

Report

# Order Fulfillment



# Challenges, trends, and solutions

Focused on improving order accuracy, and speeding up order fulfillment times, fulfillment operations face a litany of challenges. Companies need advanced strategies in order to stand out in the modern e-commerce marketplace. The reasons for chasing a piece of the online pie are compelling. According to research firm e-Marketer<sup>1</sup>, the global e-commerce market will reach \$5 trillion by 2021 (up from \$3.5 trillion in 2019).

In total, global retail sales reached \$25 trillion in 2019, an increase of 4.5% over 2018. In its The Future of Retail 2020 report<sup>2</sup>, e-Marketer says companies are focused on delivering a “frictionless retail” experience that includes easy returns, mobile order-ahead, cashierless checkout, and other innovations that streamline the transaction.

<sup>1</sup> e-Marketer; Global E-commerce Report; Andrew Lipsman; June 27, 2019  
<sup>2</sup> e-Marketer; The Future of Retail 2020; Andrew Lipsman; December 19, 2019



# Automation is making a difference

**This Research Report reveals fulfillment’s biggest pain points and shows how automation is making a difference for companies looking to optimize their order fulfillment processes.**

The innovation taking place behind the scenes on the e-commerce front is equally as (if not more) important. For without the right combination of people, processes, and systems, companies can quickly find themselves behind the 8-ball in the order fulfillment game.

To offset these challenges, companies are infusing more technology and automation, all with the aim of being able to “do more with less.” To learn more about their key pain points and how they’re being solved, Peerless Research Group conducted a study on behalf of Modern Materials Handling for Kardex. The survey was sent out in 2019 to Modern Materials Handling magazine readers, 147 of whom participated in it. Those readers were asked to evaluate:

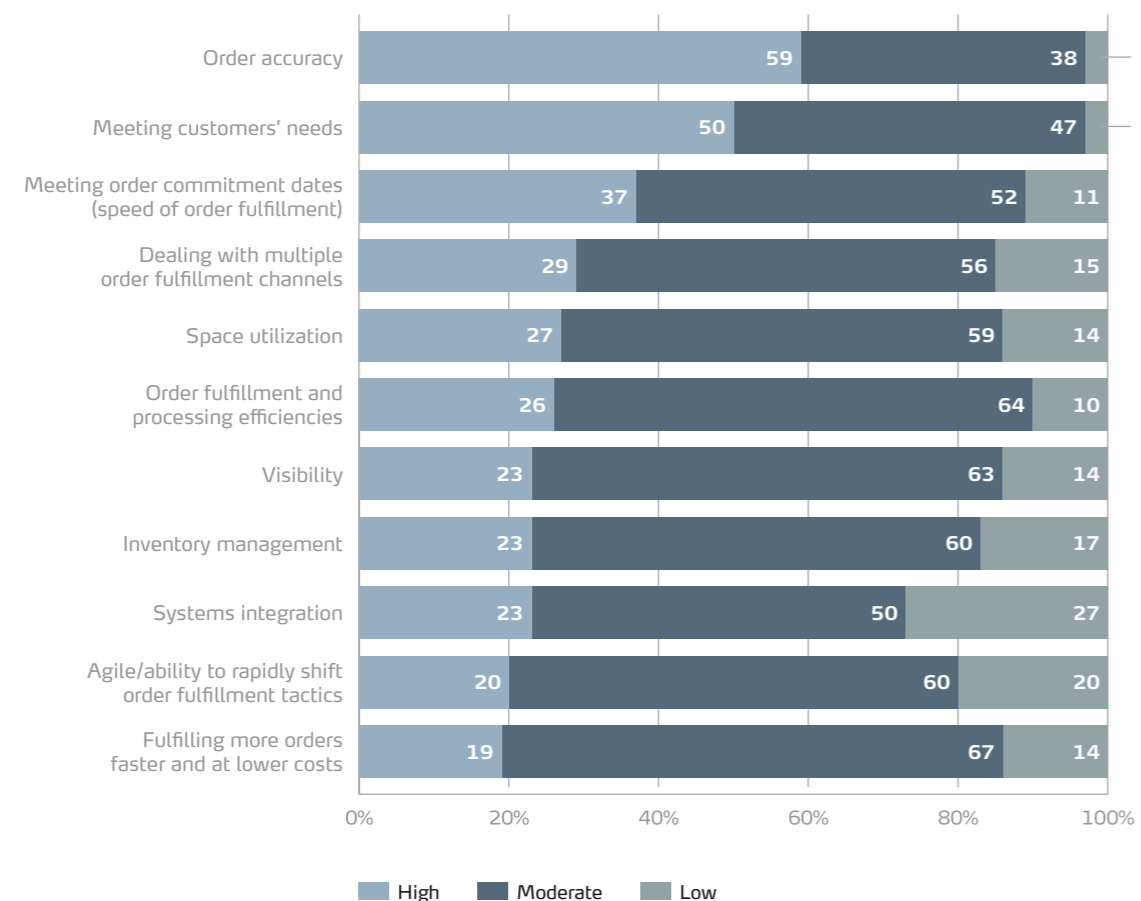


# The fulfillment focus

## What's your fulfillment focus?

Warehouse operators have a lot on their plates right now, but most are putting their energy into improving order accuracy: (97% say this is a moderate or high concern), meeting customers' needs (97%), speeding up order fulfillment times (89%), and dealing with multiple order fulfillment channels (85%). Other key areas of concern include space utilization, order fulfillment/processing efficiencies, inventory management, and systems integration. These results align with industry trends, which indicate that fulfillment centers are tightly focused on getting accurate orders to the right place at the right time.

