



FOOD COAST TO COAST

For national suppliers,
it's all about
transportation costs

For Ocean Spray, transportation costs are pushing them to a novel solution: partner with competitors to cut transport fuel costs by 40% and carbon emissions by 20%.

Logistics and shipping costs were the major threat to supply chains, affecting 52% of manufacturers, up from 37% a year earlier. That was the finding in a 2012 annual survey by MFG.com, an online marketplace for manufacturers and suppliers. Another concern was fuel oil prices, affecting 29% of manufacturers, steady for both years.

Addressing those concerns includes both managing fuel price uncertainty, as well as finding new ways to lower overall supply chain costs. Whether the shift is to the past with old-world modes like rail or advancing toward the future with alternative fuels and advanced technologies, no innovation is overlooked as supply chain managers work to lower costs and energy use in their operations.

THE HIGH COST OF TRANSPORTATION

In our globalized market, consumers expect to have access to goods and services from around the world at a moment's notice.

As such, the demand for an efficient distribution network has meant a tremendous increase in transportation costs — and emissions — worldwide.

Carbon emissions are an effective way to measure use. Costs alone can be deceiving, as they are tied to market factors that can mean a company is using less, but still paying more. Carbon emissions, on the other hand, are stable: no matter how much fuel prices fluctuate, one truck emits the same amount of carbon mile after mile.

Not surprisingly, the freight sector's share of global carbon emissions is large and rapidly growing. According to the Environmental Defense Fund ([EDF](#)), every year 500 million metric tonnes of CO₂ are emitted by the US freight system.



This amount of greenhouse gases may seem intangible until you realize it would fill a space about the size of the original Rockefeller Center building.

Trucks make up about 75% of that amount, according to Kate Hanley, outreach coordinator at EDF's Boston office. In fact, more than 80% of all US urban centers are served exclusively by trucks. And that number is rising, even during a period when personal transportation energy demand is decreasing.

Yet according to EDF, America has within its grasp proven, cost-effective technologies and processes that could reduce emissions from the distribution sector by 100 to 200 million metric tonnes a year — a reduction of 20-40%. These solutions, including load sharing, mode switching, de-speeding and load adjustment are now being implemented by Ocean Spray to achieve substantial savings.

OCEAN SPRAY: NEW STRATEGIES

[Ocean Spray](#) recently completed a study with the help of EDF and the MIT Center for Transportation Logistics (CTL) to measure improvements for their supply chain. Applying EDF's "Five Rules for More Carbon Efficient Freight Supply Chains," the team tackled their transportation costs and emissions from a variety of angles.

LOAD SHARING

Believe it or not, a number of freight trucks and railcars are moving around the country load-free.

“Trucks pass each other on the road empty,” said Adrian Gonzalez, president of Adelante SCM.

Adelante SCM provides learning and networking opportunities for supply chain executives. Mr. Gonzalez writes a [Logistics Viewpoints](#) blog and hosts a weekly [Talking Logistics](#) video chat to help companies with supply chain issues.

Ocean Spray Cranberries found a way to take advantage of the opportunity for load sharing by partnering with a competing juice company in Florida. For Ocean Spray, this meant the opening of a new distribution center to bring product from New Jersey closer to the demand in Florida.

MODE SWITCHING

The competitor had vacant railcars moving from New Jersey to Florida, so Ocean Spray worked with them via a logistics partner ([Wheels Clipper](#)) to make use of the backhaul opportunity through coordinated shipment schedules.

As Ken Romanzi, Ocean Spray’s senior vice president and chief operating officer, North America, put it:

“We needed a more efficient way to haul products south. Our competitor was spending money and energy moving empty railcars in that direction. It made good business sense for us to collaborate.”

DE-SPEEDING

Switching from road to rail brought changes in Ocean Spray’s three-day New Jersey to Florida truck schedule. The company adjusted to a four- to five-day rail shipment schedule, adding new systems to efficiently track the location of shipments at all times, ensuring on-time delivery within the new system.

LOAD PLANNING

Rail boxcars can hold 38 pallets compared with only 19 on a truck. This meant adjusting their load planning to accommodate the increased capacity of rail freight.

Transitioning from road to rail — using 308 boxcars instead of 616 trucks — resulted in shifting 80% of their freight traffic between New Jersey and Florida. The results are very impressive: a 40% reduction in transportation costs equaling \$200 savings per load; carbon dioxide

emissions reductions for that lane of 68% or 1,300 metric tonnes, which is equivalent to 100,000 fewer gallons of fuel; and an overall carbon footprint shrinkage of 20% for these operations. Ocean Spray is extremely enthusiastic about the results, and is planning to make similar changes in other routes.

