

Beyond Visibility: Driving Supply Chain Responsiveness

September 2008

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Executive Summary

This study's findings show that granular supply chain visibility is a key component of the infrastructure needed to build an agile and responsive supply chain network. The report examines how Best-in-Class companies use visibility to more effectively respond to changes in market conditions and potential disruptions, focusing on the execution-related aspects of supply chain responsiveness (i.e. logistics, shipment, and operations) and the role of visibility. Our study has surveyed 349 companies to identify their levels of agility and responsiveness, and the impact of visibility on these key operational elements. Among other findings, it shows that companies that have visibility into in-transit shipments, order and supplier events, and trade document status are more likely to employ the following agile distribution strategies (compared to those without such visibility):

- 66% more likely to be rerouting in-transit shipments to higher points of demand "sometimes" or "frequently"
- 74% more likely to cross-dock shipments "sometimes" or "frequently"
- 51% more likely to monitor logistics bottlenecks and adjust plans to avoid congestion "sometimes" or "frequently"

In addition, companies with better levels of visibility are 3.9-times more likely to be able to analyze the current level of supply chain risk exposure.

Best-in-Class Performance

Aberdeen Group has used the following metrics to determine Best-in-Class, Average and Laggard performers in this study:

- Percent of orders received from suppliers complete and on-time (perfect orders)
- Percent of orders delivered to customers complete and on-time (perfect orders)
- Change in total landed costs over the past year
- Change in the frequency of out-of-stocks over the past year

Best-in-Class companies (the top 22% of performers) have the following performance advantages, based on this definition: perfect order delivery rate - 11 percentage points higher compared to Industry Average and 20 percentage points higher than Laggards; 39% have been able to reduce total landed costs over the past year compared to just 9% among Industry Average and 0% of Laggards.

Competitive Maturity Assessment

Best-in-Class companies in this study are not only able to access the needed information faster, but they are also significantly more likely than Industry Average and Laggards to report a higher quality of data collected (58%

Research Benchmark

Aberdeen's Research Benchmarks provide an in-depth and comprehensive look into process, procedure, methodologies, and technologies with best practice identification and actionable recommendations

versus 31% versus 17% reporting data accuracy of over 90%). They are more likely to have visibility into in-transit shipments, supply chain disruptions and accrued supply chain costs. Best-in-Class companies have more flexibility to enable a responsive supply chain execution process; they are:

- About 30% more likely than Laggards to have the ability to do cross-docking or treat in-transit inventory as available for safety stock calculation purposes
- 37% more likely than Laggards to have the ability to redirect in-transit shipments to higher points of demand and 28% more likely than Laggards to have the ability to carry out threshold-enabled decision making (i.e. Kanban, stocking levels triggering a purchase order)

Best-in-Class are also further ahead in automating supply chain event monitoring, event management, workflow and issue resolution, as well as supply chain partner collaboration.

Required Actions

Chapter Three provides recommendations for Laggards, Industry Average and Best-in-Class companies, centered on:

- Finding points in the supply chain network where increased flexibility and responsiveness could bring the most operational improvement
- Using visibility data to enable "agility actions" for responsive supply chain execution
- Using visibility data for improving supply chain risk management and reducing supply chain disruptions

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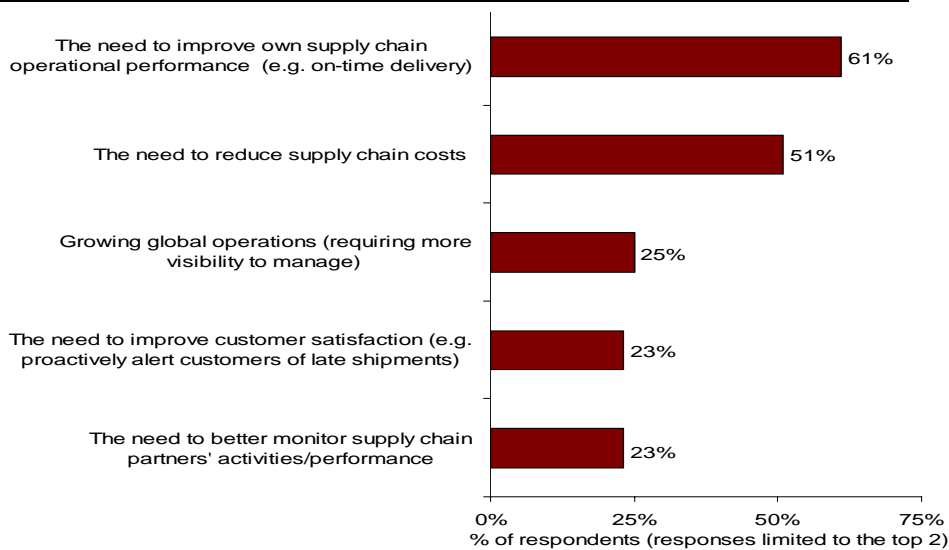
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Chapter One: Benchmarking the Best-in-Class

Business Context

Driven by the pressures to improve supply chain operational performance and reduce supply chain costs (Figure 1), companies with both global and domestic supply chains are putting increased focus on supply chain visibility. This study is based on a survey of 349 companies, among which 74% have identified improved operational performance as the main value of supply chain visibility, followed by reduced supply chain disruptions (22%). Fifty-four percent (54%) of participating companies have had a supply chain visibility improvement initiative for over a year, and an additional 21% are planning to begin one in the future. Only 14% indicated that they had no past or planned improvement initiatives in this area.

Figure 1: Top Pressures Driving Focus on Supply Chain Visibility



Source: Aberdeen Group, September 2008

This Study's Focus: Execution-Related Responsiveness

The concept of supply chain responsiveness is a broad one, and can incorporate various aspects of supply chain management - from the ability to forecast short- and long-term demand fluctuations and market conditions, to demand-supply synchronization and sales and operations planning, to distribution, logistics, transportation, and other related tasks. Although there are many manufacturing- and planning-related aspects of responsiveness in which process visibility also plays an important role, this report focuses on execution-related processes (i.e. logistics, transportation, and other shipment- and distribution-related tasks) and the role of visibility in making these processes more efficient.

Fast Facts

Companies with visibility into in-transit shipments, order and supplier events, and trade document status are:

- √ 66% more likely to be rerouting in-transit shipments to higher points of demand "sometimes" or "frequently"
- √ 74% more likely to cross-dock shipments "sometimes" or "frequently"
- √ 3.9-times more likely to be able to analyze the current level of supply chain risk exposure

