Inbound Transportation Management: Industry Best Practices

As highlighted in the February 2010 Aberdeen study, *Transportation Procurement and Payment: Gain Control over Spend*, transportation inbound management is growing in both importance and scale as more companies (about 60%) have expanded, or have plans to expand, their global transportation network to accommodate import shipments from other countries. In response to this trend, there is an increased interest in gaining visibility and control over inbound freight. This document will explore the benefits and challenges common to inbound transportation management. Processes, solutions, performance results, and best practices will be examined across companies of varying size and maturity.

**Inbound Transportation Management Grows in Relevance and Adoption**

Between June and July 2010, Aberdeen surveyed 181 companies and documented their processes and capabilities regarding international transportation. The July report, *International Transportation: Optimize Cost and Service in a Global Market*, highlights a growing focus on inbound transportation management.

Customer demands for high delivery performance, and the increased demand for accurate delivery status information, are driving the need to ensure shipment integrity and enhance internal/external communications across the entire supply chain. In the past, many organizations were blind to shipment details within the transportation pipeline. Inbound transportation is particularly troublesome since shipments are often in the hands of trading partners, carriers, or suppliers; severely limiting visibility. With low country sourcing, the amount of inbound transportation spend is increasing faster than ever before and companies are clamoring to gain visibility and control over inbound costs.

The focus of this document is on companies that have realized the significance of gaining more visibility and control of inbound transportation. These companies have looked beyond their internal capabilities and systems and have successfully partnered with a solution provider or a managed services provider to enhance their processes. The research findings and case studies presented in this Analyst Insight underscore the value and growing relevance that 1) dynamic supply chain optimization capabilities, and 2) near real-time visibility to detailed supply chain events play in successfully managing inbound transportation.
Business Context: The Pressure to address Inbound Transportation rises with increased inbound volume

For purposes of this Analyst Insight we took a look at the top 30% of companies with inbound volumes. This group of 53 companies were the top performing companies with the highest percentages of control of their inbound freight. Overall these companies have a weighted average of 60% of their inbound freight under control or management. The results (on the key Best-in-Class metrics defined in the sidebar) of this class of companies in relation to their peers is found in Table 1.

Table 1: Performance Gaps- Inbound controlled vs, Others

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Inbound Controlled (n=53, Top 30% inbound)</th>
<th>Best-in-Class (n=37, best performers)</th>
<th>All Others (n=144, all others)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spend Trend: Transportation</td>
<td>-6.14%</td>
<td>-8.71%</td>
<td>2.23%</td>
</tr>
<tr>
<td>Spend Ratio: Transportation Annual Percent Spend</td>
<td>3.29%</td>
<td>2.38%</td>
<td>11.38%</td>
</tr>
<tr>
<td>Shipment Integrity: On-time and complete</td>
<td>96.94%</td>
<td>97.18%</td>
<td>92.83%</td>
</tr>
<tr>
<td>Inbound Trans percent controlled</td>
<td>60.00%</td>
<td>54.67%</td>
<td>54.87%</td>
</tr>
<tr>
<td>Percent Respondents</td>
<td>30%</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>Respondents</td>
<td>53</td>
<td>37</td>
<td>144</td>
</tr>
</tbody>
</table>

Why is the level of control over inbound freight significant? Over 80% of all companies in the study have imports - and the need to gain control over shipment status and cost to this inbound volume is a key requirement (cited by over 60% of companies). Having more volume and control of inbound freight results in a shift in the priority of “transportation management/cost focus” more heavily to the inbound, rather than the outbound, side of transportation.

Regardless of the specific enterprise involved, 56% of companies overall cite the internal top management pressure to reduce transportation costs as their key operating pressure with external concerns for increased supply chain volatility coming in second (36% of all respondents).

Overall the pressures companies feel regarding transportation are similar across all groups (Figure 1). However, companies in the top 30% with highest inbound transportation under control deviate from their peers in the response to inbound volatility (the second ranked item).
Figure 1: The Pressure to Improve Transportation

- Increasing cost and service impact of transportation on overall supply chain: 53% Top 30% with Inbound, 58% All Others
- Increased supply chain volatility (shifts in lead-times, inventory or volume): 42% Top 30% with Inbound, 34% All Others
- Increased customer demands (improved cycle times or delivery performance): 26% Top 30% with Inbound, 37% All Others
- Expanded complexities (i.e., number of countries, transport modes, or volumes): 25% Top 30% with Inbound, 21% All Others

Source: Aberdeen Group, July 2010

When asked about their capabilities to respond to both the **external inbound supply chain volatility** and/or the **internal or top management cost pressures** around transportation management, most companies are planning to take similar actions (Figure 2).

