

# VISIBILITY IN THE GROCERY DELIVERY SUPPLY CHAIN

HERE'S HOW CONSUMER SHOPPING TRENDS HAVE CHANGED THE WAY GROCERY RETAILERS APPROACH SOURCING, DISTRIBUTION AND TRANSPORTATION, ESPECIALLY IN TERMS OF SUPPLY CHAIN VISIBILITY.



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Food  
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SUPPLY & DEMAND CHAIN  
**EXECUTIVE**

# CONTENTS



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3. INTRODUCTION
4. THE RISE OF GROCERY E-COMMERCE
5. YEARS OF EVOLUTION IN MONTHS
6. SCALING UP TECHNOLOGY
7. INCREASED RELIANCE ON MICRO-FULFILLMENT CENTERS
8. LAST-MILE DELIVERY CHALLENGES

**A** relatively new area of innovation in the supply chain is grocery e-commerce. An increase in online ordering, coupled with the lockdowns during the COVID-19 pandemic have led to a dramatic increase in consumers shopping for groceries online. The shift has bolstered emerging technologies and additional investment from retailers. While challenges remain, the future of grocery e-commerce is looking bright.

The uptick in online grocery orders has led to click and collect, also known as buy-online/pick-up-in-store (BOPIS), where personal shoppers, or pickers, walk grocery store aisles, shopping for the consumer, who then drives to the store to pick up the order. Grocery aisles congested with pickers and in-store shoppers is less than ideal. That's why many companies are opting to use separate dark stores and micro-fulfillment centers to complete orders.

This 4-part white paper will uncover the logistics behind supply chain visibility, detailing how and what technologies companies are investing in, how companies are working to meet same-day delivery and what forms of technologies are best for mitigating supply chain risks. This series of white papers will break down grocery retail, last mile and warehouse automation, revealing how procurement software, enterprise

resource planning (ERP), warehouse management systems (WMS), robotics and other automated solutions help companies better forecast for inventory, waste reduction, fleet management problems, a future in contactless and driverless and more.



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**Here's how consumer shopping trends have changed the way grocery retailers approach sourcing, distribution and transportation, especially in terms of supply chain visibility.**



# THE RISE OF GROCERY E-COMMERCE



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In the early days of the Internet, grocery e-commerce was often a failed experiment. Retailers eager to join the successes of online ordering during the late 1990s entered the fray. Grocery e-commerce, however, was met with numerous initial challenges and major financial losses. Early adopters like HomeGrocer.com and Webvan ended up losing money, declaring bankruptcy or being absorbed by the likes of Amazon.

Retailers have since experimented with various business models to improve the experience and profitability of grocery e-commerce. Instacart entered the scene in 2012, offering personal shoppers, online ordering and delivery through cloud computing and mobile apps. Now, many grocers are offering similar services, often using the BOPIS model. It wasn't until the COVID-19 pandemic, however, that online grocery ordering gained serious traction.

According to a survey conducted by Food Logistics and Supply & Demand Chain Executive, software, mobile apps, distribution and fleet are the most common investments by grocers.



**SOFTWARE, MOBILE APPS, DISTRIBUTION AND FLEET ARE THE MOST COMMON INVESTMENTS BY GROCERS.**



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# YEARS OF EVOLUTION IN MONTHS



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**“LAST YEAR WAS A BIG YEAR FOR E-COMMERCE IN GROCERY FOR OBVIOUS REASONS –A TERRIBLE HUMANITARIAN CRISIS, CREATING A LOT OF SAFETY CONCERNS AND PEOPLE WANTING TO AVOID GOING INTO THE PHYSICAL STORE. SO, E-COM GOT A BIG BOOST.”**

*Rob Wilson,  
managing director  
and partner at L.E.K.  
Consulting*

**D**uring the pandemic of 2020, many consumers turned to online grocery shopping.

for online grocery shopping. Many older shoppers who previously had not shopped for groceries online, started doing so.

**E-commerce shopping went from 3-4% of the grocery market to 10%**, says Rob Wilson, managing director and partner at L.E.K. Consulting. The number of households buying groceries online went from 16 million in 2019 to 40 million in 2020.

“Millennials were twice as likely as boomers, for example, to have purchased groceries online pre-COVID and that’s changed a lot because a lot of the older population has been at risk. So, they’ve gotten online, as well.”

“Last year was a big year for e-commerce in grocery for obvious reasons—a terrible humanitarian crisis, creating a lot of safety concerns and people wanting to avoid going into the physical store. So, e-com got a big boost,” Wilson says.

The pandemic and resulting lockdowns also widened the market



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**Online grocery shopping increased 16% from April 2020 to April 2021**, according to a Brick Meets Click/ Mercatus Grocery Shopping Survey. **The delivery/pickup segment captured \$6.6 billion in sales**, or more than three-fourths of total online grocery shopping in April 2021, according to the survey. To many, these numbers mean online grocery shopping is here to stay.

# SCALING UP TECHNOLOGY



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**F**or grocery e-commerce to work on a large scale, several technologies are needed. Different technologies and concepts like delivery robots, automated micro-fulfillment centers and BOPIS made the shift to e-commerce on a grand scale possible for grocers, says Sunny Mehta, principal consultant at LogisticsIQ.

