

# The Visible Supply Chain

Ensuring end-to-end optimization

## White Paper

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*Aligning Business and IT to Improve Performance*

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## Visibility Needed

Today's supply chain is, of course, the primary processing mechanism of every manufacturing company. But it's more than that: Its multifaceted, multicompany, multinational structure makes it the most complex management challenge found in any enterprise. Supply chain management no longer means just making sure that the right resources and the right materials move to the right place at the right time. Today, it also means ensuring that the entire chain of events involved in producing goods and distributing them to customers satisfies customers, minimizes costs and maximizes profit.

Clearly, managing a supply chain in this fashion requires information, but exactly what that means is not obvious. Merely pushing information about partners or products into a report that lands on a manager's desk every day will not achieve the goals. Nor will a dashboard, even if it delivers that same information in real time.

What today's supply chain managers need instead is a supply chain that is visible. "Visibility" in this case means that data about the supply chain is delivered in a way that enables managers to know whatever they need to know whenever they need to, at whatever level of detail they need, and that allows them to analyze the data and take action based on the results of their analysis. The essence of supply chain visibility is the ability to know the location and status of all physical components, from raw materials to finished goods, as they move from suppliers through the stages of production to delivery to customers.

Defined this way, supply chain visibility is a tall order, but some of today's IT systems can meet it. This paper will describe the characteristics of a visible supply chain, explain why having one is important and discuss the technology resources that can deliver it to you.

## What Visibility Contributes

Business performance management relies on data that is readily accessible to managers, but data accessibility alone is not sufficient to make the supply chain visible. It is truly visible only if the data is accessible within a context that gives it meaning and can make it useful as part of a decision-making process. Context is especially important in today's information-rich enterprise environments because it is easy to overload users with too much data, from too many sources, presented to them with too little context of how it relates to other data and business processes and activities.

In addition, most business decisions today require collaboration, so visibility also requires that the information be shared among colleagues. And visible systems offer users an analytic framework within which they can work with their information. Business intelligence (BI) systems are frequently used as the analytic tools of choice because they can pull data together from disparate sources and make sense of it, which is necessary in creating a visible information environment. The analysis enhances visibility by providing an additional context for the information.

For example, if a manager does an average unit cost analysis of a product component and sees that it is costing more than the minimum amount the organization contracted to pay, he or she can then take action to analyze and correct

the problem. Analysis of the component-ordering pattern can determine where quantities can be adjusted to meet minimum pricing requirements. Then the company can use its enterprise resource planning (ERP) system to adjust the component ordering pattern and the manufacturing workflow for that product.

Finally, visibility in systems includes the ability to act on the information and the analysis provided. If the data is accessible and available in a meaningful context, and if both primary users and their cohorts can share and analyze it, they have what they need for decision-making. Finally, a visible environment is complete only if it also enables users to act on any decisions that are made.

## **The Visible Supply Chain**

Today's international, multifaceted, multiple-partner supply chain makes creating a visible information environment to support it both difficult and necessary. The complexity of supply chain structures and the amounts of data they generate create the need to implement a visible supply chain. Supply chain managers thus must find ways to make their diverse and far-flung manufacturing and distribution initiatives more visible.

Other pressures to control supply chain processes come from both external and internal sources. Externally, one source of that pressure is customer demand, particularly for products sold worldwide in markets that are very competitive. When operating at that scope and in such markets, visibility is essential, but gathering and managing the information that enables demand to drive the manufacturing and distribution processes is a complex job because it likewise is dispersed widely.

Internally, cost pressures make finding low-cost suppliers and managing their participation in the supply chain a business imperative that can be executed most efficiently when the processes are managed through a visible supply chain. Implementing other cost containment programs such as scrap minimization, efficient transportation systems and inventory reduction similarly require a visible supply chain, as do creating and managing initiatives such as distribution programs that meet delivery goals, component quality initiatives and effective target marketing programs. Then there is the issue of aligning the supply chain itself with corporate strategy: To maximize the contribution that the supply chain makes to overall enterprise performance means that supply chain decision-making has to be both deft and on target, which is another ongoing source of pressure.

Ventana Research believes that supply chain visibility can enable supply chain managers to meet these pressures, and that the creation and maintenance of supply chain visibility should be part of an overall performance management strategy.

## **Technology Pathways to a Visible Supply Chain**

A visible supply chain can be implemented by using technologies that are readily available and in many cases are already in place in manufacturing enterprises. Most supply chain data is managed in a combination of the ERP system and specialized software for supply chain management (SCM). To make these technologies work in a visible supply chain environment, key technologies must be added to the mix:

dashboards and other tools that can track materials and product flow in the supply chain, and information access and business intelligence tools for analysis.

