



Managing Complexity for Maximum Value: 5 Strategies for Optimizing Temperature-Controlled Food Transportation

INTRODUCTION

In the United States, transportation costs account for roughly 60–70% of total food logistics costs and approximately 7% of the total cost of goods sold^{1,2}. But those statistics don't speak to the incredible complexity of working in supply chain logistics today. Fluctuating fuel costs. Labor shortages. Late or missed delivery windows. The risk of spoilage and waste. If you're a temperature-controlled food company, you're trying to solve an elaborate puzzle—in real time—with the bottom line on the line every day.

Industry experts agree: Supply chain challenges aren't going away anytime soon. Now is the time to be proactive. To get strategic. Reevaluating your transportation and supply chain strategies is the key to creating efficiencies and driving value.

It all starts with the right partner. You want a logistics provider that has the right combination of physical infrastructure and data architecture. A partner that has the expertise, network scale and end-to-end global transportation services to offer creative, customer-driven solutions. That's how you increase efficiency, improve supply chain visibility and reduce transportation costs.

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Lineage Logistics is more than a collection of state-of-the-art storage facilities. We can be your end-to-end strategic transportation partner. In the coming pages we'll briefly explore what Lineage has to offer and share a case study of one customer's success. Then we'll cover five strategies for getting more value out of your supply chain. Here's what to expect:

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LINEAGE LOGISTICS

Efficiency and Reliability at Scale

A streamlined supply chain is critical to reducing transportation costs and improving reliability. But for many food producers, retailers and restaurant operators, a streamlined supply chain proves to be an elusive goal. The combined storage, transportation and distribution system is too fragmented and complex to effectively manage.

Or so it appears. An experienced logistics solutions provider with an advanced network engineering tool kit and global infrastructure can transform complexity into efficiency and reliability.

But not every logistics provider is equal. You want a provider that can assess your current network to find gaps and vulnerabilities that lead to excess transportation costs, shipping delays and potential spoilage. Using advanced modeling, this provider should leverage data to design solutions that consider every factor—from warehouse locations to shipping modes—to eliminate waste and enable product to reach consumers faster.

With the right provider, customers can move products faster and more efficiently through the supply chain. It takes the right combination of advanced solutions, design tools, global transportation and warehousing capabilities with ongoing operations support. That's how an end-to-end logistics company like Lineage Logistics is uniquely positioned to deliver value to customers. And we can do it at scale or in highly specific use cases.

For example, a temperature-controlled customer came to us with dispersed warehouse and production operations. They were using four different warehouses and a highly inefficient transportation process from production to finished goods.

Lineage deployed its sophisticated network modeling tool kit to assess the problem and model a solution. We showed the customer how to optimize the flow from raw materials to production, through processing and final delivery. Then we implemented our integrated transportation and warehousing services to bring the model to life.

The result: an over 8% reduction in transportation costs, resulting in approximately \$3 million in annual savings. The efficient service program we created also allowed the customer to cover 99.6% of all delivery sites within a two-day coverage zone.

We were able to leverage the strength of our network and breadth of our services to **reduce transportation costs by** **OVER 8%**

resulting in approximately **\$3M** in annual savings.

This is only one example. Every customer has different and highly complex supply chain needs. And that's what makes Lineage different. We use some of the world's best data scientists to model your unique warehouse, transportation and distribution profile. Then we have the temperature-controlled warehouse, transportation and distribution infrastructure to make your storage and delivery goals a reality. Along the way we turn a fragmented, chaotic supply chain into a seamless, connected network.

Continue reading to see how a large commercial retail customer benefited from this integrated approach.



CASE STUDY

How a Single-Provider Transportation Solution Increased Efficiency and Lowered Costs

A large, United States-based commercial retail customer recently came to us with a common problem: a patchwork supply chain.

In trying to service a regional big box retailer, the retail customer was struggling to transport its products efficiently. At the time, the retail customer was using several providers to store products in multiple locations. Carriers needed to visit multiple facilities just to complete one order. In addition, the retail customer's internal logistics team was overwhelmed. Shipping complete orders on time meant scheduling with multiple providers, all with varying levels of service. The result was an overly complicated process filled with communication and service challenges every step of the way.

The company initially engaged with Lineage to streamline transportation for the regional big box retailer. We used our regional distribution center in Allentown, Pennsylvania to centralize storage and create a transportation hub for fulfillment. We then built a custom supply chain for the retail customer that they could manage with a single point of contact at Lineage.

Because of this early success, it wasn't long before the retail customer expanded the relationship to include domestic drayage and customs brokerage. Previously, the retail customer struggled with a lack of communication from drayage providers on container status during import clearance. The result was costly delivery delays and additional demurrage and detention charges. By eliminating the communication gap, we created significant efficiencies throughout the entire supply chain.

