Untangling the Complexities of efulfillment

AS CONSUMERS GAIN GREATER CONNECTIVITY to retailers by means of e-commerce, their already high demands become increasingly challenging for businesses to meet. Until recently, order fulfillment was a simple function for supply chains. But with the increasing expectations, the changing nature of order fulfillment presents a whole new set of complexities. As part of this evolution toward an environment based on instant gratification, companies have shifted their supply chain models to meet these expectations to drive future growth.

These growing challenges place enormous pressures on distribution operations and order fulfillment processes. Supply chain managers demand greater visibility into orders that are smaller in size, but made at more frequent intervals. Consumers need their deliveries to be on time, accurate, damage free, and easily returnable.

These expectations are driving complexity at distribution centers (DCs), including expanded item-level handling, processing of smaller orders, and support for returns and reverse logistics. More orders now require value added services such as kitting, light assembly, or special packaging. To thrive in this supply chain arena, companies must excel with every fundamental detail, while also realizing that they need to be precise in the execution. Adding labor to get product out the door, or building up excess inventory are not cost-competitive options.
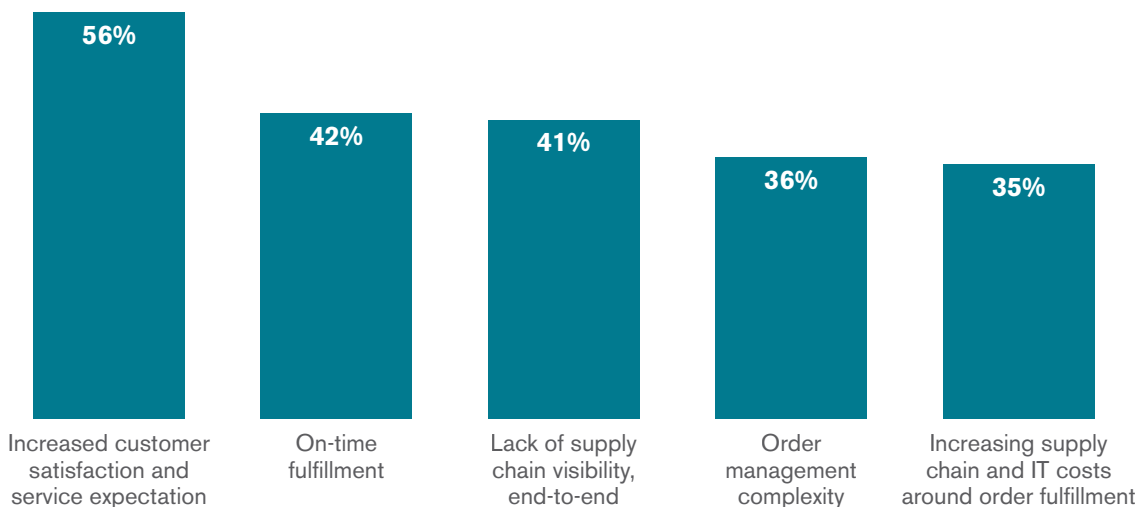
To better understand how companies are improving their distribution and order fulfillment practices to meet today's customer demands, Peerless Research Group (PRG), on behalf of *Supply Chain Management Review* and Ryder System, Inc., surveyed 148 top supply chain executives in U.S.-based manufacturing,

"There's a mix and complexity of customer orders and an increase in international sales. There's an increase in customer expectations for shipping timelines."

