

Achieving Supply Chain Visibility

Most executives and managers understand the frustration of not having adequate visibility across the supply chain—late deliveries, unplanned orders, and unhappy customers, just to name a few. What they may not understand is how to leverage existing capabilities and technologies to improve visibility and improve operating performance. This session explores the "ins and outs" of visibility and presents the fundamentals of leveraging technologies, such as the Internet, to gain new insight into the supply chain.

Participants should expect to learn how to 1) assess their organization's ability to achieve greater visibility, 2) take advantage of existing technologies that support supply chain visibility, 3) present the value of supply chain visibility to internal management and to external trading partners, and 4) overcome some of the common barriers that other organizations face every day in achieving better visibility.

Achieving supply chain visibility has been a critical desire for companies and a frequent promise that often does not meet expectations. Improving visibility is a noble as well as a potentially valuable undertaking. Additionally, technology capabilities are finally matching expectations and driving significant benefits for many companies. Discover how companies have achieved improved visibility and how to evaluate and address your company's visibility needs.

WHAT IS SUPPLY CHAIN VISIBILITY?

Over the last few decades, organizations and supply chains, largely driven by technology, have evolved significantly. From the 1950s through the present, supply chain has undergone multiple stages of evolution: departmentalized or functional supply chain management, integrated supply chain management, and value networks.

Today, the Internet is unleashing a powerful phenomenon—visibility—that is significantly impacting the supply chain. As supply chains migrate from a push model (build-to-stock) to a pull model (build-to-demand), they require four key elements for operational success: real-time visibility (across the value chain), flexibility (of supply and sourcing options), responsiveness (to changes in customer demand and product lead times), and rapid new product introductions (based on market trends and new designs).

DEFINING VISIBILITY

Visibility can be described in a number of ways:

- "The ability to see."
- "Turn the lights on" (it's the ability to see throughout your entire operation).
- Visibility reveals the areas that aren't working.
- Visibility enables collaboration—visibility and collaboration go hand in hand.

According to a recent Yankee Group Report (January 2002) that examines the emergence of supply chain visibility and event management solutions, "... companies are now turning to visibility and supply chain event management (SCEM) solutions to reduce total supply chain costs, drive efficiency, and increase customer responsiveness. The increasing complexity of today's extended enterprise is simultaneously spurring new technical and process challenges for supply chain performance. Companies continue to be hampered by the lack of real-time visibility into trading partners' business processes and are encumbered by costly inefficiencies. Visibility and SCEM solutions enable businesses to collaborate in a decentralized fashion; monitor inventories, orders, demand, and constraints across the supply chain; and optimize related business processes—allowing proactive resolution of problems and issues in real time while aiding existing plans."

A key success factor for effective supply chains is to ensure that decisions are taken at the most appropriate level in the organization. For example, a production scheduler can proactively mitigate unintended consequences of a rail car of a raw material not arriving in time due to the availability of real-time, in-transit inventory information. However, that same piece of information—combined with the detection of a supply demand imbalance spotted by detecting a spike in the price of a related commodity in the spot markets—can lead managers to conclude that the supplier has suffered a major outage in one of its units. The new generation of supply chain systems include visibility applications coupled with "supply chain process management" or "event management" capabilities. These capabilities enable the close to real time "event-based" escalation of relevant pieces of information through the organization to appropriate individuals, who will then execute decisions to minimize organizational impact and/or leverage opportunities created by this event. This type of visibility can also be termed as "active visibility."

VISIBILITY AND SUPPLY CHAIN EVENT MANAGEMENT

Real-time visibility of the supply chain, combined with a monitoring and an event-management system, increases the proportion of decisions that are taken preemptively to minimize unintended consequences or exploit unforeseen situations. Core process elements of supply chain event management or active visibility include:

- **Monitor:** Provides ongoing information about supply chain events, including the current status of inventory, orders, shipments, production, and supply.
- **Notify:** Helps to support real-time exception management through alert messaging, proactively warning a decision maker if an action must be taken or if a trend is emerging.
- **Simulate:** Supports decision making by assessing what will happen if specific actions occur or recommends that an action be taken based on response to an event or trend analysis.
- **Control:** Lets a decision maker change a previous decision or condition, such as diverting a shipment or expediting an order.
- **Measure:** Provides measurements, often key performance indicators (KPIs) and metrics, for assessing how well the supply chain performs, past and present.

(Source: *The Report on Supply Chain Management*, February 2002, AMR Research Inc.)

SOME KEY SHORTCOMINGS OF TRADITIONAL SUPPLY CHAIN APPLICATIONS

Typical visibility and information gaps in traditional supply chain applications include change recognition, multi-firm process management, and understanding business context (See Forrester Research, 2002).

- *Change recognition:* Planning applications don't react quickly when changes occur to order or inventory levels. To effectively manage exceptions, companies need applications that monitor events and physical assets, recommend alternatives, and resolve outcomes automatically—without replanning.
- *Manage across the extended enterprise:* Traditional warehouse and transportation applications cannot accommodate partner information easily. To collaborate effectively, companies need applications to manage relationships based on a community data model.
- *Understand business context:* Traditional applications don't have visibility into overall corporate demand, supplier capacity, or customer priorities. Companies need Web-based

solutions that provide visibility with on-the-fly partner connections and multi-application directed workflow.

