

Visibility in the Supply Chain

BY BILL HARVEY AND BILL WOLFE

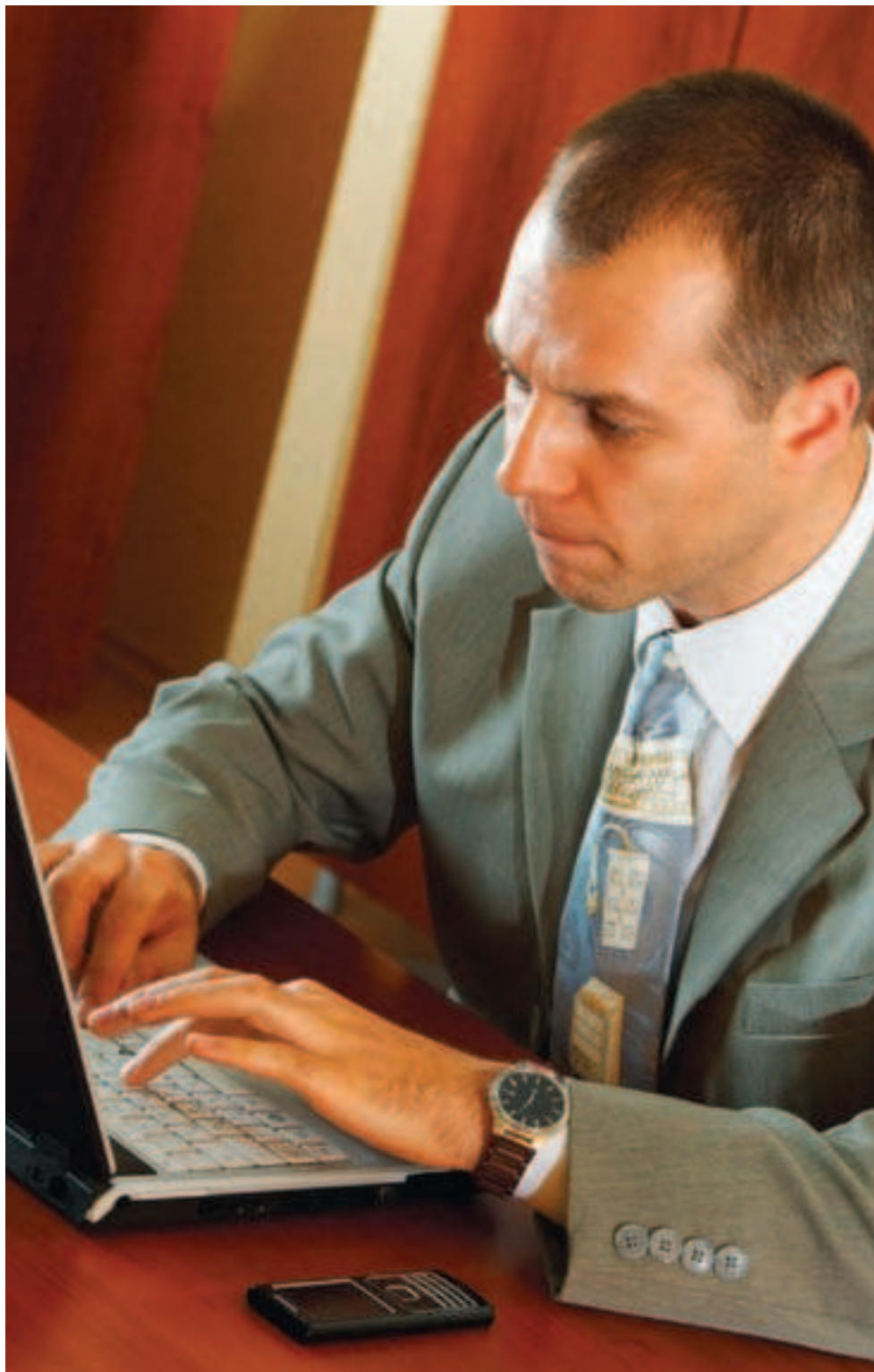
As materials move through the supply chain, there are many complex layers of communication and coordination that must work in harmony to achieve on-time delivery. An ever-expanding network of partners is tasked to perform critical value-added functions within the supply chain. As these networks grow, so do the management challenges and inefficiencies. Orders get lost, shipments don't arrive, customers aren't happy. To gain control over the logistics network and processes, companies need a comprehensive view into their supply chain network.

