

The high and volatile cost of fuel, labor shortages, capacity constraints have caused transport rates to increase - a pain point for most shippers. What can shippers do to minimize the effect on their budgets? Transportation optimization software is a relatively quick way to identify and embed long-term savings in a transportation network. But buyers need to choose the solutions and the providers carefully to ensure the return on investment and user-friendliness.

Rising costs

The US transportation is unique to a degree, but some of the circumstances there are common to the transportation industry globally. Bunker and truck fuel surcharges stand at 20-25%, and there is a shortage of truck drivers, which is driving rates up and equipment availability down. Rail rates are undergoing double-digit price increases, with captive shippers getting the brunt of the increases. Trucking -both less-than-truckload and truckload - are high and will increase more next year, according to our data. Intermodal rates look like they will rise by seven to ten percent in 2008.

Ocean rates to and from American ports are also rising as the price of steel (\$28-30/ton scrap steel used for shipbuilding and containers) affects vessel and container costs. One ocean shipper's biggest surprise in 2007 was the increase in prices in shipping to Mediterranean countries like Turkey and Pakistan. For 2008, they are expecting a 20-30% increase in ocean rates to these countries.

In the parcel market, UPS Ground and UPS Standard to Canada services will increase 4.9%. Air and International express services will increase a net 4.9% (a combination of a 6.9% increase in rates and a 2% reduction in the air and international fuel surcharge.)

Solutions that can help

Many shippers' networks are not optimized. It's not anybody's fault; they have simply been built up historically and

Best solutions in SCM

David Jacoby, Boston Logistics Group



one lane has been added to another. Traffic managers are frequently too busy with day-to-day activity to spend time planning and optimizing the flows. But with a one-time commitment of time and some resources, a more cost-efficient network can be had. One way to achieve this is through software applications. Transportation optimization solutions fall into seven broad categories:

- Routing and scheduling systems
- Dispatching systems
- Communication systems
- Order verification and real-time inventory management systems
- Delivery network performance reporting systems
- Fleet management software
- Transportation management systems (TMS) that help manage multiple third parties (3PLs)

Routing and scheduling systems can offer features such as territory planning, load consolidation planning and execution, dynamic and static vehicle assignment,

routing, scheduling around time windows, mapping, and in some cases "what-if" modeling capabilities. Some vendors offer planning systems that are used only when the network configuration changes, while other vendors offer execution systems that are meant to be run every day or every time the route is run. Some systems offer both planning and dynamic execution capabilities.

Good real-time dispatching systems inevitably include some capability to balance loads, either inbound vs. outbound, or from vehicle to vehicle. Some offer the capability to edit routes manually once they are created, while others do not (in these, the routes cannot be edited once they are generated). Some high-end systems offer vehicle tracking after the route has begun, while others only allow the generation of the route itself.

Real-time tracking involves a wireless hardware device, which can be on the vehicle or on the driver, as in a handheld

Supply Chain Solution

device or PDA (personal digital assistant such as a cellphone or Blackberry). These increase the cost of the system from a simple software solution, so require a much larger budget. However, they can be balanced against the benefits of improved service and the ability to divert and change orders once the vehicle is in transit.

Order verification and reporting systems allow central dispatchers or customer service managers to see the real-time status of orders as they are delivered. Because they are tracking the package or cargo that is inside a vehicle, they can also measure the productivity of the vehicle and/or the driver. In these cases, logistics managers have the ability to get higher service levels at lower cost. Herein lies one of the key benefits of software solutions,

since without systems logistics managers have perennially faced a trade-off between higher cost or lower service - they could not get one without sacrificing the other. But with transportation management systems, they can improve both simultaneously.

Fleet management systems can monitor equipment as a whole or components of the equipment such as engine performance, fuel consumption, or tax compliance based on mileage and places driven.

Full transportation management systems (TMS) help shippers that don't own their own fleets to interface more efficiently with their transportation providers. These systems provide rating, tendering, payment, and freight bill auditing capabilities.

How to choose a system

The right choice of a system depends on factors such as fleet size, service requirements, time spent on the road versus at each stop, and the flexibility of the driver workforce to implement change. For packaged software (see classification below), shippers often experiment and find one they like. For mid-range applications, companies usually get a professional opinion from a consultant that is familiar with the systems to help evaluate the best system for their needs. High-end applications require careful consideration, and usually involve a pilot program. **D**

David Jacoby is President of Boston Logistics, a global supply chain economics consulting firm. He can be reached at djacoby@bostonlogistics.com.

Figure 1: A Taxonomy of Transportation Management Systems and Features

	Routing/Scheduling							Dispatching				Communication				Order Verif.				Reporting				Fleet Mgmt.				3PL Mgmt.				
	Territory planning	Load consolidation	Vehicle assignment	Routing/Scheduling	Mapping	Time window management	"What-if" modeling	Legacy interfaces (APIs)	Load balancing	Manual route editing	Manifest generation	Vehicle tracking	Generation of time at stop	Real-time dispatch (rushes)	Dynamic re-routing	GPS	Order status	Barcode scanning	Auto-Generation of stop	Proof of delivery (POD)	Driver performance	Carrier performance	Route/Stop performance	Vehicle performance	Engine monitoring	Fuel tax tracking	Maintenance management	Rating	Electronic load tendering	Freight payment	Freight payment auditing	
High-End	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Mid-Range	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Packaged	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Source: Boston Logistics Group, Inc.