Visibility-Enabled Agility and Responsiveness

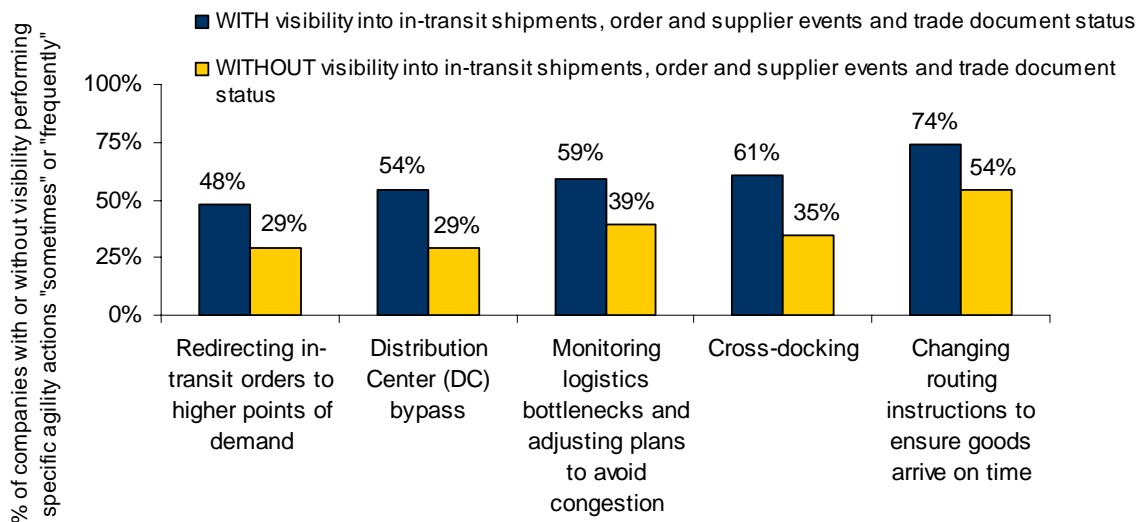
Responsive supply chain execution - enabled by agility and flexibility of supply chain networks and processes - was identified among the key themes of the ongoing supply chain transformations in the 2008 Aberdeen Supply Chain Summit. While companies may have different approaches to finding the right balance between supply chain costs and the desired level of responsiveness, all of them need to have a certain minimal level of flexibility and responsiveness built into their supply chains. For those firms that are strongly driven by customer service goals (e.g. complete and timely delivery), supply chain responsiveness is especially important.

To examine the impact of visibility on supply chain agility and uncover potential opportunities for increasing supply chain responsiveness through visibility, Aberdeen has examined a variety of "agility actions" performed by companies with varying degrees of visibility.

Dynamic Shipment and Distribution Changes

Figure 2 shows the percentage of companies performing various shipment- and distribution-related agility actions in two groups - those with and without reported visibility into in-transit shipments, order and supplier events and trade document status.

Figure 2: Shipment and Distribution Agility Actions with and without Visibility



Note: For the purpose of comparison in Figure 2, companies with partial visibility (i.e. into just 1 or 2 of these processes) were omitted. 78 participants reported having visibility into these 3 processes,

Source: Aberdeen Group, September 2008

In addition to more frequently performing distribution-related adjustments based on changing circumstances, companies reporting visibility into in-transit shipments, order and supplier events and trade document status are also more likely to work collaboratively with suppliers to plan corrective actions and joint strategies based on the results of supplier performance review (86% versus 55% among those with no visibility into these

processes). Such performance-based reviews are one of the process differentiators of the Best-in-Class companies in this study (see Table 3, The Competitive Framework in Chapter Two).

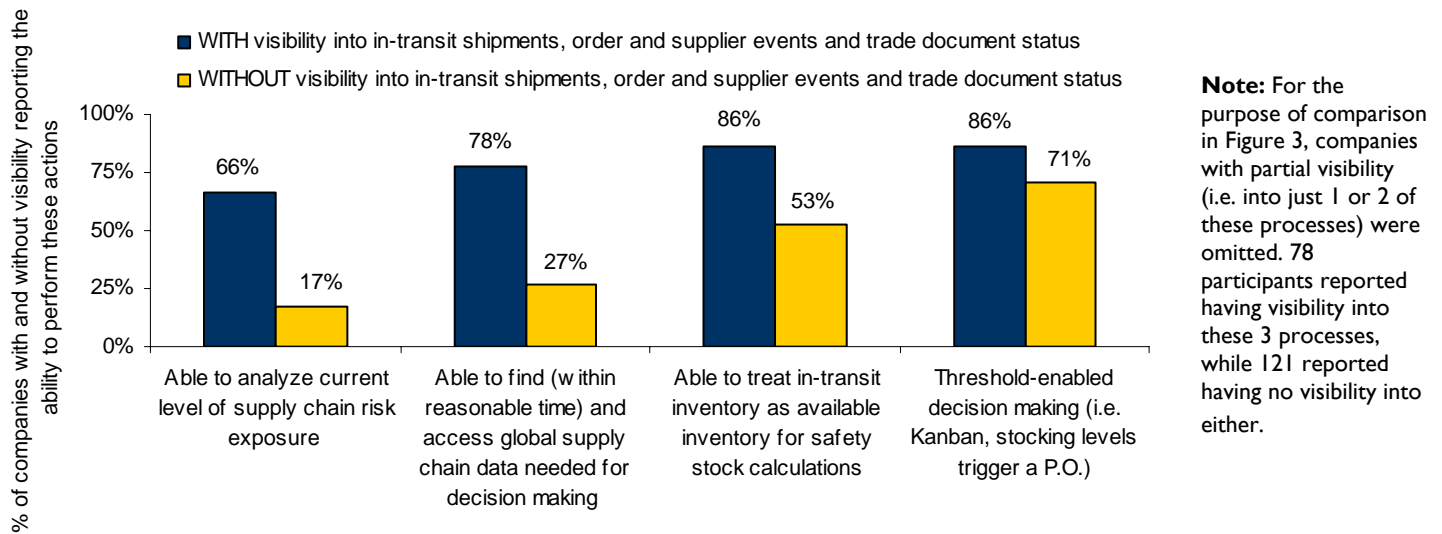
Another important characteristic of companies reporting visibility into in-transit shipments, order and supplier events and trade document status is that they are over 11-times more likely than those without such visibility to report having visibility into supply chain issues and disruptions (80% versus 7%). Having timely visibility into disruptions in logistics, distribution and trade compliance processes has helped leading companies achieve higher levels of operational excellence. It allows them to minimize the potential impact of disruptions on company profit, customer satisfaction and brand reputation.

Enabling Responsive Supply Chain Execution Decisions

Figure 3 looks at several process capabilities that allow companies to increase their execution-related responsiveness:

- The ability to quickly find and access data necessary for their level of supply chain decision making is a critical need for supply chain managers, directors and chief supply chain executives: in both the current study and Aberdeen's September 2007 study on global supply chain visibility, [*A View from Above: Global Supply Chain Visibility in a World Gone Flat*](#), this has been one of the Best-in-Class differentiators.
- Supply chain risk management is getting increased attention from companies worldwide, especially those with global supply chains. Our July 2008 study, [*Supply Chain Risk management: Building a Resilient Global Supply Chain*](#), showed that supply chain visibility and data quality played an important role in supply chain risk management. Figure 3 illustrates that companies with visibility into in-transit shipments, order and supplier events and trade document status are noticeably more likely to report the ability to analyze current level of supply chain risk exposure.
- Ability to treat in-transit inventory as available and make milestone / threshold-enabled decisions provides companies with more flexibility in distributing inventory faster and more efficiently and making the supply chain execution process more seamless.