**Figure 1**  
Evaluating organizations' fulfillment operations

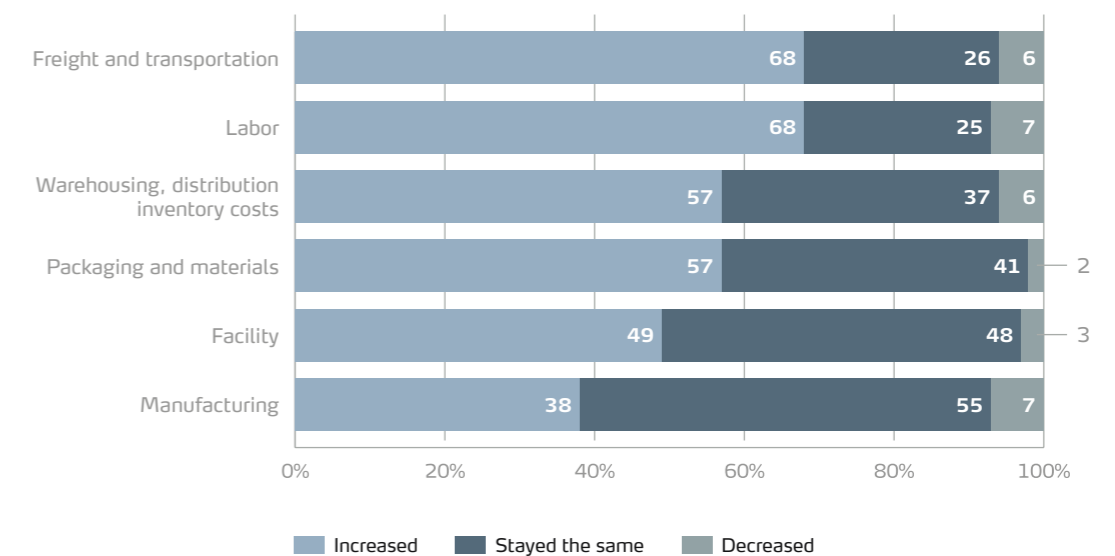


## Shifts impacting fulfillment costs

When asked to describe the shifts in fulfillment costs over the prior 24 months, respondents pointed to freight and transportation; labor; and warehousing and distribution inventory costs as the top three areas where companies are now paying more.

For example, 68% of companies are paying more for freight transportation than they did in 2018, while an equal number are paying higher labor rates. Fifty-seven percent say they're paying higher warehousing and distribution inventory costs, while 57% say packaging and materials expenses have risen since 2018. Across the board, very few companies are paying lower fulfillment costs than they did two years ago. These results are consistent with recent Modern Materials Handling reports involving analysts, consultants, and individual companies.

**Figure 2**  
Areas in which fulfillment costs have changed over the last 2 years



# The biggest challenges

## Tackling the biggest fulfillment challenges head-on

To address their most pressing fulfillment and distribution challenges, 45% of the respondents are working towards enhancing their process capabilities. A measurement of how well a process functions, process capability focuses on producing a consistently high-quality product or service. With e-commerce and staffing pressures mounting, companies assess their processes and then look for ways to do things better, faster, and smarter.