Figure 2: Key Actions to Improve Transportation Management

- Renegotiate cost/service contracts with 3PLs, suppliers, and trading partners: 44% Top 30% with Inbound, 56% All Others
- Rationalize the numbers of trading partners (suppliers, carriers, brokers): 29% Top 30% with Inbound, 40% All Others
- Fully integrate Transportation Management internally: 31% Top 30% with Inbound, 40% All Others
- Develop event management capability to reroute/rebalance in-transit: 13% Top 30% with Inbound, 13% All Others

Source: Aberdeen Group, July 2010

Here again, however, we see that top ranked companies (best performing 30% of enterprises with inbound transportation under control) are more focused on their inbound supply chains.
Pressures and Actions Deviate with the Degree of Inbound Transportation under Control

Customer demands for high delivery performance (27% to 35% in Figure 1) and the increased demand for accurate delivery status and cost information is driving the need to insure shipment integrity and enhance internal/external communications across the entire supply chain. In the past, many organizations were blind to shipment details within the transportation pipeline. Inbound transportation is particularly troublesome since shipments are often in the hands of trading partners, carriers, or suppliers; severely limiting visibility. Along with demands for new levels of visibility, (45% of all respondents indicate they currently use supply chain visibility software) there are new demands from other internal groups to have visibility into this information. Along with the increased demands for visibility and the increasing costs of inbound transportation comes an increased focus on inbound transportation management.

Companies with highest percentages of inbound freight under control are:

- With respect to **inbound pressures** - 1.2 times as likely as all others to rank “supply chain volatility” as a top pressure (42% vs. 32% for all others)
- With respect to **inbound strategic actions** - 1.4 times as likely as all others to rank “rationalizing the numbers of trading partners (suppliers, carriers, brokers)” as a top action (40% vs. 29% for all others)

Since inbound transportation, particularly from overseas, is typically more costly the increased focus on inbound transportation and inbound consolidation is not surprising. We will next explore ways these companies are enhancing their people, process and technology to address and optimize their inbound transportation.

Centralized Transportation Visibility, Access, and Performance Management

When asked about their capabilities to respond to both the **external market pressures** and/or the **internal or top management pressures** around optimizing inbound transportation, most companies are investing in processes to gain visibility and shared access to inbound modes and volumes.

It is the level of sharing of and visibility to detailed knowledge and its ease of integration into a centrally shared view across the extended inbound supply chain that helps enterprises breakdown the silos between departments, regions, and external partners (Figure 3). This capability coupled with dynamic optimization capabilities (found in later sections) allows companies to deliver higher levels of performance in inbound carrier and shipment consolidations and transportation cost reduction.
Figure 3: Savings Start With Shared Data Visibility and Access

The blue bars above indicate the current levels of adoption ranging from 43% to 69% of all respondents. Even though respondents from each maturity class have a nearly equal focus on each of the capabilities highlighted in Figure 2, they are not at all equal when it comes to performance management - the Best-in-Class are markedly better. They are:

- 1.74-times as likely to measure suppliers / carriers / 3PLs freight management performance monthly or more often (53% vs. 30.5% for all others)
- 1.36-times as likely to measure the company’s own freight management performance monthly or more often (45% vs. 33% for all others)

As we discovered in the July study (International Transportation: Optimize Cost and Service in a Global Market, July 2010), it takes more than shared data and visibility for an enterprise to maximize the opportunity to plan or execute load consolidation for inbound, to coordinate backhauls, and to plan closed loop tours. Additionally, by sharing data with carriers and external partners new opportunities for consolidations and backhauls can be uncovered. The Best-in-Class companies have people, process, technology and superior performance management to their credit. They are using a combination of all these tools to seize strategic advantage and contribute to both cost/service and sustainability goals and they are widening the gap in overall performance.

The gap between the Best-in-Class and all other companies focuses on the ability to move beyond traditional localized views and silos at the plant or regional level and to incorporate a global view both to internal and external partners. The next case study further illustrates this point.

"We really had no centralized visibility to our transportation spend. This was the first step we needed to make in order to start the process of bringing our spend under control. Without the visibility, everything else we did would have been guess work.”

