PUTTING CONTINUOUS POOL OPTIMIZATION TO WORK IN THE SUPPLY CHAIN

How continuous pool optimization
is helping companies work smarter and more profitably
in today's fast-spinning logistics environment.

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Logistics MANAGEMENT

MANAGING FREIGHT IS AN EXPENSIVE, resource-intensive task. In today's omni-channel, multiphase distribution environment, it's no longer enough to simply load pallets onto a truck and ship them from point A to point B via a common carrier. And the process isn't getting any easier, what with global e-commerce sales continuing to proliferate (to the tune of $4.5 trillion by 2021) and the competition for vehicles, drivers and lanes intensifying every year.

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To offset these and other transportation-related challenges, Bart De Muynck, research director-transportation technology at Gartner, is seeing more companies using freight pooling (i.e., when shipments are combined to create a full truckload shipment out to a pool distribution facility that serves a certain geographic area) and cross-docking to manage their multiphase transportation operations. Positioned closer to the end customer, these pool and cross-dock operations not only impact the actual transportation component, but also the warehouse and yard operations.

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"This certainly creates more complexities from a transportation perspective," says De Muynck, who sees continuous pool optimization as a viable solution to these and other difficulties that are rearing their heads in this high-velocity, smaller-order environment.

With continuous pool optimization, shippers can plan shipments to a consolidation point by pre-determining a specific location or by allowing an algorithm to dynamically determine the optimal consolidation facility. The continuous pool optimization feature in 3Gtms, for example, identifies the best pool point (i.e., a warehouse or cross dock), in a company's freight network to route a daily mix of inbound freight on truckload or less-than-truckloads (LTL) to plan loads for delivery.

These routes can then be "split," thus enabling the execution of multiple movements into consolidation while delaying the determination of the outbound routing until more freight accumulates at the pool location (or, when time limits require the freight to be released from the pool).

Then, outbound routing from the consolidation facility can be executed independently—but with consideration—of the inbound movement while still maintaining a single order for each leg of the journey. De Muynck says continuous pool optimization is unique because it allows shippers to optimize their transportation operations without having to know exactly what's going to happen in advance.

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Over the next few pages, we'll discuss the key issues that shippers and 3PLs are grappling with in the multichannel distribution environment and show how continuous pool optimization can help them work better, smarter and faster while more efficiently meeting their customers' needs.

Deep logic for dealing with complex freight scenarios

As he looks around at how shippers are managing their transportation operations, JP Wiggins, vice president of logistics at 3Gtms, sees a lot of room for improvement. And while retailers, manufacturers and distributors may feel like they're doing the best they can to operate efficiently and profitably in the current environment, there are still many opportunities out there to optimize and improve upon those efforts.

Shippers feel like they are doing the best, but many of them have not looked at the modern technology that is now available to them. There are now tools developed in the last year or two that allow creativity in routing, improvements in operations and provide more cost savings and better customer service.

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Continuous pool optimization allows shippers to be creative in designing a dynamic distribution model that optimizes itself in real time. Consider the manufacturer that's based in Milwaukee and that needs to ship freight to Tampa. And let's say it's Tuesday, and that the company doesn't have enough freight to fill a truckload, but it does have customers in Florida that are awaiting their deliveries.

The manufacturer could ship the half-empty truck down south, wait until it does have a truckload, or utilize continuous pool optimization and plan its shipments to a consolidation point. Then, using the 3Gtms platform, it can dynamically determine the optimal consolidation facility and get its shipments into its customers' hands as fast, cost-effectively, and efficiently as possible. For example, some orders can go through a DC or a terminal because the shipper has time to choose either option (or even add stops in transit), while always choosing the most cost-efficient method.

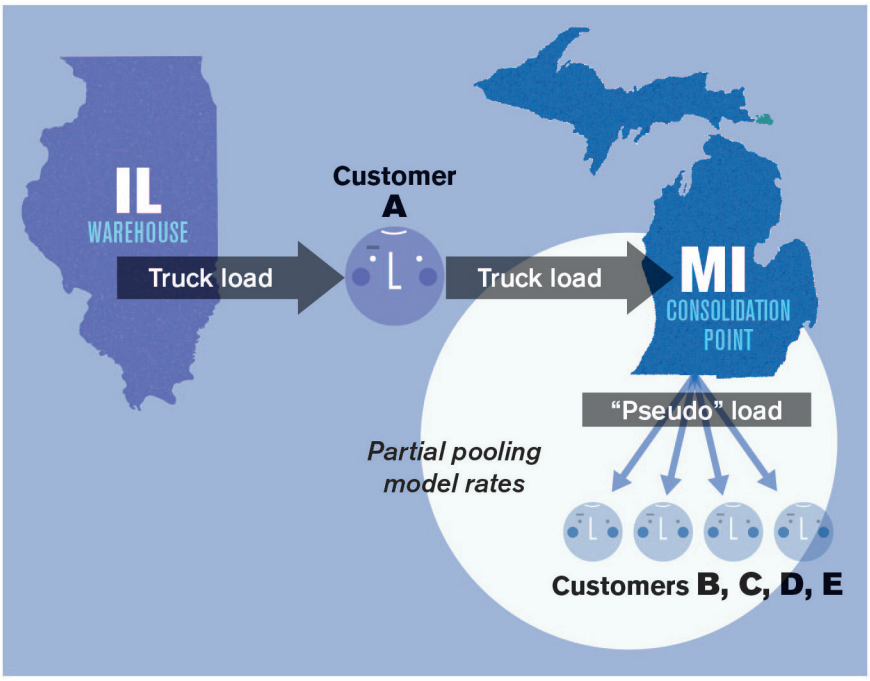
Make no mistake, this isn't the kind of optimization that a typical transportation management system (TMS) offers. "Traditional TMS must route freight to the final destination. The key breakthrough is to be able to route it in pieces, as the first pass only routes it to an intermediate point," Wiggins points out, "and regardless of the optimization opportunities."