“In fact, trends like curbside pickup, in-store pick up and direct-to-consumer delivery were well expected before the pandemic due to change in consumer behavior like same-day delivery. The pandemic forced the grocers to adopt these technologies quickly as a faster response to consumer delivery requests,” Mehta says. “Robotics, AI, imaging and machine vision were the core new technologies to support such software, navigation and automation.”

While TMS and WMS systems are commonplace in warehouse environments, additional technologies such as robot operating systems, analytics and navigation will be more prevalent in coming years, she says.

“We can expect the software related to robotics analytics and simulation for utilization and optimization, ROS (robot operating system)

and navigation, as more robots (AGV/AMR) and shuttles are expected to be used in the warehouses or dark stores,” Mehta says.

According to a survey conducted by Food Logistics and Supply & Demand Chain Executive, the best software to use when first implementing automation is cloud-based software solutions and track and trace.

## For companies just starting to implement automation, what is the best form of technology to start with?

(Select your top 3)

Blockchain .....	15%
Automation/Robotics .....	29%
WMS/TMS .....	28%
Cloud-based .....	44%
Software Solutions.....	44%
IoT .....	13%
ERP .....	19%
Track-and-Trace .....	33%

Automation is also essential to companies short on workers, Wilson says.

“Automation is just a big trend right now,” he says. “If you’re a grocer, you’ve already had the need to accelerate. This is only further accelerated because long-term labor costs are going to continue to rise and it’s just creating more of an incentive for folks to look to automate where possible. You can’t always replace people and thank goodness for that, but there are certain things that can be automated. A bolder view from some is that this is going to the model of grocery because grocery is historically operating on razor-thin margins.”

**“IN FACT, TRENDS LIKE CURBSIDE PICKUP, IN-STORE PICK UP AND DIRECT-TO-CONSUMER DELIVERY WERE WELL EXPECTED BEFORE THE PANDEMIC DUE TO CHANGE IN CONSUMER BEHAVIOR...”**



Sunny Mehta,  
principal consultant  
at LogisticsIQ

# INCREASED RELIANCE ON MICRO-FULFILLMENT CENTERS



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**G**rocers are increasingly relying on micro-fulfillment centers to deliver more quickly to the consumer.

“Shifting to BOPIS helped the grocers to set up the urban warehouses within the city near the end customer rather than getting each grocery order from fulfillment or distribution centers situated away from the city,” Mehta says. “It provides additional options to end-customer to either pick it from the store once online order is placed or get it delivered at door step.”

LogisticsIQ’s latest research shows that the micro-fulfillment market is expected to have a cumulative opportunity **worth roughly \$10 billion** in the next six years by 2026, with an installed base of about 2,000 micro-fulfillment centers if the technology and concept remains permanent, Mehta says.

“Year 2022 is going to be the cornerstone for the micro-fulfillment market reaching the \$1 billion mark and setting the foundation for the future, as it will help grocers to validate their ROI and buyback period,” she says. “It is expected that **there will be one micro-fulfillment center for every 10th of the U.S. total 40,000 grocery stores by 2030.**”

**“YEAR 2022 IS GOING TO BE THE CORNERSTONE FOR THE MICRO-FULFILLMENT MARKET REACHING THE \$1 BILLION MARK AND SETTING THE FOUNDATION FOR THE FUTURE.”**

*Sunny Mehta,  
principal consultant  
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# LAST-MILE DELIVERY CHALLENGES



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**“AMERICANS LIKE TO DRIVE THEIR CARS AND A LOT OF THEM WILL FIND IT CONVENIENT TO PICK UP AGAIN ON THE WAY HOME FROM WORK.”**

*Sunny Mehta, principal consultant at LogisticsIQ*

Increased automation has allowed grocers to adapt to the many supply chain disruptions in recent years, especially throughout 2020.

“A major challenge for grocers was to predict the real-time demand due to the pandemic. It was really difficult for them to plan the inventory between essential and non-essential items,” Mehta says.

But, last-mile delivery remains a challenge when consumers expect a short delivery time for groceries.

“You can’t afford two- to three-day delivery in grocery segment,” she says.

Going forward, grocers will rely on automation and other technologies to keep storefronts relevant and costs down as more consumers shift to online ordering, says Wilson.

“Consumers picking up the last mile is going to be a big thing for U.S. grocers,” he says.

“Americans like to drive their cars and a lot of them will find it convenient to pick up again on the way home from work. As folks start to go out of the work-from-home environment, I think you’ll start to see more pick up as more people return to work.”

Check back for the remaining two parts of this white paper, which will break down last mile and warehouse automation and how these relate to the state of supply chain visibility.

[CLICK HERE TO READ PART 1](#)

[CLICK HERE](#) to read Part 1, which uncovers the logistics behind supply chain visibility, detailing how and what technologies companies are investing in, how companies are working to meet same-day delivery and what forms of technologies are best for mitigating supply chain risks. ■



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**“A MAJOR CHALLENGE FOR GROCERS WAS TO PREDICT THE REAL-TIME DEMAND DUE TO THE PANDEMIC. IT WAS REALLY DIFFICULT FOR THEM TO PLAN THE INVENTORY BETWEEN ESSENTIAL AND NON-ESSENTIAL ITEMS.”**

*Sunny Mehta, principal consultant at LogisticsIQ*

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