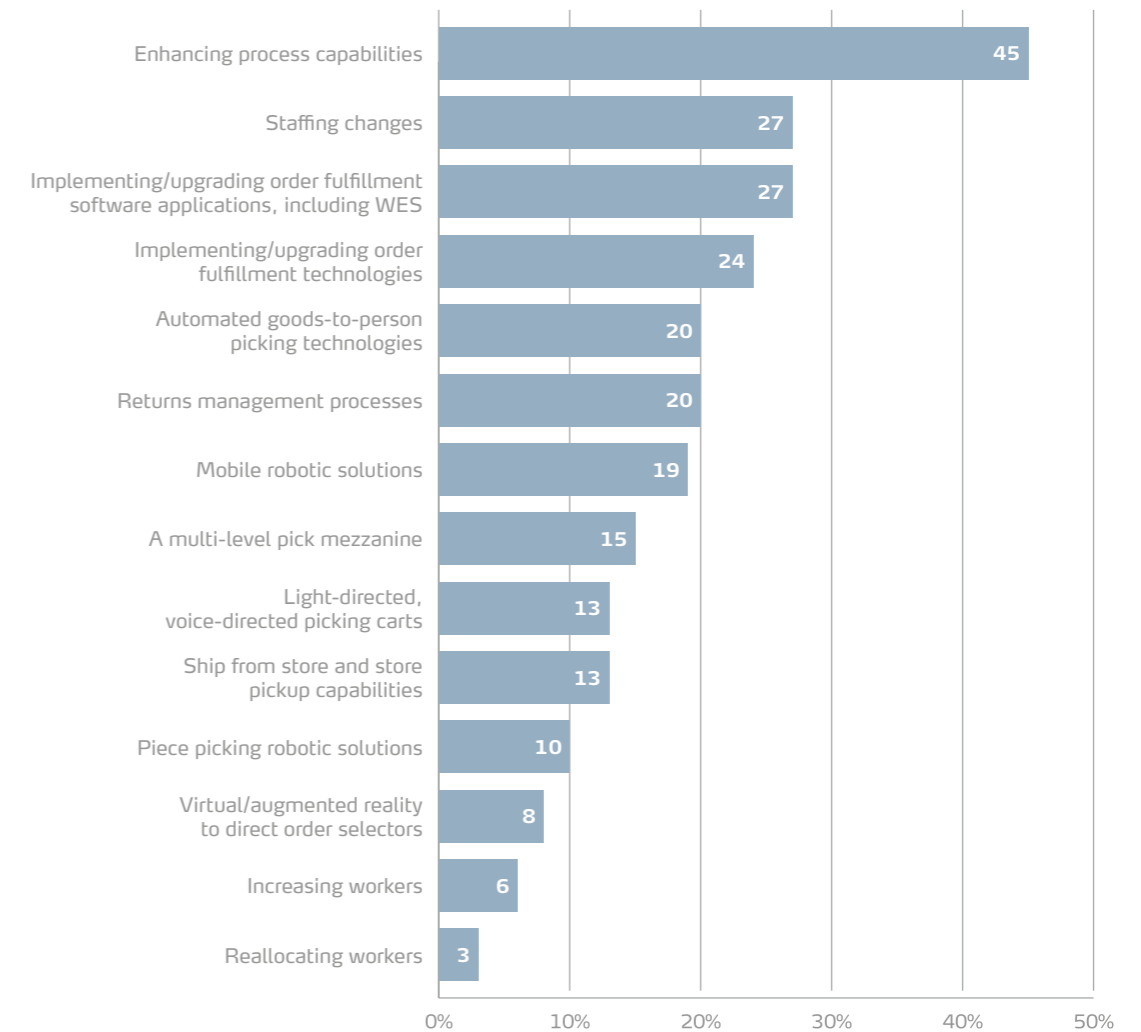
Other ways to improve order fulfillment and distribution operations include staffing changes (for 27% of respondents); implementation or upgrading of order fulfillment software applications – including warehouse execution systems or WES (27%); the implementation or upgrading of order fulfillment technologies (24%); and the use of automated goods-to-person picking technologies (20%). Companies are also evaluating returns management processes, multi-pick mezzanines, and light-directed/voice-directed picking carts.

