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SURVEY DATA

Supply Chain Integrity Outlook 2025:
Closing the Data Accuracy Gap

A major data accuracy gap is impacting overall supply chain integrity

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"Supply chain integrity" refers to the reliability, security, and accuracy of all elements within the supply chain. It ensures that products and services are delivered as intended without disruption, tampering, or counterfeiting.

Strong supply chain integrity can have a profoundly positive effect on everything from consumer safety and environmental impact to customer loyalty and overall brand reputation.

Meanwhile, a lack of integrity can make supply chains especially vulnerable to disruption and ill-prepared to cope with rapidly changing consumer demands, which can prove costly for supply chain leaders.

To assess the state of supply chain integrity in 2025, we conducted research among 1,000 US supply chain professionals across a variety of industries.

What we discovered was that supply chain integrity matters – a lot. Nearly half (46%) of respondents indicated that it is a crucial concern for their organization, and over half (51%) are experiencing difficulties with their supply chain.[1]

Based on the findings in this research, the inability to ensure data accuracy is a distinct threat to supply chain integrity in 2025.

The research identifies a major data accuracy gap that is impacting overall supply chain integrity. Though a majority of supply chain managers believe their organization is equipped to drive accurate supply chain visibility, in reality, far fewer are able to achieve accurate, 360°, real-time inventory visibility consistently. This lack of data accuracy can lead to systemic difficulties in addressing fast-moving trends and pervasive challenges, like shrink and loss, rapid changes in consumer demand for goods, and even delivery errors.

In this report, we explore how organizations seek to close the supply chain accuracy gap, what other threats to supply chain integrity exist in 2025, and what measures supply chain leaders are taking to bolster the integrity of their supply chains.

The insights we uncover will help you to build a clear plan of action for improving the integrity of your supply chain.

1. 'Driving supply chain integrity is a challenge for my organization', 'My organization's supply chain is vulnerable to disruption and rapid changes in customer demand', and 'We lack the level of insights, visibility, and accuracy required to drive confidence in our supply chain integrity' responses combined.

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Contents

The State of Supply Chain Integrity

Organizations lack the supply chain integrity needed to adapt to changing consumer demands

Supply chain integrity is top of mind for many supply chain professionals. Almost half (46%) of those surveyed say that supply chain integrity is a key concern for their organization.

However, our study shows that many organizations' supply chains are falling short.

2 in 5 respondents (40%) say their organization does not have a high level of supply chain integrity[1], and just over half (51%) of all respondents are experiencing difficulties with their supply chain.[2]

Many of those surveyed lack the level of insights, visibility, and accuracy required to drive confidence in their supply chain integrity and respond quickly to market changes.

Almost 3 in 5 (59%) say their organization's supply chain is not resilient enough to cope with disruption and rapid changes in customer demand.[3]

The findings also reveal that over half (52%) of supply chain leaders in various sectors[4] report challenges responding to rapid peaks in customer demand caused by social media- and influencer-driven trends. Meanwhile, changes in customer demand due to growth in social media storefronts (49%) and the rise of the thrift movement (47%) are also causing challenges for their organization's supply chain.

It's clear from the research that attaining and maintaining supply chain integrity presents a significant challenge for many organizations.

1. Reverse of 'My organization has a high level of supply chain integrity' (60%).
2. 'Driving supply chain integrity is a challenge for my organization', 'My organization's supply chain is vulnerable to disruption and rapid changes in customer demand', and 'We lack the level of insights, visibility, and accuracy required to drive confidence in our supply chain integrity' responses combined.
3. Reverse of 'My organization's supply chain is resilient to disruption and rapid changes in customer demand' (41%).
4. General supply chain manager group.

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Blind spots contribute to a data accuracy gap that threatens supply chain integrity

A complete and accurate view of supply chain operations is critical to achieving supply chain integrity.

Organizations with real-time supply chain visibility can make informed, data-driven decisions that help optimize inventory, boost efficiency, and reduce costs. At the same time, they'll be better equipped to handle disruption, and rapidly changing customer demands.

However, our survey results indicate that many organizations suffer from a data accuracy gap that makes this impossible.

While the majority (91%)[1] of supply chain professionals surveyed believe their organization is equipped to drive accurate supply chain visibility, the reality is that only a third (33%) consistently drive accurate, 360°, real-time inventory visibility.

Just 33% of surveyed organizations consistently drive accurate, 360°, real-time inventory visibility

Meanwhile, the supply chain leaders surveyed report that achieving real-time inventory insights, visibility, and accuracy (30%), and capturing accurate data to feed automated and AI-enabled systems (28%) are some of the biggest challenges they currently face when it comes to supply chain resilience and integrity.

This highlights that many organizations are likely experiencing blind spots that prevent them from addressing inaccuracies that could fuel systemic issues, such as challenges pivoting quickly in response to shifting demand, shrink and loss, difficulty meeting sustainability requirements, and misloads and delivery errors.

The following sections explore how these blind spots manifest for surveyed organizations.

1. 'Strongly agree' and 'Somewhat agree' responses combined.

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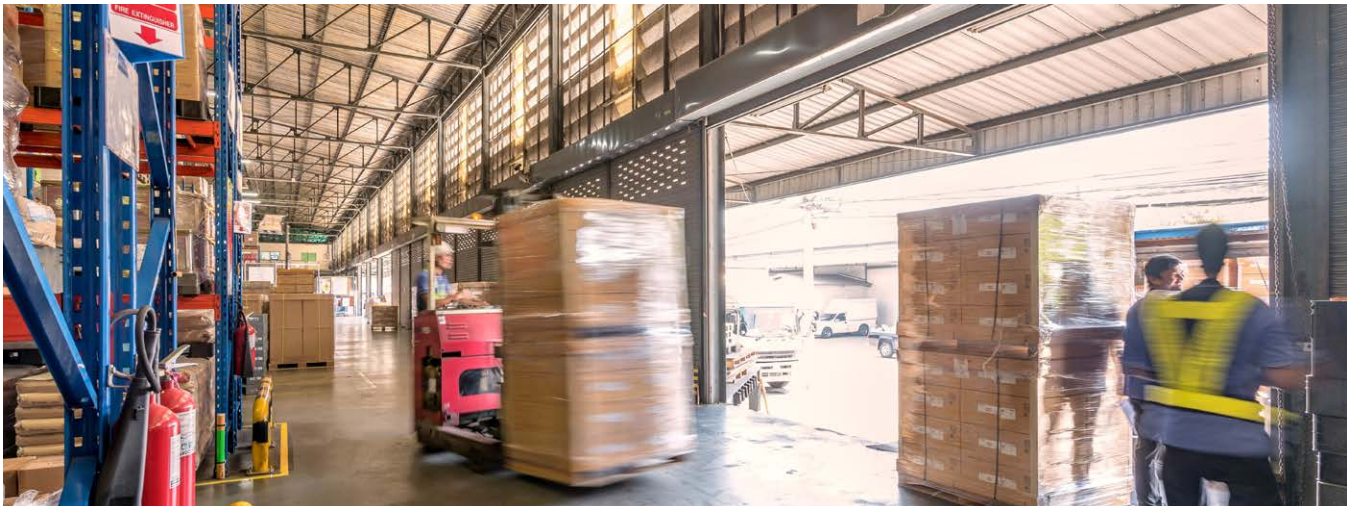
Challenge: Counterfeits, Shrink, and Loss Prevention