~ Chris Cavin, Director of Transportation, RockTenn
Case in Point: Large Worldwide Automotive Supplier Moves From a Manual to an Automated Inbound Transportation Contract Management System

Seven years ago a multi-billion dollar worldwide automotive industry components and parts supplier hired a consultant to look at freight spend. Following detailed interviews of the company’s 17 US based plants and after a manual data collection process by mode and lane, a historical transportation spend analysis was conducted. An RFQ was prepared and optimal carriers were selected to minimize overall inbound transportation costs consistent with analysis from the historical spend.

As a result of the initial program, the company realized about a 20% reduction in transportation costs. However, the company needed to repeat the collection/analysis process on fresh data each year to repeat the analysis and continue to support continuous improvement. They wanted to collect data on a long-term basis, and based on the success they had seen through the program developed by the consultant, the company determined that a long-term arrangement with a freight payment and audit company would be of ongoing benefit. So an independent logistics services solution company was selected to both gather and audit ongoing spend data to insure adherence to contract and feed a periodic carrier selection process.

Currently (across the inbound global supply chain) about 60% of the volume on raw materials and components to the 17 plants comes from suppliers in North America and about 40% comes from suppliers overseas. Before the conversion, the only analytics that were done were conducted by collecting overall dollar payments made on freight shipped to each plant on a per supplier basis. Unit volumes and numbers of shipments were not easy to obtain and no routing guides were in place. Each plant determined and controlled transportation independently and there was no corporate wide visibility beyond an individual plant.

After using the independent freight audit company for a few years the company integrated a best-of-breed transportation contract management point solution software into its internal overall operation.

In moving to the new automated and integrated solution, several changes were enacted. Rather than manually keying invoices and forwarding them to the independent freight audit company (which would in turn send them to the plants to review) the new system fully automates the process allowing electronic tracking of orders and invoices and tendering of freight according to routing guide criteria. The elimination of key punching alone resulted in the existing staff being able to free up to 40% of their time to analyze and resolve problems. Another key benefit of the new system is the capability to automatically generate spend details by mode and lane to feed into the next business cycle and allow for adjustments of carrier mix or rates during follow-on contract negotiations.

The complete transportation procurement and payment system install and deployment process took approximately two to three months and was...
followed by a three to four month learning curve as terms and thresholds were built into the system to model, test and validate the rules for each contract and rate table. Benefits of the system include:

- Streamlined and automated procurement
- Compliance management
- Electronic invoice and payment - moving from manual
- Automatic audit against contractual costs

“We are very pleased that the collaboration with the new integrated TMS company has allowed us to deliver double digit annual transportation savings (net of all costs and fees) and address our three primary objectives of the company at the same time… So far, the consolidation of volumes/carriers and the contract management tool has gone a long way toward cutting our transportation rates. But this is just the beginning…We've been very pleased with the new transportation payment and procurement system which gives us much more visibility and control across plants and into our carriers and suppliers" says the company's International Commodity Manager for Indirect Product and Service. "Besides giving our employees more time to focus on problem resolution the system, in its first year after deployment, delivered a return on investment versus our former manual process."

**Performance Differentiators: Inbound Transportation and Optimization Events**

It follows that, beyond visibility and frequent performance management, a company must do something different with the knowledge it obtains. Utilizing a centralized data platform to improve collaboration with carriers can increase savings and improves contract rates and facilitates consolidations of inbound shipments and continuous moves. But without optimization tools to act on this data during planning and execution no savings can be derived. Indeed, as illustrated in Figure 3, survey results show that the firms enjoying Best-in-Class performance shared several common characteristics, including on-the-fly decision-making and near real-time visibility with optimization of execution within their processes.

“Communications were the single largest challenge but once there was buy-in the overall project plan was quickly put in place and implemented at the company locations. The SaaS based deployment time was only a matter of months and the low cost of investment generated quick returns…As customer expectations rise and trade volumes shift, we are happy with the consistency in both cost and service that our new collaborative TSM services solution provides in our global export challenge. The results have been an improved customer satisfaction and a steady growth in the bottom line.”

~ Director of Transportation, Large Food Manufacturer
 Savings start with Strategic Transportation Planning

When it comes to the planning process it is important to properly consider the correct transportation mode as regional shipments are planned and scheduled. At 60%, Best-in-Class companies have the capability to consolidate loads between Less-Than-Truckload and Truckload (LTL/TL/parcel). This means that they are 2.5 times as likely as all others to secure the best advantaged freight rates on regional shipment consolidations.