## Infusing more technology into the warehouse

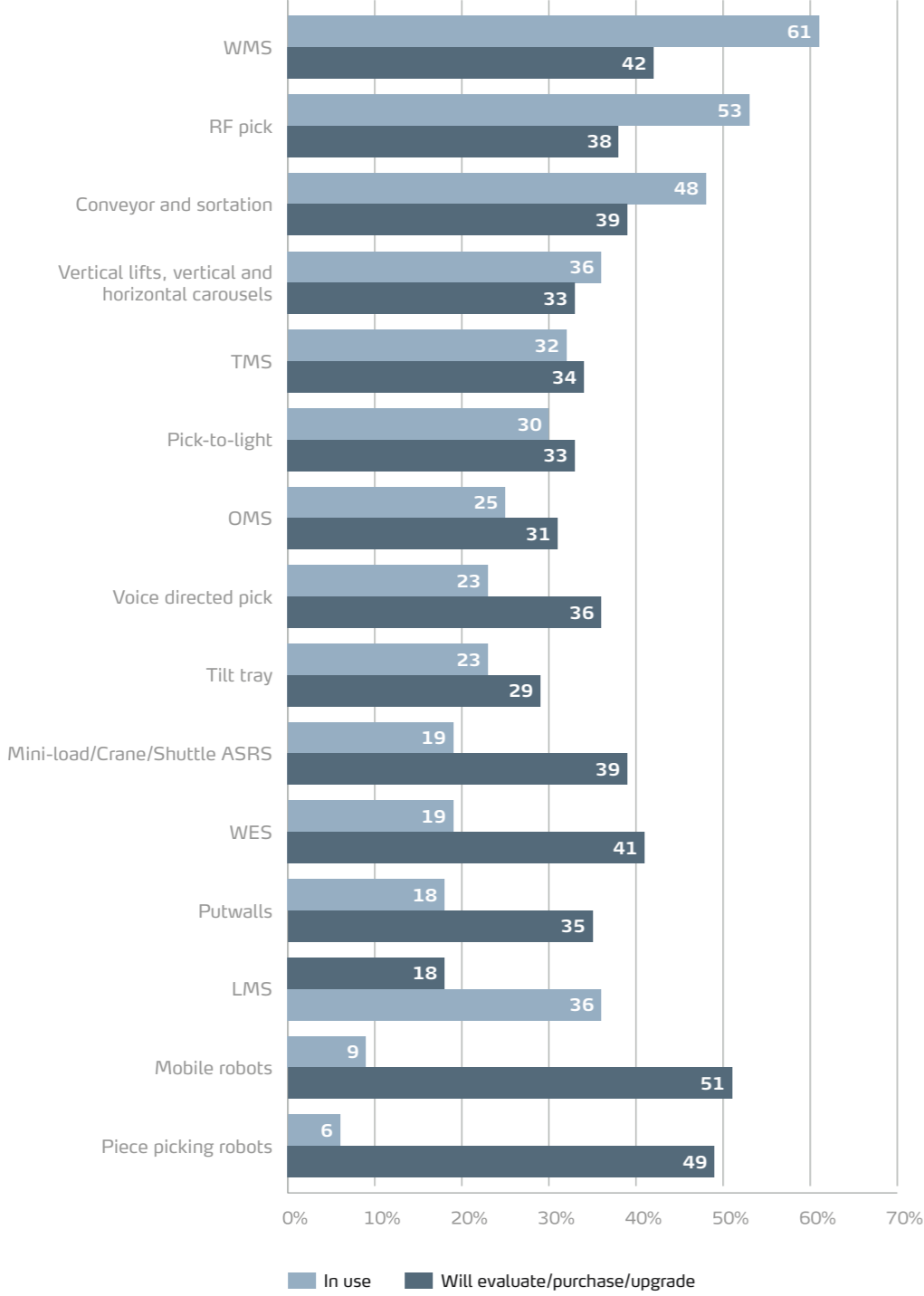
When asked which order fulfillment technologies they will be implementing or upgrading over the next 24 months, 42% said warehouse management systems (WMS), while 39% are either using or evaluating conveyor and sortation systems, and 38% cited radio frequency (RF) picking solutions. Roughly one out of three respondents added that many other systems such as vertical lifts and both vertical and horizontal carousels, transportation management systems (TMS), and pick-to-light systems are among those currently in use and that will also be considered for evaluation.

Other types of systems and applications either already in use or under evaluation in the modern warehouse include order management systems (OMS), voice-directed picking solutions, tilt trays, mini-load/crane/shuttle, automated storage and retrieval systems (ASRS), WES, and put-walls. As labor constraints continue, expect to see more companies evaluating and investing in these and other systems.

**Figure 3**  
Actions organizations are taking or evaluating to address order fulfillment or distribution challenges



**Figure 4**  
Systems and applications now in use/plan to evaluate, purchase, or upgrade within the next 24 months for warehouse/DC order processing



# The e-commerce impact

## Operations need to change as e-commerce spikes

On track to reach \$5 trillion globally by 2021, e-commerce is the primary driver for fulfillment and distribution pain points as revealed in this Kardex study. By pushing organizations to fulfill orders faster than ever while striving to ensure high levels of accuracy and service, e-commerce has impacted every corner of the modern fulfillment operation.