vice president, operations; medical devices; $50M-$100M in revenues
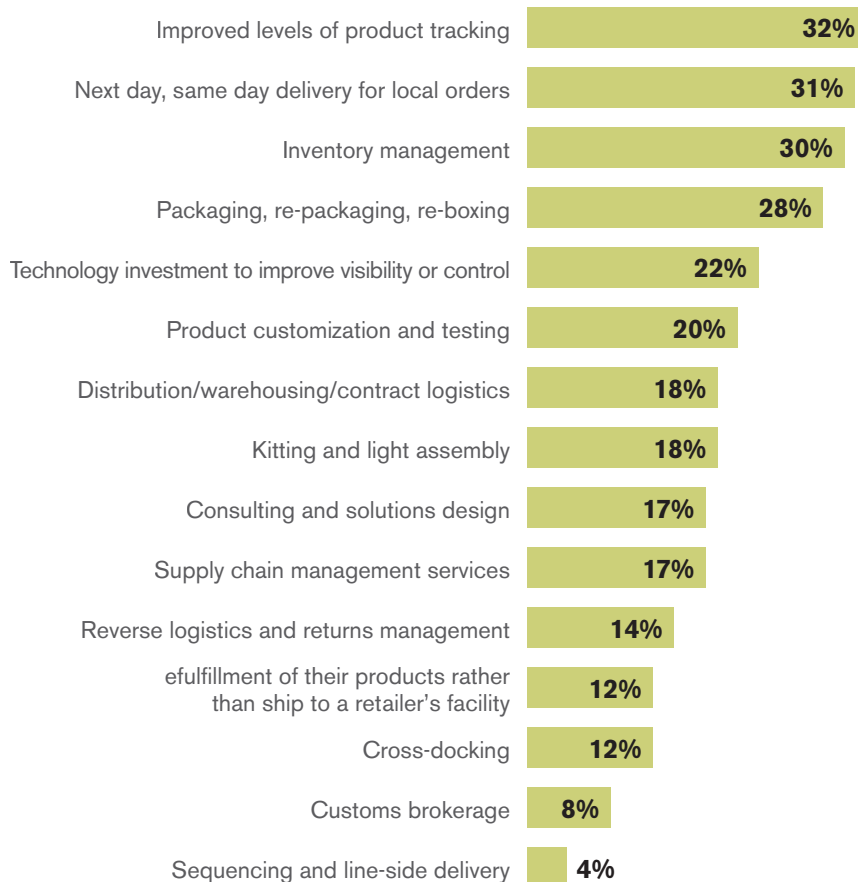
FIGURE 1

Top challenges facing operations

56%	Increased customer satisfaction and service expectation
42%	On-time fulfillment
41%	Lack of supply chain visibility, end-to-end
36%	Order management complexity
35%	Increasing supply chain and IT costs around order fulfillment

FIGURE 2

What customers are asking for today vs. two years ago

Category	Percent
Improved levels of product tracking	32%
Next day, same day delivery for local orders	31%
Inventory management	30%
Packaging, re-packaging, re-boxing	28%
Technology investment to improve visibility or control	22%
Product customization and testing	20%
Distribution/warehousing/contract logistics	18%
Kitting and light assembly	18%
Consulting and solutions design	17%
Supply chain management services	17%
Reverse logistics and returns management	14%
efulfillment of their products rather than ship to a retailer's facility	12%
Cross-docking	12%
Customs brokerage	8%
Sequencing and line-side delivery	4%

"Orders are smaller and customers are waiting longer to re-order, placing more pressure to have deliveries on time and at shorter notice."

president; food & beverage; <$50M in revenues

distribution, and retail businesses. Study results show that some organizations are able to operate their distribution and fulfillment processes with high efficiency. However, there's considerable room for process improvement for the majority of supply chains and DCs.

Customer Requirements are Mounting

When it comes to managing order fulfillment and distribution operations, providing better service to meet customer demand is the primary challenge facing managers today. Survey respondents recognize that they need to do a better job meeting schedules, upgrading distribution and fulfillment processes, and enabling greater supply chain visibility to partners. Achieving these objectives will be key in elevating overall customer satisfaction levels. (See Figure 1)

Today's consumers expect more than in the past, which is prompting suppliers to respond. Suppliers are being asked to provide better order tracking, greater visibility into order processing, quicker delivery for local orders, and product customization capabilities. (See Figure 2)

Complex Distribution and Fulfillment Operations

Organizations commonly support multiple distribution and fulfillment channels. On average, companies use two channels for sales, with most relying on their sales force (65 percent) and their company's website (42 percent) for generating orders. Additionally, one-third of those surveyed take orders via electronic communication or through call centers, while one in four organizations offer catalogs or operate storefronts.