Figure 3: Supply Chain Decision Making with and without Visibility



Source: Aberdeen Group, September 2008

Case Study: The Foschini Group Launches Supply Chain Improvements to Reduce Lead Times, Optimize Sourcing and Better Manage Supplier Performance

The Foschini Group, a large South African retailer with 1300 stores country-wide and additional presence in Botswana and Namibia, works with over 700 suppliers from South Africa, China and other Asian countries. Last year the company embarked on a supply chain improvement initiative, prioritizing the following four key projects:

1. Supplier relationship improvement (including optimization of the sourcing process and more effective supplier performance management)
2. Replenishment process standardization
3. “Pipeline project” – reducing lead times from international suppliers by focusing on local in-shoring opportunities
4. Lead time project – logistics-focused project aimed at reducing the time from supplier’s packing to the product being in store

“Visibility plays a big role in these improvement initiatives, especially the lead time reduction project,” says Rocco Reitz, Supply Chain Analyst at The Foschini Group. “We currently place an order with an international supplier and only get sight of the order once our freight forwarder receives the goods. We require greater visibility into the supplier’s critical events and then will be able to manage by exception. Another blind spot is actual delivery to stores once goods are shipped from our DC and for those goods shipped directly from supplier through to stores. Our transport is outsourced and holds the proof of delivery.”

continued

Case Study: The Foschini Group Launches Supply Chain Improvements to Reduce Lead Times, Optimize Sourcing and Better Manage Supplier Performance

To make supply chain processes more reliable, the company has identified a set of key supply chain events that it wants to have visibility into across all of its operations within the next year. This information will also be used in the introduction of supplier performance scorecards, in order to formalize and improve group-wide supplier relationship, sourcing and purchasing decisions. Reitz continued, “We have looked at many visibility technology providers but found that only a few of them have retail-specific offerings. We are planning to replace our legacy warehouse management system with a one that provides extended visibility into warehouse and logistics processes for our entire group, for example, automates and speeds up Advanced Shipment Notice receipt from suppliers.”

“We also want to introduce more flexibility into our supply chain by doing cross-docking and distribution center (DC) by-pass,” continues Reitz. “We are looking to reduce our DC stock holdings to avoid capacity constraints. To do this, we need to have access to both granular supply chain information and event management capabilities.”

The Maturity Class Framework

Aberdeen has used the following metrics to determine Best-in-Class, Industry Average, and Laggard performers in this study:

- Percent of orders received from suppliers complete and on-time (perfect orders)
- Percent of orders delivered to customers complete and on-time (perfect orders)
- Change in total landed costs over the past year
- Change in the frequency of out-of-stocks over the past year

Table 1: Top Performers Earn Best-in-Class Status

Definition of Maturity Class	Average Class Performance
Best-in-Class: Top 22% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 94% of orders delivered to customers complete and on time ▪ 87% of orders received from suppliers complete and on time ▪ 39% have decreased total landed costs in the past year ▪ 77% have decreased the frequency of out-of-stock inventory in the past year
Industry Average: Middle 48% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 83% of orders delivered to customers complete and on time ▪ 74% of orders received from suppliers complete and on time ▪ 9% have decreased total landed costs in the past year ▪ 21% have decreased the frequency of out-of-stock inventory in the past year
Laggard: Bottom 30% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 64% of orders delivered to customers complete and on time ▪ 60% of orders received from suppliers complete and on time ▪ 0% have decreased total landed costs in the past year ▪ 6% have decreased the frequency of out-of-stock inventory in the past year

Source: Aberdeen Group, September 2008

The Best-in-Class PACE Model

Using visibility to achieve supply chain operational excellence requires a combination of strategy, process and organizational capabilities, and enabling technologies. Table 2 highlights pressures, actions, and capabilities reported by the Best-in-Class companies.

Table 2: The Best-in-Class PACE Framework

Pressures	Actions	Capabilities	Enablers
<ul style="list-style-type: none"> The need to improve own supply chain operational performance (e.g. on-time delivery) 	<ul style="list-style-type: none"> Streamline processes for easier monitoring Collaborate with suppliers to gain better visibility into supplier-side processes 	<ul style="list-style-type: none"> Ability to redirect in-transit orders to higher points of demand Ability to treat in-transit inventory as available for safety stock calculations Cross-functional supply chain metrics Ability to analyze current level of supply chain risk exposure Online visibility into in-transit shipment status Online visibility into supply chain issues / disruptions 	<p>The following functionalities automated by the visibility system in use:</p> <ul style="list-style-type: none"> Reports, statistics, event tracking Internal supply chain performance dashboards Financial settlement or financing triggers Data management service (e.g. automated alerts if data are missing or erroneous) Collaboration (supplier / customer relationship management)

Source: Aberdeen Group, September 2008

Best-in-Class Performance Advantage

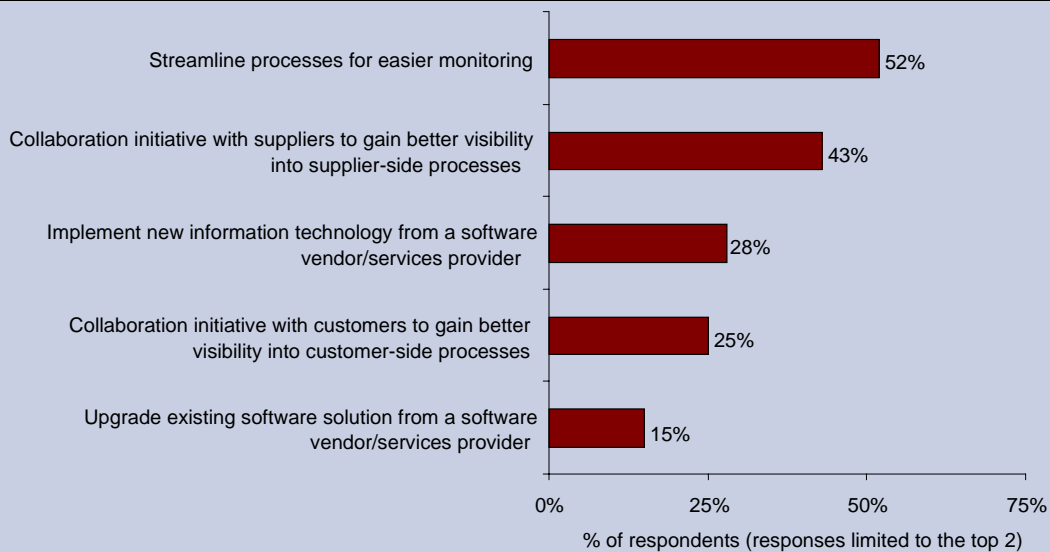
Best-in-Class companies in this study are:

- 4.3-times as likely as all others to have decreased the number of shipment delays over the past year
- 96% more likely than all others to have decreased their cash-to-cash cycle over the past year
- 46% more likely than all others to have decreased international lead times over the past year and 3-times as likely to have decreased domestic lead times
- 50% more likely than all others to have decreased inventory level over the past year

Aberdeen Insights — Strategy

Companies of all three maturity groups have prioritized the initiatives shown in Figure 4 for improving their supply chain visibility (respondents were limited to selecting the top two options).

Figure 4: Top Initiatives for Improving Supply Chain Visibility



Source: Aberdeen Group, September 2008

In creating a visibility improvement roadmap, companies should start with a set of manageable tactical improvements, aligned with their long-term operational improvement goals. Collaboration initiatives play an important role in improving the quality of data received from supply chain partners and help increase the overall level of visibility. Read the November 2006 report, [Supply Chain Visibility Roadmap](#) to learn more about how to develop a business case and a roadmap for a visibility improvement project.

With improved operational efficiency in mind, companies need to focus on how to use supply chain visibility data to drive responsiveness in their supply chains. Specific areas of improvement should be prioritized - for example, distribution or warehousing processes, in-transit shipment tracking, visibility into competitive carrier rates or monitoring logistics bottlenecks. Companies should then analyze whether they could increase visibility by using existing processes and resources more effectively - e.g. by instituting a formalized process for receiving electronic data from third-party logistics (3PL) providers, forwarders or carriers, or having them automatically track more milestones as part of their tracking service.