By now, the scope of Lineage's service had expanded from the regional to national level. Working with the retail customer's transportation team, we conducted a lane analysis to reduce its less than truckload (LTL) and full truckload (FTL) outbound shipment costs. Ultimately, Lineage was able to create a solution that both saved money and made operations easier for the commercial retail customer, including customs clearance, drayage equipment availability, warehouse partnership and transportation management, all with the convenience and clarity of working with a single provider.



STRATEGY #1

Leverage the Right Transportation Mode(s)

According to the 2022 State of Logistics Report, “Overall, U.S. business transport costs jumped 21.7% to \$1.205 trillion.” One of the best ways to combat these cost increases is to optimize your supply chain by using the ideal transportation mode—or mix of modes—for the job. But to do that, you’ll need a logistics provider that has access to a wide variety of transportation modes and also the experience and knowledge to deploy those modes strategically.



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Here are four considerations:

1. To reduce costs on LTL shipments, consider consolidating shipments and implementing a multimodal transportation strategy. LTL ridesharing matches your freight with other loads and is a reliable way to ensure your products arrive on time while avoiding LTL premium pricing.

2. Load matching pairs outbound loads to trucks already inbound to a warehouse location. This both reduces costs and is a sustainable solution that avoids wasteful empty miles.
3. For long-haul freight traveling longer distances, intermodal transloading can help reduce costs by combining multiple modes of transportation to maximize efficiencies. For instance, domestic moves may combine temperature-controlled rail and truck to move your products between coasts.
4. For international moves, ocean freight is added to the mix, which may also require help with import/export, customs brokerage and drayage. A logistics provider with an in-house customs brokerage team and strategic locations at the world’s busiest ports can help move your products around the world swiftly, with fewer headaches.

There’s no one-size-fits-all approach to choosing the right transportation mode. As we saw in the retail customer case study, Lineage will work with you to create a custom solution. With more modes to move your products and a seamless connection to the world’s largest cold chain network, Lineage can solve your biggest transportation challenges and ensure your product arrives where it needs to be—on time, on temp and within budget.

STRATEGY #2

Consider Adding Rail to the Transportation Mix

Speaking of modes, there's an underutilized transportation option that we're recommending to many of our U.S. customers. As fluctuating fuel costs, rising labor costs and ongoing driver shortages plague the trucking industry, rail is becoming an increasingly attractive way to diversify your transportation portfolio. In combination with data-driven transportation management solutions, today's private rail systems offer customers new options for cost savings and efficiencies while also reducing their carbon footprint.

"Customers could reduce transport costs by 15-40%, depending on the shipment size and distance traveled," Lineage Logistics President and CEO Greg Lehmkuhl, noting that rail offers a strong complement to existing transportation portfolios.

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For many customers, we understand any hesitancy to using public rail as an option. The perception is not good. From a lack of visibility of product in transit to concerns about having access to the right rail car when you need it, to fears of labor disruptions.

But while there are perceived risks, there are also tangible rewards. Especially if you're working with the right logistics partner that can mitigate the risks while maximizing the benefits. The key is to incorporate rail into your overall transportation strategy.

When done right, here are some of the significant opportunities that rail presents:

RAIL BENEFITS

- 1** Rail cars have an **average of 4x the cargo capacity** of a typical over-the-road trailer.³
- 2** Trains are much more fuel efficient. A single gallon of diesel fuel is enough for a freight train to move a ton of cargo 470 miles. **Railways consume 9x less energy per ton-mile than trucks.**³
- 3** That fuel efficiency translates to lower environmental impact. **Freight trains emit 75% fewer green-house gases** and account for only **.5% of all US GHG emissions**, whereas **medium and heavy-duty trucks account for 25% of the U.S. emissions.**^{3,4}
- 4** **Rail is less labor intensive, requiring fewer operators to move more freight.** As the labor shortage among truck drivers grows more acute, rail can be a hedge against larger labor issues.⁵

There are also benefits to rail that are unique to Lineage. We've invested in a large private fleet of refrigerated and insulated boxcars. Our full-service railcar leasing program makes it easy for customers of all sizes to integrate rail transportation into their supply chain without having to worry about day-to-day maintenance or other operational issues related to operating a rail fleet.

We offer two types of temperature-controlled equipment suitable for an array of customer products:

2,800+ total boxcars



1,500+ mechanical reefers



1,300+ super insulated boxcars

We'll work with you to determine what type and how many railcars you need. And we'll design and create specific railcar modifications to suit the unique needs of whatever product you're hauling. In addition to temperature sensors, every railcar is equipped with GPS and door sensors to provide real-time tracking information for every car.