Order fulfillment, specifically for online and store order processing, is most commonly handled through a single DC (45 percent) while others operate dedicated DCs. However, in order to execute fulfillment assignments, on average the companies surveyed run six warehouses as well as six DCs for inventory management and order processing. (See Figure 3)

FIGURE 3

How distribution centers are set up

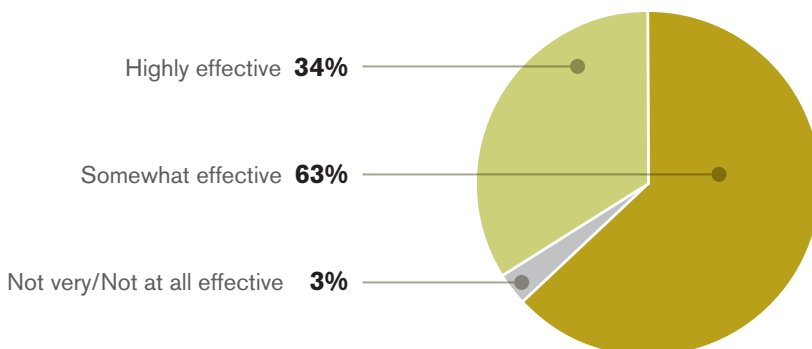| 45%	27%	28%
Online and store fulfillment set up in one single DC	Multiple DCs, each dedicated to either online or store fulfillment	Other (i.e. regional DCs, etc.)
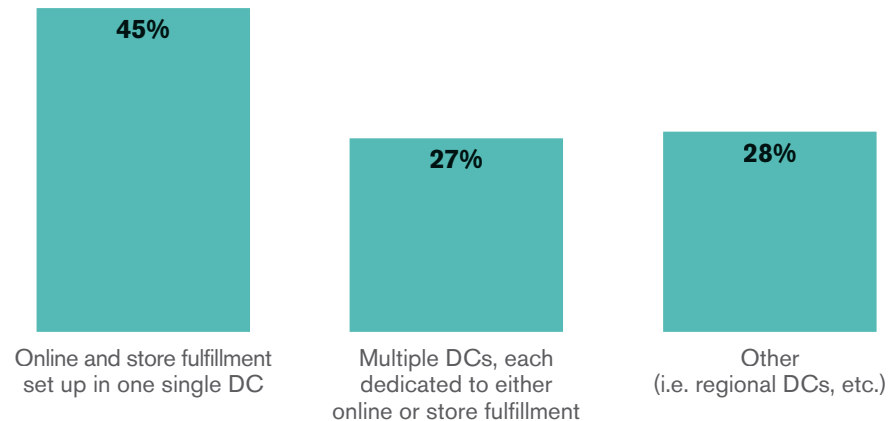
Generally, whenever companies run multiple DCs, there is difficulty in tracking and optimizing the inventory levels across DCs, as well as knowing the current, actual inventory position within each DC. Visibility is needed for goods in transit, as well as knowledge of which zones, aisles, dock doors, or trailers are located within sites and yards. The rise of e-commerce has driven the need for visibility to a more granular level, right down to each carton, item, or stock keeping unit (SKU) being picked and processed, as well as visibility into replenishment levels for forward pick areas.

When companies have multi-channel facilities to hold goods and fulfill orders, it can be complex to set up receiving, bulk storage, picking procedures, and forward pick areas—as well as packing and shipping. While multi-channel DCs can set up completely separate zones and processes by channel, more operators are looking to establish integrated fulfillment centers in which at least some common zones and processes are used for multiple channels, even if the final pick, pack, and ship processes differ. This integrated approach adds complexity in terms of rules and accurate procedures for inventory receiving and allocation, wave management, and order picking, as well as outbound packing and shipping processes.
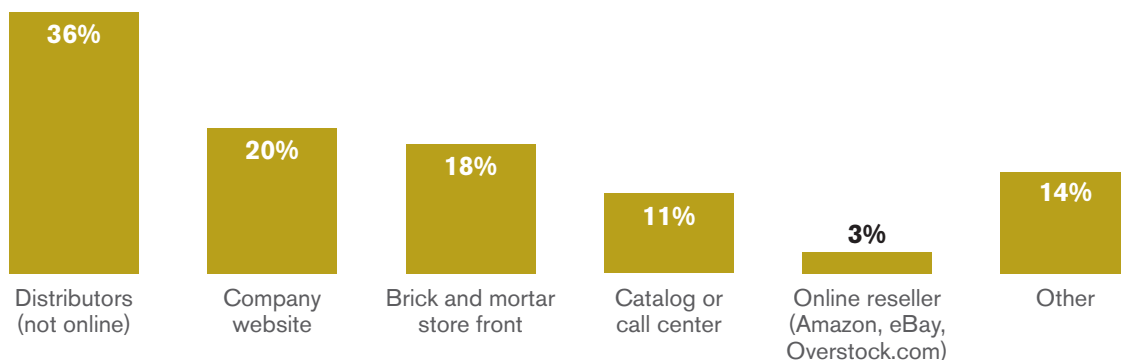
The majority of those surveyed think there is room for improvement in their current approach to handling their distribution processes. Just one in three respondents claim that their distribution operations are highly effective. (See Figure 4)