According to AMR Research, Supply Chain Visibility is one of the "supply chain's next frontiers, providing the real-time, micro-level view needed to perform the critical functions of monitor, notify, simulate, control and measure. This capability will become increasingly important as supply chains evolve into linked networks, and move from a single enterprise controlling multiple processes to multiple enterprises that control a single process, distributed across trading partners."

Supply Chain Visibility means access to accurate, timely information throughout supply chain processes and networks, allowing organizations to make decisions quicker and with more accuracy. A more comprehensive view of the supply chain allows businesses to trim inventory, streamline logistics and optimize the efficiency of their work forces as they gain a competitive advantage. Today, most organizations have limited visibility into one or two processes, such as freight. But even there they don't have the full picture, especially working with third parties, causing missed shipments or delayed deliveries.

Real visibility in your supply chain processes and network enables new levels of operating efficiency, service capabilities, and profitability for suppliers and logistics partners. This means organizations are able to achieve:

- Automated order-to-cash with customers
- Reduced order cycle times
- Lower inventory levels
- Lower transportation costs
- Automate procure-to-payment processes with suppliers



To take control of their logistic networks and their processes, companies need to be able to see their entire network chain.

Critical functions



Real visibility allows better inventory control. Companies are able to know their inventory status at any time.

- Improve accuracy and efficiency of receiving operations
- Improve customer service and satisfaction levels
- Focus on exception management

Global visibility into transportation processes enhances the tracking capability of railcars and allows for better management and documentation on shipments. For example, Dow Chemical utilizes a Company Railcar Shipment Visibility solution for railcar tracking that enables surveillance of highly hazardous materials in transit and enhanced communications for emergency responders nationwide to protect the safety and security of the communities through which these materials are transported. Railcars are equipped with global positioning systems and sensor technologies to allow electronic monitoring of the location and condition of railcars and their contents. These types of applications offer precise

traceability, verifying exactly the status and location of shipments; however, they are usually very expensive to implement and operate.

More affordable solutions include business process networks (BPN), which help companies achieve operational excellence by replacing complex approaches with auto-

mated systems and integrated business processes. BPNs are fully connected operational frameworks that remove transactional and communication barriers and institutionalize processes for integrating the information flow between global trading partners.

With seamless access and visibility into the supply chain network, the enterprise can dramatically reduce costs and gain greater control over capital and inventory. Harnessing visibility into the logistics network means greater control over processes across an array of partners and systems, eliminating errors and enhancing customer relation-

ships. Companies can unlock new levels of efficiency, service and profitability across the entire supply chain.

Business process networks promote intense information sharing and collaboration among trading partners, including shippers,

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third parties, suppliers and customers.

Chemical companies like BASF, Air Products and others utilize Elemica's integrated BPN to gain visibility into transportation processes. These networks give a comprehensive view into the transportation network providing immediate access to information and greater control over logistics service providers. Processes are streamlined from bill of lading through invoicing. Automated shipping status messages alert companies to delays, allowing shippers to advise customers of the status and proposed arrivals of shipments.

For example, one large chemical company manages its entire supply chain process from order entry to final shipment using a BPN. The company utilizes demand forecasts from their customers or actual purchase orders to start the order process. These orders are entered into the BPN, which sends them to a SAP-based ERP system. SAP verifies that the inventory is there and creates a sales order. The SAP system determines where the inventory is located and creates a shipment request. A transportation management system contracts the appropriate carrier and transportation mode. When the shipment is made, the BPN alerts the SAP system to update inventory, tracks the shipment by communicating with the carriers, creates documentation on the shipment, issues a freight invoice, and provides notification when the customer receives the product. All along the way, at any time, chemical company management can view the status of the order, inventory and shipment. If the customer wants to know where his order is, the information is available in real time. If a carrier misses an appointment to pick up a load, the chemical company knows it and can alert their customer of the problem.

The biggest benefits of using this particular business process network integrated with the SAP system has been a significant savings on rush shipments due to the lack of errors in information exchanged. The full visibility helps the chemical company work more proactively with their carriers and gather information for performance metrics.

