Tear Down This Wall!

Part 3 of 3: How to Put Purchasing and Logistics Collaboration into Action

ArrowStream

Collaboration in action

How to create collaboration between Purchasing and Logistics

This whitepaper is the third in a three-part series describing how supply chain organizations can achieve greater savings through effective, technology-enabled collaboration between Purchasing and Logistics. Part 1, “The Untapped Power of Purchasing and Logistics Collaboration,” introduced a new way for Purchasing and Logistics to work together, focusing on opportunities and challenges that supply chain organizations face in this collaborative approach.

Part 2, “Sizing the Savings Opportunity in Purchasing and Logistics Collaboration,” showed how to quantify the savings available through this approach.

Part 3, “How to Put Purchasing and Logistics Collaboration into Action,” describes the processes and technologies required to capture these savings.

From Silos to Collaboration

In the supply chain, the sum can truly be greater than the parts. When Purchasing and Logistics move beyond a disconnected, upstream/downstream relationship, the game changes. Collaboration of both ordering and shipment routing, results in an optimized product flow achieving a 7-10% freight cost reduction, while maintaining or even reducing inventory levels. That's a wall worth tearing down.

Parts 1 and 2 of this series examined and quantified the savings potential. The final part of the series focuses on how to get it done. We walk through the changes required from order through delivery and answer some key questions along the way including:

- What is involved in the planning process, and when does it occur?
- How is the plan embedded in the execution of orders and shipments? What are the points of interaction between Purchasing and Logistics?
- How do savings based on planned order patterns survive in a dynamic replenishment environment?
- How will roles and responsibilities change? Is a major organizational re-alignment required?
- What technology capabilities are necessary?
- How do I measure results?

ArrowStream Crossbow™ serves as our technology example as we discuss the required systems for this collaborative approach. Crossbow is a software suite based specifically upon the approach outlined in this series.

At a summary level, the changes required in implementing this approach are manageable. While there are necessary systems and procedures that are critical to the success of this unique approach, one of the greatest benefits when implementing, is that it leverages rather than replaces the organization's already made investments in technology and people. After all, the point of collaboration in the supply chain is not to change the operations of each individual function, but to connect and align them around a shared set of objectives that matter to the organization as a whole.

Nevertheless, a realignment of objectives is a shift in mindset, so there will be change management required to get there. People and systems will execute their pieces of the supply chain in fundamentally the same way they do today, but in the context of a plan that will elevate the impact. It will be important for everyone to understand the new rules of this initiative and how each part affects the success of the holistic strategy. If the parts do not, the goal will not be achieved, even with the best of intentions.

This is a classic change management challenge, and there are methodologies and consultancies well-positioned to help address and implement collaboration in a supply chain.

We begin with a summary of the process to be layered upon existing operations and follow with a more detailed look at each of the three critical implementation points in the order-to-delivery lifecycle.

Please Note: The operational process mapped out in the following sections pertains to an organization that is managing both the replenishment and transportation of products into one or more facilities. With some variation, the approach can also be applicable and compelling for the planning of outbound delivery of products, and for a third-party logistics company managing freight for its customers. We will address those scenarios briefly in the concluding section.

Closing the Order-to-Delivery Loop

While the details can vary from company to company, a typical order-to-delivery process within an organization managing both the replenishment and transportation of products breaks into the following operational workflow:

- A near-term demand picture is identified
- The Purchasing team, with the aid of a replenishment system, uses this demand picture, item information, and current inventory levels to generate a purchase order for product that protects against stock-outs and inventory obsolescence while keeping inventory levels as low as possible and achieving the most favorable pricing tier
- The order is sent to the Logistics team, typically directly into a transportation management system (TMS)
- The shipment is planned, leveraging consolidation opportunities and available carrier rates to deliver the product at the lowest cost while meeting service requirements
- The shipment is tendered to a carrier, tracked, and received

Traditional collaboration across these activities could take many forms, such as improved communication with carriers to achieve better shipment visibility or better planning between logistics and warehouse operations to breed dock efficiency. Here, we are after a different and much bigger objective: *The Optimal Product Flow.*

