

Demand-Driven Disruption

How Consumers are
Changing the Landscape
of Food, Beverage &
Consumer Packaged Goods





Satisfying the Demands of Today's Consumer

It's no surprise that changing consumer expectations are impacting the consumer packaged goods (CPG) industry. However, what is unprecedented is the velocity of these changing expectations, the technology influencing these transformations and the impact they're having on the supply chains of CPG companies across the country.

Our team wanted to understand these changes in their entirety and speak directly to businesses in the CPG industry to learn how they're meeting consumer

expectations while still keeping their supply chain operations efficient. We surveyed 39 CPG supply chain leaders, 75% of whom were C-level or VP-level executives who let us know exactly what challenges they're facing in the industry today.

In this e-book, we present these results alongside direct insights from our own clients on how they're using new supply chain technologies to overcome these pressing concerns.

Our survey included:

39

CPG Supply
Chain Leaders

75%

Were C-level or
VP-level executives



Consumers don't have the same loyalty for [brands] anymore, they want to try new things, **resulting in a pressure to innovate** and bring new things to the market. Now we're shipping different pack sizes and products."

—Trimble Transportation CPG Customer



Proliferation of SKUs

One of the primary impacts of rising consumer expectations is the expansion of SKUs within the supply chain. From different flavors to unique colors, the consumer, especially Millennials and Gen Z, expect more customization in their purchases than ever before.

This often results in more sub-brands in a CPG company or varieties of an existing product. Unfortunately for supply chain managers, this also means more SKUs to keep track of and fitting many different package sizes into trucks for delivery.

Rising Consumer Expectations

From a shift to more online shopping to rising concerns about product ingredients and sources, today's consumer is looking for added value from their CPG purchases. They're also presented with more options

than ever before, both at the grocery store and online. So how are these changing expectations impacting CPG companies and their supply chains?

E-Commerce Isn't Going Anywhere

E-Commerce has changed the way that consumer packaged goods are being purchased. Although the shift from brick-and-mortar to more shopping online was already happening, the pandemic accelerated the shift. According to the US Census Bureau, e-commerce sales increased by \$244.2 billion or 43% in 2020, the first year of the pandemic, rising from \$571.2 billion in 2019 to \$815.4 billion in 2020.¹

Online sales in US retail jumped 40 percent year-over-year in 2021, and consumers are increasingly taking an omnichannel path to purchase: across all consumer categories spanning consumer electronics to groceries.² Companies are having a major impact on consumer decision journeys, forcing CPG brands to evaluate how they market and ship their products to consumers.

Traditionally CPG brands have been hesitant to change how their brand is packaged and displayed

in retail stores to avoid displeasing or confusing their customers. E-commerce giants are now shifting the way CPG products are packaged to better facilitate the shipment of goods directly to the consumer's doorstep.

Amazon worked with Procter & Gamble to develop several shipping-friendly versions of its most popular products like Tide, Dawn and Old Spice body wash. For example, the "Tide Eco-Box" uses 60% less plastic than shipping a traditional bottle of Tide since it doesn't require additional packaging and takes up less space in a delivery truck.³ Not only does this help Amazon efficiently ship large quantities of Tide to their online shoppers, but this is also helping P&G reduce costs in their supply chain when shipping directly to their consumers.

\$244

Billion dollar increase in ecommerce sales in 2020

40%

Increase in online sales in 2021

¹ U.S. Census Bureau, April 2022 <https://www.google.com/url?q=https://www.census.gov/library/stories/2022/04/ecommerce-sales-surged-during-pandemic.html>

² McKinsey & Company, July 2022 <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/e-commerce-at-the-center-of-profitable-growth-in-consumer-goods>

^{3,4} Procter & Gamble, November 2018 <https://news.pg.com/news-releases/news-details/2018/PG-Thinks-Inside-the-Box-with-New-Tide-Eco-Box/default.aspx>



The "Tide Eco-Box" uses 60% less plastic than shipping a traditional bottle of Tide.⁴

Direct to Consumer (D2C) Subscriptions

To add value, some consumer-packaged goods brands are choosing to differentiate themselves by selling directly to the consumer (D2C). By forging direct relationships with consumers, these businesses have more control over the entire shopping experience: from the online ordering process, to how a product is packaged and delivered, to even the return process.