Visibility extends to all users connected via the business process network and can include email notification to carriers, suppliers, customers, sales, customer service, warehouse operations, etc. Users have the ability to monitor critical activity in the supply chain, including monitoring the successful execution of the plan for inventory requirements and shipping schedules. Most ERP systems can create these plans, but lack the ability to successfully execute them. That is where the BPN comes in, enabling the user

to develop a plan and monitor actual events, measuring performance-to-plan and highlighting exceptions by:

- collecting order and shipment status information from all trading partners
- evaluating each new transaction and determining key business events
- getting the information about those key business events to the right person in time for decision making

Supply Chain Visibility solutions improve logistics efficiency by enabling com-

panies to foresee order failures before they happen. Companies can achieve line-item level visibility across multiple modes of transportation by connecting to trading partners; systematically sharing data in the form of electronic messages such as purchase order acknowledgements, advanced shipment notices and carrier status/proof of delivery; and monitoring the order process using alerts to flag potential order failures and enable proactive resolution.

The value of BPNs extends to the logis-

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Critical functions

tics service provider community. Not only are they able to reduce manual entry into their systems (a big cost-saver), but they can also better serve their shipper customer because of the visibility into their role on the overall supply chain.

Dashboards provide operational views of current performance, exceptions can be spotted easily and “drill down” capabilities provide needed detail. Examples of dashboards include order status, order lead-time and performance, as well as shipment status and performance. Usually BPNs offer analytics capability to measure trends and key performance indicators (KPIs) to get empirical data needed to continually improve performance. For example, carrier performance can be measured by metrics such as “on-time delivery” so that future contract negotiations are based on performance, not promises or assumptions. Detention charges can be analyzed to identify pain points in the supply chain.

Another benefit of supply chain visibility involves inventory – companies are able to know where their inventory is at all times.

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Since most companies keep inventory at third party warehouses rather than onsite, full inventory visibility provides companies the ability to fill orders quicker, resulting in higher customer satisfaction. They can also issue invoices immediately, thus promoting quicker order-to-cash cycles.

Supply Chain visibility addresses the key business problem in the supply chain of missed sales, production delays, and high administrative costs caused by shipment and inventory status information that is not timely or complete. Knowing the status of inventory in the pipeline is critical for buyers who are making the replenishment and stock transfer decisions and operational managers who are managing the flow of goods. Departments concerned with inventory availability struggle to obtain the in-

formation they need with enough lead time for them to ensure the inventory is received complete and on time.

In summary, some tips for boosting your supply chain visibility:

- 1) Supply chain visibility requires cross-functional support across various departments within the organization, even across regional boundaries. Identify who will be involved and who is responsible for improvement metrics. Make sure everybody is onboard and supports the project.
- 2) Gather information from all trading partners involved, both internally and externally. This is accomplished easily using a transportation network or portal

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connecting carriers and shippers. You may need to pull information from legacy systems and access data from carrier, freight forwarder and 3PL systems. Web services and service-oriented architecture make it easier to do this.

- 3) Data quality is critical, yet too much information can be overwhelming. Filter data so users can manage by exception.
- 4) To drive strategic business improvement from visibility information, companies need to move past basic shipment tracking to event management, performance trending, root cause analyses, etc.
- 5) Incorporate escalation policies and resolution workflows to ensure corrective action is taken.
- 6) Create a list of key metrics targeted for improvement. This can include on-time delivery performance, safety stock levels, expediting costs, productivity, etc.
- 7) Develop a visibility strategy that determines how improvements will be tracked and measured.
- 8) Select an on-demand solution that comes with pre-connections to carriers to speed implementation time. Make sure your BPN can provide email notifications to interested parties that are not subscribers to the network. Inbound orders, advance shipment notices, and inventory status can be tracked via a supplier portal or B2B collaboration hub.
- 9) Roll out the visibility program in a series of small steps. Start with the biggest problem area. Don't try to tackle everything at once. This may mean



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concentrating on a specific region, key customer or transportation mode only. Many companies roll out the visibility connection process in waves of 10 to 15 suppliers and carriers.

- 10) Don't forget training! Spend time and money on training materials and user

training. Otherwise, you won't get the value and improvements you need. ■

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