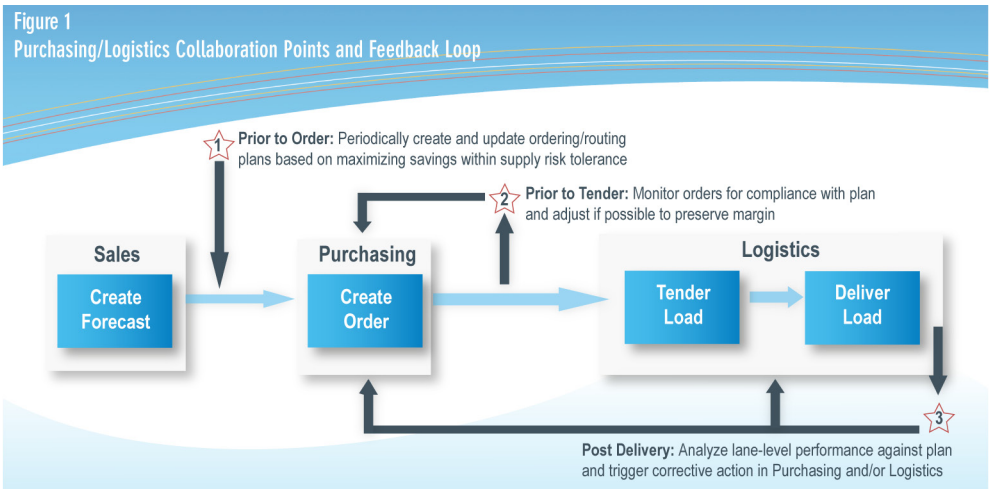
More specifically, the goal is to leverage the full flexibility of both order generation and shipment routing to achieve a far greater utilization of carrier equipment.

The approach implements a continuous ongoing planning layer over the order-to-delivery cycle and creates a closed-loop system of monitoring and continuous improvement that will ensure that purchase order execution is aligned to the plan wherever possible. Both sides are essential to success.

These elements are applied to the order-to-delivery cycle at three distinct junctures:

- Prior to Order
- Prior to Tender
- Post-Delivery

Figure 1 depicts the order-to-delivery cycle with these new points of collaboration identified by starred sequence numbers.



This particular approach creates several critical advantages that are necessary to a meaningful collaboration program:

- A constant, current holistic vision of the optimal achievable product flow
- A set of targets against which all actions can be measured
- Immediate, in-process corrective action
- A closed feedback loop to lock in a cycle of continuous improvement

This cycle forms the connective tissue that is necessary not only between purchasing and logistics operations and personnel, but also between supply chain planning and execution. Existing systems and processes are complemented, not replaced. Buyers still place the orders using existing replenishment systems. Logistics Planners still plan the routes using existing TMS capabilities. What has changed is that their actions, once disconnected, are now directed toward a common goal.

Let's take a close look at each of the three junctures that this collaboration thrives in.

Prior to Order

The most expedient way to adjust order patterns and set routing guidelines is with a pro-active, planning-based approach before the orders are even placed. This periodic planning process is performed to the side of the existing buying and freight execution sequence.

It is technically possible to avoid planning altogether, generating replenishment orders systematically that consider all logistics options and impacts. However, in practice, this method proves costly by eliminating the opportunity to examine routing decisions prior to allowing them to impact order patterns. One could think of it as optimization without collaboration. Just as buyers need the ability to counteract estimated order quantities, logistics personnel must have input into more complicated routing decisions. A planning-based approach allows this collaboration to occur and does so with a minimum of systems and process turnover.

In this collaborative replenishment and transportation environment, a software solution is leveraged to periodically examine demand requirements, based on recent order history, updated with any seasonal or other demand forecasting information. This process might run once a week, once a month, or in some cases more or less frequently– the frequency depends on network volatility and how tightly the organization wants to manage the ordering guidelines to support the highest profitability.

In order for this optimization process to identify not only profitable ordering and routing scenarios available for each lane, but also consider a range of operational limitations in putting forward solutions that actually work, good, clean data is necessary. This baseline of data generally includes: order history, forecast information, shipping point details, SKU-level product attributes, and carrier rates.

However, there is no need to strive for perfection in data quality. One of the benefits of the planning-based approach is that solutions will go through a feasibility check before being enacted. This checkpoint can provide a degree of cover for data gaps.

Business constraints are applied at a global level, as well as at a shipping lane, supplier, and item level to mark the boundaries of feasibility. Examples of typical constraints include, but are not limited to, allowable equipment types, weight, cube and pallet restrictions, and limitations on stops and out-of-route miles. Since replenishment patterns are under scrutiny, other constraints come into play that are atypical to a logistics optimization engine: shelf-life restrictions and inventory build-up or depletion limiters.