Once the initial level of visibility is established, companies should examine ways to extend visibility to their suppliers and customers and obtain appropriate tools for tracking supply chain performance and managing an efficient workflow. Visibility-empowered supply chain managers can then be more flexible in performing the necessary "agility actions" (such as shipment re-routing due to demand changes or infrastructure disruptions, expedited shipping of late shipments, cross-docking and DC bypass strategies, vendor-managed inventory programs and more). In addition, these companies are also better able to inform or warn their customers about potential delivery delays, capacity issues and other supply chain disruptions, allowing them to work out acceptable issue resolution while maintaining high customer service levels.

Chapter Two: Benchmarking Requirements for Success

Visibility into critical activities and milestones is a necessary infrastructure element for managing supply chain processes. As this study shows, Best-in-Class companies are more likely to have granular visibility into critical supply chain processes and events, which helps them gain better control of their supply chains. The following section will examine the capabilities and enablers necessary to achieve this visibility.

Competitive Assessment

Aberdeen Group has analyzed the Best-in-Class, Industry Average, and Laggard companies across the following categories: (1) **process** (the approaches they take to execute daily operations); (2) **organization**; (3) **knowledge / information management**; (4) **information technology**; and (5) **performance management**. Table 3 summarizes this analysis and aims to provide a guideline for best practices based on the Best-in-Class performance across the key metrics.

Table 3: The Competitive Framework

	Best-in-Class	Average	Laggards
Process	Collaborating with supply chain partners to get timely and accurate supply chain data		
	75%	67%	56%
	Ability to redirect in-transit orders to higher points of demand		
	70%	66%	51%
	Ability to do cross-docking		
	81%	71%	61%
	Ability to treat in-transit inventory as available inventory for safety stock calculations		
	79%	66%	61%
	Ability to analyze current level of supply chain risk exposure		
	52%	37%	31%
Organization	Formalized supply chain risk management		
	43%	32%	21%
	Frequently working with suppliers to plan corrective actions and joint strategies based on the results of supplier performance review		
	41%	26%	16%
	Centralized supply chain management organization		
	83%	73%	70%

Fast Facts

Best-in-Class companies are:

- √ 87% more likely than the Industry Average to report data accuracy of over 90%
- √ 22% more likely than Industry Average and 76% more likely than Laggards to have online visibility into in-transit shipment status

	Best-in-Class	Average	Laggards	
Knowledge	Online visibility into in-transit shipment status			
	72%	59%	41%	
	The ability to find (within reasonable time) and access global supply chain data needed for decision making			
	66%	51%	32%	
	Lot-level or item-level product traceability			
	78%	59%	55%	
	Online visibility into supply chain issues / disruptions			
	52%	43%	34%	
	Online visibility into accrued supply chain costs			
	44%	29%	25%	
Technology	Visibility data accurate over 90% of the time			
	58%	31%	17%	
	Software technologies used for supply chain visibility:			
	<ul style="list-style-type: none"> ▪ Module in our ERP system - 57% ▪ Transportation carrier tracking system - 45% ▪ Visibility system from a freight forwarder - 37% ▪ On-premises (license) commercial visibility system - 26% ▪ Commercial Transportation Management System (TMS) - 24% ▪ On-demand (hosted) commercial visibility system - 18% 	<ul style="list-style-type: none"> ▪ Module in our ERP system - 45% ▪ Transportation carrier tracking system - 38% ▪ Visibility system from a freight forwarder - 30% ▪ On-premises (license) commercial visibility system - 24% ▪ Commercial Transportation Management System (TMS) - 23% ▪ On-demand (hosted) commercial visibility system - 15% 	<ul style="list-style-type: none"> ▪ Module in our ERP system - 32% ▪ Transportation carrier tracking system - 25% ▪ Visibility system from a freight forwarder - 20% ▪ On-premises (license) commercial visibility system - 12% ▪ Commercial Transportation Management System (TMS) - 13% ▪ On-demand (hosted) commercial visibility system - 13% 	
	Measuring supply chain performance at least monthly			
	74%	54%	44%	
	Cross-functional supply chain metrics			
	78%	61%	54%	
	Performance			

Source: Aberdeen Group, September 2008

Driving Responsiveness in the Supply Chain: Best Practices for Improving Operational Excellence and Reducing Disruptions

We have seen in Chapter One that visibility into processes and milestones plays a critical role in enabling an efficient, agile, and responsive supply chain. This section examines best practices in establishing visibility and using it to achieve those goals based on the strategies reported by the Best-in-Class companies in this study.

Process

Visibility and "Business as Usual"

Visibility plays a big role in day-to-day routine supply chain management tasks, historic supply chain performance analysis and long-term planning. Companies need accurate transaction data to decide on how to ship, store and distribute their goods. Even before unanticipated changes occur in customer demand or shipment flows, many companies may choose to perform certain "agility actions" as part of their routine supply chain management process, which requires a certain level of supply chain visibility to be attained. For example, in this study Best-in-Class companies excel in implementing the following process capabilities:

- Best-in-Class and Industry Average companies are about 40% more likely than Laggards to *do cross-docking* "sometimes" or "frequently" (52% versus 37%)
- Best-in-Class and Industry Average companies are about 30% more likely than Laggards to *utilize threshold-enabled decision making* (i.e. Kanban, stocking levels trigger a purchase order) "sometimes" or "frequently" (64% versus 48%)

These agile execution capabilities increase companies' flexibility in adapting to changing business conditions and potential shipment or logistics-related disruptions. As Chapter One pointed out, visibility into shipments, orders and supplier events, as well as trade documents, is needed to enable these supply chain processes. It is worth mentioning the role of workflow management in supply chain execution: if a company has sound processes and a defined workflow for supply chain decision making, it will be more efficient in implementing agile, milestone-triggered supply chain activities, including seamless shipment processes and on-time customer delivery.

"10+2". When the new proposed Importer Security Filing (ISF) and Additional Carrier Requirements regulation, popularly known as the "10+2" rule (see the callout box), comes into effect, the government will be mandating a new, higher level of visibility for "business as usual." This survey shows that most US importers are still not sure of whether or how they'll be able to handle the new requirement. With the active public debate on this topic thriving since early 2008, it is surprising that about half (49%) of 171 US importers participating in this survey do not know for sure whether

"10+2" Rule Requirements

Under "10+2"...

- ✓ U.S. importers will be mandated to electronically file 10 specified pieces of data at least 24 hours before their shipments are loaded aboard a vessel destined to the United States
- ✓ Carriers will have to submit container status messages daily regarding certain events and stow plans no later than 48 hours after departure from the last foreign port (or prior to the vessel's arrival at the first US port - for voyages lasting less than 48 hours)

Visit www.cbp.gov for more information.

they currently have visibility into the data elements that will be required by the new ruling. Thirty-six percent (36%) indicated that they did not have such visibility at this time, and only 15% indicated that they had the needed visibility. When the regulation comes into effect, companies that are unprepared will have to deal with a number of disruptions and delays in their business, while they are adjusting and figuring out how to obtain the required visibility and ensure accurate filing of all data elements with the customs. To avoid impending disruptions, companies should investigate their level of preparedness and take steps towards gaining the required visibility.