Calling 3Gtms' continuous pool optimization capabilities "very advanced," De Muynck says that TMS as a whole tends to focus on order execution, but only once all of the key variables have been determined (e.g., what's my load? How big is it? Where is it going? Where is it coming from? What are the ship dates?).

"Those systems lack the complex logic to be able to deal with advanced optimization," says De Muynck. "On the other hand, 3Gtms serves as a good combination of a newer solution that's more user-friendly to work with but, at the same time still has the deep logic needed to deal with very complex freight scenarios."

Continuous Pool Optimization:

- Enables the algorithm to dynamically determine the optimal routing of a set of orders through consolidation points.
- Unlike a pool or cross-dock locations, consolidation points allow product to be held for a period of time at the location for future consolidation with other orders that are either already at the consolidation point or will arrive in the future.
- While the full scope of orders available for consolidation out of the through-point may not be known at the time, the algorithm uses "model rates" to determine a pro-rata cost for the movement out of the consolidation point while using actual carriers and rates for the movement in, to make its pooling decision.
- Handling time and costs at the consolidation point are also included in the decision process.
- Movement into consolidation points are planned as "real," executable loads.
- Movement out of consolidation point are planned as "model" loads and are not executable.
- Once the planner has reviewed and accepted the route plan, the route can then be "split" at the consolidation point.



The classic consolidation conundrum…solved

When shippers utilize consolidation points or DCs to optimize their transportation options—and their warehouse facilities and yards—they are effectively optimizing a part of the supply chain that has been traditionally overlooked or ignored. Discerning between a cross-dock (which doesn't "hold" inventory) and a DC (which does), Wiggins says continuous pool optimization leverages both, depending on the shipper in question.

The manufacturer of household appliances, for instance, is probably shipping goods to customers like Home Depot and Lowe's. If those products are being manufactured in St. Louis and then shipped throughout the southeast region of the U.S., they can either be sent right to a Lowe's store or delivered to the retailer's DC (in the specific geographic region). If the latter is the most logical choice for a particular shipment, then the products have to be put into inventory and then delivered directly to the Lowe's or Home Depot store.

"It's the classic consolidation conundrum: Do you go through the DC—effectively consolidating freight from different locations to make a single delivery—or just go direct to the store's door?" Wiggins asks. Continuous pool optimization, on the other hand, allows companies to leverage dynamic consolidation. By allowing shippers to "hold" freight and store inventory at a DC, this approach enables a more streamlined, creative logistics strategy and enables dynamic decision making in today's fast-paced distribution environment.

By giving shippers the "total cost of ownership" of various shipping options, continuous pool optimization is helping them tackle their most pressing e-commerce and omni-channel challenges. In a world where the end user is placing orders more frequently, in irregular order quantities (right down to the shipment of a single pencil or tube of Chapstick), and at the last minute, for example, shippers start to see the benefits not long after implementing optimization techniques.

"The days of ordering full truckload quantity on a scheduled basis are gone," says Wiggins. "Customers are now expecting quicker deliveries, faster options, more timely deliveries, and more visibility over the entire delivery process. As a result, shippers need to be more creative about how they manage the transportation component."

For companies that are fulfilling orders, that means being able to offer more options to customers (e.g., same-day, next-day, 2-day, etc.) supported by transportation modes like full truckload, multi-stop truckload, pool distribution, and continuous pool—all of which must be optimized for maximum efficiency and productivity. "Right now, a lot of companies are just forcing freight into the DC via routing guides and then ignoring it," says Wiggins. "They're not optimizing or doing calculations on it. They're just saying, 'You're dead to me, bye' and moving on."

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Optimization is a real game-changer

Anytime you can add a layer of creativity to a process, it just gets better. Even age-old transportation techniques like routing and scheduling can benefit from a fresh look and some ingenuity, as 3Gtms has proven with its advanced optimization solutions. As logistics managers begin to realize this, Wiggins expects even more shippers to explore optimization as a viable, affordable way to meet the needs of the expanding e-commerce and multi-channel distribution environment.

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"Third party logistics providers and shippers alike need new and innovative ways to move freight that don't even exist today," says Wiggins, who sees optimization as more of a "must have" and less of a "nice to have" for companies that want to maintain market share, keep their customers happy, and grow their bottom lines.

"As the end customers' freight patterns shift, shippers and 3PLs will need to have this tool in their arsenals," adds Wiggins. "Shippers need optimization tools that can take advantage of any and all options that logistics managers can think of. TMSs need to be enablers of the creativity and continuous pool optimization enables creativity that other TMSs cannot."

About 3Gtms

3Gtms is the fastest growing, Tier-1 transportation management system (TMS) provider. It is dedicated to helping mid to large shippers and logistics service providers gain a competitive advantage through technology. Whether you move $5 million or $5 billion in freight, its 3G-TM solution seamlessly manages the full transportation lifecycle, including transportation planning and optimization, execution and settlement, empowering customers to make better shipping decisions while meeting their service goals. 3Gtms is dedicated to delighting its customers and as a result, holds a 100 percent customer satisfaction rate that is unmatched in the industry.

For more information, visit: www.3gtms.com.

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