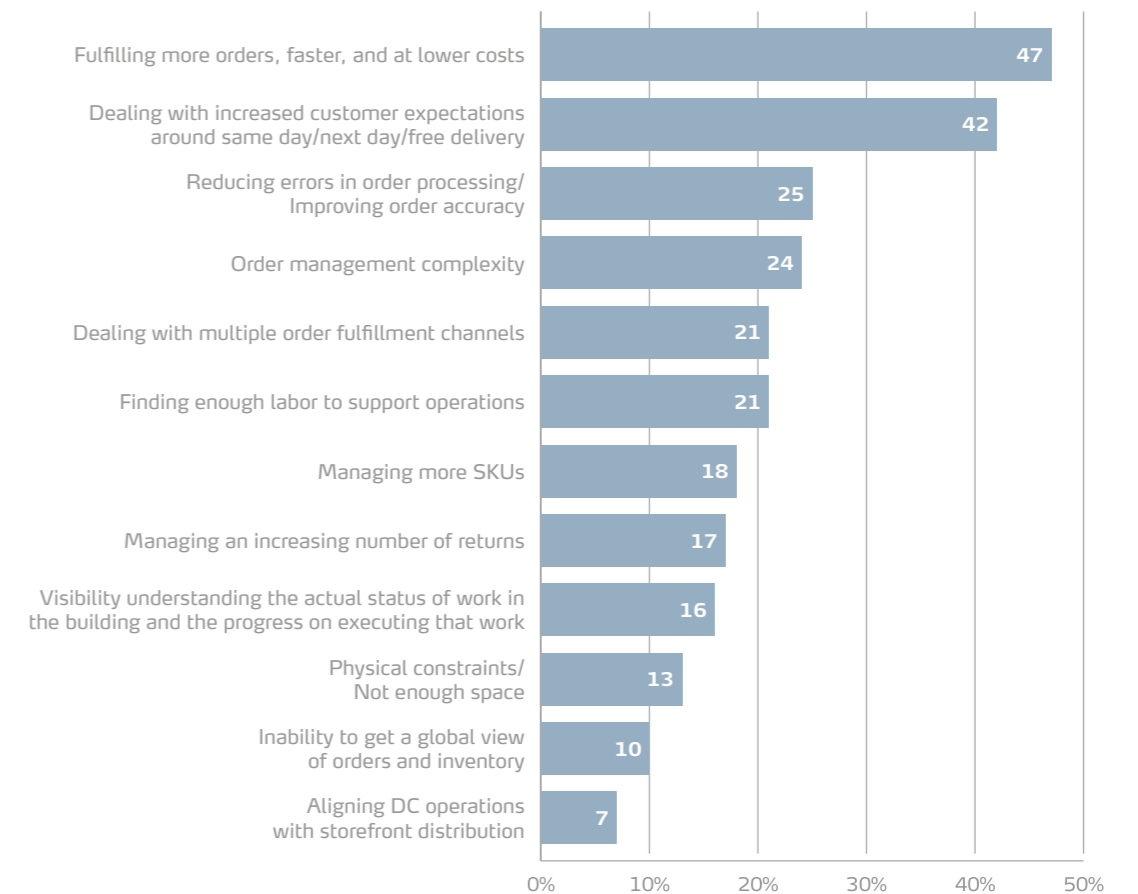
For 47% of respondents, e-commerce's biggest impact has been the need to fulfill orders faster and at a lower cost. Forty-two percent say it's managing customer expectations around same-day/next-day delivery, while 25% point to the need to reduce order processing errors (while improving accuracy) as their primary e-commerce-related challenge. Furthermore, the key impacts of e-commerce are order management complexity (for 24% of respondents), multiple order fulfillment channels (21%), finding labor to support their operations (21%), and managing more SKUs (18%).

## E-commerce forces the order profile to shift

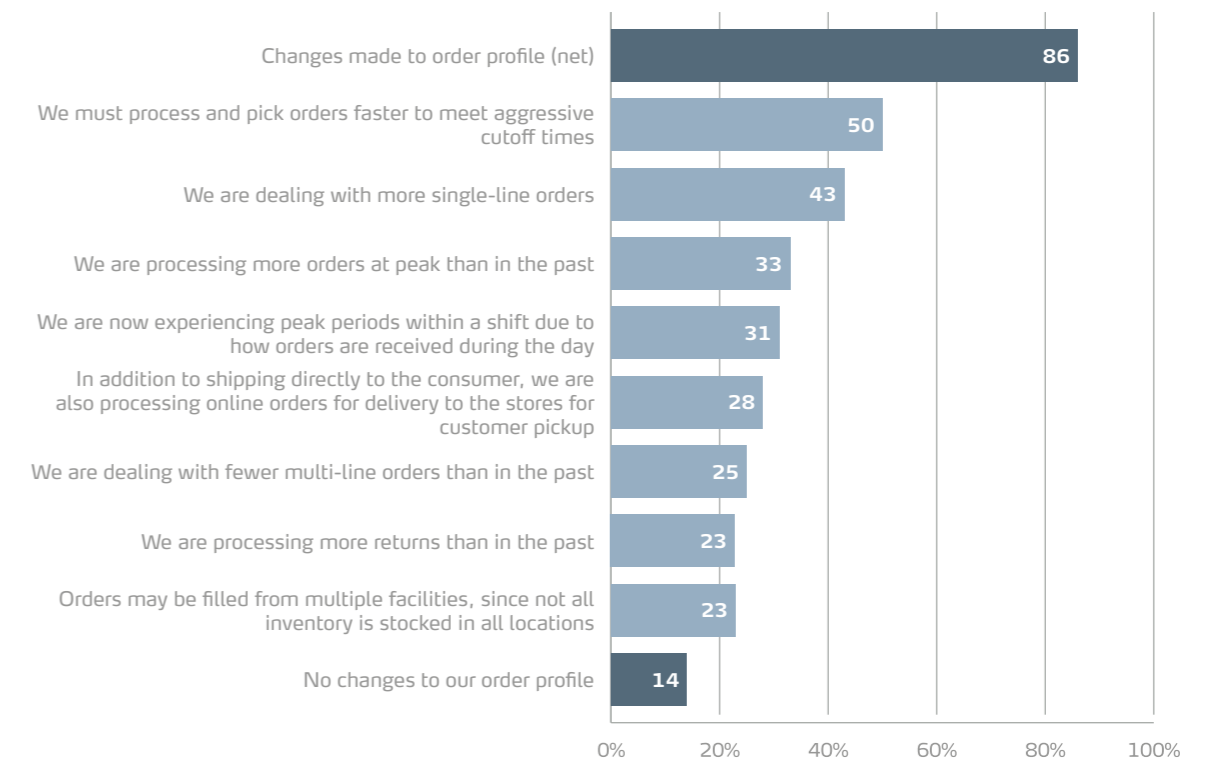
"Order profile", a term used to describe how customers are ordering products, has shifted for 86% of companies due to e-commerce. Fifty percent of respondents say they must now process and pick orders faster in order to meet aggressive cutoff times, while 43% say that they're managing more single-line orders (one single SKU per order).