Through acquisitions (like Unilever's acquisition of Dollar Shave Club) or starting their own direct-to-consumer initiatives (like the growth of automatically-recurring order subscriptions), CPG companies are quickly following retailers into the D2C space. However, this also means that their supply chain is extending right to the consumer's doorstep. This expansion comes with additional costs and areas for operational challenges which need to be evaluated carefully by CPG businesses before deciding to enter the D2C space.

One of these D2C challenges is the return process. While delivering directly to the consumer's doorstep provides total control over the customer experience, it can also pose operational and supply chain strains when a customer is unhappy with the product and would like to return it. Also known as the reverse logistics strain, this is a common final mile challenge for retailers that increases the amount of time spent on track and trace activities.⁵

⁵ McKinsey & Company, September 2021
<https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/five-traps-to-avoid-the-long-game-of-dtc-and-e-commerce>



E-commerce sales penetration in the United States **more than doubled** to about 35 percent in 2020 from around 16 percent the previous year, the equivalent of roughly **ten years of growth within a few months.**⁶

⁶ Trimble Transportation Survey Results October 2018



Pandemic Disruption

Recent years have brought far-reaching changes to the freight transportation and logistics industry. Throughout the COVID-19 pandemic, there were dramatic changes in demand patterns, which required more flexible route options.

While volume for grocery stores initially skyrocketed as customers stocked up on goods for home, casual dining restaurant orders fell. Dramatic shifts in demand continued throughout the pandemic.

McLane Company, Inc., a supply chain services leader that provides grocery and foodservice solutions for convenience stores, merchants, drug stores and restaurants, immediately needed to adapt to the shift.

In order to efficiently serve customers during this disruption, companies like McLane needed to be nimble and find ways to adapt to changing demands. Those that were able to adapt quickly, find operational efficiencies and invest in technology could better serve customers and weather the storm of the pandemic. By investing wisely, McLane reduced miles, balanced fleet usage and saved both time and money.

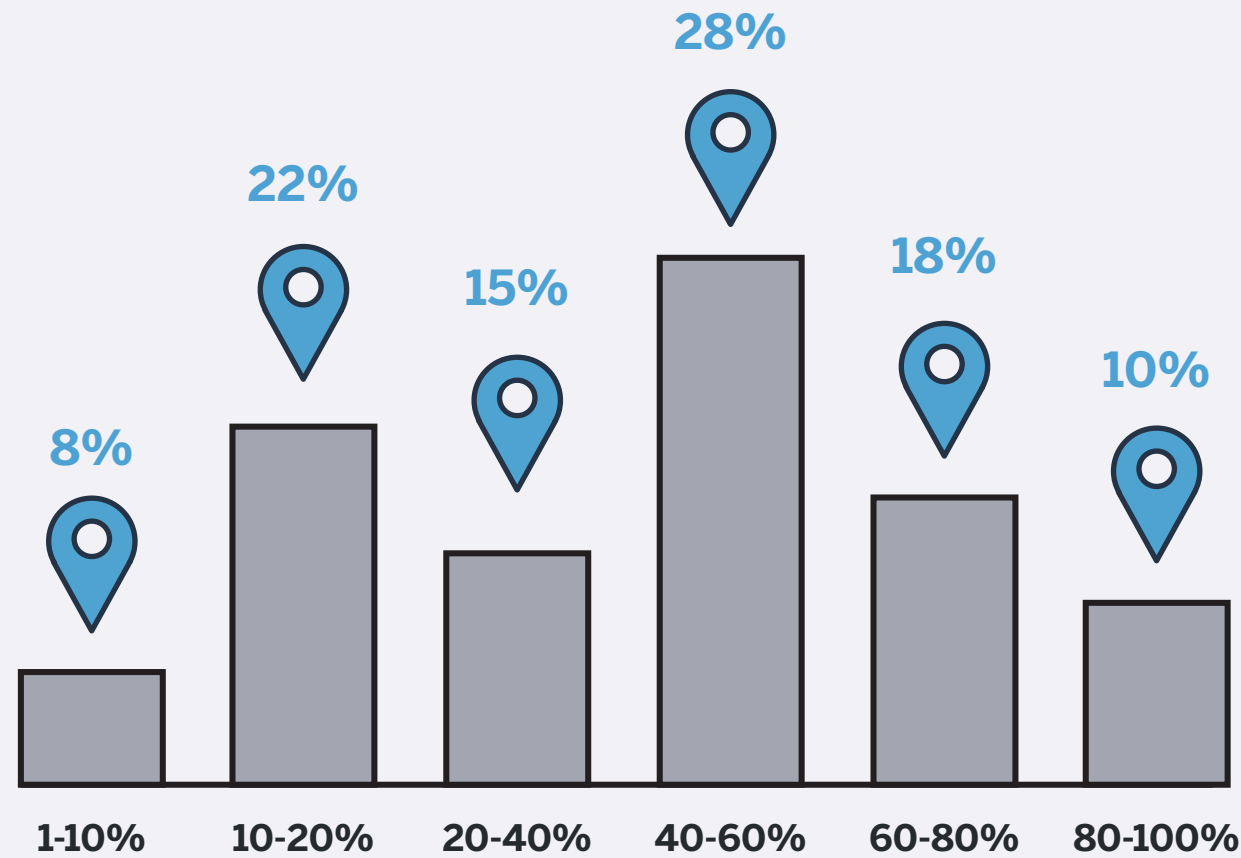
Check out a case study for more information on how McLane is leveraging Trimble technology here:

[S](#)

Track & Trace

Retailers are spending more time on track and trace activities than ever before. This is because consumers who shop online expect transparency into when their products will be delivered or their return will be processed. To provide exceptional customer service, retailers, and CPG companies will need to know the ETA of a shipment down to the hour of the day, which ultimately means more time spent tracking and tracing orders.

Known as the "Amazon Effect," consumers now expect to know when their package is out for delivery as well as once it has been delivered, no matter what the product or delivery method. This level of transparency and real-time updates wasn't possible just a couple of years ago.

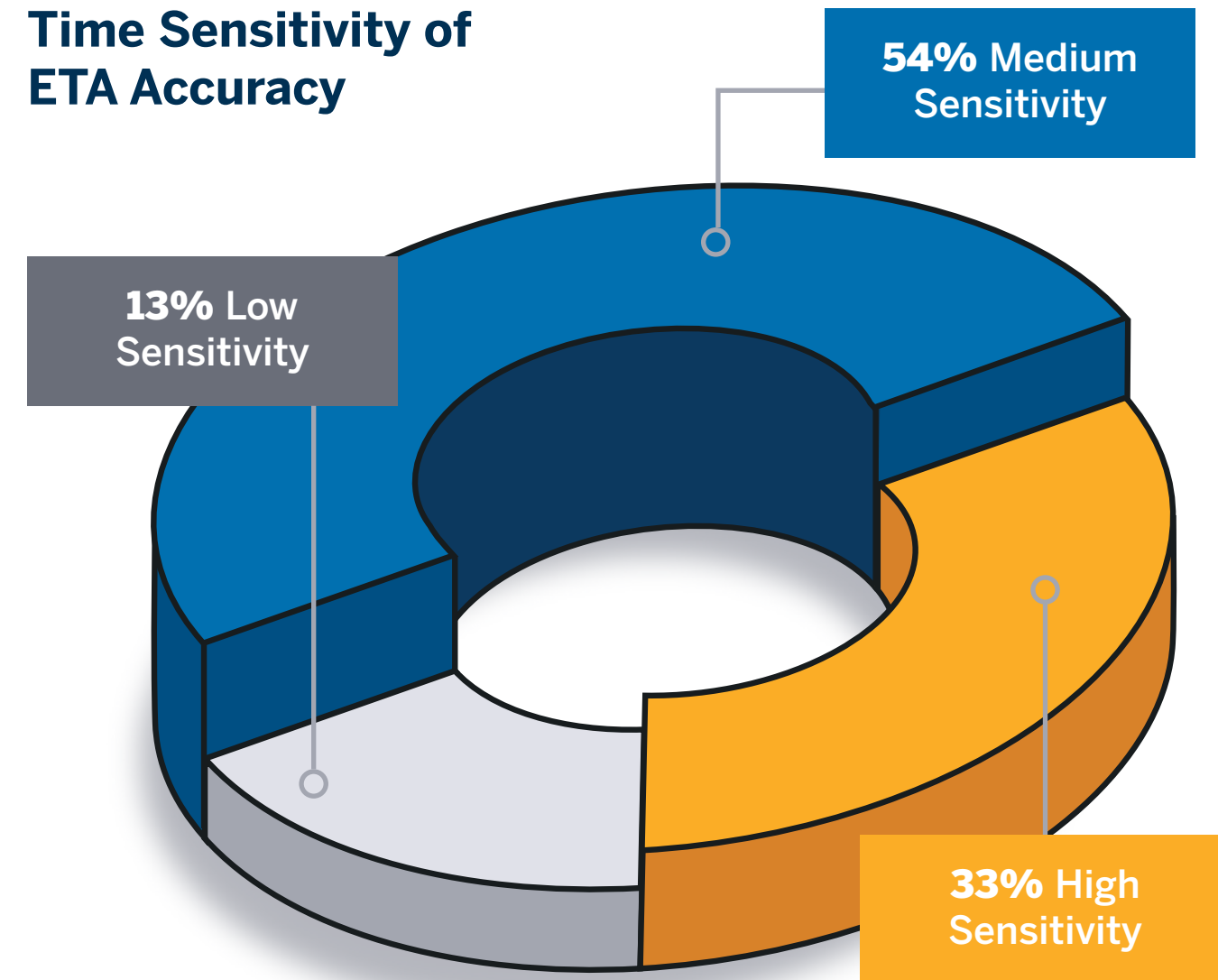


Amount of Work Day Spend on Tracking & Tracing Shipments

⁷Trimble Transportation Survey Results October 2018

Over 50% of CPG companies only spend around 40-60% of their time on track and trace activities, and just need to know the ETA of a shipment down to the day.⁷

Time Sensitivity of ETA Accuracy



Value Adding Propositions for DTC Products

When CPG companies are starting their own D2C initiative, it's also important that they add significant value to the consumer in order to convince them to buy their product directly instead of through a traditional retail experience. This could include discounted prices, time-saving subscriptions of their favorite products or custom goods that are only available directly from the manufacturer. Adding any of these values to product offerings and preparing for the strains on supply chain