Even if a company has the process in place to mode shift from LTL to TL it is equally important to consider opportunities to reduce empty miles on an outbound-to-inbound trip by looking at regional inbound loads to and from carriers and suppliers. With visibility to these load requirements it is best to evaluate and plan "continuous moves" so that freight cost savings can be derived from the reduction of empty miles. Here again the Best-in-Class (43%) are 2.87 -times as likely as all others to take strategic advantage of continuous moves/optimization of inbound-outbound freight in one planning process. Both these capabilities on the planning side contribute to the significant advantage in cost improvement of 8.7% that leading companies displayed vs. prior year. These two process capabilities can result in significant improvements in load utilization and reductions in carbon footprints. They are frequently showcased by enterprises in support of corporate global sustainability goals.

| Unified TL-LTL-parcel optimization capabilities - 2.50x | 60% |
| Zone skipping support - 2.22x | 60% |
| Optimally select inbound and outbound modes and carriers - 1.33x | 56% |
| Optimization of domestic-international transition optimal port of exit/entry - 1.26x | 53% |
| Dynamic plans for shipments to go via common carrier vs. private fleet - 5.38x | 43% |
| Continuous optimization of inbound & outbound freight in one planning process - 2.87x | 43% |
| Dynamic supplier routing instructions - 1.91x | 42% |

| Best-in-Class Optimization Enablers vs. All Others |
| The Best-in-Class are… |
| ✓ 1.86x as likely to automate Zone skipping support for parcel |
| ✓ 1.59x as likely to automate Spot bid capability |
| ✓ 1.43x as likely to automate Country skipping support |
| ✓ 1.14x as likely to automate Suppliers and inbound carriers’ information exchange |
| ✓ 1.14x as likely to automate Support for dynamic hub optimization |
| ✓ 1.11x as likely to automate Total Landed Cost forecasting and tracking |
| ✓ 1.11x as likely to automate International rating - currency and costing |
| ✓ 1.08x as likely to automate Optimization tools to effect near real-time control |

Note: Figures preceding x indicate the automation gap vs. Best-in-Class
Source: Aberdeen Group, July 2010
Savings end with Dynamic Transportation Optimization

As Figure 3 shows, the Best-in-Class companies are markedly better than all other companies when it comes to dynamic optimization.

While it is important to optimize transportation during the planning process it is equally important to support dynamic optimization during execution. There are several additional process capabilities that define the level of ability that exists for dynamic execution of transportation. In each case from 45% to 64% of all companies have these capabilities. But the degree of capability varies by performance class. Each item is ranked below along with the comparative percentage of advantage (vs. all others) exemplified by Best-in-Class companies:

- Ability to respond in near real-time to events across multiple channels - 39% more likely
- Ability to make supplier-distribution network realignments (sourcing, mode, or routing shifts) - 27% more likely
- Ability to redirect in-transit flows and orders to balance higher demands or inventory imbalances in-transit - 19% more likely
- Ability to dynamically route international shipments (vs. static, itinerary-based routing) - 19% more likely
- Ability to support DC bypass (orders pre-labeled and shipped straight to store, consumer, or via crossdock) - 8% more likely

Those enterprises that have been able to capitalize on technology to extend and advance key processes in real-time and involve more groups internally and externally are positioned to better leverage automation of these processes. But integration and shared data visibility is not enough, companies must build out dynamic optimization capabilities (like those additional areas listed in the sidebar next to Figure 3) if they ever expect to take advantage of load consolidations, zone skipping, and dynamic hub optimization during inbound planning or to be effective in real-time control of execution.

In general terms, regardless of class, such focus can improve on-time delivery, reduce expediting costs, and reduce transportation spend year-over-year. Best-in-Class companies have been able to effect double digit freight rate reductions while meeting service requirements at the highest levels even though confronted increasing costs in their inbound supply chains.

Case in Point: Large Grocery Wholesaler Integrates True SaaS Transportation Solution, Achieves ROI in Six Months

With $4.7 Billion in annual sales and employing approximately 7,500 associates this large grocery wholesaler is a member of the Fortune 500. The company distributes food products and logistics services to a variety of retail outlets including conventional supermarkets, multicultural stores,
urban stores, extreme price stores and military commissaries in 31 states, the District of Columbia, Europe, Cuba, Puerto Rico, the Azores and Egypt.

When the company decided to reengineer its inbound transportation profile in March of 2008 that component of their supply chain system was outsourced/handled by a logistics service provider.

Transportation and supply chain visibility platforms were some of the first applications to offer on demand or SaaS solutions and The Senior Director of Logistics and his team were looking to simulate and model the cost/service benefits of moving away from the current carrier base and open up inbound movements to additional carriers and their own outbound fleet.