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Supply chain professionals in the retail sector are plagued by counterfeit goods in the supply chain
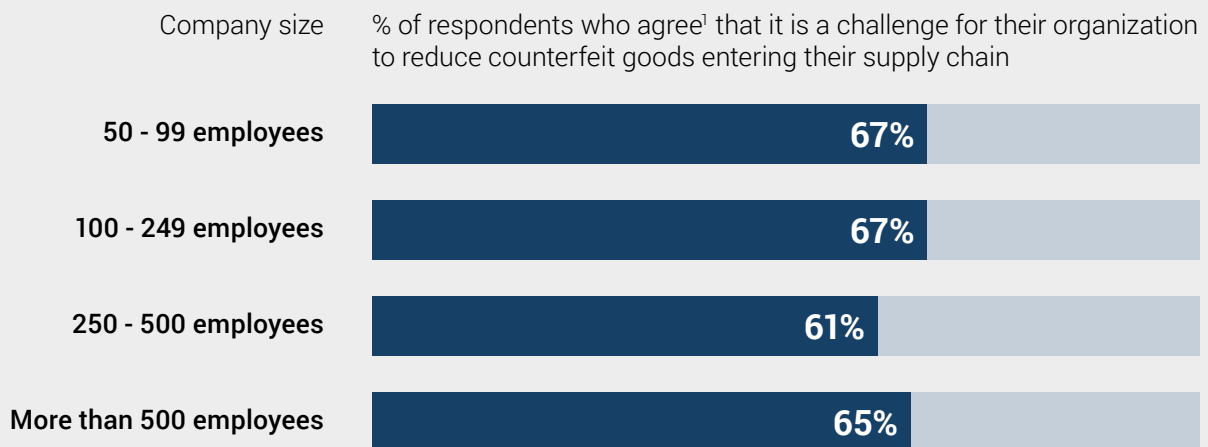
Counterfeit goods are a major issue within the retail sector.

In fact, almost two thirds (65%) of supply chain professionals in the retail sector agree[1] that it's a challenge for their organization to reduce the amount of counterfeit goods entering the supply chain.

Contrary to expectations that smaller businesses may experience fewer difficulties in this area, the findings also show that counterfeit goods represent a widespread issue affecting retailers regardless of their size.

> **65% of supply chain professionals in the retail sector agree1 that reducing the amount of counterfeit goods entering the supply chain is a challenge for their organization**

Q. To what extent do you agree or disagree that it is a challenge for your organization to reduce counterfeit goods entering your supply chain?

Company size	% of respondents who agree[1] that it is a challenge for their organization to reduce counterfeit goods entering their supply chain
50 - 99 employees	67%
100 - 249 employees	67%
250 - 500 employees	61%
More than 500 employees	65%

1. 'Strongly agree' and 'Somewhat agree' responses combined.
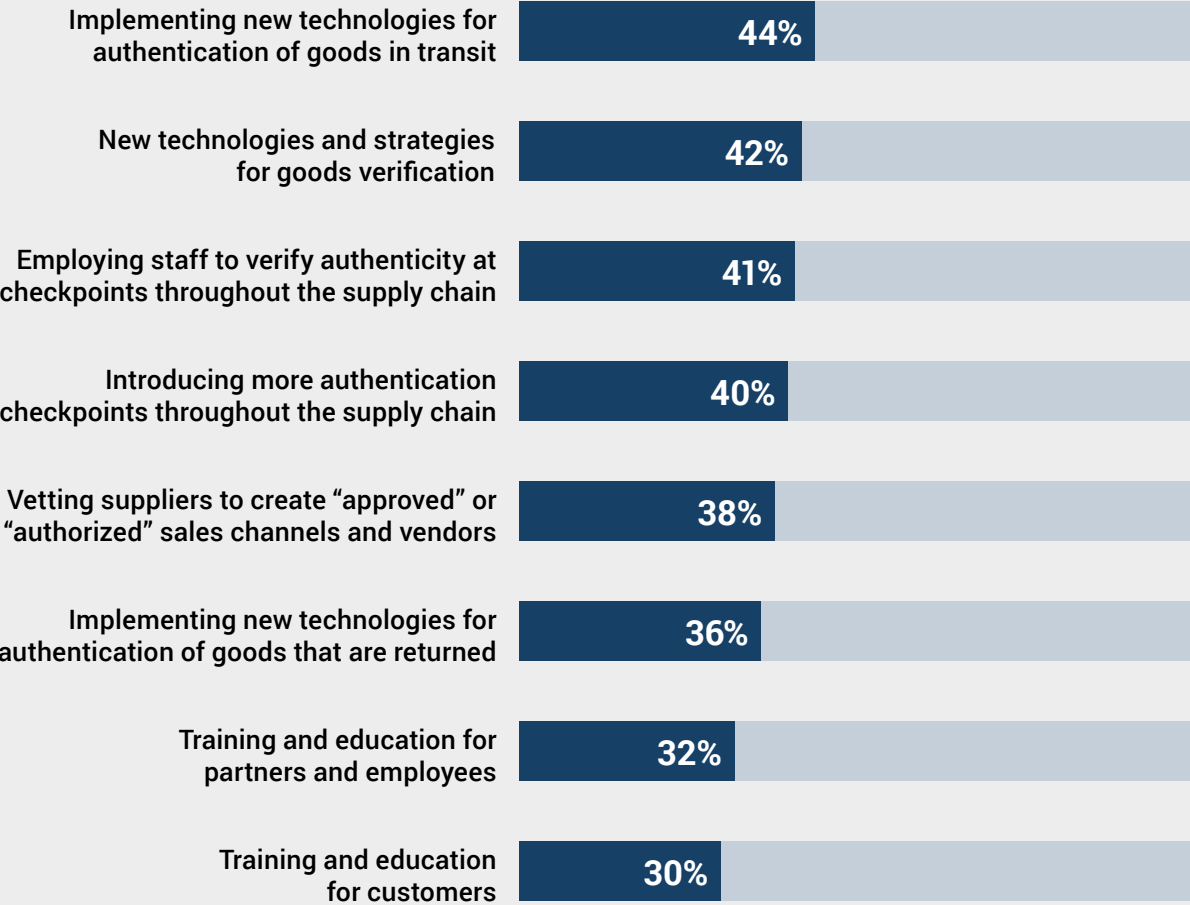
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Combating counterfeiting in retail

Almost all (98%)[2] supply chain professionals in the retail sector are implementing measures to combat counterfeiting.

For example, over 2 in 5 (44%) are implementing new technologies for the authentication of goods in transit, over 2 in 5 (42%) are doing the same for the purpose of general goods verification (42%), and 2 in 5 (40%) are introducing more authentication checkpoints throughout the supply chain.

Q. What measures, if any, is your organization implementing to combat counterfeiting?

% of respondents from the retail sector

Measure	%
Implementing new technologies for authentication of goods in transit	44%
New technologies and strategies for goods verification	42%
Employing staff to verify authenticity at checkpoints throughout the supply chain	41%
Introducing more authentication checkpoints throughout the supply chain	40%
Vetting suppliers to create "approved" or "authorized" sales channels and vendors	38%
Implementing new technologies for authentication of goods that are returned	36%
Training and education for partners and employees	32%
Training and education for customers	30%

1. Reverse of 'None'.

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Shrink and theft are systemic supply chain issues affecting retailers of all sizes

Shrink and theft contribute significantly to loss across retail supply chains.