ALTERNATIVE FUELS

Ocean Spray is not alone. Companies in virtually every industry are looking for ways to lower transportation costs and increase the resiliency of their supply chain at the same time. The solutions chosen by Ocean Spray were only a few possible strategies from a long list of options.

“All strategies have a role to play; we need all of them,” says Ms. Hanley.

Mr. Gonzalez adds that one of the areas receiving the most attention in the freight industry is that of alternative fuels. “You’re seeing third-party logistic providers and trucking companies alike testing and putting into operation trucks that run on natural gas, both liquefied and compressed, or trucks that are hybrid and electric. They are experimenting with different types to see which fits each part of their network.”

For instance,

- Electric or hybrid vehicles may be best suited to local jobs of 25 or 50 miles per day. These types of technologies make the most sense where the vehicle drives in a closed loop route, returning to its station at the end of the day for recharging or refueling.
- Diesel fuel still holds the greatest share of long-haul transport.
- Natural gas options are being tested for both short and long haul trips.

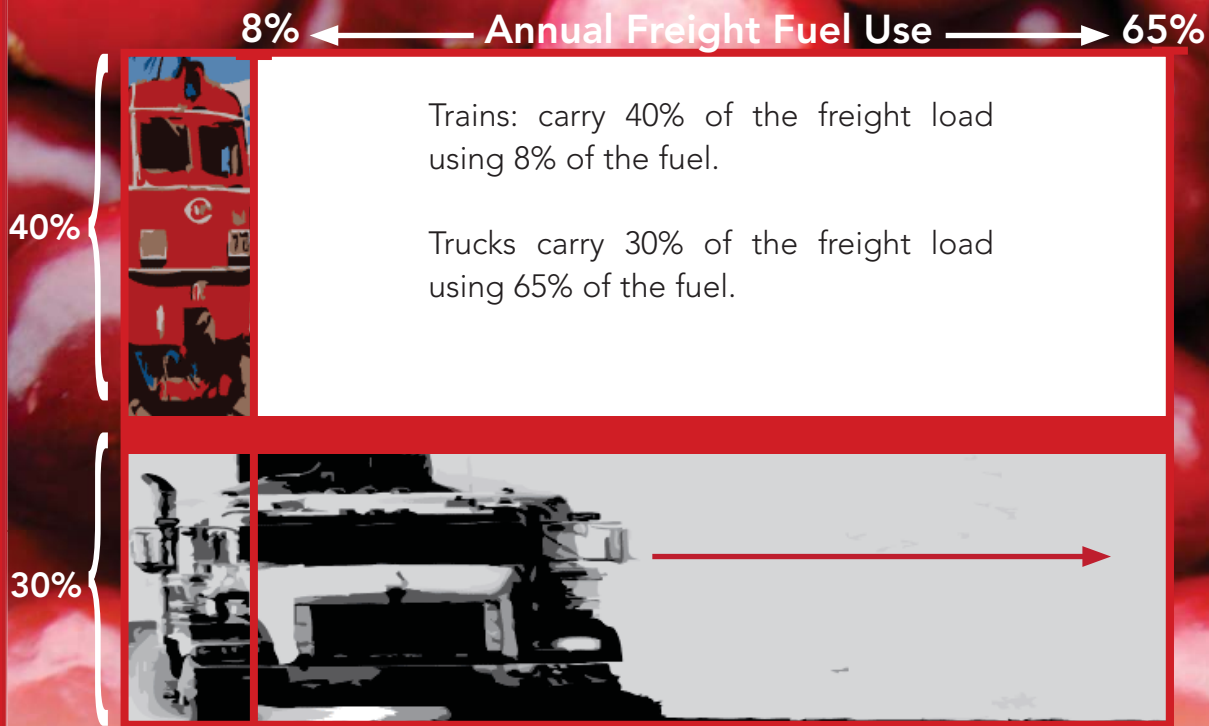
DATA AND IT

Transport companies are also employing technologies such as improved telematics: technological systems installed in trucks for measuring idle time, truck speed, and other metrics like driver behavior. They use this information to coach drivers to reduce speeds, turn engines off while loading, tweak vehicle performance, and so on.

SPREADING THE WORD

For the future, there are huge opportunities both for supply chain savings, and for companies inventing next generation tools and products.

Costing More. Getting Less



Rail has the least environmental impact of any land mode, using only one gallon of diesel fuel for moving one ton of freight over 480 miles. Many organizations are taking advantage of the benefits of rail, including the US Postal Service ([USPS](#)). A 2012 study found that the USPS could save \$100 million annually by shifting only a portion of their mail volume to rail; even more if processes and transport networks are strategically realigned to favor trains.

“The problem with rail historically,” according to Mr. Gonzalez, “is that it is less predictable; there are delays. Having that kind of variability can kill you. In more recent years the rail companies have done a much better job of providing a more consistent and reliable service, which has made companies more comfortable with long-haul shipments.”