Sensing the Change and Escalating Response

When, however, business circumstances change - e.g. a sudden change in local customer demand has led to a stock-out at a specific location, a shipment got lost, damaged, or loaded late, a bridge or road collapsed creating traffic jam in a transportation node, etc. - having visibility becomes not just a question of routine operational efficiency but a question of maintaining an undisrupted flow of goods, meeting customer expectations, or making it in time for a scheduled store promotion. When things deviate from plan, exceptions need to be spotted as soon as possible and the right parties in the company need to be alerted in time to respond with minimal disruption to the supply chain. This is when it is important for a company to have the ability to perform certain agile supply chain actions, including redirecting in-transit shipments to meet demand or avoid logistics congestion, cross-docking, or DC bypass. Best-in-Class and Industry Average companies in this study are about 30% more likely than Laggards to have the ability to redirect in-transit orders to higher points of demand and about 20% more likely than Laggards to have the ability to by-pass the distribution center.

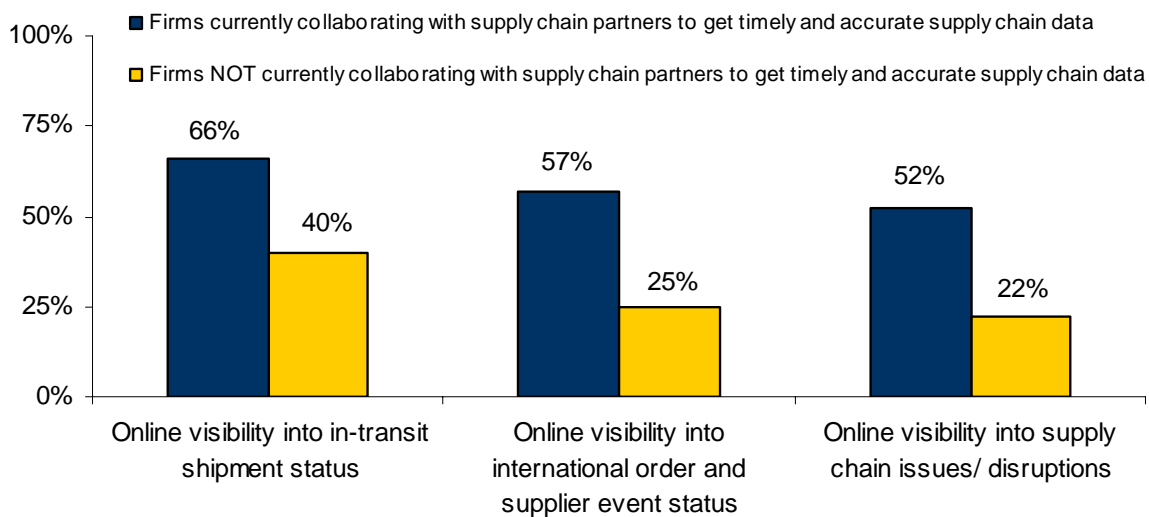
Collaboration. Internal and external supply chain collaboration is critical for effectively responding to changes and disruptions in the shipment and distribution processes. Best-in-Class companies in this study are:

- 58% more likely than Industry Average and 2.6-times as likely as Laggards to be *frequently working with suppliers to plan corrective actions and joint strategies based on the results of supplier performance review* (41% versus 26% versus 16% respectively) - this does not include those who perform this action "sometimes"
- 11% more likely than Industry Average and 34% more likely than Laggards to be collaborating with supply chain partners to get timely and accurate supply chain data

Supply chain collaboration initiatives are key to fostering information exchange in the supply chain and building a flexible and responsive supply chain network. A poll of 185 companies that took part in the [2008 Aberdeen Group Supply Chain Management Summit](#) indicated that visibility and alert management were the top capabilities on which companies were focusing their collaborative supply chain initiatives (companies were limited to selecting only one response).

In this study, companies that are currently collaborating with supply chain partners to get timely and accurate supply chain data are noticeably more likely to report higher levels of visibility into shipments, supplier events and orders, and supply chain disruptions (Figure 5).

Figure 5: Supply Chain Visibility With and Without Collaboration



Source: Aberdeen Group, September 2008

Analyzing supply chain risks. Finally, Best-in-Class companies are more likely to be strategically using visibility data to drive supply chain improvements and estimate and analyze supply chain risks. Without visibility into current and historic supply chain processes, a company wouldn't be able to formalize the way it thinks about supply chain risks. While historical data can be analyzed to develop long-term strategic risk assessment and planning, day-to-day supply chain monitoring can help spot and mitigate more tactical execution-related risks. Best-in-Class companies in this study excel in both of these areas by being:

- 34% more likely than Industry Average and twice as likely as Laggards to have implemented a formalized process for supply chain risk management (43% versus 32% versus 21%);
- 41% more likely than Industry Average and 68% more likely than Laggards to be able to analyze the current level of supply chain risk exposure (52% versus 37% versus 31%).

Knowledge Management

Best-in-Class companies in this study are not only able to access the needed information faster (Table 3), they are also significantly more likely than Industry Average and Laggards to report a higher quality of data collected (58% versus 31% versus 17% reporting data accuracy of over 90%). Best-in-Class companies have a higher level of visibility into in-transit shipment status, supply chain issues and disruptions. They are also more likely to have

lot-level or item-level product traceability. These capabilities are critical for responsive supply chain execution. Best-in-Class companies in this study are:

- 22% more likely than Industry Average and 76% more likely than Laggards to have online visibility into in-transit shipment status
- 32% more likely than Industry Average and 41% more likely than Laggards to have lot-level or item-level product traceability, which can play an important role in effectively managing product recalls, should a product quality problem occur
- 21% more likely than Industry Average and 53% more likely than Laggards to have online (real-time) visibility into supply chain issues and disruptions

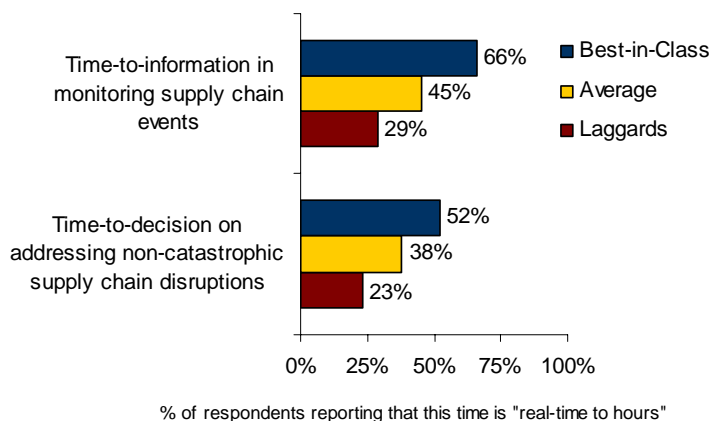
"Pro-active" visibility also matters in managing supply chain risks - i.e. when companies get the right information when it matters, from all critical internal stakeholders, as well as external supply chain partners (including suppliers, customers, carriers, logistics providers, agents, government, etc).

In addition, Best-in-Class in the current study are also more likely to have **visibility into accrued supply chain costs**. Interestingly, companies that have such visibility are 26% more likely to have the ability to change pricing or promotion activity for their products based on actual, not expected, landed cost (and 40% more likely to be actually doing it - i.e. report not just having the ability but that they do sometimes perform this action).

Time-to-Information and Time-to-Decision: The Impact on Supply Chain Execution Responsiveness

It matters not only which processes a company has visibility into, but also how deep and granular this visibility is, and - even more importantly - how quickly supply chain professionals can retrieve the required information and turn it into decisions. This especially matters for effective exception and disruption management, when the time it takes to get information and make a decision has direct impact on successful issue resolution. Figure 6 shows that Best-in-Class companies lead in both areas.