The need to remedy these gaps in traditional supply chain applications, as well as advances in Internet and Web-based solutions, have led to the evolution of new approaches and technologies for solving these problems.

NEW TECHNOLOGIES AND ENABLERS OF SUPPLY CHAIN VISIBILITY

Key new technologies that enable visibility and close gaps in traditional applications include:

- alarm and event management: work-flows and rules engines
- business intelligence and analytics (including AI and Heuristics)
- portals and role-based consoles (visibility based on your role in the organization)
- RFIDS (radio frequency identifiers), potentially the next big wave for tracking inventory and enabling real-time business decisions
- mobile technologies/handheld devices.

VISIBILITY FOR BETTER MANAGEMENT OF DEMAND

Delays and supplier stock outs can derail the best-made plans. To manage demand, companies must react to changes by monitoring and redirecting resources through practices such as

- Visibility in distributed order management, which enables your company to effectively manage the lifecycle of a customer order across the extended supply chain. Distributed order management needs visibility to manage orders from multiple channels and coordinate fulfillment across multiple inventory locations, suppliers, partners, and business units.
- Visibility and sharing of information between buyers and sellers around product seasonality, promotional events, and new product launches is further increasing the associated benefits of higher customer service levels and lower supply chain costs.
- Customer order visibility: Demand forecasts are now routinely updated by sales representatives based on the latest customer information and, increasingly, by end customers themselves. Your customers' ability to access detailed order lifecycle information through Web portal facilitates demand-planning capabilities and order processing—and improves customer satisfaction. This can help improve customer relationships by empowering your

customers to access real-time, Web-based information about their orders.

- Visibility for dynamic inventory allocation: Companies must be able to sense demand spikes or shortfalls and respond to those changes by deploying inventory in distribution centers (DCs), at supplier points, and on boats en route. These companies need access to networkwide inventory and the ability to determine other supply chain costs and customer impacts.
- Visibility in global multi-tier sourcing: To maintain the right stocking levels with demand changes, companies need to be able to redirect global supplier shipments when they arrive at port rather than routing everything to central DCs.

VISIBILITY FOR BETTER MANAGEMENT OF SUPPLY

Enabling transparency of your supply processes can provide significant benefits. It can

- Minimize information delays and distortions across echelons or levels in the supply chain and drive dramatic reductions in material shortages, lead times, and supply chain inventory, as well as improvements in on-time shipments and revenue capture.
- Enable a collaborative environment, where demand and supply plans, commitments, orders, and shipments can all be shared across multiple tiers of suppliers.
- Can help provide your suppliers with more accurate and timely downstream requirements, helping ensure supply in the right amount at the right location at the right time.
- Help you “see” inbound supply across connected suppliers, providing forward visibility that allows you to anticipate supply shortages before they become a problem.
- With event management, provide networkwide monitoring capabilities that enable real-time notification of unplanned events. Event monitoring can be used to detect discrepancies between the plans submitted by upper tiers and the commitments from lower tiers. It then notifies those parties that are best equipped to resolve the discrepancy.
- Coupled with business intelligence and strategic decision support tools, enable interactive evaluation of resolution scenarios and re-planning and optimization of the supply network according to changes in demand and supply availability.
- Eliminate communication barriers across your supply partners to enable better, faster decisions.

MANAGEMENT VISIBILITY

Through the use of corporate “dashboards” and event management solutions, executives can have the transparency they need into the enterprise.

- Strong tactical and strategic decision-making is only possible with access to real-time information. The supply chain visibility empowers executives to make key management decisions based on accurate data about inventory, order processing, and employee productivity.
- Visibility enables real-time decision making for managers and executives in dynamic business environments that requires up-to-the-minute data about inventory levels, order volumes, order status, employee productivity, etc.

KEY PERQUISITES FOR ENABLING VISIBILITY

- enterprise data integrity
 - GIGO – “garbage in garbage out”
 - single source of truth
- seamless systems integration
 - integration and architecture that supports seamless and instantaneous communication
- business process orientation with an extended enterprise view
 - beyond the four walls
 - include customers and business partners into the equation
- enabling technology platform and tools
 - leverage visibility and SCEM applications
- established performance measures
 - measures that matter
 - measure what matters
- roles and work flow definition
 - define roles, workflows, and escalation procedures.

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CONCLUSION

Visibility of events in one part of the supply chain, no matter how far removed from your own operations, often have direct and significant consequences on your company's bottom-line performance and ability to meet customer expectations. In this increasingly collaborative business environment, intelligent notification of and response to these events as they occur is critical to building and maintaining competitive advantage.

Active visibility (visibility with event management tools) across your extended supply chain can provide real tangible benefits, including:

- improved responsiveness to changes in supply and/or demand
- lower operating costs through improved visibility of supply chain glitches
- reduced inventory levels across your supply chain
- improved productivity through event management
- stronger business relationships with your business partners.

Extended supply chain visibility allows for better control and execution. Visibility allows for improved responsiveness to the ever-changing conditions of the supply chain and, as a result, can reduce costs, increase revenues, and make more efficient use of critical assets.

ABOUT THE AUTHOR

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