In fact, according to the latest figures from the National Retail Federation, the average shrink rate in FY 2022 increased to 1.6%, up from 1.4% in FY2021.[1]
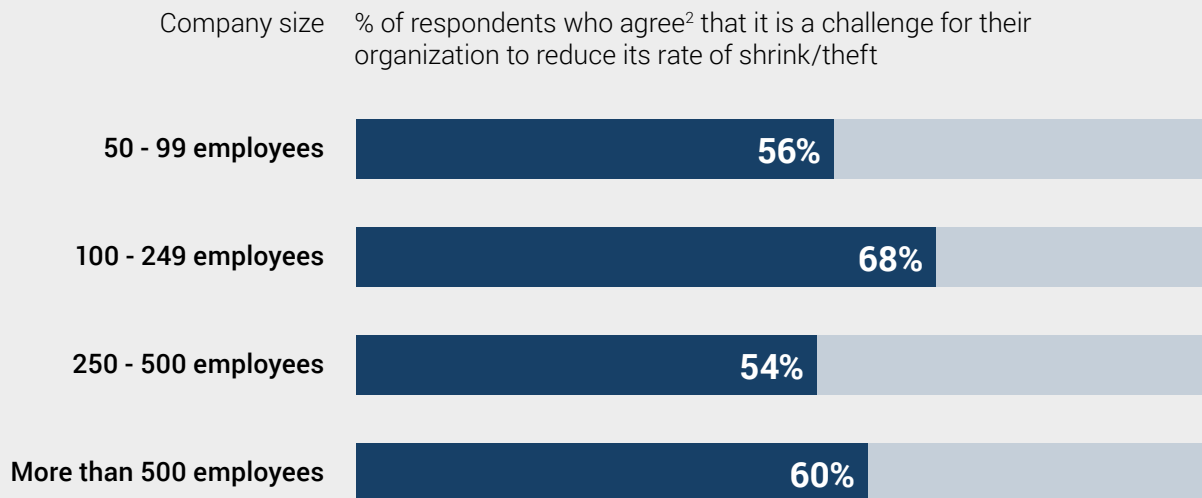
Our research confirms that this continues to be a widespread issue.

3 in 5 (60%) supply chain professionals in the retail sector agree[2] that it is a challenge for their organization to reduce its rate of shrink/theft, while just 1 in 5 (20%) disagree.[3]

60% of supply chain professionals in the retail sector agree[2] that it is a challenge for their organization to reduce its rate of shrink/theft

As with counterfeits, the data highlights that businesses of all sizes are affected. Many supply chain professionals working in retail report that reducing shrink and theft is challenging for their organization, indicating that these are systemic issues.

Q: To what extent do you agree or disagree that it is a challenge for your organization to reduce its rate of shrink/theft?

Company size — % of respondents who agree[2] that it is a challenge for their organization to reduce its rate of shrink/theft

Company size	% agree
50 - 99 employees	56%
100 - 249 employees	68%
250 - 500 employees	54%
More than 500 employees	60%

1. National Retail Security Survey 2023, National Retail Federation, September 2023
2. 'Strongly agree' and 'Somewhat agree' responses combined.
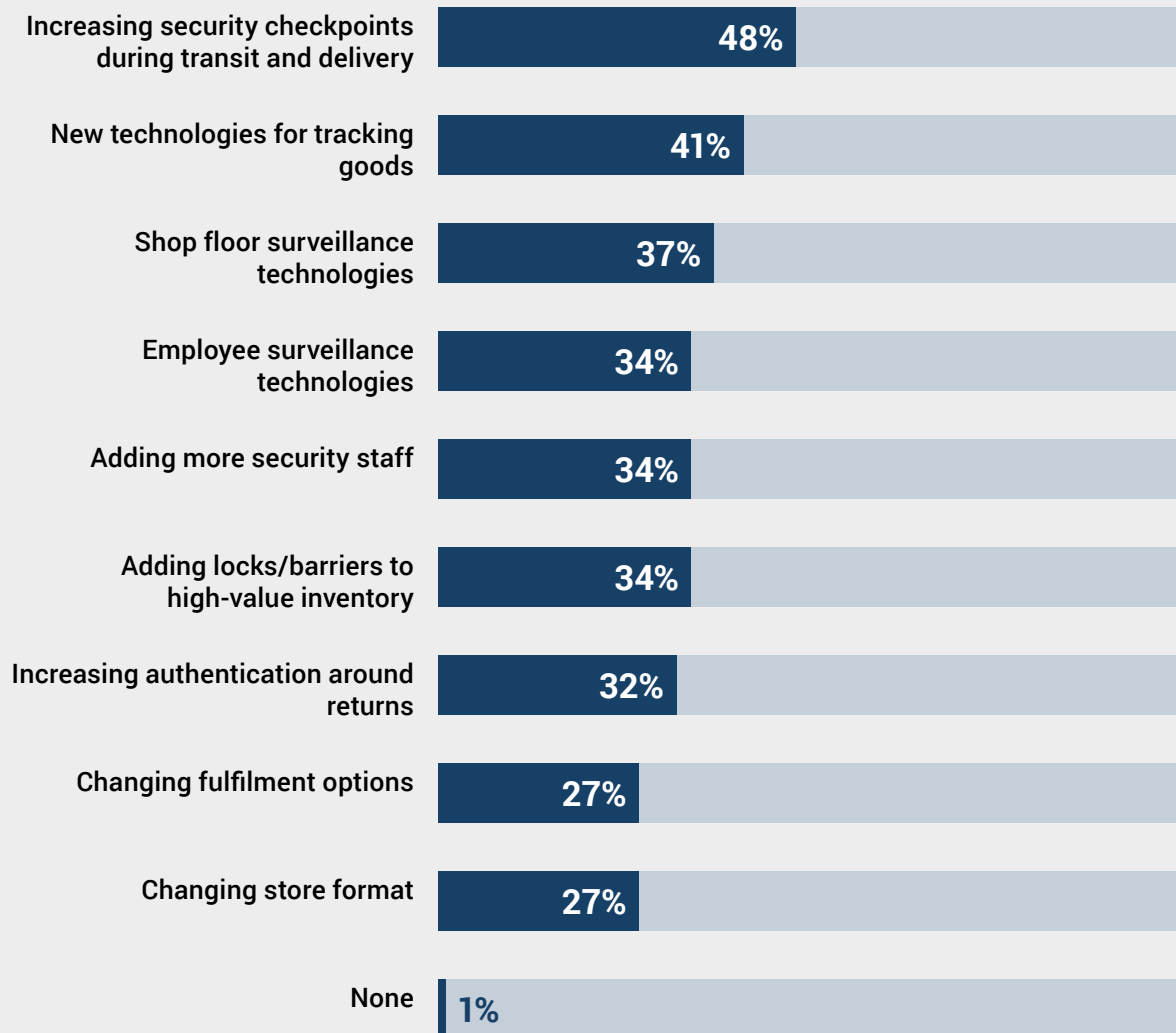3. 'Strongly disagree' and 'Somewhat disagree' responses combined.

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How retailers are addressing shrink and theft

Almost all (99%)[1] supply chain professionals surveyed in the retail sector say that their organization is investing in measures to reduce shrink/theft.

For example, respondents were most likely to say that their organization is increasing security checkpoints during transit and delivery (48%), and implementing new technologies for tracking goods (41%).

Q. What measures, if any, is your organization implementing to reduce shrink/theft?

% of respondents in the retail sector

| Measure	%
Increasing security checkpoints during transit and delivery	48%
New technologies for tracking goods	41%
Shop floor surveillance technologies	37%
Employee surveillance technologies	34%
Adding more security staff	34%
Adding locks/barriers to high-value inventory	34%
Increasing authentication around returns	32%
Changing fulfilment options	27%
Changing store format	27%
None	1%

1. Reverse of 'None'

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Food, grocery, and restaurant businesses are significantly impacted by shrink

The issue of shrink becomes even more pronounced within the food, grocery, and restaurant sector.

In fact, according to our survey, 82% of supply chain professionals surveyed within this sector agree[1] that their organization finds it challenging to reduce its shrink rate. This is compared to 60% of those in the retail sector who agree[1] it is a challenge for their organization to reduce its rate of shrink/theft.