Figure 6: Time-to-Information and Time-to-Decision



Source: Aberdeen Group, September 2008

"Our biggest visibility 'black hole' encompasses in-progress production events, the product finished date, the container loading date at the foreign factory, and then the events between the shipment's arrival at a receiving port and its arrival at the door of our warehouse (although it is easier to confirm location once a shipment is already in the U.S.). In between these events, we use our 3PL's visibility tools to track our shipment's progress."

~ Director of Logistics,

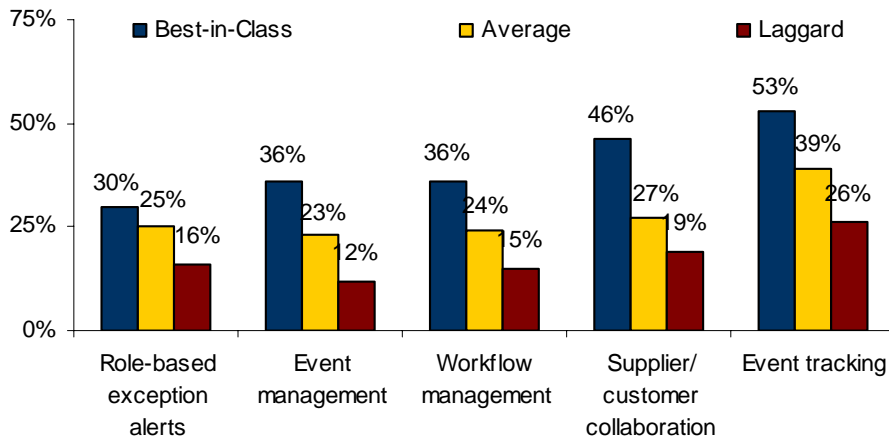
Large U.S.-based furniture manufacturer and distributor

Information Technology

Event Management, Workflow and Collaboration

Figure 7 highlights key execution-related process automation differentiators reported by the Best-in-Class participants, including milestone tracking, event and workflow management, exception alerts and collaboration.

Figure 7: Process Automation - Best-in-Class Differentiators



Source: Aberdeen Group, September 2008

Event management capabilities, including milestone tracking, issue escalation, role-based visibility views for other departments and external trading partners, role-based alerting, and collaboration tools (e.g. ability to post notes and attach documents to the platform, as well as exchange information and have the right manager review and resolve issues at hand, etc.) are the cornerstones of effective disruption management for today's complex supply chains. Establishing these capabilities helps facilitate the much-needed collaboration across the supply chain.

To achieve responsive execution, companies must move towards pro-active supply chain monitoring and disruption management. In addition to improving operational performance, this will also help them build a more resilient supply chain for the future. Read our May 2008 Research Brief, [The Role of Event Management in Managing Inventory](#) for more information on this topic and a list of sample solution providers.

RFID-Enabled Shipment Visibility

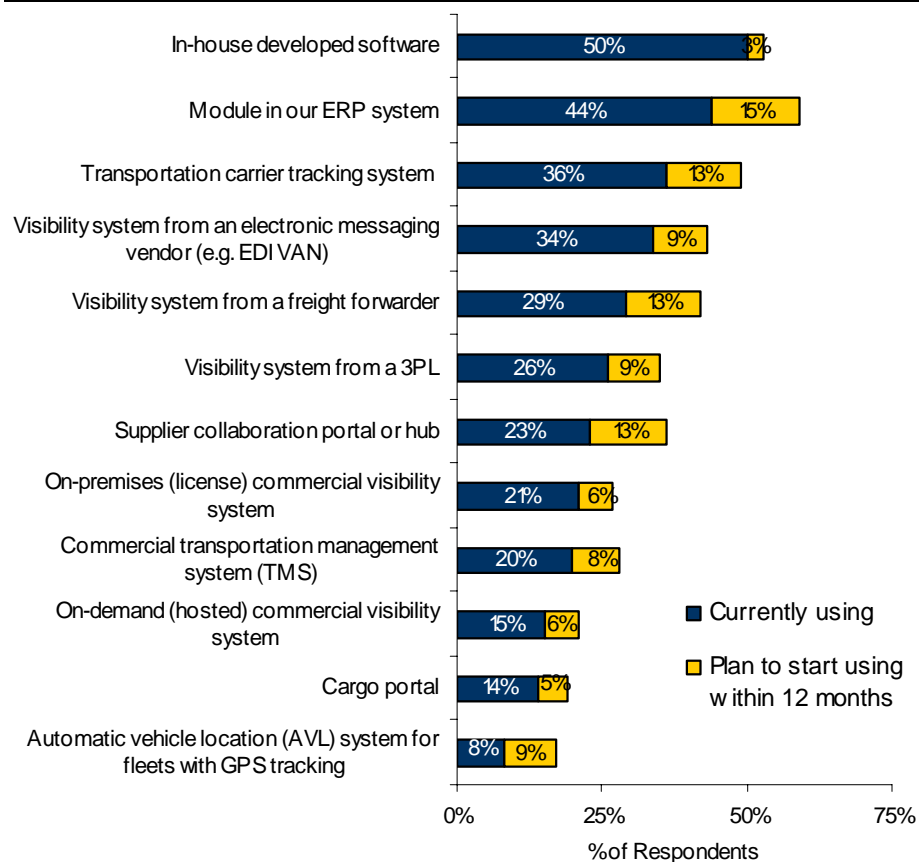
Twenty-one percent (21%) of study participants indicate having RFID-enabled shipment visibility, and 23% indicate that adding RFID-enabled visibility is one of the ways in which they plan to improve their supply chain visibility technology capabilities at some point in the future. Companies with RFID-enabled shipment visibility are, compared to all others, 24% more likely to have lot-level or item level traceability (73% versus 59% among those without RFID-enabled visibility), which helps in managing product recalls, among other benefits. Consumer goods, retail / distribution sector

and pharmaceutical / chemical manufacturers have shown the highest usage of RFID-enabled shipment visibility in this study.

Software Systems for Visibility

The following software systems are used by the participants of this study to enable visibility into different parts of their supply chains:

Figure 8: Visibility Software Use: Current and Planned



Source: Aberdeen Group, September 2008

Note: Many "best-of-breed" third party solution providers offer both on-premises and on-demand deployment options for their software.

Case Study: Emerson Climate Technologies Targets Shipment Visibility to Better Control Its Global Supply Chain

Emerson Climate Technologies (ECT) is a global provider of heating, ventilation, air conditioning, and refrigeration solutions. The company has suppliers and manufacturing facilities in Europe, Thailand, India, China, Japan and North America. Currently, supply chain monitoring is partially automated by a supplier collaboration portal and in-house developed software, in addition to some visibility provided by the 3PL partner.

continued

Case Study: Emerson Climate Technologies Targets Shipment Visibility to Better Control Its Global Supply Chain

Jess Porter, Transportation Manager at ECT, described the additional recent initiatives aimed at improving global supply chain visibility:

- As part of the corporate-wide move, ECT is in the process of implementing a transportation management system from a third-party commercial software vendor
- Another third party has been contracted to design and implement a company-wide load management system, with a goal of centralizing all shipment and transportation data in one central repository

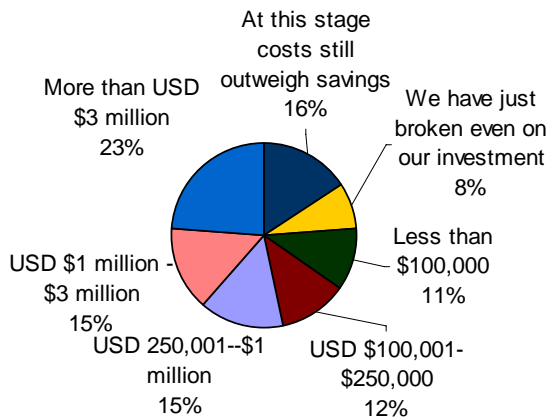
Porter commented on the reasons for focusing on extended supply chain visibility and transportation management: "Fifteen years ago, our average transit time was just over a day, now it is close to a month. We have some visibility into these long transit moves but cannot confirm whether a complete order was shipped and whether it was exactly on time - until the shipment is already in motion. So if there is a problem, we lose up to 25% of transit time until we get this information and are able to address the issue."