Lineage has rail connections at 80 ports and growing, plus more than 340 strategically located warehouses nationwide. This allows us to leverage the best rail has to offer, making it a good time to consider how Lineage can optimize your supply chain with our private rail management solutions.

STRATEGY #3

Use Data Modeling for a More Connected Cold Chain

In the world of temperature-controlled logistics, data is emerging as one of the most powerful tools for maximizing value and eliminating waste. At Lineage, our award-winning data science team uses data and data insights at all levels of the supply chain. Our team not only knows how to streamline the existing mix of storage and transportation, but also how to model proposed improvements. Supply chain management platforms like Lineage Link® make the entire process transparent and available for smarter supply chain decisions based on real-time data and analytics.

For instance, when optimizing a route for an individual distribution vehicle, our teams look at everything from the type of vehicle and weight of the load to real-time weather, road and traffic conditions to determine the fastest, most cost-effective route from point A to point B.

Data insights also ladder up to the entire transportation network. This allows customers to pair outbound loads with trucks already inbound to destination warehouses. A data-driven approach to load matching not only optimizes capacity, but also reduces trucking costs and minimizes the environmental impact of unnecessary trips and empty trucks.

But the ultimate power of data science is anticipation. You no longer have to wait for a problem to surface to solve it. With improved cold chain visibility, our supply chain engineers can prevent common transportation headaches before they occur. Whether it's driver shortages, rising fuel costs, lack of warehouse space or losing track of a shipment, Lineage's real-time data makes it possible to diagnose and address problems faster and ensure your products reach customers quickly and cost effectively.



Through a combination of data science and supply chain engineering, Lineage Logistics saves customers on average

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The effect on the bottom line is significant. Through a combination of data science and supply chain engineering, **Lineage can save customers on average 10–15% on their transportation costs.**

LINEAGE LINK®

Improve Visibility from Warehouse to Final Destination

Take control of your cold chain with one fully integrated supply chain management platform. Lineage Link® offers customers unparalleled visibility coupled with access to real-time data and insights.

When it comes to managing your transportation, you don't want to engage in guesswork. You want to know how much inventory is left in the warehouse, where a shipment is in transit and when it's been safely delivered.

Lineage Link® seamlessly integrates data from your suppliers, products, inventory, carriers and customers so you can monitor, move, manage and collaborate across your entire cold chain like never before.

REAL-TIME VISIBILITY



Inventory

View stock on hand by lot, pallet and item ID



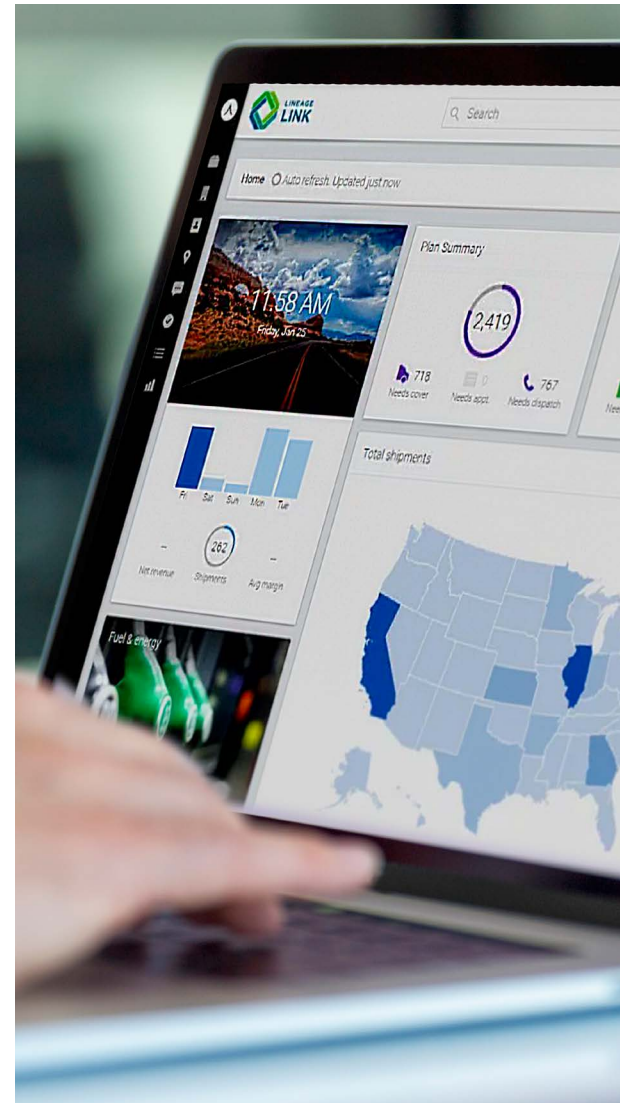
Orders

- Monitor the status of all inbound and outbound orders from the dashboard
- Quickly access details and documentation for any order
- Filter and monitor orders as they progress from Open to Complete