operations from shipping and returns will help CPG brands successfully enter and compete in the growing D2C space.

Today, brands are often using DTC to introduce new products or test new offerings before they're available through traditional online channels or in physical retail spaces. These DTC offerings are increasingly seen as an important part of an omnichannel approach.



Offer a Money-Saving Solution



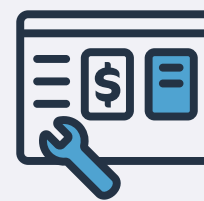
Offer a Time-Saving Solution



Present a Unique Product



Create a surprising experience



Offer Customized Products

Supply Chain Quarterly, December 2018
<https://www.supplychainquarterly.com/topics/Strategy/20181219-delivering-on---direct-to-consumer---in-the-cpg-industry/>

Consumer Transparency Spotlight: Food Safety Modernization Act (FSMA)

About 48 million people in the U.S. (1 in 6) get sick, 128,000 are hospitalized, and 3,000 die each year from foodborne diseases, according to recent data from the Centers for Disease Control and Prevention. This is a significant public health burden that is largely preventable.

The FDA Food Safety Modernization Act (FSMA) is transforming the nation's food safety system by shifting the focus from responding to foodborne illness to preventing it. Congress enacted FSMA in response to dramatic changes in the global food system

and in our understanding of foodborne illness and its consequences, including the realization that preventable foodborne illness is both a significant public health problem and a threat to the economic well-being of the food system.