Thirty-three percent of companies are now processing more orders at peak while 31% are experiencing peak periods within a certain shift due to the way orders are received throughout the day. As one of the most important functions in the warehouse or DC, order picking has become the key to success in regards to customer experience. It's also an area where companies can achieve fairly high labor cost savings by implementing automation.

**Figure 5**  
The impact of e-commerce fulfillment on order management, fulfillment, and distribution processes



**Figure 6**  
How organizations' order profile has changed due to e-commerce



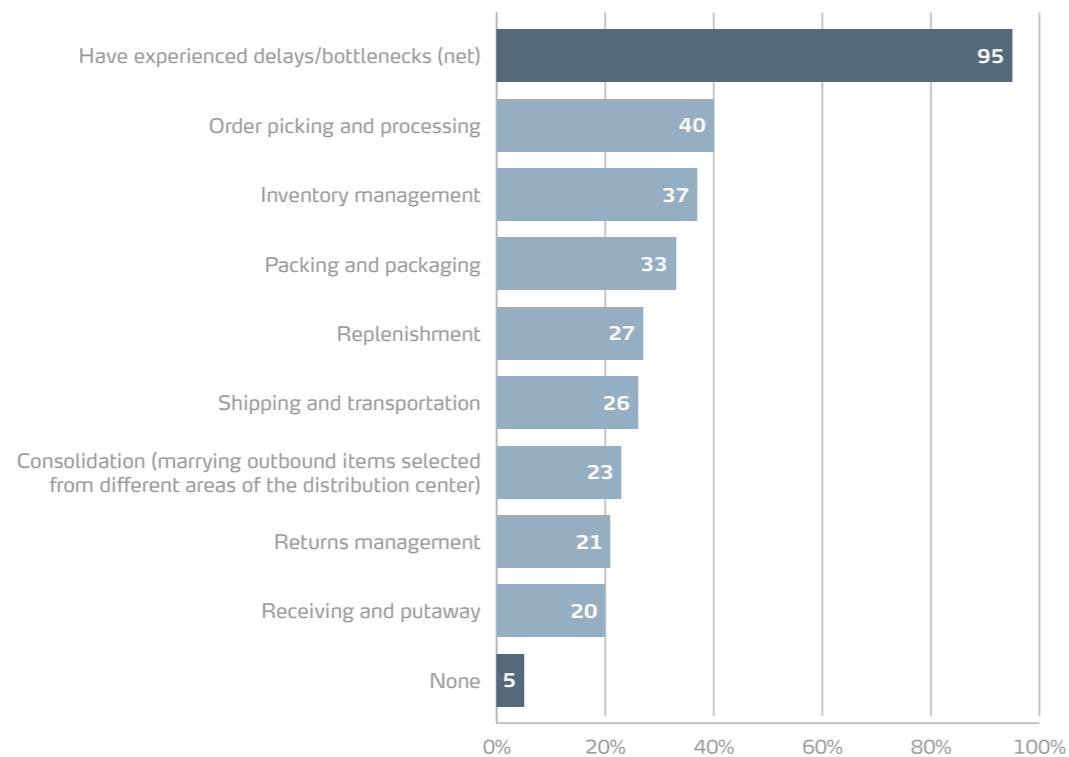
# E-fulfillment

## Addressing the e-fulfillment challenge

E-fulfillment presents interesting new challenges for the modern-day warehouse or DC and this new survey proves that point. A full 95% of companies surveyed have experienced delays or bottlenecks in their order fulfillment operations in the last year. 40% face issues with order picking and processing, while 37% struggle with inventory management.

Other e-fulfillment-related issues that respondents are grappling with include packing and packaging (for 33% of companies); replenishment (27%); and shipping and transportation (26%). These survey results illustrate the critical role that picking and packing play in the overall fulfillment operation, and shows the impact of delays and bottlenecks on DCs that must work to balance accuracy with speed in the e-commerce environment