FIGURE 4

Effectiveness of current distribution process

Highly effective **34%**

Somewhat effective **63%**

Not very/Not at all effective **3%**

FIGURE 5

Channel expected to be the single greatest revenue stream in the next 24 month

| Distributors (not online)	Company website	Brick and mortar store front	Catalog or call center	Online reseller (Amazon, eBay, Overstock.com)	Other
36%	20%	18%	11%	3%	14%

Looking to the future, managers believe that distributors (36 percent) will be their most prolific channel, although websites (20 percent) and storefronts (18 percent) are also forecast to be productive revenue streams. (See Figure 5)

Over the next two years, companies expect nearly 25 percent of their revenue to come from e-commerce sales, with 30 percent generated from brick and mortar activity. Respondents believe about 50 percent of sales will come from other sources. (See Figure 6)
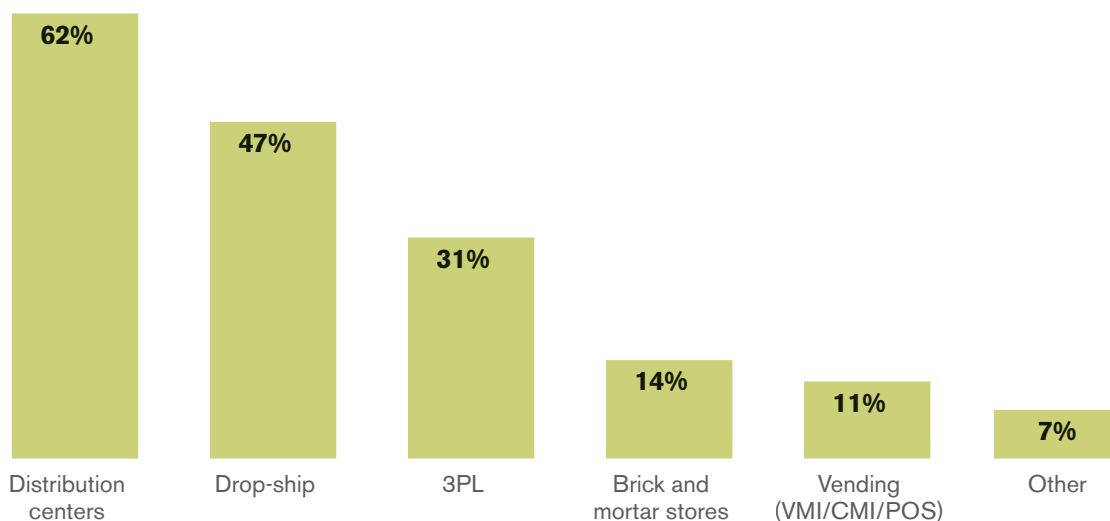
FIGURE 6