82%

VS

60%

82% of respondents in the food, grocery and restaurant sector agree[1] it's a challenge for their organization to reduce its rate of shrink

60% of respondents in the retail sector agree[1] it's challenging for their organization to reduce its rate of shrink/theft
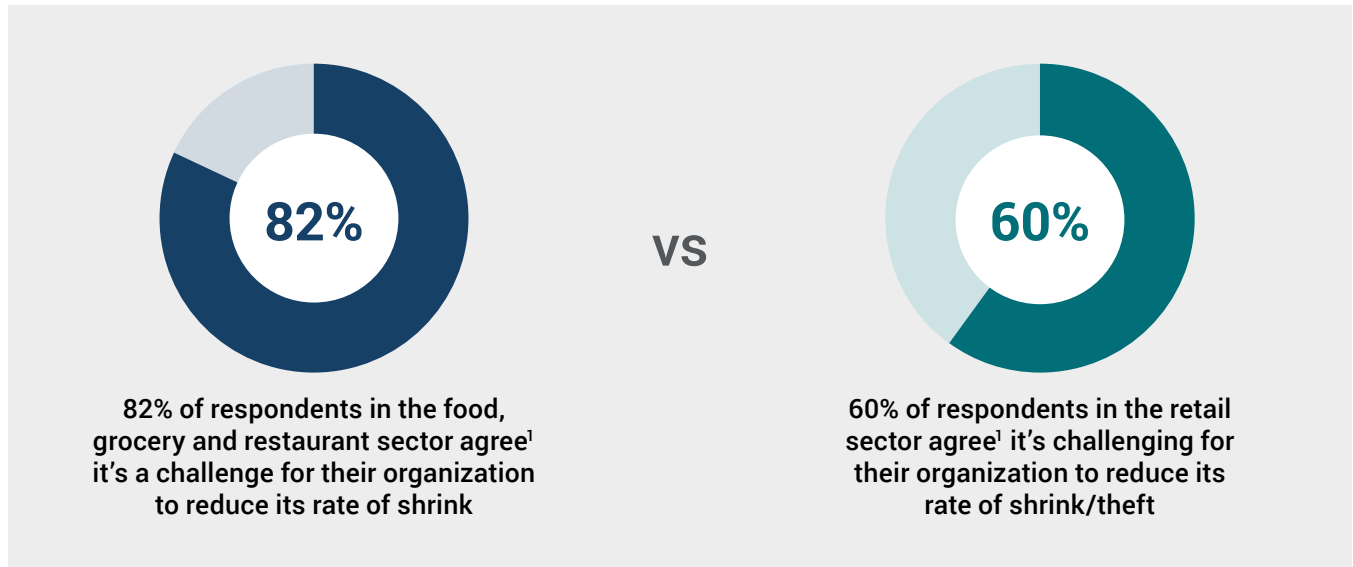
Causes of shrink in the food, grocery, and restaurant sector

Supply chain professionals surveyed in this sector report that shoplifting (45%), food spoilage (37%), and food waste (35%) are their top concerns.

Meanwhile, respondents were most likely to say that levels of employee theft (33%), shoplifting (30%), and food waste (30%) are increasing at a growing rate. These are also the issues they were most likely to say their organization is struggling to reduce.

Top concerns

Shoplifting (45%)

Food spoilage (45%)

Food waste (45%)

Top issues on the rise

Employee theft (33%)

Shoplifting (30%)

Food waste (30%)

Top issues businesses are struggling to solve

Food waste (28%)

Employee theft (28%)

Shoplifting (20%)

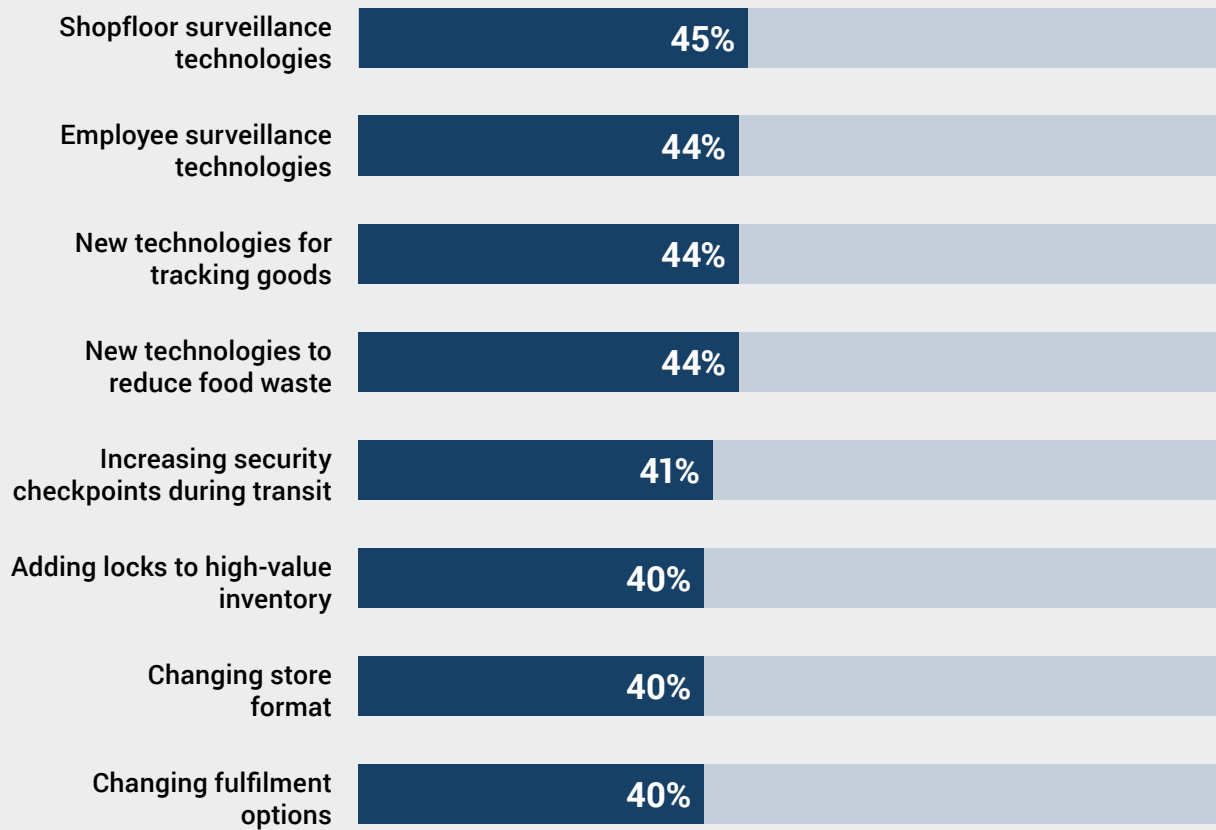1. 'Strongly agree' and 'Somewhat agree' responses combined.

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How the food sector is reducing shrink

Organizations in the food, grocery and restaurant sector are implementing a variety of measures to reduce shrink.

For example, almost half (45%) are implementing new technologies for shopfloor surveillance, while a similar proportion is deploying employee surveillance technologies (44%), new technologies to track goods (44%), and new technology solutions for reducing food waste (44%).

Q. What measures, if any, is your organization implementing to reduce shrink?

% of respondents from the food, grocery and restaurant sectors

Measure	%
Shopfloor surveillance technologies	45%
Employee surveillance technologies	44%
New technologies for tracking goods	44%
New technologies to reduce food waste	44%
Increasing security checkpoints during transit	41%
Adding locks to high-value inventory	40%
Changing store format	40%
Changing fulfilment options	40%

1. 'Strongly agree' and 'Somewhat agree' responses combined.

