



JDA Software Recommends Three Critical Transportation Strategies

Companies are increasingly considering their transportation and logistics operations to be a competitive differentiator. As such, demand for advanced transportation management systems is on the rise. With mounting pressure on businesses to contain costs, address capacity constraints, lower their carbon footprints and streamline movements, a flexible, agile and functionally rich transportation management system can help support their service goals. Yet, for some companies, pinpointing the optimal solution can be nearly as complex as getting the right products to the right places at the right time and at the lowest cost. One factor adding confusion to the search is the manner in which vendors use – or overuse – the term “optimization.”

For more than 15 years, transportation solution vendors have been touting the optimization power that their solutions deliver to support more sophisticated planning, execution and settlement processes. Indeed, optimization techniques are proven to drive the vast majority of the business value realized from the use of transportation management systems. However, not all optimization strategies are created equal and that's where the confusion lies.

Vendors too often focus on just one function to optimize, which can lead to more harm than good. A simplified optimization approach may lead a shipper to pick one carrier

over another simply based on cost. A comprehensive approach may reveal that the selected carrier doesn't have enough trucks or docks available to support the load in the first place.

With the transportation management system market expanding, the time has come to clarify misperceptions and reveal the best practices in optimization. Shippers must go beyond carrier selection or rates by relying on a system that addresses myriad constraints and granular functions by applying these three key principles:

Principle 1: One Size Does Not Fit All

With so many constraints and variables, transportation issues can't be solved with deterministic approaches because the problem gets too large too quickly. For the best possible answer in the shortest amount of time, companies must apply both heuristic and deterministic approaches that use a series of logical and common sense decisions along with network constraint considerations.

Transportation management systems should offer a flexible configuration that adapts to each company's unique strategies, as well as network constraints and variables. No solution should apply the same five steps for every transportation problem. The transportation management system should support a wide range of mathematical approaches, allowing the company to view the problem holis-

tically and then constantly modify those approaches based on its current needs and requirements.

Companies that follow optimization best practices constantly monitor and tune their strategies to address any changes in their networks, supply chain, market and customer demands. Capacity, for example, tends to ebb and flow with the state of the economy and shippers must be prepared to adapt their strategies to capitalize on market opportunities. Rather than just letting the transportation management system's solver run unattended, shippers must always look for ways to drive more value for their business.

Principle 2: The Details Matter

Intertwining planning and execution processes makes transportation functions unique among other supply chain functions. Shippers don't have the luxury of planning and forecasting months in advance and then balancing any variances as the shipment date gets closer. Transportation lead times could be weeks, days or even hours, making planning and execution essentially one and the same. That's why it is so critical that all of the details – from network and dock scheduling to asset capacity and granularly defined rates – are expertly modeled. The more upfront work that the engine does, the better a company's plan will be. With no second chances, shippers must make the best decisions the first time in order to efficiently execute and

Buyers' Checklist: 10 Transportation Optimization Capabilities

Whether a company spends \$10 million per year on freight or budgets hundreds of millions of dollars for a multi-modal, global logistics network, that organization must invest in a transportation management system that meets its existing and future needs. That means selecting a partner that delivers functional breadth and depth along with flexibility, scalability and expertise. To set companies on the right path, JDA Software offers its list of top 10 optimization capabilities to more effectively contain costs, reduce miles and increase utilization efficiency.

1. Adjust heuristics and strategies to drive value specific to the network
2. Evaluate actual and not representative carriers' rates, including assessorial charges
3. Create a detailed network schedule that accounts for the varying transit measurements across modes
4. Model dock capacity and create a detailed dock schedule
5. Enable the concurrent modeling of private and dedicated assets with commercial freight, including domiciles, tractors and trailers
6. Maximize loading efficiency by leveraging containerization algorithms
7. Iteratively plan across a continuum of time
8. Consider asset capacity and commitment constraints across multiple optimizations
9. Support the dynamic consideration of concurrent routing strategies, including multiple hub routing, multi-pick and drop, as well as continuous moves
10. Solve large-scale volumes across an entire network and over a wide time horizon within a reasonable timeframe

maximize value.

Ensuring accuracy and visibility into all of the details also confirms that a company is not missing opportunities to get the same results at lower overall costs. For example, in general truckload routing, a business will incur distance, mileage and stop charges, as well as fees for incidentals such as a lift gate. Upfront visibility into those requirements is essential. If a company is planning a move consisting of three orders, it is far more cost effective to spread the lift-gate charge across three stops than to plan a move with only one stop.

A company must also have details into the load that it is moving. While pallets are straightforward enough, what if the load contains loose and oddly shaped products? Rather than making assumptions that can lead to added costs and stoppages, the company needs containerization capabilities to model the load at a finer level of granularity.

Principle 3: Concurrency Is King

Shippers must rely on an optimization engine that considers all elements of the problem – the strategies, details and levels of granularity – at the same time in order to produce the best answer. Engines that break up the problem or handle requirements in a sequence will not deliver optimal results and could even lead to costly problems.

For example, there is one transportation management system currently on the market that relies on representative rates in order to optimize loads. This system then considers the detailed rating and carrier

selection as a second step. This flawed approach could result in building a bad load in step one by not taking into consideration all of the details up front. When the shipper moves to step two, it could be rating and finding the lowest cost carrier of a bad load. The right approach in this scenario is to consider rating concurrently as the optimization engine is running through its routing strategies. Companies that are using a best-practice transportation management system can consider all aspects of the problem concurrently, including rating, routing, scheduling and capacity constraints.

Another optimization best practice is to take an iterative approach across a continuum of time. As shippers receive new information and orders, they should use that knowledge to incrementally improve the plan each day. While a company may receive and optimize 1,000 orders on a particular day, only a portion of those orders typically needs to be executed that same day in order to meet customer requirements. The shipper should add the remaining orders to its planning bucket and mix those orders with existing and new ones.

Throughout the process of constantly adjusting and incrementally optimizing the orders to be executed, shippers must have visibility across time into the orders that they have already executed. This enables them to continually refine any network constraints or carrier commitments. It also ensures that they have the required resources to realize their service goals as efficiently and effectively as possible.