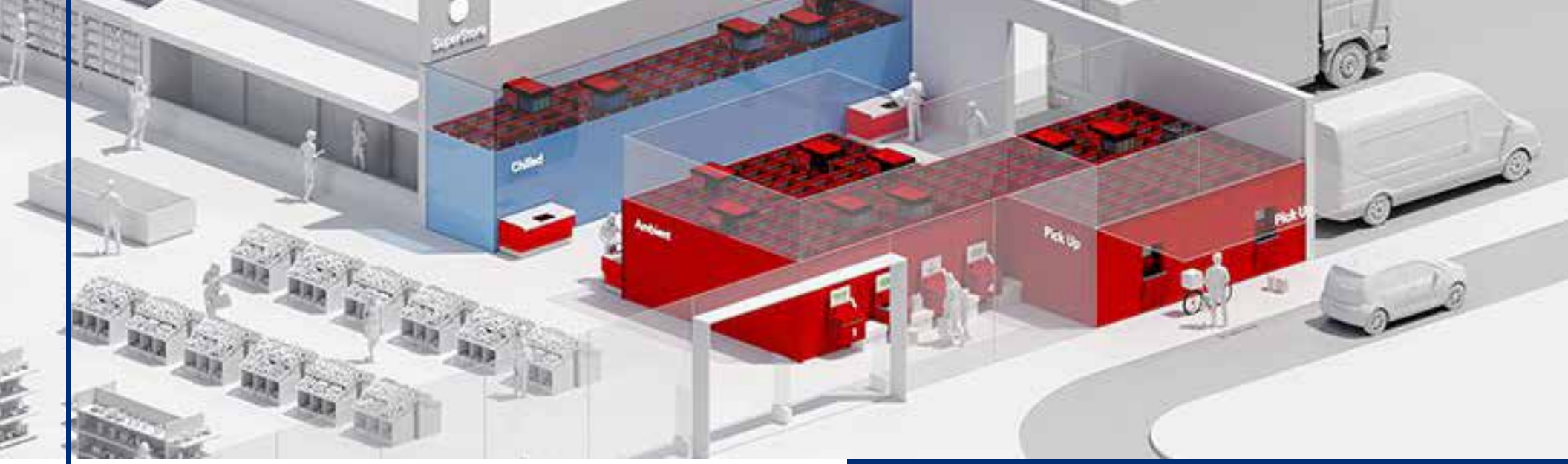


There are only two ways to meet this kind of demand locally for same day delivery and pick-up, he notes: Add additional labor at an additional cost, or alternatively, automate. “While most retailers are still adding labor, the only way to contain costs and remain competitive is to look to automation,” he says.

This is particularly true in the grocery sector, where margins are thin, and order picking is labor-intensive. As Andrew Benzinger, business development manager at AutoStore comments, “Even the best-in-class grocer is working within a 1% to 2.5% gross margin. So in that environment, a capital expenditure to buy automation will almost always be the most cost-efficient way to serve those online customers. Once the automation is paid, within one to two years, that’s going to their bottom line.”

In a recent study by MWPVL International, for an online order of $100 at a grocery store, manual picking or “valet picking” (which is how the vast majority of online orders are being filled by supermarkets) costs an estimated $10.78 in direct labor, excluding delivery costs. If an automated microfulfillment solution was located back-of-store, labor costs to fulfill this order through robotics would drop to $2.86.[4]

The other problem with manual picking front-of-store in the grocery sector is increased aisle congestion, says Haines. “People are walking the aisle picking orders, blocking customer access, which is hurting the shopping experience for in-house customers.” Manual picking is also diluting the grocery brand. “For those stores using services like Instacart, customers are becoming brand agnostic. By customers buying through Instacart, supermarkets are essentially giving their customers away,” he explains.



In order to solve those kinds of problems, grocers and other retailers are looking to either back-of-store microfulfillment systems, or dark stores, which are small off-site fulfillment centers (many times closed brick and mortar stores) serving a larger customer base. “Ultimately, whatever microfulfillment strategy they choose, it’s about meeting immediate online customer demand (delivery, curbside or in-store), and with automation, improving efficiencies and saving on labor,” Haines comments.

While grocers have specific challenges due to the nature of their products, microfulfillment is less risky for the grocery sector due to its consistent customer bases in highly localized areas. “Grocers can offer easy curbside pick-up and, compared to most retailers, can count on weekly repeat customers. “Grocers benefit from the fact that their products are necessities, and are high volume, as compared to other retailers. So automating their microfulfillment process, they stand to capture the ROI quickly.”

BACK OF STORE VS. DARK STORE MICROFULFILLMENT

BACK OF STORE: automated fulfillment within the relatively small space constraints in the back of a traditional retail store. This method combines manual store pick with automated storage and picking of smaller items

DARK STORE: a small building typically in a metropolitan area that utilizes some automation to fulfill e-commerce, curbside and delivery orders. This is like a small warehouse / fulfillment center and customers are not allowed access. This building might be an old retail / grocery store, or a small warehouse.

III 9 key considerations in developing a microfulfillment strategy:

Supply chain managers face several key considerations prior to implementing a microfulfillment strategy:

1. How important is online shopping, same day delivery and curbside pick-up to your long-term strategy? Do you have the minimum volume that would justify creating an automated microfulfillment system in a dark store or back-of-store?