FSMA's more proactive approach to food safety increases the importance of data visibility and transparency for the consumer. With this legislation, both the producers and shippers of food are accountable for ensuring products are handled in a way that guarantees their safety.

- How are companies responding to FSMA regulations?
- What technology is used to reduce the risk of food contamination during transportation?
- What can companies do to reduce the costs and impacts of a product recall?

We explore how the top CPG companies today are solving all of these questions and more in our [Definitive Guide to the Food & Beverage Supply Chain](#).

Foodborne disease can cause:

1 in 6
To get sick

128k
To become hospitalized

3,000
Fatalities

Transparency & Traceability

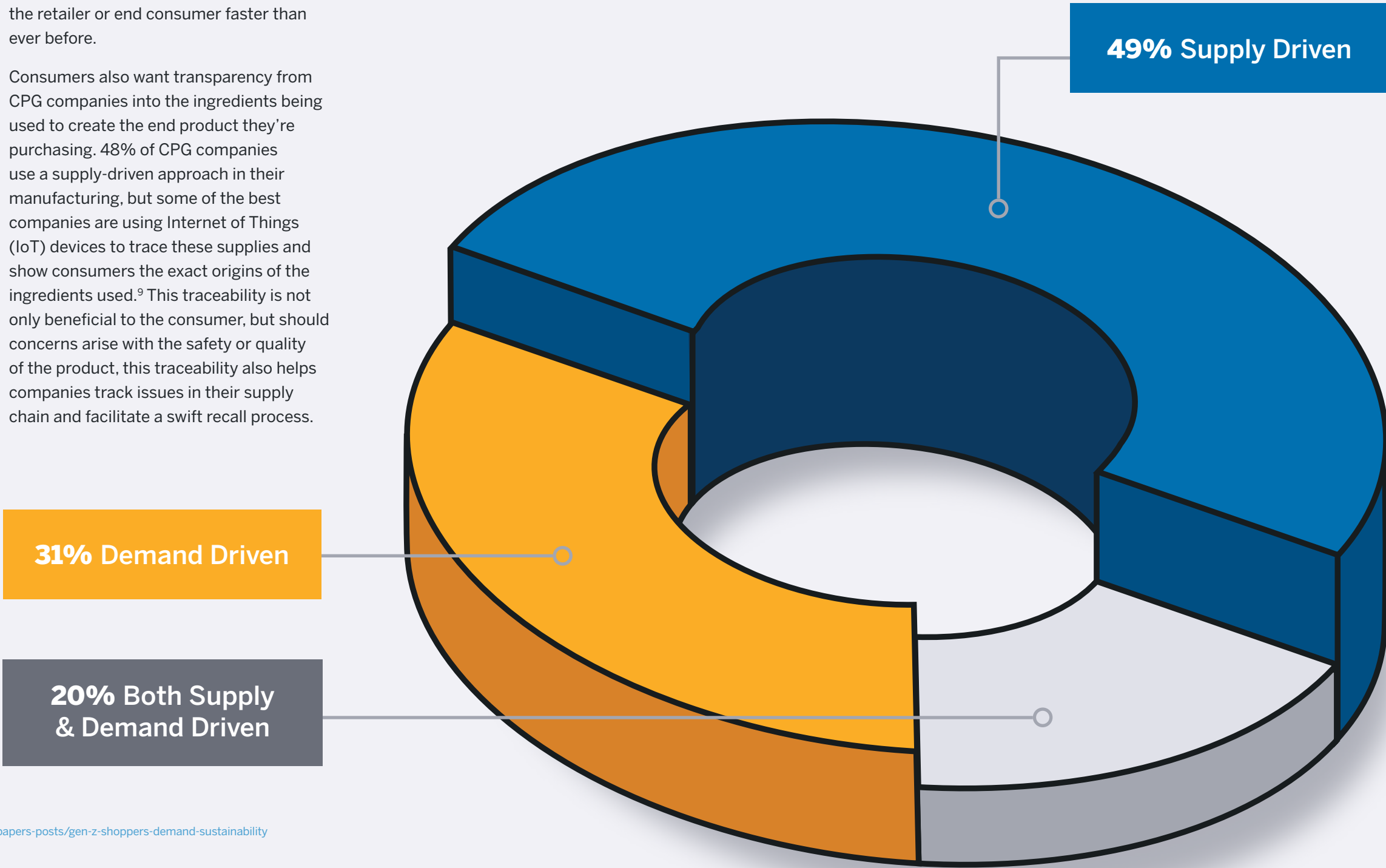
One of the primary ways buying behavior has changed over the past decade is that now consumers are not only concerned about the quality, but also the ingredients, origins and sustainability of the products they are buying.