Since this occurs prior to order, the output of this optimization process is not orders or loads. It is a set of guidelines on how to purchase and route product. Guidelines include recommendations on order size, frequency, and timing, all of which are used to set up ideal consolidation solutions. The optimization technology should account for the opportunities available to your network by leveraging multiple routing models. The models would include simple one-way moves and also consolidation routes (multiple pickups and/or deliveries), but might also include backhaul opportunities and fleet utilization, continuous moves, and cross-dock or pooling scenarios. Unless it is easily compartmentalized, no significant avenue for savings should be ignored or else you risk exchanging one linear, suboptimal decision-making process for another.

A process is implemented to review, approve, and "publish" these guidelines. This process would ideally involve software-supported workflow to track agreement from both Logistics and Purchasing and signoff on the savings and inventory impact for each solution. Once published, the guidelines are fed to purchasing for adoption during the replenishment process. Most robust purchasing systems can accept the types of parameters required, but some buying organizations will be more comfortable using them in a more manual fashion.

In addition to ordering guidelines, profitability expectations are produced for each solution, to be used as targets to measure the performance of actual orders and shipments.

With technology at its core, the proactive planning process is not resource-intensive. The first time it is run, the entire network will be under review, and the list of solutions to assess is quite long. From that point forward, the full network is included in the optimization process, but only the resulting solutions that are new or changed need approval. This list is typically manageable, on the order of 2% to 5% of total freight lanes on a monthly basis, even in large-scale networks.

In fact, the overall resource impact of this approach can be very favorable. Today, many organizations leverage optimization technology within their selected TMS solution to select routing for freight just prior to load tender. The simpler solutions that emerge from this route optimization can largely be tendered with little oversight. However, freight planners often find that they need to review all suggested consolidations that emerge from these tools to ensure feasibility. Despite the promise of automation, too many business exceptions exist to permit hands-off freight routing.

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In contrast, an up-front planning approach seeks to smooth and standardize purchase orders, so that route determination more often follows a plan that has already been vetted by both Purchasing and Logistics personnel. In an environment of collaboration between these teams, daily exception management at the point of freight execution is significantly reduced in favor of a more efficient, proactive planning regimen.

There is another game-changing benefit of this approach that must be noted: the planning function can and should be leveraged to examine freight that is not yet under management. When a freight allowance is known or can be benchmarked, supplier-managed freight can be examined side-by-side with lanes under management today. While only mentioned here briefly, this "what-if" analysis is a tremendous opportunity for some organizations, completely separate from the 7-10% total freight cost reduction stated earlier. Significant added revenue growth can be achieved by finding new lanes to manage that fit well with your network. In many instances, these are lanes previously ignored as unprofitable when order pattern changes were not considered.

Prior to Tender

Lasting success in any collaboration activity requires more than just a joint planning

function. A closed feedback loop is essential to monitor compliance to plan and support timely corrective action between both teams.

Since this solution is premised on moving logistics considerations upstream, it is possible within this model to go even further: to trigger immediate, in-process corrective action to recapture load profitability before it is even lost (i.e. shipped).

This immediate trigger and corrective action plan can be implemented by leveraging exception management technology to highlight non-compliant purchase orders as soon as they are created, and facilitate communication between load planners and buyers to revise the order before it is built into a shipment and tendered.

The importance of this opportunity to revise the order before it is built into a shipment cannot be overstated. With compliance issues corrected as they occur, rather than after the fact, history shows that organizations can transition from new process introduction to an extremely high compliance rate within as little as a single month, even in a distributed organization.

"The final step in the closed-loop process is trend reporting at a lane level and root-cause analysis on the margin of delivered loads."

There is no need for this process to interrupt the automated flow of orders to a TMS system, as long as the compliance alerts are acted upon before the tender occurs. The proper flow can typically be accomplished through simple process timing (checking compliance alerts prior to running the load creation process in the TMS).