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Challenge:
Meeting Sustainability Requirements

Supply chain professionals across sectors want to improve sustainability, but many are struggling to do so

The pressure to reduce the environmental impact of operations is one of the biggest challenges faced by over a quarter (27%) of supply chain professionals.

At the same time, a quarter (25%) say meeting more stringent Environmental, Social, and Governance (ESG) regulations — including the European Union's Digital Product Passport (DPP) and Corporate Sustainability Reporting Directive (CSRD) — is one of their main challenges.

Retailers in particular are being heavily impacted by changing regulatory frameworks.

Nearly half (49%) of supply chain professionals surveyed in the sector say they are concerned[1] about their organization's ability to meet the requirements of the EU's upcoming DPP legislation.

49% of supply chain professionals in the retail sector are concerned[1] about their organization's ability to meet the EU's DPP mandate

Food waste represents a major sustainability challenge for the food, grocery, and restaurant sector

Not only do the findings show that 99%[2] of supply chain professionals surveyed in this industry admit that product is lost through food waste within their organization, but on average[4] they estimate that $68 million is lost through food waste across their organization annually.
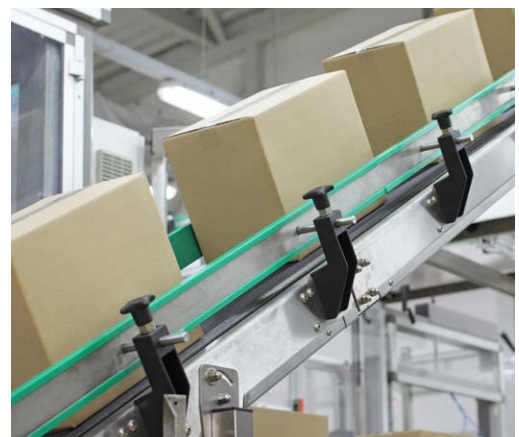
1. 'Very concerned' and 'somewhat concerned' responses combined
2. Reverse of 'None – no product lost through food waste'
3. Mean

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Q. Please provide an estimate of the value of product lost through food waste(donated or thrown away) across your organization annually.

Value of product loss through food waste	% of respondents
Less than $1 million	24%
$1 million – less than $49 million	35%
$49 million – less than $150 million	32%
$150 million – less than $500 million	6%
$500 million or more	1%
None – No product lost through food waste	1%
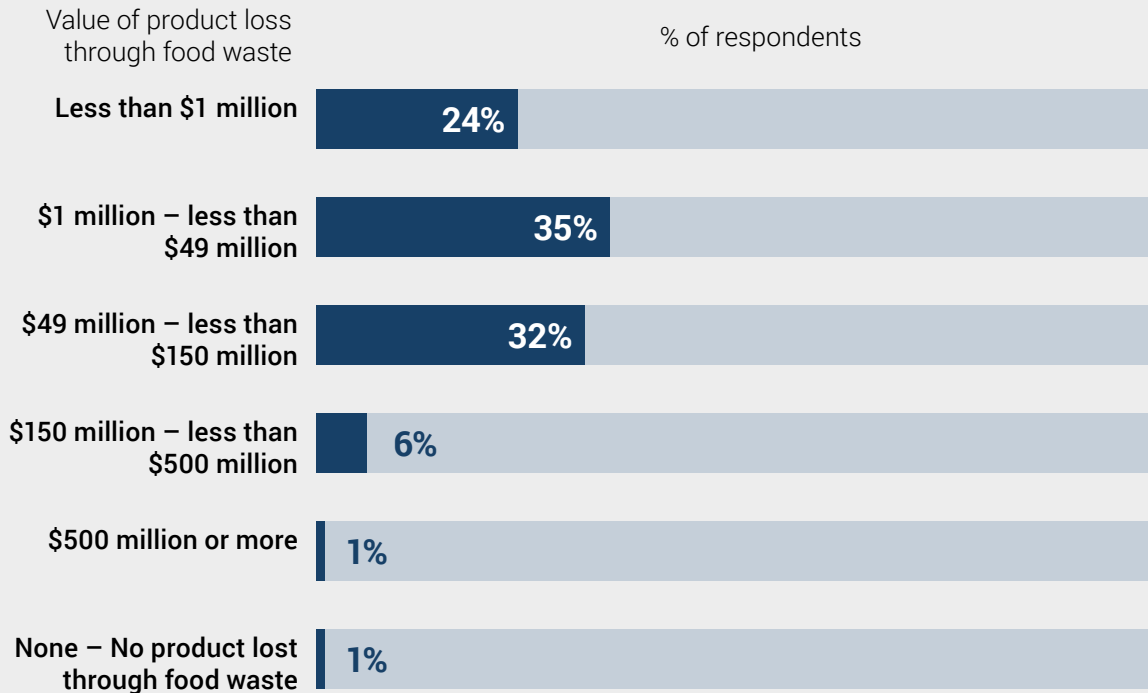
Unfortunately, of this food waste, these respondents estimated that over a third (34%) is sent to landfills.

Q. Please provide an estimate of the percentage of your organization's food waste that is donated / sent to landfill / converted for other usage e.g. animal feed or compost

31% Converted for other usage, e.g. animal feed or compost

35% Average[1] estimated % of food waste that is donated

34% Sent to landfill
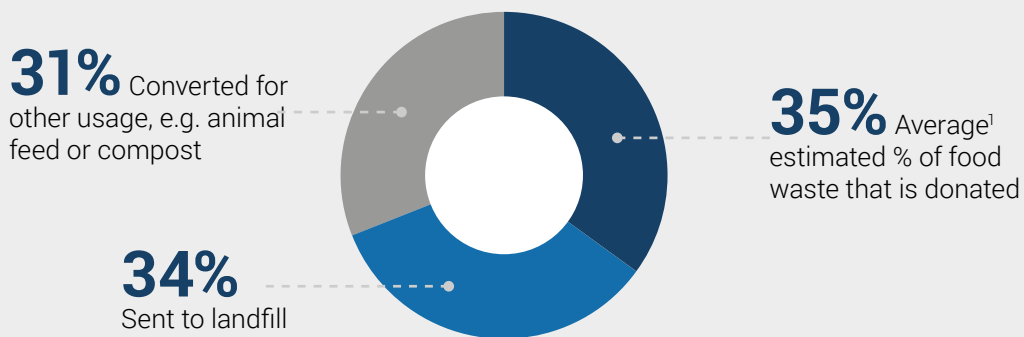
Despite the challenges they're up against, improving supply chain sustainability is high on the agenda for many businesses.

