FUEL FOR THOUGHT:

Strategies for Counteracting Soaring Oil Prices

by Hal Feuchtwanger

It's difficult to identify any area of business—or of life, for that matter—that hasn't been affected at some level by skyrocketing fuel prices. When the price of oil surges to record levels, businesses along every link of the supply chain feel the pain. That pain can reach crisis levels for many companies, and the first response for some is to attempt to offset these increased transportation costs by simply passing them along to their customers.

The reality, however, is that there are a multitude of strategies companies can employ to hedge against increased fuel costs to avoid the wrath of their customers, and to retain, or even improve, their competitiveness. These solutions run the gamut from simple and short-term to more complex, longer-term solutions.

Operations and equipment

Operations and equipment is the first place many fleet operators can make adjustments to reduce transportation costs. By establishing some common-sense "rules of the road," many of these companies have the potential to realize marked improvements in fuel efficiency. From an operational perspective, examples of relatively simple changes may include:

- Scheduled/routine equipment maintenance and repair
- Driver training, tracking, and incentives programs
- Engine control modules to regulate top speed, cruise speed, RPM and idle time

Additional advances in technology and equipment are also starting to generate substantial improvements in both fuel efficiency and emissions output. Many of these are being promoted within the United States as part of the EPA SmartWay Transport Partnership (www.epa.gov/smartway). Examples of these include:

- Improved aerodynamic truck/trailer designs – profiles, bumpers, fairings, etc.
- Advanced truck stop electrification
- Idle reduction technologies
- Low rolling resistance tires
- Exhaust after-treatment devices
- Alternative fuel powered vehicles

It has been estimated that a SmartWay-certified tractor-trailer combination is as much as 20 percent more fuel efficient than the average tractor-trailer combination on the road today (Environmental Protection Agency press release, "New Green Big-Rigs Cut Greenhouse Gases, Save Truckers Up To $11,000 Yearly," March 30, 2007). By the year 2012, the goal of this voluntary partnership is to save between 3.5-6.5 million gallons of diesel fuel per year, thereby eliminating 33-66 million metric tons of carbon dioxide (CO2) emissions. This initiative would represent the equivalent of removing roughly 12 million cars from the road. Some shippers are even beginning to make this partnership a prerequisite for the carriers with whom they contract.

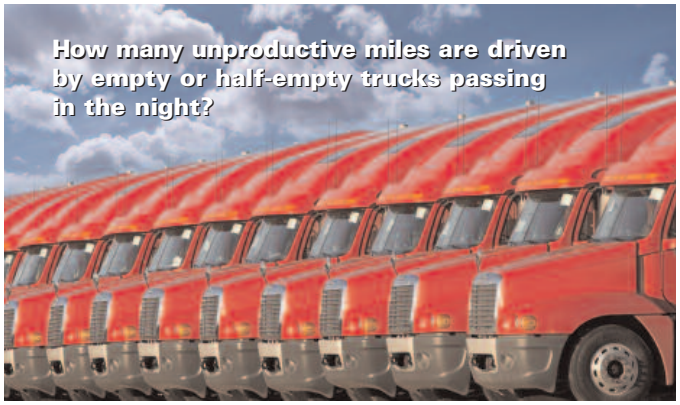
Planning and control

Driven largely by reduced manufacturing costs, companies have made dramatic moves during the past 25 years to low-cost country (LCC) manufacturing sources, particularly in China and the Asia-Pacific region. (For more on this topic, see "Private-Label Sourcing: What's Next After China," on page 4.) However, according to David Simchi-Levi of MIT, the tipping point for many companies to start looking at "near-shoring" is directly tied into the price of oil as a percentage of total supply chain costs. Once oil reaches a certain threshold, companies may benefit by sourcing closer to home. Although the manufacturing unit costs may still be higher in many cases, those costs are offset by the increased shipping costs from offshore locations. ("What is the Tipping Point for Bringing Back Production to the Domestic Market?" *Supply Chain Digest*, August 25, 2008). One of the world's largest automakers recently worked with i2 to address and exploit this particular opportunity by jointly developing a total landed cost modeling solution.

There are also significant cost savings opportunities for many companies in areas where existing transportation planning processes are not being optimized. Transportation optimization can include automated shipment and route planning, load building, intelligent shipment splitting, hub consolidation/deconsolidation, containerization, carrier mode selection and online dock scheduling. To enable these optimized transportation planning processes, companies must have the ability to control and systematically represent comprehensive transportation data. At the highest level, the three fundamental transportation data components include:

- Physical network representation (locations, business hours, business rules, constraints, etc.)
- Carrier tariff information (contracted services, equipment types, lanes, rates, etc.)
- Transactional shipment data (origin, destination, dates, dimensions, etc.)