Porter continued, "The biggest thing for us is getting insight into the parts and quantities that are moving, not just having visibility at the shipment level. We are planning to enhance our event management and other capabilities to achieve this goal. We currently have a Supplier Portal and a Customer Portal. With much of the development done on those, we plan to transition both into a Supply Chain Portal, which will eventually, along with the TMS and the Load Control Center, provide visibility to the whole supply chain to us, our suppliers and our customers."

Quantified Benefits

About thirty percent (~30%) of study participants reported having partially or fully quantified the benefits of using their supply chain visibility technology. Among these, for 16%, costs still outweigh the savings, 8% have just broken even on the investment, and the rest have reported the following financial gains (Figure 9):

Figure 9: Benefits of Visibility Software



"[We use] increased service level and decreased cost [to quantify the benefits of visibility technology.]"

~ Operations Manager at a Large North American Retailer

% of 101 companies that have quantified or partially quantified the benefits of supply chain visibility technology since implementation

Source: Aberdeen Group, September 2008

Companies have used different approaches to quantifying the benefits, including analyzing the following:

- "Savings in terms of cycle time reduction. Improved usability of assets. Exception management" (mid-market Asian retailer)
- "Looking at cost of stock outs" (large South Asian manufacturer)
- "Proof of concept ROI based on a pilot" (large Asian retailer)
- "Take each process group and quantify it, its impact on the entire chain, use basic risk analysis to derive data and add probabilities of success and failures on visibility to arrive at a C/B analysis of visibility software" (SMB Asian pharmaceutical manufacturer)
- "Lost sales reduction, inventory reduction" (large European chemicals manufacturer)
- "Cost reduction due to reliability and shorter lead times" (large Middle-Eastern retailer)
- "Inventory velocity improvements" (large North American consumer durables company)

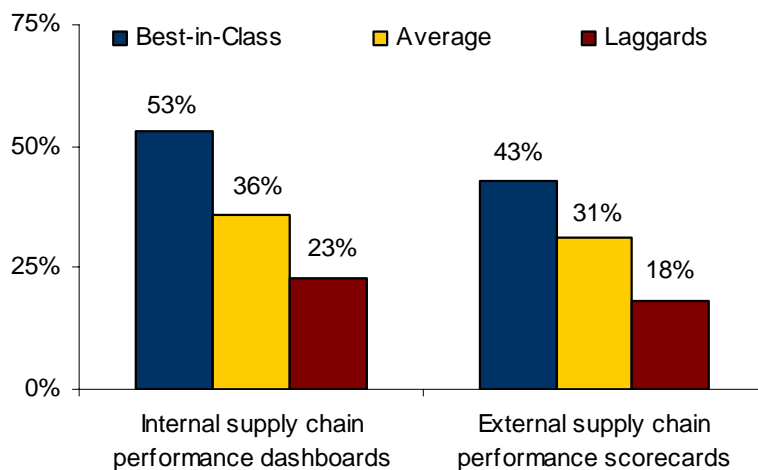
Performance Management

Best-in-Class companies are measuring supply chain performance more frequently and are more likely to use cross-functional metrics in the process. Needless to say, having more granular and timelier visibility into various supply chain processes makes it easy to measure and analyze supply chain performance across functions.

The Best-in-Class are also more likely to use internal dashboards to measure supply chain performance, and external scorecards to measure

their supply chain partners' performance (Figure 10). Scorecards help companies formalize the evaluation of supplier performance in order to improve the supplier selection process, potentially adopt performance-based incentive programs, and improve overall supplier relationships. A forthcoming November 2008 Aberdeen Group study on *Supply Chain Analytics: Command and Control Center for the Enterprise* will provide an in-depth investigation of how companies use supply chain analytics strategies and tools to drive both tactical and strategic supply chain improvements and transformations.

Figure 10: Dashboard and Scorecard Use



Source: Aberdeen Group, September 2008

Aberdeen Insights — Technology

Companies in this study have prioritized the following actions aimed at improving their information technology capabilities for supply chain visibility:

- Improve data quality and timeliness of status messages - 59%
- Enhance analytics capabilities - 55%
- Add warning alerts if actual events deviate from plan - 47%
- Add escalation policies to help manage alerts - 39%
- Incorporate additional status events - 37%
- Increase the number of trading partners providing status information - 34%
- Incorporate resolution advice or workflow - 23%
- Add RFID-enabled visibility - 23%
- Add financial settlement or financing triggers - 21%
- Other - 9%

continued

Aberdeen Insights — Technology

Best-in-Class companies are more likely to be focused on the following actions aimed at improving their visibility technology:

- Enhancing analytics capabilities (64% versus 54% among Industry Average and 48% among Laggards)
- Add escalation policies to help manage alerts (46% versus 38% among Industry Average and 34% among Laggards)

Both of these areas are critical for improving supply chain responsiveness and increasing operational excellence. As discussed earlier in this Chapter, escalation policies are inherent to an effective event management system, which helps companies improve issue resolution and reduce their time-to-response to changes and disruptions. Supply chain execution analytics (e.g. dashboards showing on-time versus late shipments along with detailed shipment information, charts and graphs with information on current shipment location and accumulated landed costs, etc.) are also contributing to more effective decisions, improving both the quality of supply chain decision-making and time-to-response. To read more on how Best-in-Class companies use supply chain analytics, read the February 2008 Research Brief, [Beyond Visibility: How Best-in-Class Companies Use and Transform Global Supply Chain Data](#) and re-visit our website later this fall to access the Supply Chain Analytics benchmark report forthcoming in November 2008.

Chapter Three: Required Actions

Companies should consider the following actions to drive responsiveness in their supply chains through improved visibility:

Laggard Steps to Success

- **Focus on the highest impact areas first.** Identify key points in your company's supply chain where increased flexibility could yield the biggest improvements in operational performance (e.g. in-transit shipment, distribution center or warehouse operations, customs processing, etc.). Next, identify the supply chain events, visibility into which would enable added flexibility: for example, getting earlier visibility into which purchase orders had been included in the current shipment could help better plan customer deliveries and resolve issues early if not all of the expected orders have been shipped; getting the advance shipment notice from suppliers electronically could allow matching it with the purchase order earlier and taking action if there is a mismatch; getting advanced visibility into updated trade compliance regulations (e.g. tariffs, denied party lists, free trade zones, etc.) could help avoid penalties or harness additional gains by filing for use of applicable trade agreements.
- **Build a business case for visibility.** If your company uses manual monitoring for most supply chain events, try to estimate the cost of errors or late information that could be avoided with the help of automation. Estimate the lost savings that could have been achieved by performing "agility actions" (e.g. warehouse storage costs that could have been avoided with cross-docking) that are currently impossible due to lack of visibility into supply chain processes. This can help build a business case for a supply chain visibility improvement project at your company.