Percent of revenue to come from these channels in the next 24 months

eCommerce **23%**

Storefront sales **30%**
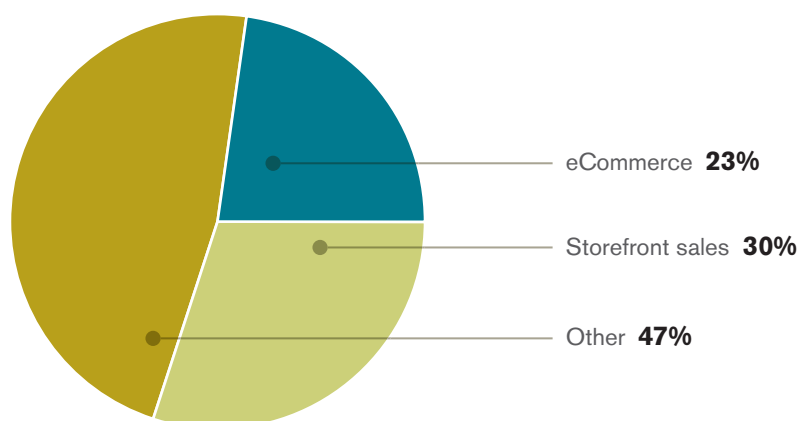
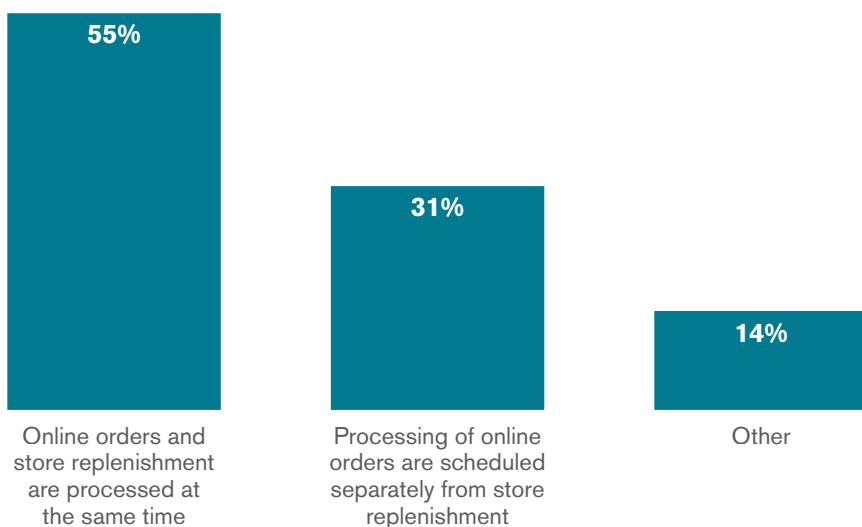Other **47%**

Sources used for fulfillment

Organizations rely on a few methods for order fulfillment, and most commonly use DCs (62 percent) or arrange to drop ship parcels (47 percent). At 31 percent, 3PLs are also a widely used means for handling fulfillment tasks. (See Figure 7)

More than one-half (55 percent) of the companies surveyed process online and store orders concurrently at their DCs. One in three schedule fulfillment for online and store replenishment separately. (See Figure 8)

When DCs attempt to process orders for e-commerce and store channels concurrently, they typically have common areas for receiving and bulk storage, but use different picking methods, picking zones, and replenishment strategies for forward pick areas. Coordinating concurrent processes for multiple channels can be done, but requires complex data collection, a warehouse management system or investment in other supply chain software, and support for wave and/or zone picking methods.

How is order fulfillment scheduled?

FIGURE 9

Initiatives to address distribution/order fulfillment challenges

43%	Implement or upgrade supply chain software applications
34%	Re-engineer our fulfillment operations
33%	Adopt supply chain analytics
24%	Increase labor
20%	Increase equipment spend
19%	Implement or upgrade barcoding hardware and/or systems
14%	Outsource some or all order fulfillment tasks to a supplier, such as a manufacturing or distribution partner
11%	Outsource some or all order fulfillment tasks to a 3PL

FIGURE 10

Order fulfillment costs over the last 12 months
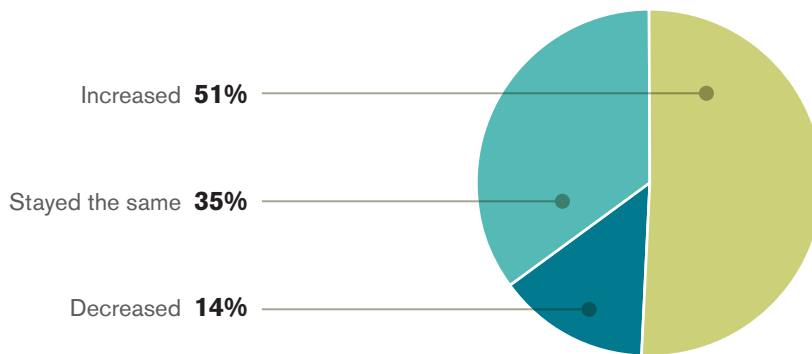
Increased **51%**

Stayed the same **35%**

Decreased **14%**

Scheduling and processing fulfillment for multiple channels in a more separate manner also calls for data collection and warehouse management capabilities. It may also involve the need to maintain distinct receiving, bulk storage, and picking or material handling systems. Today, relatively few DCs are untouched by the need to fulfill orders for multiple channels. Any processing/scheduling strategy chosen (integrated or separate) requires strong systems support to avoid errors, excessive labor costs, and other potential problems.