Shipping

- Quickly scan all planned and active shipments
- Access real-time shipping information
- Track shipment events like arrivals and departures
- Upload and store all shipping documents in one location



ACTIONABLE INSIGHTS



Notifications

Customize alerts for inventory, order and shipping activity



Workbench

Assign tasks to your team members to improve workload visibility and stay on track



Messenger

Communicate directly with customers using Lineage Link®



Reports

Gain fresh insights with live reports and key metrics

EASY, INTUITIVE CONTROL

For better visibility and control of your cold chain right at your fingertips, choose Lineage Link®. Featuring a user-friendly online interface, Lineage Link® is available on any desktop or mobile device using an internet browser or via the mobile app. Contact a Lineage team member today to get started.



STRATEGY #4

Lower Last Mile Costs by Optimizing the Entire Supply Chain

The cost of last mile delivery is significant, particularly in the food service industry. In fact, **last mile delivery costs typically account for 40% of total cold chain logistics costs.** This makes the final leg of transportation a seemingly easy target for food service customers looking to lower overall delivery costs.

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However, the reasons last mile delivery is so expensive—the price of labor and fuel, inefficient routes, delivery delays and lack of transparency—are too often out of your control.

To reduce transportation costs more effectively, consider focusing on the middle mile first. This may seem counterintuitive, but there are often hidden costs throughout the journey of your food. At Lineage, we take a more holistic view of the entire cold chain. Using data science, we enhance transparency and implement incremental changes in the middle mile. This reveals hidden savings that can be used to offset last mile costs.

Small changes can have a big impact, whether it's using a nontraditional mode of transportation, arranging ridesharing for LTL shipments or rethinking your redistribution. Those cost savings and enhanced efficiencies ripple through your entire supply chain. Then, when it comes to that crucial last mile, we can tap into more than 420 temperature-controlled warehouses to offer flexible solutions that further drive down costs. That's the smart way to handle the last mile.

STRATEGY #5

Transform Redistribution from a Headache to a Competitive Advantage

In food service, redistribution typically refers to slow-moving or promotional products for which customers don't have the space to store large quantities long-term but can't afford to order smaller quantities more frequently due to high LTL costs. For many U.S. food service distributors, redistribution presents challenges ranging from storage to distribution to budget management.

These products might be seasonal or promotional in nature, like frozen food items for an upcoming holiday sale, or they might be dry non-food items, like napkins, straws or even cleaning supplies. These products often require large minimum orders but are used in smaller quantities over a longer period.

Whatever the product, redistribution is about optimizing product flow. You want to ensure that items are available when and where they are needed. Unlike other logistics partners, Lineage has a unique solution. **Each year we buy more than \$4 billion in redistribution inventory to ensure our customers have product available where and when they need it most.** We also offer financing, storage and distribution to make redistribution easy. This assurance of a readily available supply has been especially valuable given recent supply chain challenges.

Let Lineage Redistribution help you find the hidden costs in your supply chain, work with you to optimize inventory levels and provide affordable delivery when the time is right.



CONCLUSION

Grow with the Leader in Cold Chain Logistics

With fluctuating fuel costs and lingering supply chain disruptions projected to continue, now is the time to reassess your transportation strategy. Lineage combines temperature-controlled warehousing and transportation expertise into one seamlessly connected solution, helping you optimize how your products flow from origin to destination.

Our supply chain engineers will work alongside you to design and implement a creative, one-of-a-kind transportation strategy that streamlines your supply chain, reduces costs and drives your supply chain toward greater sustainability. With reliable end-to-end

solutions, more available modes of transportation, fully integrated food service solutions, flexible re-distribution options and a more connected cold chain, Lineage is well positioned to offer customer-driven solutions that help you transport your products on time and within budget.

With a global network of more than 420 locations spanning 20 countries, you can rely on Lineage to move your products anywhere they need to go. As you look to expand your business, why not work with a transportation provider you already know and trust?

WANT MORE INFORMATION?

CALL 1-800-678-7271

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¹ <https://www.wsj.com/articles/shipping-and-logistics-costs-are-expected-to-keep-rising-in-2022-11639918804>

² Greg Bryan, President of Global Logistics at Lineage Logistics, 13 June 2022

³ <https://www.freightera.com/blog/train-vs-truck-transportation-efficiency-cost-advantages-disadvantages-infographic/>

⁴ <https://www.aar.org/wp-content/uploads/2020/06/AAR-Sustainability-Fact-Sheet.pdf>

⁵ https://www.logisticsmgmt.com/article/2022_rate_outlook_up_up_and_away