As Millennials and Gen Z become the primary purchasers of consumer-packaged goods this trend will continue. Today, Millennials are four times more likely than Baby Boomers to avoid buying products from “the big food companies” and larger CPG brands and 73% of Gen Z consumers are willing to pay 10% more for sustainable products.⁸ This is because these consumers are demanding more products that are natural, organic and free from preservatives and other additives. For CPG supply chain managers, this means more SKUs to track

and higher risks for loss of goods due to spoilage, so these products need to reach the retailer or end consumer faster than ever before.

Consumers also want transparency from CPG companies into the ingredients being used to create the end product they’re purchasing. 48% of CPG companies use a supply-driven approach in their manufacturing, but some of the best companies are using Internet of Things (IoT) devices to trace these supplies and show consumers the exact origins of the ingredients used.⁹ This traceability is not only beneficial to the consumer, but should concerns arise with the safety or quality of the product, this traceability also helps companies track issues in their supply chain and facilitate a swift recall process.

Supply Chain Focus

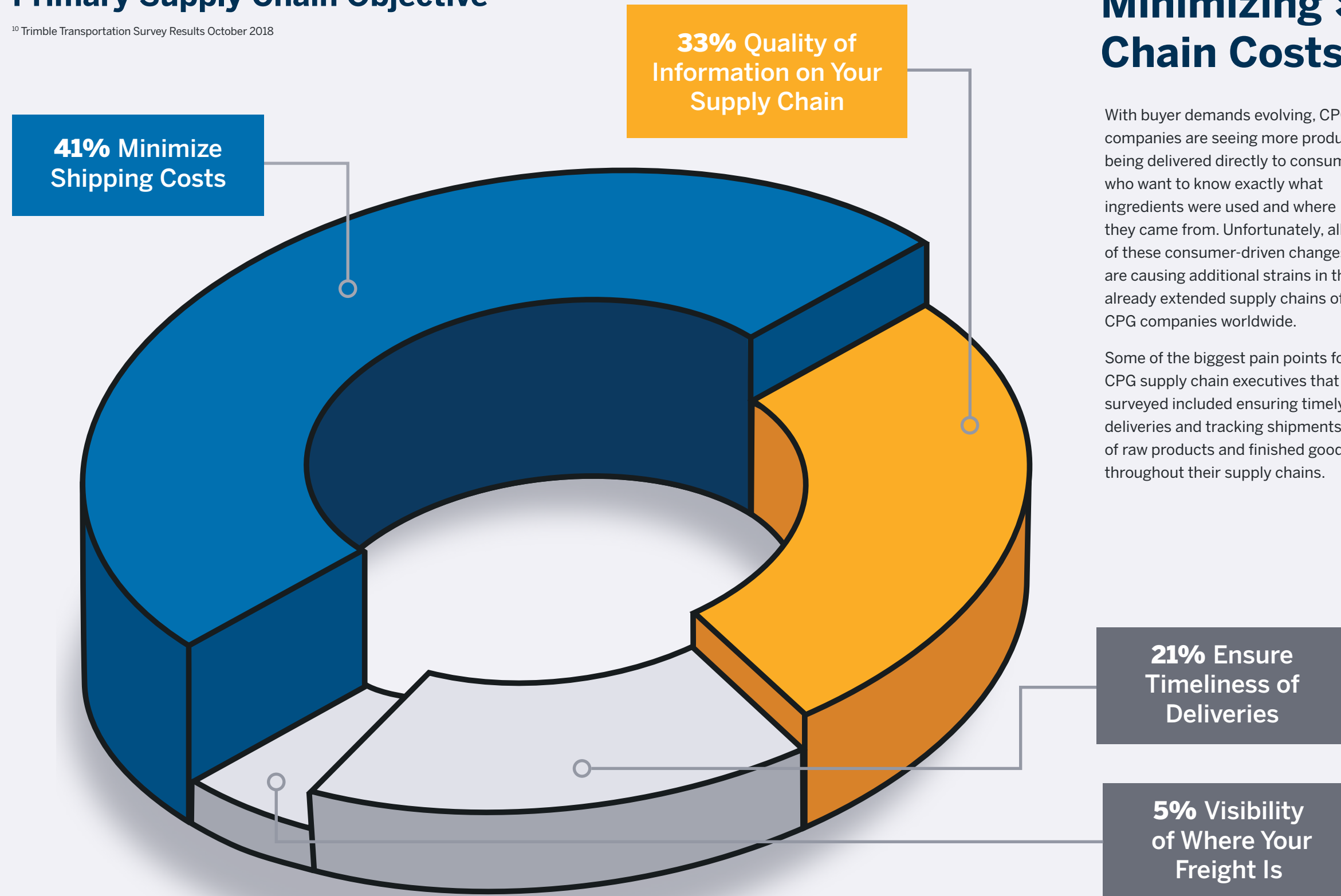


⁸ First Insight, December 2019 <https://www.firstinsight.com/white-papers-posts/gen-z-shoppers-demand-sustainability>

⁹ Trimble Transportation Survey Results October 2018

Primary Supply Chain Objective

¹⁰ Trimble Transportation Survey Results October 2018



Minimizing Supply Chain Costs

With buyer demands evolving, CPG companies are seeing more products being delivered directly to consumers who want to know exactly what ingredients were used and where they came from. Unfortunately, all of these consumer-driven changes are causing additional strains in the already extended supply chains of CPG companies worldwide.

Some of the biggest pain points for CPG supply chain executives that we surveyed included ensuring timely deliveries and tracking shipments of raw products and finished goods throughout their supply chains.

This additional time spent tracking shipments and extending the supply chain directly to the consumer's doorstep causes additional costs for CPG companies. Therefore, it's no surprise that over 40% of CPG executives responded that "Minimizing Shipping Costs" was their primary supply chain objective.¹⁰