Some organizations are proactively taking steps to address their distribution and fulfillment challenges. Critical initiatives include upgrading software applications, re-engineering their distribution and fulfillment processes, and employing supply chain metrics. (See Figure 9)

The survey results reveal that expenses associated with fulfillment and distribution operations are on the rise. The majority of organizations are experiencing costs at or above last year's numbers, while just 14 percent have seen costs drop. This is mostly attributed to rising transportation and labor expenses. (See Figures 10 & 11)
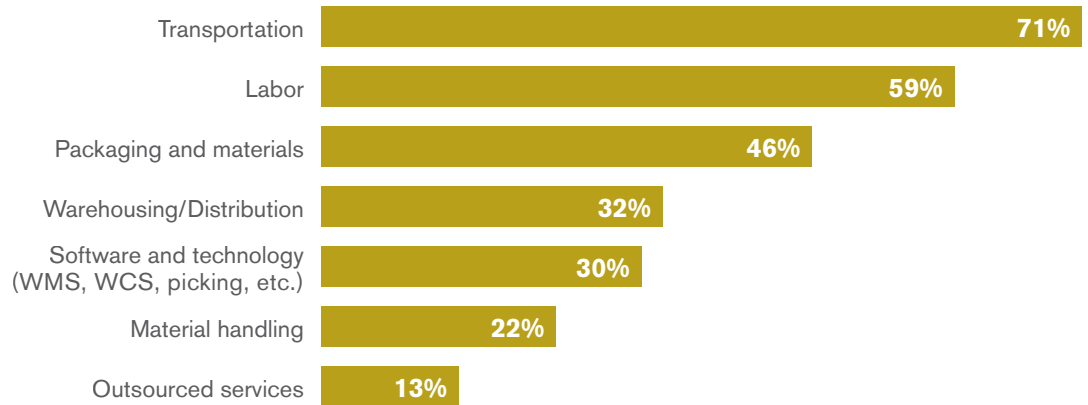
FIGURE 11

Areas where costs have increased

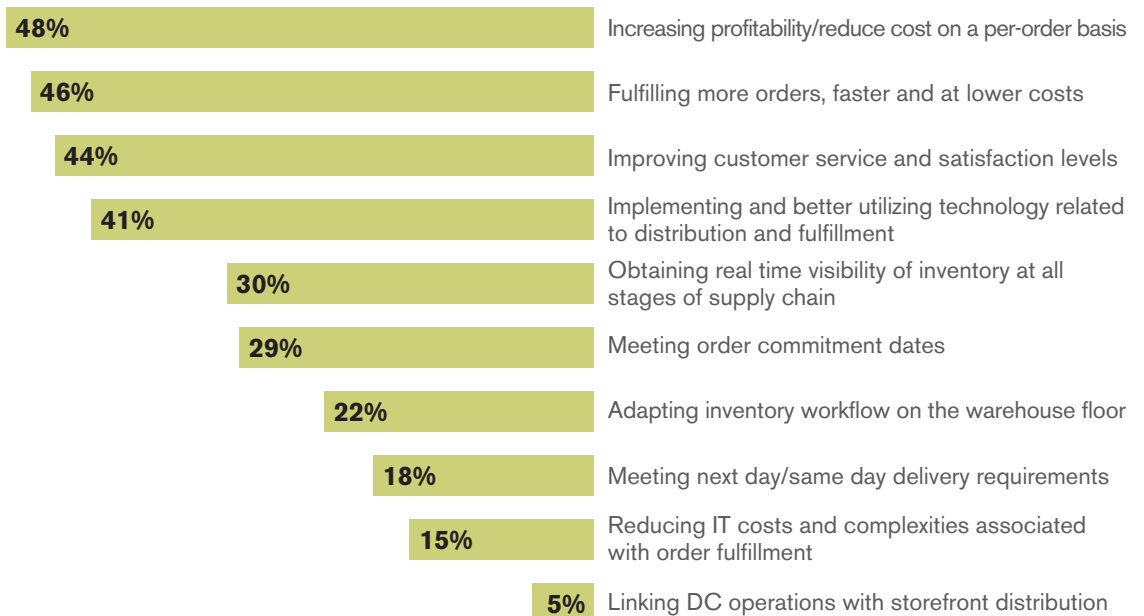| Category	%
Transportation	71%
Labor	59%
Packaging and materials	46%
Warehousing/Distribution	32%
Software and technology (WMS, WCS, picking, etc.)	30%
Material handling	22%
Outsourced services	13%