**Figure 7**  
Delays or bottlenecks in organizations' order fulfillment operations

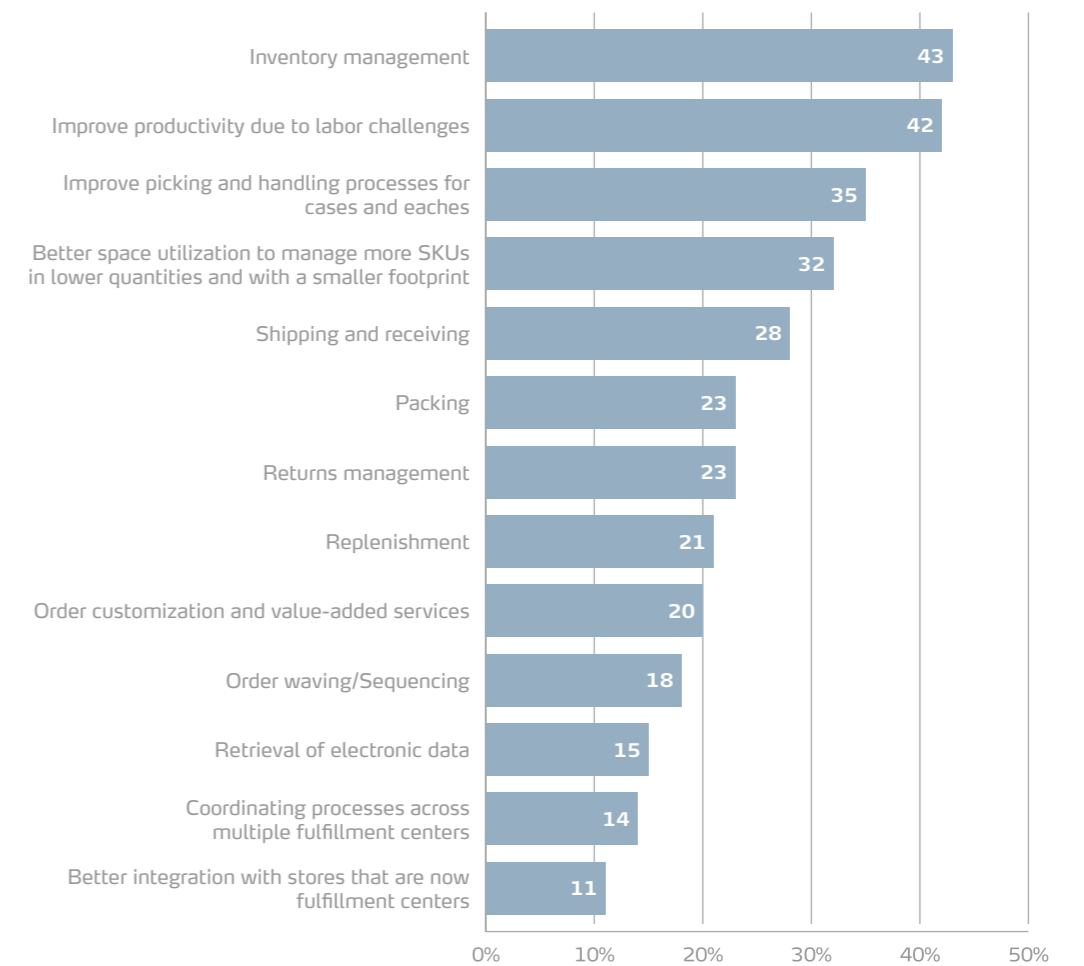


## How companies plan to improve inventory management

Inventory management, a crucial component for all smooth-running warehouses, is an area that fulfillment and distribution operations plan to improve over the next two years. Just over 4 out of 10 respondents say they are looking to improve productivity due to labor constraints, while roughly one-third want to enhance their cases and eaches picking and handling processes. One in three are also putting time and effort into achieving better space utilization (in order to manage more SKUs in lower quantities and with a smaller footprint).

Other fulfillment areas in need of improvement include shipping and receiving (for 28% of companies), packing (23%), and returns management (23%). By improving some or all of these various fulfillment elements, companies can more efficiently serve both their B2C and B2B customers.

**Figure 8**  
Aspects of e-fulfillment and distribution operations organizations would like to improve over the next 24 months