Not all instances of non-compliance will require action. Some will arise from unanticipated inventory needs. Some will be close enough to target thresholds that a decision can be made to allow the order to proceed as-is. Some will simply highlight that a plan needs to be changed for future orders to reflect new realities. To facilitate this decision-making process on the part of the buyer, it will be important to identify the reason for non-compliance and the profitability impact (dollar variance from target) through the compliance exception alert. Additionally, it is helpful to log reason codes whenever a non-compliant order is allowed through to enable ongoing performance measurement and continuous improvement.

An important effect takes place in the interaction between this "soft checkpoint" ("soft" because orders are not automatically adjusted to be compliant) and the ongoing re-assessment of plans discussed earlier. The two processes enable a product flow that has the benefit of being optimally planned while also remaining sensitive to the changing needs of a dynamic supply network. Compliance exceptions are used not only to correct orders, but to bring to the surface new operational realities that trigger updates to the plans themselves. In this way, supply chain planning and supply chain execution are tightly bound – something that it is as rare as it is necessary in operations optimization.

Post-Delivery

The final step in the closed-loop process is trend reporting at a lane level and root-cause analysis on the margin of delivered loads. As valuable as in-the-moment corrective action can be, successful collaboration and closed-loop continuous improvement requires monitoring of macro-level trends that are draining freight savings over the course of days, weeks, or months.

A host of factors can reduce load profitability from the targets set during planning, including freight allowance changes, order size fluctuations, and product mix on the revenue side, and secondary carrier usage, fuel rate changes, and unplanned accessorial charges on the load cost side. Deep, directed visibility and drill-down root-cause analysis into these drivers are essential for any inbound freight management team (even those not taking this approach in full). This visibility should be complemented by a tracked workflow process to ensure that the response is quick and effective.

Be warned that existing TMS solutions largely neglect freight margin analysis. A few

will carry PO-level revenue through to reporting, but will not measure the impact of item mix or to drive margin analysis to the SKU-level. Without the capability to perform detailed root-cause analysis into both revenue and cost movement, inbound freight management teams will struggle to maintain a rigorous focus on sustaining savings.

The good news is that the information to support this post-delivery function can generally be drawn from existing systems. The analytics and corrective action workflow can be conducted through software tools as a layer around an existing TMS, just as the planning and pre-tender functions described above.

An Expanding Frontier

The market is just beginning to understand the magnitude of savings available in supply chain collaboration technologies. Much of the focus today is on collaboration within the four walls. As connectivity between trading partners continues to expand, expect this data visibility to be leveraged by technologies that span the supply chain, from raw material supplier through distribution to point-of-sale. There will be bumps in the road. There will be collaboration that fails because it is unmeasured or because it does not contain a closed feedback loop. There will be collaboration that fails because it asks only of one side, or delivers value only to the other.

This whitepaper makes the case for collaboration where it is eminently achievable: between two functions in the same organization that are already connected through technology and where the act of merging core objectives and connecting processes can deliver tangible, impactful savings to both sides.

Looking beyond the four walls of a single organization, two additional applications of this approach stand out as achievable and high-impact across two partners in the supply chain.

First, for Manufacturers in a VMI (Vendor-Managed Inventory) relationship with customers, the model will examine outbound freight across customers to implement a replenishment pattern that is far more efficient than traditional one-customer-at-a-time VMI planning. For non-VMI customers with predictable demand, since the new product flow often means that smaller orders are sometimes more efficient, the model relaxes the need to incentivize customers to order in full truckload quantities.

Second is in the Third-Party Logistics (3PL) space. As supply chains continue to break down the wall between Purchasing and Logistics, companies will increasingly ask their 3PL partners to recommend replenishment patterns that can further reduce their total freight costs. Through this model, a 3PL can give this direction, and play a more active, collaborative role in helping their customers reduce costs.

Some will see the approach as a paradigm shift and with a paradigm shift will come skepticism over the size of the opportunity, the feasibility of implementation, or the risk to supply. The summary conclusion of this whitepaper is to suggest that the prize might be bigger than expected.

In the end, if seeking justification to examine your own freight network along these lines, simply remember that perspective is driven primarily by where you happen to start. If a fully collaborative organization with synchronized decision-making was suddenly forced to divide into discretely optimized silos with conflicting incentives, the response would be swift and loud:

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About ArrowStream

ArrowStream is a leading provider of dynamic and results-driven Software-as-a-Service (SaaS) supply chain management technology. Our proven supply chain solutions give businesses end-to-end, real-time supply chain data and visibility that better informs strategic decision-making, improves operations and reduces costs.

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