Industry Average Steps to Success

- **Use visibility data to better manage supplier performance and risks.** Work more proactively with suppliers to plan corrective actions and joint strategies based on the results of supplier performance reviews. In the July 2008 study on supply chain risk management, supplier-related disruptions (when supplier capacity did not meet demand) were the most frequently reported supply chain disruptions over the past 12 months (reported by 56% of respondents). This study shows that Best-in-Class are more likely to be frequently working with suppliers to plan corrective actions and joint strategies based on the results of supplier performance review (Chapter Two). This helps them to more effectively manage

Fast Facts

Best-in-Class companies in this study are:

- √ 60% more likely than Industry Average and 2.3-times as likely as Laggards to track actual total landed cost as shipment / order progresses
- √ 53% more likely than Industry Average and 76% more likely than Laggards to have visibility into accrued supply chain costs

supplier-related risks, better positioning them to avoid such disruptions.

- **Enhance automated event management and supplier / customer collaboration capabilities.** As Figure 7 shows, Best-in-Class companies are noticeably ahead of both Average and Laggards in automating these capabilities.
- **Focus on data quality improvement.** Best-in-Class companies are 87% more likely than the Industry Average to report data accuracy of over 90%. A December 2007 Research Brief on this topic further elaborates on the importance of data quality in supply chain visibility project, [*Data Quality Can Make or Break Supply Chain Visibility Projects*](#).
- **Explore additional ways of making your supply chain network more flexible and responsive,** such as disaster recovery plans, alternative carrier and transportation arrangements, finding a better balance between off-shoring and near-shoring, and moving away from legacy software systems to more flexible visibility technology. Enhanced technology capabilities should include extended tracking and event management, supplier and customer collaboration tools, and role-based visibility views for multiple internal departments and external supply chain partners.

Best-in-Class Steps to Success

- **Take supply chain execution responsiveness "to the next level."** After attaining initial benefits from increased visibility, examine how visibility data can be used beyond the "agility actions" and extended to other departments, such as finance, sales, and manufacturing. For example, Best-in-Class companies in this study are 60% more likely than the Industry Average and 2.3-times as likely as Laggards to track actual total landed cost as shipment / order progresses (46% versus 29% among Average and 20% among Laggards), in large part due to better levels of visibility (they are 53% more likely than the Industry Average and 76% more likely than Laggards to have visibility into accrued supply chain costs).
- **Leverage end-to-end supply chain visibility data for a comprehensive supply chain risk management strategy and risk exposure analysis.** Our July 2008 Supply Chain Risk Management study showed that visibility was an important factor in driving down supply chain risks. In the current study, the Best-in-Class are noticeably more likely to have the ability to analyze the current level of supply chain risk exposure and have a formalized process for assessing and managing supply chain risks. However, there is still much room for improvement in this area across all maturity classes. Having much deeper and broader supply chain visibility, Best-in-Class companies are best positioned to move towards the next stage in supply chain risk management.

Aberdeen Insights — Summary

This study shows that end-to-end supply chain visibility plays a critical role in the next-generation of supply chain management, helping create a more controllable, responsive, resilient and ultimately a more financially healthy supply chain. Companies must continuously evaluate and increase their level of visibility to ensure responsive supply chain execution, leading to improved supply chain operational excellence, reduced disruptions, and higher customer satisfaction.

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Appendix A: Research Methodology

In August-September 2008, Aberdeen Group conducted a cross-industry survey of 349 enterprise professionals in supply chain, procurement, manufacturing, and other functional areas to find out what role supply chain visibility played in their supply chain management processes. The online survey was complemented with qualitative follow-up interviews with selected survey respondents.

Survey respondents represented the following groups:

- *Industry:* Distribution-centric companies (including retailers, distributors / wholesalers, consumer packaged goods, apparel, and food and beverage companies) - 26%, discrete manufacturing - 24%, process manufacturing - 13%, other - 37%.
- *Geography:* Company headquarters in: North America - 72%, South / Central America and Caribbean - 2%, Asia / Pacific - 7%, Europe - 14%, Middle East, Africa - 4%.
- *Company size:* Small (less than 50 million US dollars in annual revenue) - 18%, Mid-size (50 million - 1 billion US dollars in annual revenue) - 40%, Large (more than 1 billion US dollars in annual revenue) - 42%.
- *Functional responsibility.* Logistics / supply chain - 53%, procurement - 16%, operations - 12%, manufacturing - 5%, other - 14%.
- *Company Ownership:* Public - 52%, private - 48%.

Study Focus

This report focuses on execution-related responsiveness in the supply chain (i.e. logistics, transportation, and other shipment- and distribution-related tasks) and the role of visibility in making these processes more efficient.

Table 4: The PACE Framework Key

Overview
<p>Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:</p> <p>Pressures — external forces that impact an organization’s market position, competitiveness, or business operations (e.g., economic, political and regulatory, technology, changing customer preferences, competitive)</p> <p>Actions — the strategic approaches that an organization takes in response to industry pressures (e.g., align the corporate business model to leverage industry opportunities, such as product / service strategy, target markets, financial strategy, go-to-market, and sales strategy)</p> <p>Capabilities — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products / services, ecosystem partners, financing)</p> <p>Enablers — the key functionality of technology solutions required to support the organization’s enabling business practices (e.g., development platform, applications, network connectivity, user interface, training and support, partner interfaces, data cleansing, and management)</p>

Source: Aberdeen Group, September 2008

Table 5: The Competitive Framework Key

Overview	
<p>The Aberdeen Competitive Framework defines enterprises as falling into one of the following three levels of practices and performance:</p> <p>Best-in-Class (20%) — Practices that are the best currently being employed and are significantly superior to the Industry Average, and result in the top industry performance.</p> <p>Industry Average (50%) — Practices that represent the average or norm, and result in average industry performance.</p> <p>Laggards (30%) — Practices that are significantly behind the average of the industry, and result in below average performance.</p>	<p>In the following categories:</p> <p>Process — What is the scope of process standardization? What is the efficiency and effectiveness of this process?</p> <p>Organization — How is your company currently organized to manage and optimize this particular process?</p> <p>Knowledge — What visibility do you have into key data and intelligence required to manage this process?</p> <p>Technology — What level of automation have you used to support this process? How is this automation integrated and aligned?</p> <p>Performance — What do you measure? How frequently? What’s your actual performance?</p>

Source: Aberdeen Group, September 2008

Table 6: The Relationship Between PACE and the Competitive Framework

PACE and the Competitive Framework – How They Interact
<p>Aberdeen research indicates that companies that identify the most influential pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance that a company achieves is strongly determined by the PACE choices that they make and how well they execute those decisions.</p>

Source: Aberdeen Group, September 2008

Appendix B: Related Aberdeen Research

Related Aberdeen Group research publications include:

- [Supply Chain Risk Management: Building a Resilient Global Supply Chain](#); July 2008
- [A View from Above: Global Supply Chain Visibility in a World Gone Flat](#), September 2007
- [Strength in Numbers: Collaboration is Crucial for Global Supply Chain Agility](#), December 2007
- [Process Collaboration in Multi-Enterprise Supply Chains](#), August 2008
- [Agile Logistics: Transforming the Distribution Center](#), May 2008
- [The Responsive Supply Chain: Managing Market Events in the Consumer Goods Industry](#), July 2007

Information on these and any other Aberdeen publications can be found at www.aberdeen.com.

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