As a result, organizations are targeting specific areas for greater cost control. Costs for processing on a per order basis, and the ways in which technology for fulfillment and distribution operations are being optimized are all being scrutinized by operations managers. With closer order tracking, improved technology, greater visibility, and quicker delivery cycles, organizations look to improve customer satisfaction levels. (See Figure 12)

FIGURE 12

Priorities for the next 12 months

%	Priority
48%	Increasing profitability/reduce cost on a per-order basis
46%	Fulfilling more orders, faster and at lower costs
44%	Improving customer service and satisfaction levels
41%	Implementing and better utilizing technology related to distribution and fulfillment
30%	Obtaining real time visibility of inventory at all stages of supply chain
29%	Meeting order commitment dates
22%	Adapting inventory workflow on the warehouse floor
18%	Meeting next day/same day delivery requirements
15%	Reducing IT costs and complexities associated with order fulfillment
5%	Linking DC operations with storefront distribution

FIGURE 13

What aspects of fulfillment and distribution will operations look to improve in the next 2 years?

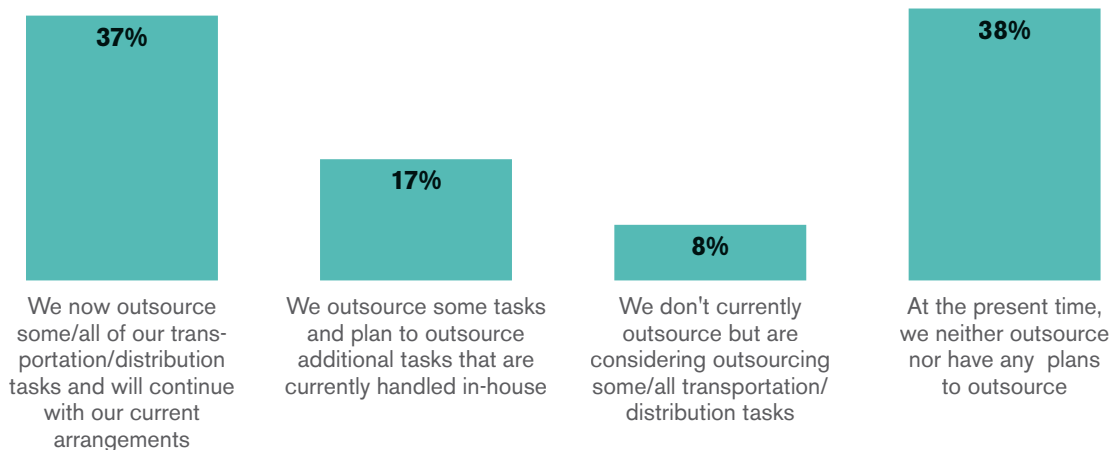| Category	Percentage
Inventory management	61%
Visibility and/or control	39%
Order customization	32%
eCommerce fulfillment	30%
Handling orders from different selling channels	25%
Packaging	23%
Coordinating processes across multiple fulfillment centers	21%
Order entry	19%
Bulk order processing	15%
Last mile delivery	13%
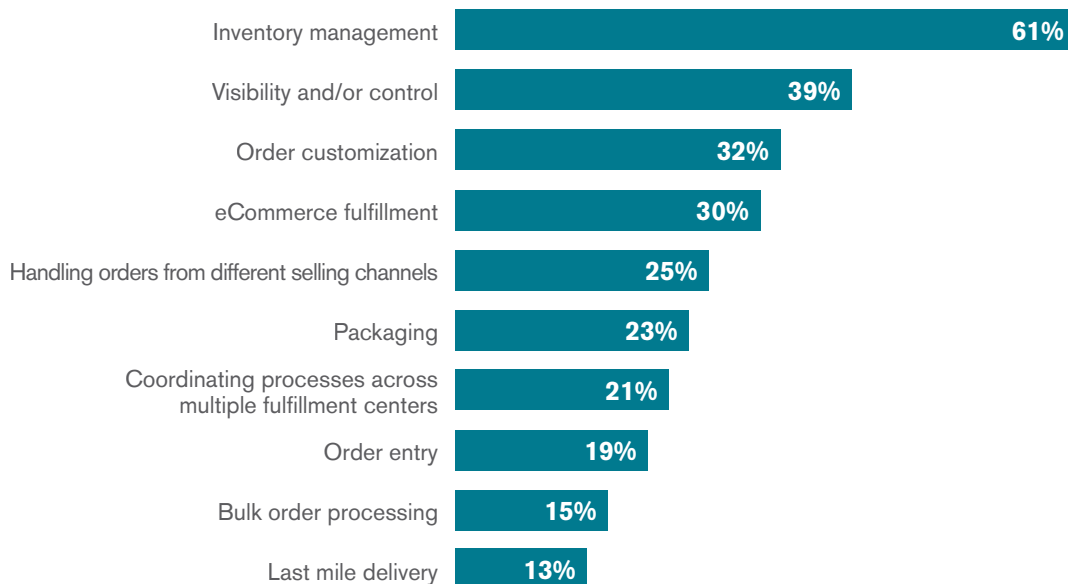
Specific functions that managers plan to improve in their fulfillment and distribution operations during the next 24 months will likely center on inventory management, greater visibility into the fulfillment and distribution process, order customization functions, and process improvements for online order execution. (See Figure 13)