2. Do you have existing retail space that you can retrofit to use as a microfulfillment center?

3. For large box stores located out of city centers, can you get closer to your customers by utilizing available urban spaces, and at what cost? Average cost per square foot of commercial retail and warehouse space varies dramatically by region. The USA avg. cost to rent retail space = $18.39 sq. ft.[5]; USA Avg. cost to rent warehouse space = $5.98/ sq. ft.[6]

4. What is your inventory replenishment strategy from the DC? If you're going to implement a microfulfillment strategy, how does your DC support that?

5. Are DC supply chain strategic decision makers communicating with the store supply chain strategic decision makers? Are they both aligned on the vision going forward? In developing a replenishment strategy for automating a microfulfillment center, there needs to be open communication between these two teams.

6. Your inventory days on hand are going to be a critical factor when determining what type of automation you need. You should be asking: how big does the system need to be and how do I size that appropriately?

7. What are your peak day or week considerations? You want to design an automation system for increased volumes, but you don't necessarily want to design to the highest volume day or week because you can oversize the system and under-utilize its value.

8. What is your IT strategy? In the grocery sector, you may want to add a small warehouse management system that's coupled with your automation.

9. In a grocery environment, microfulfillment is a great deal more complex than in a consumer goods setting. Managers need to consider automation software that can facilitate storage rules for both chilled and ambient products, as well as other rules around what products can be stored together.

IV The four pillars of a best-in-class microfulfillment automation technology:

1. Density

Microfulfillment, as the name suggests, is about distribution at a micro level. Microfulfillment centers operate in a much smaller footprint compared to traditional distribution centers. “That’s what microfulfillment is,” says Benzinger. “It’s your DC in the back of your store, or in a dark store. However, instead of operating with 250,000 to 500,000 square feet, you have 10,000...or even less.” In that environment, an automation solution has to be really dense, because it gives you more flexibility, he adds. “With a dense system you have the luxury of operating in smaller footprints with more automation. And more automation per square foot means lower costs and a faster process. “The automated area can’t take up more than 50% of your space,” he explains. “You’ve got a quick-pick manual area, a receiving and shipping area, so you’ve got to have a whole flow to the facility. That’s another reason why density is so important.”

2. Flexibility

The second of the four pillars of a best-in-class automation system for microfulfillment is flexibility. The more flexible the system, the greater use of back-of-store space, Benzinger comments. “A best-in-class automation solution should be able to squeeze like a Tetris piece into any nook and cranny in your footprint, whether it’s low ceiling or an odd shaped space.”
At the same time, the technology has to be flexible to allow for changes in order frequency and size, he adds. “Flexibility not only from a hardware perspective, but also flexibility around consumer buying habits. For example, orders through COVID have gotten smaller, but they’re ordering more frequently. So the automation system has to be able to expand or contract as needed, and be able to scale by adding or subtracting robots.”

3. Reliability

The third pillar of a best-in-class microfulfillment automation system is reliability. “A best-in-class system should have over 99% uptime,” says Benzinger. The difference between a system that has a 95% uptime and a 99% uptime is huge, he adds. That’s the difference between having a system that is extremely reliable and one that needs crazy amounts of babysitters or engineers to make sure it stays running.”

4. Picking Ahead

For grocers, most orders processed for evening curbside pick-up are placed earlier in the day. However, they’re typically not processed until closer to pick-up time due to a lack of storage capacity. A best-in-class automation system will allow orders to be picked as they come in, and then put back in storage. This, in turn, increases labor efficiency throughout the day. As Benzinger explains, “Most grocers have a limited area for storing orders, maybe 300 square feet. That’s where they’re holding all these products, and that’s that bottleneck that stops the process. An automation system like AutoStore can make that 300 square feet feel like thousands, enabling the grocer, or any retailer for that matter, to have much more storage capacity.”

V Conclusion

Consumers' buying patterns have changed the game for retailers. COVID has supercharged the demand for online shopping, same day or even within the hour delivery. Online grocery has led the way in terms of buy online pickup in-store (BOPIS), whenever the customer wants it.

Retailers and grocers alike are trying to figure out ways to best serve their customers through the pandemic changes, while keeping a close eye on the bottom line. Microfulfillment promises to meet customer expectations by allowing for fast delivery while reducing final mile costs. At the same time, back-of-store, dark store and hub microfulfillment center automation technology promises to deliver on minimizing costs and increasing efficiencies — a game changer in the grocery environment, where gross margins are wafer thin.

However, before local supply managers begin their microfulfillment automation journey, they need to be clear on several key issues. Potentially the most significant of these is the importance of open communication between the DC supply manager, and the supply manager making decisions at the local store level. Once they come together on strategy, they need to understand the scope of their automation project based on inventory replenishment requirements and, for grocers, specific software requirements that support product storage rules.

Finally, supply chain managers need to understand the characteristics of a best-in-class micro fulfillment automation system. When choosing a technology and automation vendor, begin the process by considering your square footage constraints when looking for a back-of-store option. Second, project how flexible the system needs to be to potential changes in space and consumer demand patterns. Third, determine the maintenance and uptime of any new system, and finally, understand how the chosen best-in-class automation solution will increase the efficiency of the order flow processes back-of-house.

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