1. Mean

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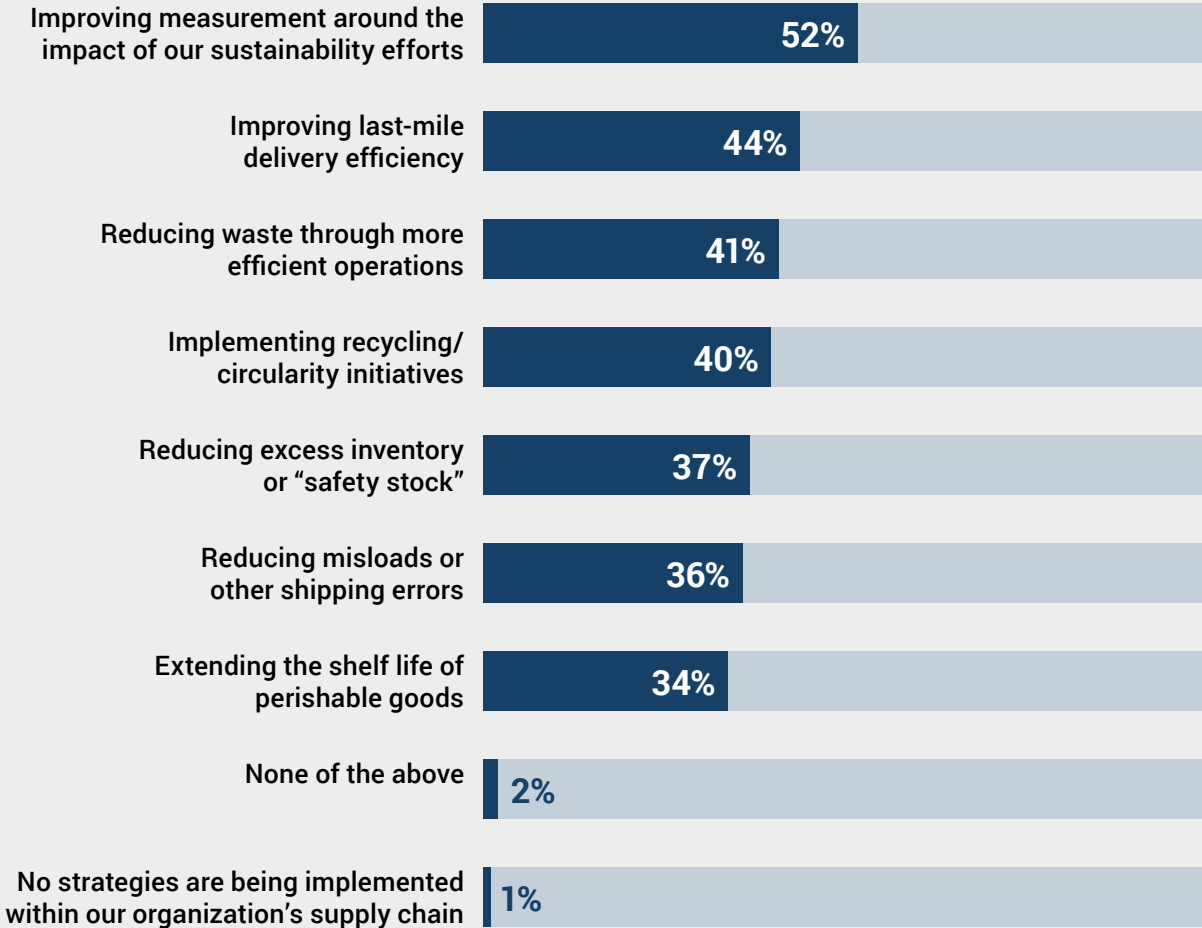# How supply chain professionals are driving sustainability

Almost all (97%) supply chain professionals surveyed across sectors[1] are implementing strategies within their organization's supply chain to improve sustainability efforts.

For example, over half (52%) are improving measurement around the impact of their sustainability efforts, over 2 in 5 (44%) are improving last-mile delivery efficiency, and just over 2 in 5 (41%) are reducing waste through more efficient operations.

Meanwhile, 2 in 5 (40%) are implementing recycling/circularity initiatives, and almost 2 in 5 (37%) are reducing excess inventory or safety stock.

Q. Which of the following strategies, if any, are being implemented within your organization's supply chain to improve sustainability efforts?

% of respondents[2] implementing this measure

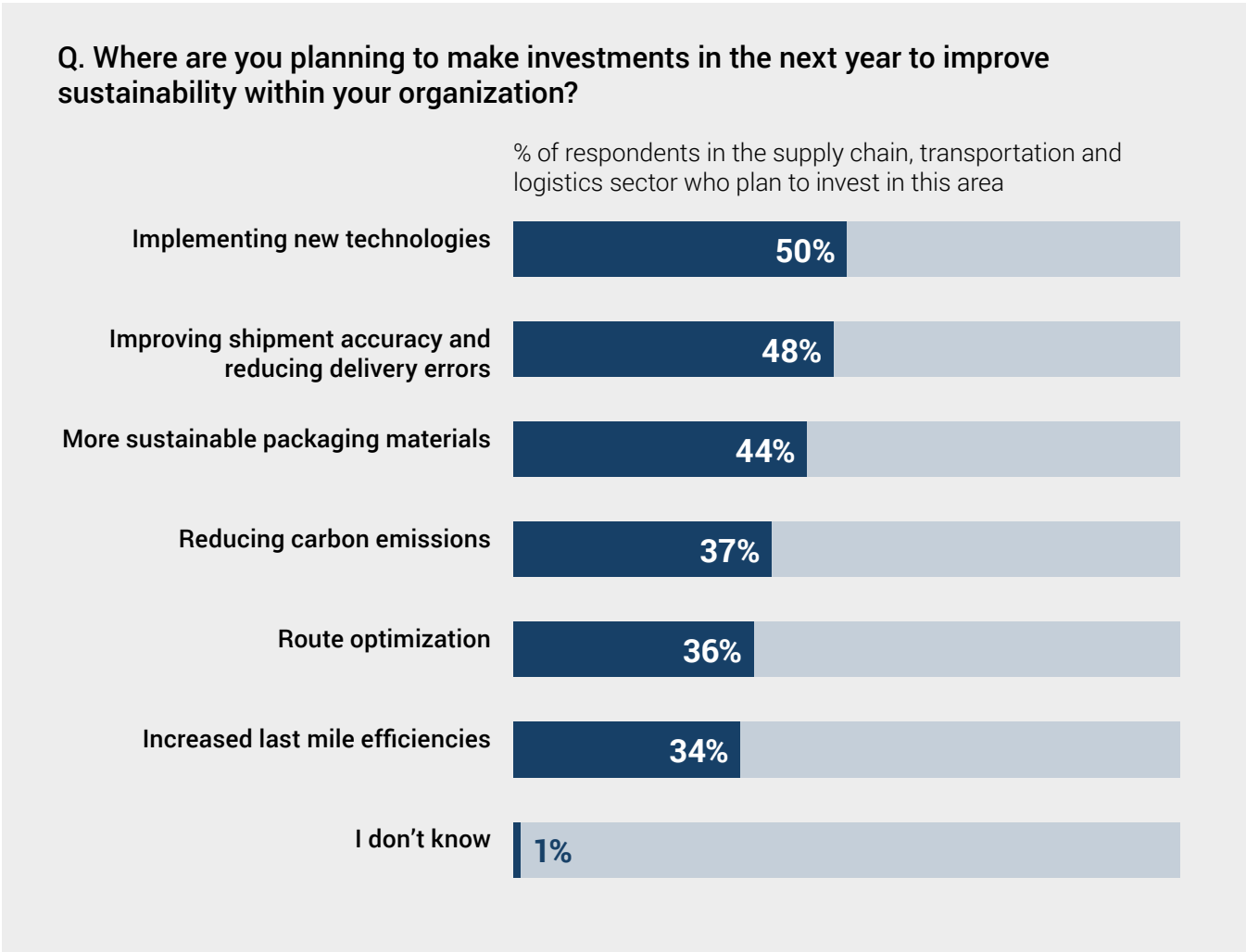| Strategy	%
Improving measurement around the impact of our sustainability efforts	52%
Improving last-mile delivery efficiency	44%
Reducing waste through more efficient operations	41%
Implementing recycling/circularity initiatives	40%
Reducing excess inventory or "safety stock"	37%
Reducing misloads or other shipping errors	36%
Extending the shelf life of perishable goods	34%
None of the above	2%
No strategies are being implemented within our organization's supply chain	1%

1. Reverse of 'None of the above' and 'No strategies are being implemented within our organization's supply chain to improve sustainability efforts'
2. General supply chain manager group

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Many of those we surveyed are also allocating budget to implementing these strategies. In fact, 31% say they plan to invest in improving supply chain sustainability in the next year.