Outsourcing Can Help Suppliers Meet the Growing Demands of Customers

While slightly more than one out of three businesses surveyed currently outsource some or all of their transportation and distribution, others plan to either subcontract jobs now handled in-house or consider outsourcing in the near future. Several of those surveyed who currently outsource, agree it has led to lower costs and a more efficient operation. (See Figure 14)

FIGURE 14

Plans for outsourcing transportation or distribution tasks

Category	Percentage
We now outsource some/all of our transportation/distribution tasks and will continue with our current arrangements	37%
We outsource some tasks and plan to outsource additional tasks that are currently handled in-house	17%
We don't currently outsource but are considering outsourcing some/all transportation/ distribution tasks	8%
At the present time, we neither outsource nor have any plans to outsource	38%

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Summary

The survey responses indicate there is no single strategy for optimizing order fulfillment in today's multi-channel environment, but there is widespread agreement on what needs to be improved regardless of strategy. The supply chain executives surveyed said that their companies are in some cases trying to use separate DCs for different channels, and in other cases they are pursuing more of an integrated fulfillment center concept. Many outsource some or all of their transportation and distribution operations, while others continue to handle fulfillment operations in house.

To address challenges such as fulfilling more orders faster, and at lower cost, companies clearly indicate they need more precision in terms of inventory management and visibility over orders, as well as greater capability to handle orders for multiple channels. They are willing to invest in technology such as supply chain software, and many are considering outsourcing some logistics processes. Their efforts are not just about cost control or internally focused processes. Today's supply chain professionals also realize that the steps they take to improve fulfillment execution are closely intertwined with customer service and the success of their business.

Methodology

This research was conducted by Peerless Research Group on behalf of Supply Chain Management Review for Ryder System, Inc. This study was executed in October 2015, and was administered over the Internet among subscribers to *SCMR*.

Respondents were pre-qualified for being involved in decisions as they relate to order fulfillment and order management for their organization.

The findings are based on information collected from 148 supply chain executives employed in retail; wholesale; or work for distributors or manufacturers who supply products to retailers such as food and beverage, consumer electronics, automotive and parts, and healthcare and pharmaceuticals. About one out of six companies said that their clients are predominantly business-to-consumer, while one-half sell mostly to business-to-business customers, and one-third supply to both B2C and B2B. While companies of all sizes are represented in the study, average revenues for responding businesses are forecast to be roughly $1.05 billion for 2015.

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