So, how are supply chain executives reducing their operational costs? Some are choosing to leverage today's latest supply chain technology innovations.

How CPG is Using Supply Chain Technology to Minimize Shipping Costs

The amount of supply chain technology that is accessible to CPG companies today can be quite overwhelming. From blockchain to IoT devices, each provides supply chain managers with vast amounts of data that needs to be sifted through and deciphered. We explore these technologies and the benefits of each in detail below:

Electronic Logging Devices (ELDs)

In December 2019 it became mandatory for carriers throughout the United States to use ELDs, followed by the Canadian ELD mandate entering full enforcement in January 2023. Intended to create a safer work environment for drivers, it's now easier to track and manage shipments, manage routes and increase transparency for consumers. The added visibility as a result of the ELD mandate has enabled carriers of all sizes to offer an exceptional level of service for consumers who have come expect this level of transparency.



IoT Devices

Also known as “Internet of Things,” these sensors have become powerful additions to any supply chain manager’s operations. For produce, these have become especially helpful by tracking reefer truck temperatures to guarantee compliance with FSMA regulations.

However, companies are also using these IoT devices to ensure the quality of their products and improve customer communications. Johnnie Walker uses sensor labels to create “smart bottles” for its flagship Blue Label whiskey. Not only can these sensors detect if the bottle is sealed

or opened, they also help supply chain managers track the product from the factory to the point of consumption and ensure its quality throughout that journey.

IoT devices are also being used by CPG companies to customize brand interactions and ensure satisfaction with their products. At the store, brands can send tailored messages to consumers with information about the different variations of products they see on shelves in front of them and send tips on how to best use or enjoy their recent purchase when it’s taken home.