For supply chain, transportation and logistics firms, increasing shipment accuracy and reducing delivery errors is a key focus for improved sustainability

Looking specifically at the supply chain, transportation and logistics sector, businesses plan to invest in several areas in the next year to improve the sustainability of their operation.

For example, half (50%) of supply chain professionals surveyed in this sector plan to invest in implementing new technologies, and almost half (48%) are looking to invest in improving shipment accuracy and reducing delivery errors to reduce unnecessary deliveries. Meanwhile, over 2 in 5 (44%) plan to spend on more sustainable packaging materials.

Q. Where are you planning to make investments in the next year to improve sustainability within your organization?

% of respondents in the supply chain, transportation and logistics sector who plan to invest in this area

Category	%
Implementing new technologies	50%
Improving shipment accuracy and reducing delivery errors	48%
More sustainable packaging materials	44%
Reducing carbon emissions	37%
Route optimization	36%
Increased last mile efficiencies	34%
I don't know	1%

Most supply chain professionals from this sector think these investments will have a positive impact. Almost 9 in 10 (87%) feel confident[1] that their organization will meet their sustainability goals.

1. 'Strongly agree' and 'Somewhat agree' responses combined

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Challenge:
Misloads and Delivery Errors

Errors occur at all points along the supply chain, but supply chain, transportation and logistics firms plan to invest in putting this right

Almost three-quarters (74%) of those surveyed are concerned[1] about the growing volumes of Load Planning Problems (LPPs), misloads, and delivery errors impacting their organization.

> **74% of supply chain professionals in the supply chain, transportation and logistics sector are concerned[1] about the growing volumes of LLPs, misloads, and delivery errors impacting their organization**

Meanwhile, respondents revealed that the largest volume of errors is most likely to occur because of delivery misloads (24%), label inaccuracies (weight, delivery address, inventory) (22%), and point of packaging (18%).
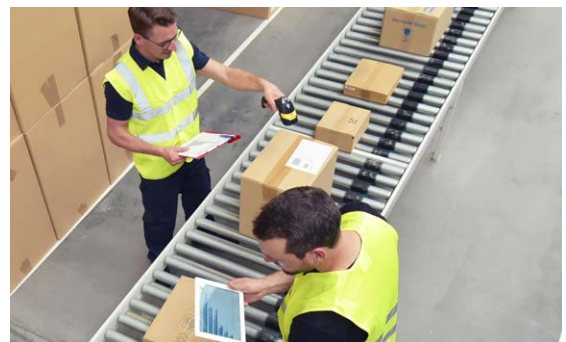
1. 'Very concerned' and 'Somewhat concerned' responses combined.

Q. Where in your logistics chain do the most errors occur within your organization?

% of respondents in the supply chain, transportation and logistics sector

Category	%
Delivery misloads	24%
Label inaccuracies (weight, delivery address, inventory)	22%
Packaging	18%
Hub-to-hub	15%
Preload	14%
Errors can happen at any point in the supply chain	8%
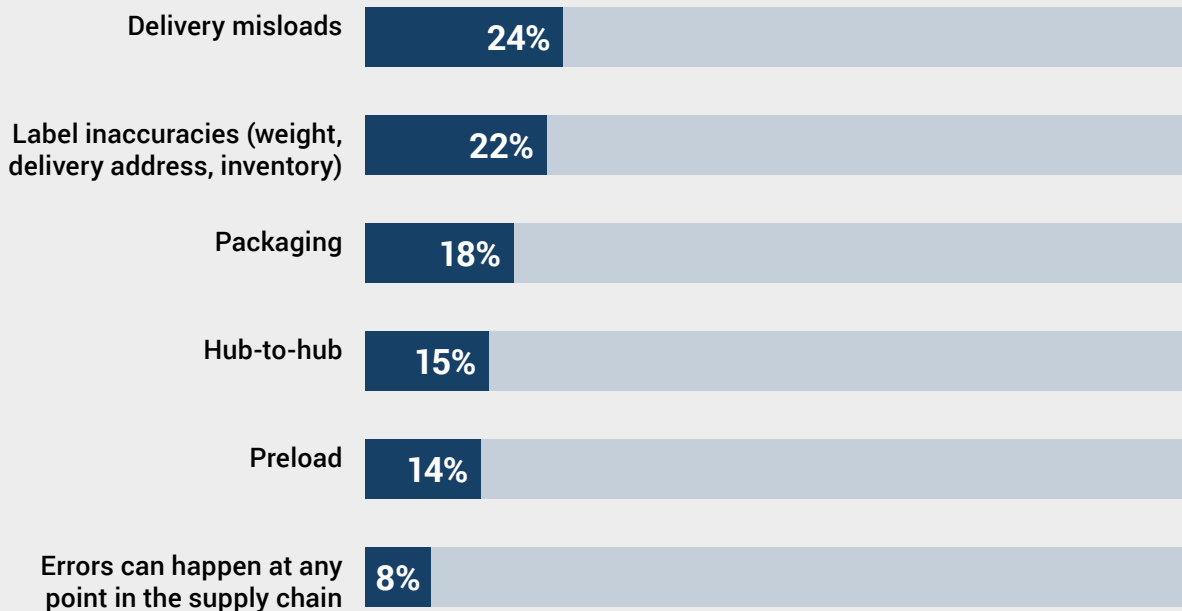
Almost three quarters of logistics professionals (74%) agree[1] that it is a challenge for their organization to reduce its volume of misloads and delivery errors.

How supply chain, transportation, and logistics professionals are preventing delivery errors

Many respondents in this sector are making investments to address this challenge, perhaps because, in part, making improvements in this area is also a way to achieve their organizations' sustainability objectives.

Almost half (48%) of supply chain professionals in the supply chain, transportation, and logistics sectors plan to improve shipment accuracy and reduce unnecessary deliveries in the next year to improve sustainability within their organization.

1. 'Strongly agree' and 'Somewhat agree' responses combined.

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The Future Impact of Supply Chain Inaccuracies

The supply chain data accuracy gap may hinder future growth

Shrink, sustainability challenges, and delivery errors all impact supply chains in the here and now. However, current supply chain inaccuracies could also stand in the way of future supply chain transformation.

There are numerous ways that organizations could benefit from improved data accuracy when it comes to optimizing their supply chains: through forecasting, warehouse management, transportation, and real-time visibility, to name a few.

Challenges implementing AI effectively in the supply chain

AI has the potential to revolutionize supply chains by enhancing efficiency, improving real-time decision-making, and enabling predictive analytics that optimize inventory management. However, effective AI strategies are built on accurate data, which supply chain managers are currently struggling to achieve.

In fact, data accuracy (43%) is the top challenge supply chain managers surveyed from various sectors[1] face when implementing AI to improve efficiency, accuracy, and performance in their organization's supply chain.

Other key challenges faced in implanting AI include data availability (39%) and difficulty accessing real-time data (36%).

These findings emphasize the need to correct supply chain inaccuracies now in order to create a solid foundation for adopting future innovations.

Q. Which of the following challenges, if any, do you face implementing AI to improve efficiency, accuracy, and performance in your organization's supply chain?