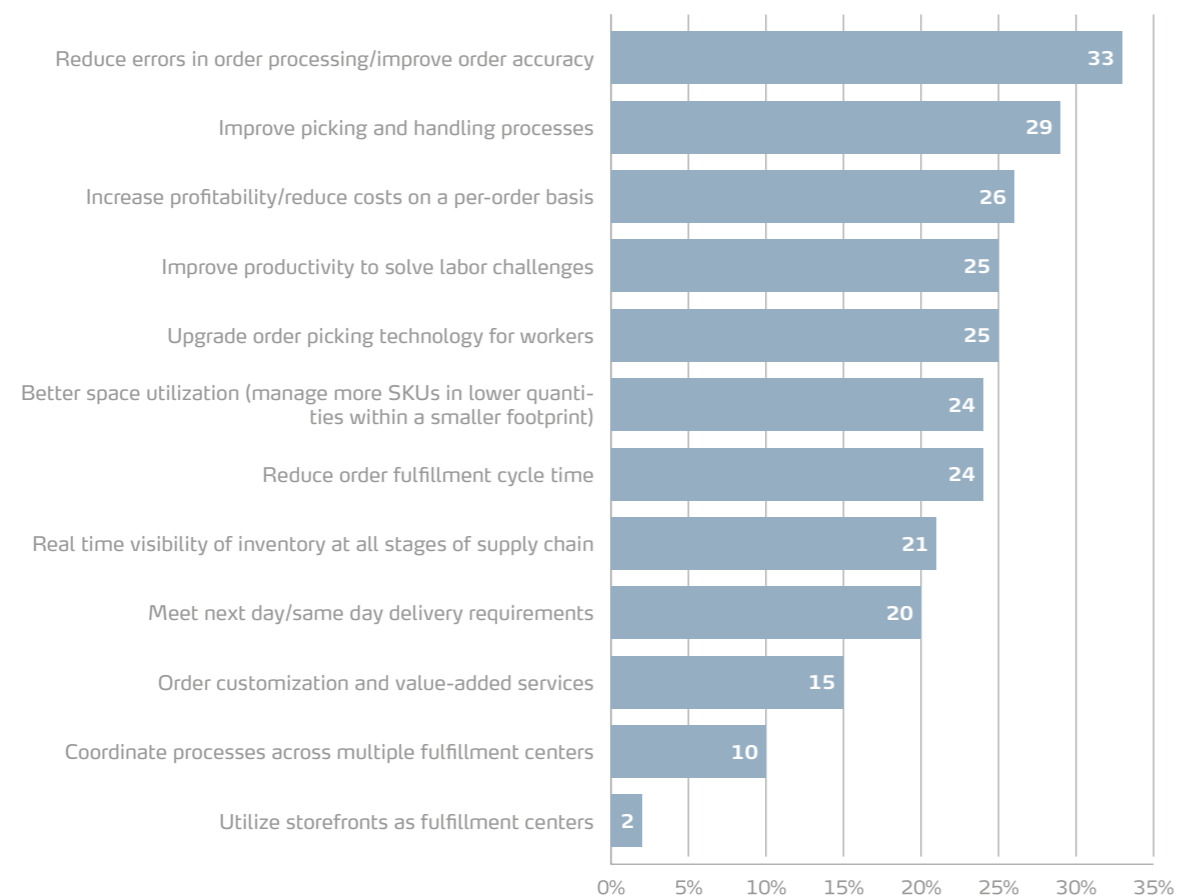
# Future priorities

## Top e-fulfillment and distribution priorities

As they look ahead it's clear that warehouses and DC managers have their eye on continuous improvement and operational efficiency. In assessing their roadmaps for 2020, 33% of companies say their top e-fulfillment/distribution goals will be to reduce errors in order processing while also improving order accuracy. 29% want to improve picking and handling processes; 26% are focused on increasing profitability and reducing costs on a per-order basis; and 25% want to improve productivity as a way to solve labor challenges.

For one-fourth of respondents, the focus for 2020 will be on upgrading order picking technology or to get more out of their existing physical space. Other key areas of focus for the year ahead include reducing order fulfillment cycle times, gaining real-time inventory visibility across the supply chain, and meeting customers' same-day/next-day delivery expectations. Overall, picking and order processing appear to be the two biggest areas that organizations want to improve this year.

**Figure 9**  
Organizations' top priorities in e-fulfillment and distribution operations during the next 12 months



# Automation is the answer

**As e-commerce continues to grow, the pressures being exerted on the modern warehouse or DC operation will only exacerbate. Concurrently, issues like low labor availability, ongoing trade wars, higher freight costs, rising real estate costs, and aging facility infrastructure will continue to make life difficult for warehouse and logistics managers.**

To keep up, companies are evaluating the latest technology solutions, implementing automated systems, and coming up with new ways to work more efficiently in any conditions. The [Wall Street Journal \(WSJ\)](#) reports that, "Logistics operators that once relied largely on human labor are now testing autonomous forklifts, self-driving carts, and other technology intended to improve efficiency and cut costs by automating repetitive tasks and freeing workers up to handle more complex jobs,"<sup>1</sup>

According to the WSJ, there have been \$1.2 billion in U.S. venture-capital deals in logistics-focused robotics and automation companies since 2015. In 2019 alone, \$357.2 million was invested in the category, which also includes self-driving truck startups and companies specializing in freight data and tracking. The broader market for warehouse and logistics automation topped \$53 billion in 2019 and will exceed \$80 billion in 2023.

These are just a few of the signs pointing to a growing interest in warehouse automation as more companies look for ways to balance their growing e-commerce operations with changing customer demands and a tight labor market. By augmenting their human workforces with automated equipment and software that helps them address these issues, smart companies are bracing themselves for long-term success in any economic or business conditions.

<sup>1</sup> The Wall Street Journal; Warehouse Robotics Startups Drawing Bigger Investor Backing; Jennifer Smith; January 7, 2020



## Research methodology

Conducted by Peerless Research Group on behalf of Modern Materials Handling for Kardex, this study was executed in December 2019 and January 2020. It was administered over the Internet among subscribers to Modern Materials Handling magazine. Respondents were prequalified for being involved in decisions for their company's warehouse and/or distribution center operations.

The findings are based on information collected from 147 corporate/division executives; top warehouse and logistics management; and plant management. Employed in manufacturing, wholesale, retail, e-commerce, or by a third-party logistics (3PL) firm, respondents work in warehouse/distribution center facilities that have \$691 million in average annual revenues and span an average of 34,040 m<sup>2</sup> in size.