“We surveyed the marketplace for options to leverage true SaaS visibility and transportation management solutions and reduced our short list down to three top vendors,” says the Senior Director of Logistics. “LeanLogistics assisted in our evaluation process. We had a goal to increase control of the overall freight spend through a prepaid to collect analysis on the inbound side while exploring systems to better utilize their lane/rate and carrier database while also taking advantage of our own outbound fleet for continuous moves.”

Here is a brief recap of the goals/complexities the teams from both sides faced:

1. Existing order management and contract management, warehouse management systems, transportation management and legacy systems would need to be mapped and data exchange synchronized both to and from the new web-based SaaS platform
2. EDI mapping and other dynamic data exchange would need to be planned upfront and prepared in a three month window prior to go-live
3. Overall data visibility and analytics tools and training would need to be incorporated spanning both new and old systems and providing integrated views to both inbound and outbound movements
4. Real-time access to a nationwide carrier and rate databases would be required for periodic and on-the-fly load tendering to current and new carriers and tendering of backhauls to the company’s outbound fleet

After selecting LeanLogistics and following a three month preparation period (in a very short implementation timeframe of 16 weeks) the conjoint implementation team was able accomplish their goals and go live on March 3, 2008. Using existing people the new system and process is working well. Results include:

1. The company increased inbound collect cases controlled from 32 to 47% and they are exceeding the prepaid conversion opportunity used in project justification
2. Training and execution is handled by existing staff on increased consolidated load volumes on both a planned and near real-time basis

3. Fleet utilization has increased significantly as the company continues to leverage load and lane synergies and backhauls

The Senior Director summarizes the project by stating, “Overall we are very pleased with our partnership with LeanLogistics and our move to true SaaS deployment within our operations - we can clearly say that we achieved our ROI objectives within six months of ramp-up.”

**Recommendations for Action**

As in the case studies, companies that lack the manpower, focus, or systems to extend and share the visibility they have into their extended inbound supply chains are likely missing several opportunities to control inbound costs and better utilize their transportation resources. Factors to consider for enterprises when are evaluating and implementing a TMS solution for inbound transportation management include:

- **Select the proper TMS solution or manage services provider.** Most companies (over 60%) lack visibility into the purchase order phase, and the shipment process, because the data exists in disparate systems or is in the hands of suppliers and trading partners. Make sure the solution you invest in (or build), or the partner you select to outsource to, has the proper systems and tools to insure connectivity through EDI and data sharing into your extended inbound supply chain. Without a strong visibility tool, decisions are difficult to make, so make sure the visibility you need is built in. Then centralize the data and employ optimization tools to leverage the consolidation opportunities your new solution provides by determining the best shipment modes, routes, and consolidations at the lowest cost.

- **Look at solutions that promise to lower overall cost of ownership.** Over 38% of companies cite that the upfront costs of investment are a top barrier to implementation. However, upfront costs may be avoided as many LSPs or TMS solution providers offer the supplemental systems capabilities in both hosted and subscription based SaaS models. Additionally in many cases, the managed services or outsourced model can be explored. In these cases investment and cost is shouldered by the provider and often centered on a no-risk guarantee - since most logistics service providers are willing to work on a contingent basis for thought leadership - based on a percent or shared savings approach.

- **Ensure management buy-in to the solution selected.** Up to 24% of companies indicate that they cannot gain management buyin to their transportation initiatives. It is important to analyze the cost and benefits and compute the ROI. If there is a two year payback...
this traditional management barrier can usually be overcome. Also, one has to consider the impact on the sustainability initiatives and their financial impact. Increased truck/ocean utilization leads to significant reductions in fuel and in greenhouse emissions. Overall there is an increased focus and market appetite for carrier collaboration and much less of a management aversion to using managed services as an option. Our October 2009 study (Integrated Transportation Management: Improve Responsiveness with Real-Time Control of Execution) indicated that most shippers (69%) are interested in considering third parties to advance and promote thought leadership across their transportation functions. Additionally about 30% to 40% of companies from the same October study, and our recent July study (International Transportation: Optimize Cost and Service in a Global Market) are open to the concept of seeking management expertise/services in optimization or even execution areas of their global transportation processes.

In closing, expect 2010 to be another year of change spurred on by the increasing global reach of transportation and the extended inbound supply chain. What is for certain, however, is the pressure that transportation executives will be under to stabilize the inbound volatility and reduce transportation costs will not end soon. Shippers are still expected to deliver higher service levels at lower cost.

This document explains how companies can deploy new TMS solutions and leverage managed services in inbound transportation management to acquire and supplement their transportation needs and increase company profits.

For more information on this or other research topics, please visit www.aberdeen.com.