^{11,12} CIO, May 2015 <https://www.cio.com/article/247034/why-johnnie-walker-joined-the-internet-of-things.html>



We know the **bottle opening event has occurred**,” Balakrishnan says. “Our communication can change from guiding the consumer on which bottle to buy to how to best enjoy this product.”

—Venky Balakrishnan-Iyer, Global VP of Digital Innovation at Diageo ¹²



Importance of the Final Mile

With the increase in consumers wanting CPG goods delivered to their homes during the pandemic, final mile delivery, also referred to as last mile, has become an increasingly important step in the supply chain. This final step is when the package goes from the warehouse or distribution center to the customer's home or business. This is not only

one of the most complex and expensive legs of the supply chain, it's also crucial to get right. This final step can account for a significant portion of the total shipping cost and is the first impression for the consumer.

Final mile delivery can account for more than 50 percent of the total shipping process.¹³

Complex Routing

New demand patterns as a result of the pandemic require more flexible route options. The pandemic forced companies to step outside their fixed-route comfort zone and rethink their approach. That's a silver lining, because there are many benefits to having a rerouting strategy, including the ability to

better manage miles, fleets, driver need, on-time accuracy and order balancing. Companies that implement and maintain a rerouting strategy can reduce transportation spending while maintaining high levels of customer demand by optimizing service.¹⁴



One of the most difficult and expensive aspects of the supply chain is **last mile and home delivery**. However, from a customer experience standpoint, it is also the most memorable and possibly important.”

– Steve Banker for Forbes ¹⁵

¹³ Insider Intelligence, April 2022
<https://www.insiderintelligence.com/insights/last-mile-delivery-shipping-explained/>

¹⁴ Trimble Maps, October 2020
<https://blog.maps.trimble.com/deploy-and-maintain-a-modern-rerouting-strategy>

¹⁵ Forbes, December 2022
<https://www.forbes.com/sites/stevebanker/2022/12/16/top-5-transportation-technology-trends-for-2023/?sh=28363dcf3cf9>



APPIAN™

Leveraging a Final Mile Solution: Appian from Trimble

Due to demand disruptions because of the pandemic and changing consumer behaviors, transportation and logistics companies are faced with challenges previously never experienced. In order to reduce transportation costs, meet customer demands and stay competitive, these companies needed to find a final mile solution. Trimble Transportation's Appian is a route optimization and dispatch software that helps distributors, private fleets and manufacturers provide superior customer service by allowing them to:

- Implement a solution that connects with their existing software
- Optimize master routes
- Make real-time changes and analyze routes
- Measure KPIs to plan for the future



Connect with Existing Software

With Appian, there is no need to build custom reports. The solution connects seamlessly with existing business intelligence software you already have. There is no need to invest in new software or build custom reports.



Optimize Routes

One of the most important pieces of an effective final mile solution is its ability to optimize routes. Appian's solutions are built on a thirty-year trusted routing algorithm that considers all fleet constraints to optimize resources and territories, saving time and money.



Real-Time Route Changes and Analysis

A rerouting strategy and the ability to make adjustments whenever needed can reduce transportation spending and give companies more control. Further, the ability to track vehicles at any point improves accuracy in estimated time of arrival, which leads to a better experience for customers and money saved for companies.



Built-in Measurement Capabilities

Appian gives companies the ability to analyze resource utilization and route profitability to measure success and help plan for the future. Understanding how to measure KPIs and implementing necessary changes can add up to big savings.

Contact Us

Trimble Transportation is revolutionizing the global supply chain through intelligent, connected technology and workflows that are rooted in industry standard commercial maps and data.

At the intersection of the physical and digital worlds, Trimble Transportation offers SaaS, web, mobile and installed solutions that improve efficiency, promote safety, optimize utilization, and enable collaboration.

From planning to delivery, we deliver on our promise to provide cutting edge procurement, transportation management, mapping, routing, dispatch, navigation, location, fleet management, ELD compliance and asset maintenance solutions.

If you're interested in learning more, reach out to schedule a demo.

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