With a world-class transportation management system, companies can utilize this information to enable an optimal transportation planning capability, as well as an efficient (and automated) freight financial/reconciliation process. And while this systematic representation of operational data is critical to supporting a robust analytics/reporting process, perhaps more important, it also feeds the more forward-looking processes of forecasting and modeling.



Projecting and sharing relevant data

Given the volatility and uncertainty inherent in today's transportation and logistics networks, world-class companies must be able to anticipate and evaluate changing business conditions—even those changes that may be beyond their control. Simply speaking, the ability to accurately project and share relevant logistics business data across partner networks increases each company's ability to plan more effectively and efficiently. For the purposes of this discussion, this capability has been defined in terms of two distinct, but related processes: forecasting and modeling.

For shippers, the forecasting process should create a projection of expected transportation demand, including total period volumes by geography, as well as likely shipment size and frequency, if possible. This forecast may be shared with carrier partners for the purposes of formulating a rough equipment capacity plan, and possibly even establishing customer-carrier commitments. While many manufacturers and consumer goods and retail companies have established technology-enabled sales forecasting and/or sales and operations planning processes, very few have a corollary shipment forecasting process, manual or otherwise.

On the carrier side, Schneider National is one of the larger companies with an established systematic shipment-level forecasting process for their top 50 customers. In fact, for many of these customers, Schneider has proven its ability to project shipment volumes and timing substantially more accurately than the shippers themselves.

Modeling normally begins by establishing a current baseline with historic network data, much like the forecasting process. And while a shipment forecast may be used as input to create a subsequent modeling scenario, the modeling solution has the ability to modify and evaluate extensive network and data changes, well beyond just the shipment forecast. In fact, modeling solutions are normally

utilized in one of two ways:

1. Network Rationalization – to create and fully represent one or more expected business scenarios across a company's supply chain network, intended to justify planned or actual network changes and commitments.

2. Contingency Planning – to create and fully represent any number of alternative business scenarios across a company's supply chain network, to formulate expected responses in the event of unexpected circumstances, variations or other unplanned network changes.

Penske and PepsiCo are just two notable examples of companies that have demonstrated success by establishing a clear internal competency and making a substantial commitment to the ongoing process of network/transportation modeling.

Visibility and collaboration

The contingency planning process discussed previously is a key method enabling leading companies to formulate and create a "predictive response" capability—or in simpler terms, a "plan B." However, to make this predictive response process actionable, those same companies must have the ability to rapidly identify the fundamental nature, or basic cause and effect, associated with the corresponding unplanned result/event.

Samsung is one example of an industry leader that has created a true global logistics visibility hub (or Control Tower, in the newest industry parlance) to enable real-time event monitoring, and more important, to identify and execute the appropriate countermeasure or quick customer response related to the unintended or unplanned event. Perhaps as significant, however, this wealth of information captured over time as part of the monitoring process is routinely analyzed and leveraged to inform and justify appropriate modifications to the process, or even to the larger network, creating a continuous feedback loop for future modeling efforts.

While there are clearly numerous examples of companies that have adopted one or more of the transportation efficiency measures outlined here (and quantified the associated benefit as a result) the reality is that most of those processes are still executed within the four walls of any organization. Rarely, if ever, do truly collaborative efforts extend beyond the orbit or ecosystem of the individual company—for example, from division to division, shipper to carrier, or shipper to supplier. And in many cases, even those efforts are often suspect, or half-hearted.

External considerations

Perhaps the biggest opportunity, and most difficult question to answer, may be, "what kind of reductions in fuel consumption and CO2 output could be realized based on expanded shipper-to-shipper, carrier-to-carrier, or even industry-to-industry collaborations?" It's hard to fathom how many unproductive miles are being run as a result of myriad empty trucks passing in the night.

External considerations

Many experts believe that unregulated speculation among large energy traders, authorized through the Commodity Futures Modernization Act in 2000, has been at least partially responsible for rising oil prices. The Food, Conservation and Energy Act of 2008 (2008 Farm Bill) gained legislative approval on May 22, 2008, overriding a presidential veto, and effectively closing the "Enron loophole." Not surprising to some, the price of oil dropped roughly $25 per barrel in the first 50 days after the bill became law.

While other regulatory actions, economic factors, geopolitical changes and even forces of nature will almost certainly continue to have both positive and negative impacts on the price of oil, those dynamics will continue to remain largely outside of a company's control. A company's ability to neutralize the effects of those kinds of events—and remain competitive in spite of them—will almost certainly depend on their willingness to embrace and adopt the kind of operational measures outlined here.

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