Modern dashboard technology applied to a visible supply chain gives production and distribution resource managers the ability to see both numerically and graphically what is happening in their areas of responsibility. In a properly visible environment, cohort managers can see their own data as well as data from processes that affect their work, even though they are not responsible for managing them. In either case, the dashboard user can drill down to find the root causes of the behavior of the monitored resources.

Updated data from intra-enterprise ERP and supply chain systems often is available in real time or within one day. Recent research from Ventana Research has shown, however, that even where a local ERP system is in place, data often is not available to managers that quickly. This limits visibility into the supply chain and is a problem that should be corrected.

When data from intra- and intercompany sources is not immediately available to the supply chain management system and the dashboards its managers use, the cause may be a delay involving interfaces to an external partner. The delay may also be the result of recent merger activity or a lag in the implementation of modern IT systems in certain divisions.

One solution to the problem is to use portals, especially where role-based systems have portal interfaces that expose exactly the required information. Modern XML-based portals have transfer mechanisms built in, which enhance both their visibility and their usefulness in transaction processes.

Where data access or transfer is obstructing visibility, mechanisms such as fully automated electronic data interchange (EDI) or XML-based systems may have to be added. Unfortunately, in many instances the only available methods are less than fully automatic – spreadsheets, for example, and other analysis and reporting tools that require manual involvement to transfer the data.

No matter what methods are used to gather the data, it must be available on the managers' dashboards whenever they need it. If the data is not accessible in real time, the most recent data points must be available.

Business intelligence tools can provide analysis of the behavior of various supply chain processes and resources. That may include information as basic as performance volumes or costs measured against planned performance metrics, but it may also involve such subtleties as recalculating the resource relationships in the production equations used in manufacturing. Some BI tools can extrapolate from available data estimates of data that is missing or not available in a timely way.

Whatever data is available on a particular supply chain dashboard, whether it is at the top level or is found by drilling down, is fair game for analysis using BI tools. Those tools will take on greater value if the data is sifted into its proper contextual role. For example, a dashboard panel that shows tracking data for all components used in all products is generally useful, but it does not help a manager view and analyze the manufacturing economics and requirements for a particular product. A

dashboard containing information for materials and production data for that product alone will be more useful to provide visibility and analysis.

## **Strategizing for Supply Chain Visibility**

Creating a visible supply chain begins with a project strategy and the people who will have to work with the system when it is implemented. But simply stating the goal of creating a visible supply chain isn't an adequate project strategy; it must begin with an assessment of the information and analysis systems that are in place for your supply chain. You have to determine whether they will be adequate to the job and what will have to be added to build them into useful components of a visible supply chain system.

The people who are to be involved, including the relevant IT staff and the managers for various parts of the enterprise supply chain that will use the resulting system, jointly should determine the system requirements and what parts of existing systems can be used to meet them. Among the specifications that must be mapped out are which portions of the supply chain need most critically to be visible, which managers deal with those segments and which colleague managers need access to those parts of the supply chain. The system architects also have to determine for each supply chain segment the data elements to be displayed on dashboards graphically and the types of graphics, as well as numeric tables, will be displayed. Business intelligence tools and techniques must be specified for each supply chain element as well.

The team also must agree on the nature of the decision-making process for the supply chain elements. And last but far from least, the team must determine the measures of success it will use to indicate when the visible supply chain project is complete and ready to be used, and that will tell it going forward how to improve the system on a continuous basis.

Creating a visible supply chain is an undertaking not to be taken lightly. This project has IT elements, but essentially it is about business performance. Many of the building blocks for a visible supply chain are already in place at most modern organizations, but you must create visibility deliberately and thoughtfully if it is to serve as a competitive differentiator and a facilitator of improved profitability.

## **About Ventana Research**

Ventana Research is the leading Performance Management research and advisory services firm. By providing expert insight and detailed guidance, Ventana Research helps clients operate their companies more efficiently and effectively. We deliver these business improvements through a top-down approach that connects people, processes, information and technology. What makes Ventana Research different from other analyst firms is our focus on Performance Management for finance, operations and IT. This focus, plus research as a foundation and reach into a community of more than 2 million corporate executives through extensive media partnerships, allows Ventana Research to deliver a high-value, low-risk method for achieving optimal business performance. To learn how Ventana Research Performance Management workshops, assessments and advisory services can impact your bottom line, visit [www.ventanaresearch.com](http://www.ventanaresearch.com).