43% Data accuracy

39% Data availability

36% Cost

36% Access to real-time data

34% Integration with consumer-facing systems and services

26% Integration with legacy systems

22% Lack of workforce talent

19% Lack of buy-in from senior leadership

5% Do not face any challenges implementing AI

2% We are not implementing along our supply chain

1. General supply chain manager group

Supply chain managers are adopting a scattershot approach to supply chain transformation
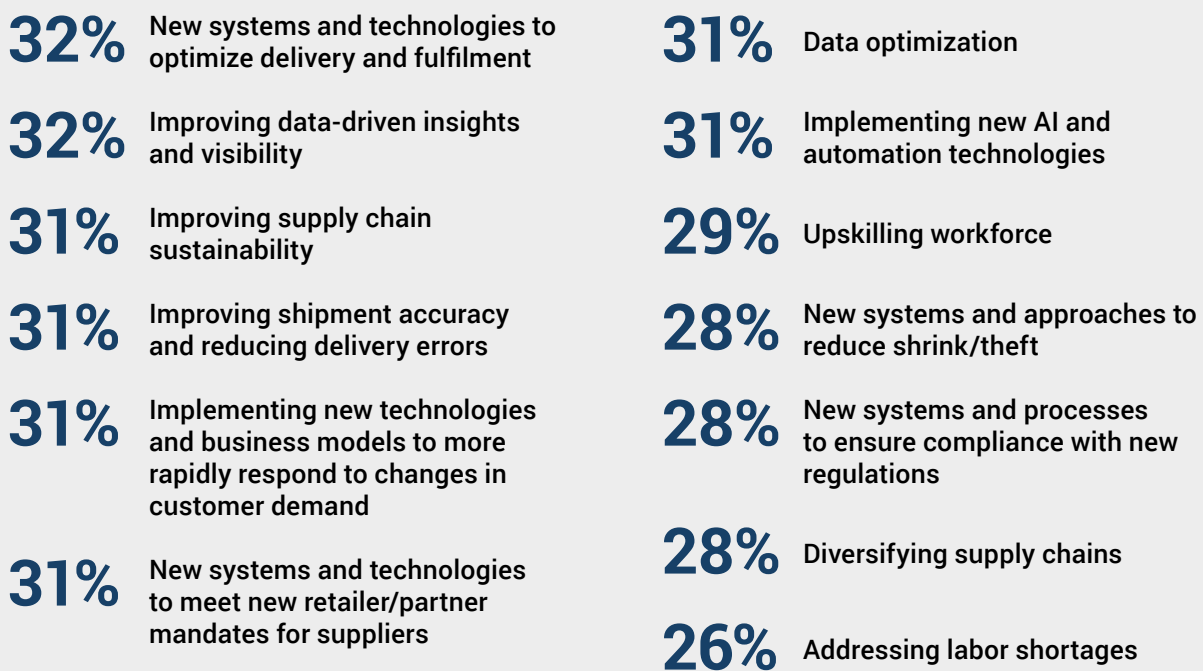
Our research demonstrates the pressing need for supply chain transformation. Overall, almost all (99%)[1] of those we surveyed plan to invest in improving their organization's supply chain in the next year.

> ## 99% of supply chain professionals plan to invest in improving their organization's supply chain in the next year[1]

However, our research indicates that the best course of action may not be obvious. As a result, many respondents are attempting a mix of strategies to achieve their transformation objectives.

When asked which areas they planned to invest in, no single area came out on top.

Q. Which of the following areas, if any, do you plan to invest in in the next year to improve your organization's supply chain?

32% New systems and technologies to optimize delivery and fulfilment

32% Improving data-driven insights and visibility

31% Improving supply chain sustainability

31% Improving shipment accuracy and reducing delivery errors

31% Implementing new technologies and business models to more rapidly respond to changes in customer demand

31% New systems and technologies to meet new retailer/partner mandates for suppliers

31% Data optimization

31% Implementing new AI and automation technologies

29% Upskilling workforce

28% New systems and approaches to reduce shrink/theft

28% New systems and processes to ensure compliance with new regulations

28% Diversifying supply chains

26% Addressing labor shortages

At the same time, organizations are employing several measures to improve the sustainability of their supply chains, and many respondents report that they are taking various steps to overcome industry-specific challenges like counterfeiting, shrink, theft, and delivery errors.

However, this scattershot approach could indicate an important underlying issue.

Supply chain professionals' difficulty in consistently implementing narrowly scoped measures could, in turn contribute to the general lack of real-time visibility and data accuracy across supply chains.

1. Reverse of 'Not planning to invest in anything in the next year to improve our organization's supply chain'.

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Bridging the data accuracy gap with real-time visibility

The issues we've explored in this report all have one thing in common: they can be greatly improved by addressing the data accuracy gap within supply chains.

Item-level visibility into everything that enters and travels through a supply chain helps drive data accuracy. With item-level visibility as a foundation, organizations can capture real-time insights, which power more robust forecasting and decision-making. This bolsters supply chain integrity, allowing organizations to more nimbly respond to the stressors their supply chains face.

RAIN RFID provides one method by which global enterprises can achieve the level of visibility required to close a data accuracy gap within their supply chain. RAIN RFID is a passive, battery-free wireless technology that connects billions of everyday items to the internet. RAIN RFID systems enable businesses to identify, locate, authenticate, and engage with items, providing rich, real-time data and insight.

RAIN RFID is used in a wide variety of applications. For retailers, RAIN RFID solutions support better omnichannel fulfilment, stronger counterfeit and loss protection, and greater ability to respond to the rapid fluctuations in demand that characterize today's shopping reality. With these operational benefits securely in place, retailers like [Uniqlo have been able to innovate their in-store and online shopping experiences.](#)

Meanwhile, logistics companies use RAIN RFID to closely monitor packages and prevent costly and environmentally damaging last-mile delivery errors. UPS, for example, has been able to [reduce its misload rate by 67%](#) by implementing item-level visibility with RAIN RFID.

For restaurants and grocers, item-level insights bring enormous potential to prevent food waste and spoilage, an issue our survey reveals continues to be intractable. [Chipotle](#) offers one example of how restaurants can not only reduce waste but also build superior recall management capabilities. The retail chain uses RFID to track ingredients from suppliers in real-time as they seek visibility into inventory at a national level. [Kroger](#) has also recently launched RFID for inventory management as it aims to reduce food waste and enhance store operations.

Impinj, the pioneer and leading innovator of RAIN RFID products and solutions, works hand-in-hand with global enterprises to address their challenges. We develop RAIN RFID systems that deliver business-critical information throughout the lifecycle of every item manufactured, transported, and sold.

Our highly integrated platform allows businesses to connect, identify, and track items within their supply chain, as well as obtain real-time insights needed to shape effective strategies for improving supply chain integrity. Together with our global partner network, we help enterprises gain efficiencies, reduce waste, and ensure everything is in the right place at the right time.

To learn more about how Impinj can help strengthen your supply chain integrity in 2025, visit www.impinj.com

Looking for more insights about supply chain integrity?
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Methodology

Impinj partnered with research experts Censuswide to survey 1,000 US supply chain professionals at director level and above in companies with 50+ employees.

The data was collected in August 2024.

Industry
Food/Grocery/Restaurant 25%
Retail 25%
Supply chain/Transportation/Logistics 25%
Other sectors 25%

Company size
50 - 99 employees 17%
100 - 249 employees30%250 - 500 employees 24%
More than 500 employees 29%

Censuswide abides by and employs members of the Market Research Society and follows the MRS code of conduct and ESOMAR principles. Censuswide is also a member of the British Polling Council.

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Ready to discuss how Impinj can help your business?

Contact us: www.impinj.com

Impinj (NASDAQ: PI) helps businesses and people analyze, optimize, and innovate by wirelessly connecting billions of everyday things—such as apparel, automobile parts, luggage, and shipments—to the Internet. The Impinj platform uses RAIN RFID to deliver timely data about these everyday things to business and consumer applications, enabling a boundless Internet of Things.