SAVINGS

The fuel cost savings and green side-benefits associated with the kinds of strategies used by Ocean Spray are usually motivation enough for most companies to make the switch.

As Ms Hanley put it, "They offer significant and near-term reductions in costs. Examples like Ocean Spray show that the cost savings are there; the emissions reductions are there. A lot of these operational changes don't require significant upfront capital investments and you're going to see results near and long term, and you can measure these results with the right metrics."

COMMUNICATIONS

Interestingly, one of the methods for getting the word out is by appealing to the human nature of logistics managers. According to Helen Atkinson, a PR consultant for EDF and someone who's worked in the field of logistics for many years,

"The logistics department of most large companies is usually in the cupboard under the stairs: it's grubby, it's trucking and ships, and costs us money," she explains. "For the logistics department to be a source of sustainability, credibility is a really great way for them to gain clout in

the board room. It's safe to say that some of the people who worked with EDF have found this to be a career booster."

From there, word of mouth carries the message of clean, reliable supply chain savings throughout the industry. This is just one aspect of spreading the word about doing the right thing for enlightened self-interest. "That's only part of the puzzle obviously, but it's an interesting part of it."

A FUTURISTIC LOOK AT COMMERCIAL TRANSPORTATION

There are several routes that might bring some relief, before the advent of natural gas fleets and an improved infrastructure.

DRONES

Ironically, some think about the possibility of drones.

Mr. Gonzalez says there are jokes about drones becoming a means of carrying both local and long distance deliveries. Consider, for instance, if a courier

THE Green Economy
THE Green Economy
collaborative . resilient . clean . prosperous
resilient . clean . collaborative . prosperous
resilient . clean . collaborative . prosperous
collaborative . resilient . clean . prosperous



Kickstarter.

Support TGE.

For \$10 to \$10,000, become a TGE sponsor and help us reach more people with more media.

Find out how right [HERE](#).

EDF's Five Rules for More Carbon-Efficient Freight Supply Chain

- 1**. Choose the most carbon-efficient mode possible. When it comes to carbon emissions per ton-mile, planes emit 47 times more than container ships and trucks emit six times more than trains. Clearly differentiating cargo that needs to be expedited from that which doesn't is step one; other options include vendor-managed inventory and even moving final assembly closer to the client.
- 2**. Collaborate with other shippers. Are there opportunities to merge your warehouses and distribution assets with other companies? Ship products directly to the client and avoid warehousing altogether? Match "back-haul" lanes with other shippers to improve efficiency? All of these strategies are being used successfully.
- 3**. Redesign your own network for efficiency. New logistics tools can help to optimize warehouse locations, shipping routes and modal connections.
- 4**. Get the most out of each move. Set goals for trailer utilization, look for new ways to combine loads and use the best new software to optimize orders. Redesigning and consolidating packaging can also increase utilization while decreasing damage.
- 5**. Increase energy efficiency in distribution centers. These vital links account for 11 percent of the carbon footprint of goods movement. Changes to HVAC, lighting, motor controls and refrigeration can be quick payback ways to save energy and emissions.

company were to deploy drones for pin-point deliveries from a warehouse to your door.

EXISTING PUBLIC TRANSPORT

Other dreamers are working on ways to use the existing public transit network to transport goods. As the human population becomes increasingly more urbanized, congestion has an impact on local logistics. Simultaneously, many cities are upgraded with more efficient public transportation networks. As such, both subway and surface transportation systems in cities could be used in off-hours or as an add-on to existing passenger services to move goods around an urban area. This would not apply to long-haul deliveries, but could connect to rail for even more efficient local transport.

3D PRINTING

A potential game changer according to many could be 3D printing — a technology that's already receiving widespread adoption for select businesses. "3D printing may eliminate transportation altogether by basically allowing anyone to download software to print products from the comfort of home," says Gonzalez. With constantly improving 3d printing technology and the potential to use a huge variety of manufacturing materials, everyone from small manufacturers

to consumers may be able to download instructions for creating a wide variety of products – musical instruments, machining tools, children's toys, and even weapons.

Putting Star Trek aside, it's unlikely such technology will be useful for printing dried cranberries. Farm produce from companies like Ocean Spray will remain within the conventional manufacturing realm. Yet, as Mr. Gonzalez points out, humans are notoriously incapable of predicting exactly what the future will look like.

"Look at social media. Forget about 20 years ago; think of how completely different it was 5 years ago. It's been transformative. The future reality for transport will be far different than what we can possibly imagine."

LINKS:

[MIT-EDF Case Study Summary: Ocean Spray](#)

[Why we work on Supply Chain Logistics: EDF](#)

[How Big Is One Ton of Carbon?: The Green Economy.com](#)

Maryruth Belsey Priebe,
Senior Editor