

# X-Ray Vision for Your Supply Chain

Increased visibility can help you  
boost your top and bottom lines.



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Wouldn't it be great to have a crystal ball to help you manage your company? What if you could see emerging market trends, customer demand patterns, and supply chain problems far in advance? You would generate more accurate forecasts, boost delivery performance, cut costs throughout your supply chain network, and realize more market opportunities.

Supply chain masters such as Dell, Nokia, and Wal-Mart are creating their own crystal balls in order to increase visibility into their evolving supply and demand dynamics. By accessing the right information at the right level and at the right time, these crystal balls reduce uncertainty and variability—and the associated costs. Well-informed companies don't need excessive "safety nets" in their supply chain configurations and management practices. They can fulfill customer orders with less inventory and better service. Moreover, they can respond to anticipated and unanticipated events more promptly, while minimizing the probability of the latter.

Research shows that most companies can benefit from increased visibility. A 2004 cross-industry study by AMR Research indicates that supply chains with the best visibility strongly outperform their peers in inventory investment, perfect order fulfillment, cash-to-cash cycle time, and stock-outs (Figure 1). For example, a five percent increase in forecast accuracy drives a 10 percent improvement in perfect order fulfillment—an equation that translates into higher earnings, better margins, and a higher return on assets.

Clearly, visibility improvement can be an effective way of "seeing through" supply chain complexity and boosting business profitability. The challenge is getting the intended results without opening the floodgates of information.

## How Visibility Can Help

Complexity manifests itself in three major areas: supply chain configuration and structure, products and services, and processes and systems (see P. Vickers and A. Kodarin, "Reaping the Benefits of

Figure 1: See the Results

**Best-in-class visibility leads to superior supply chain performance...**

Best-in-class companies	Inventory days of supply	-15%*
	Perfect order fulfillment	+17%*
	Cash-to-cash cycle time	-35%*
	Stock-outs	-90%*

**...while small improvements in visibility bring significant financial benefits.**

Demand forecast accuracy	Perfect order fulfillment	Earnings per share	+50¢
		Return on assets	+5%
+5%	+10%	Profit margin	+3.3%

\*Best-in-class performance compared with peers

Data from *The AMR Research Supply Chain Top 25 and the New Trillion-Dollar Opportunity*, November 2004

Figure 2: The Benefits of Better Visibility

Supply chain area	Complexity challenges	Visibility function	Benefits
<b>Supply chain configuration and structure</b>	<ul style="list-style-type: none"> <li>• Complex material flows</li> <li>• Poor flexibility and responsiveness</li> <li>• Excess inventory</li> </ul>	<ul style="list-style-type: none"> <li>• Share insight into demand patterns and inventory levels</li> </ul>	<ul style="list-style-type: none"> <li>• Improved planning, delivery, and inventory</li> </ul>
<b>Processes and systems</b>	<ul style="list-style-type: none"> <li>• Delays, errors, and exceptions</li> <li>• Excess inventory</li> <li>• Complex SC organization to handle exceptions</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor to detect issues early</li> <li>• Integrate order, customer, inventory, and supplier data</li> </ul>	<ul style="list-style-type: none"> <li>• Fewer exceptions</li> <li>• Better delivery and inventory</li> <li>• More productive workers</li> <li>• Issues resolved faster</li> </ul>

Supply Chain Complexity,’ in this issue of *PRTM’s Insight*). Figure 2 illustrates some of the challenges typically encountered in the areas of configuration and structure and processes and systems, and how increased visibility can help address them. These solutions are discussed in greater detail below.

**Supply chain configuration and structure**—A number of factors, including mergers and acquisitions, outsourcing, customer requirements, and the proliferation of suppliers, can cause supply chain complexity by multiplying sourcing locations, modes of transportation, and inventory stocking points. With deeper insight into customer demand patterns and inventory levels, the crystal ball can help companies plan how to move different products through the supply chain most efficiently. And better plans are sure to translate into simpler material flows and fewer inventory locations.

Avon, a \$7.7 billion worldwide direct seller of beauty products, operated multiple warehouses in Europe—one per country, with each warehouse having an independent inventory tracking system. By creating a centralized pan-European view into sales and available inventory for each product, the company was able to move its entire inventory into one centralized hub in Poland, near the production facility. Products that were previously packaged and labeled in different languages well in advance of shipment could now be labeled just prior to shipping. This flexibility has enabled Avon to be more responsive to fluctuating customer demand while cutting inventory costs.

The proliferation of suppliers, another major source of configuration complexity, is often due to a lack of confidence in supplier performance. Visibility can greatly reduce this uncertainty by allowing you to see your suppliers at work. For

example, creating a supplier portal will let you and your suppliers work with the same information, thereby reducing disconnects and communication delays.

Flextronics, a major provider of electronics manufacturing services, has established such a portal. The company created an integrated supplier platform that allows real-time views of changes in demand and production plans, and information to be shared about delivery dates and volumes. This platform has delivered substantial benefits, including cost savings in materials management and reduction of excess inventory.

**Processes and systems**—A complex supply planning process makes it difficult to forecast demand accurately and respond quickly to changes in customer requirements. Inaccurate forecasts impede effective supply and logistics planning, which can cause high levels of buffer inventory, rush orders, and other undesirable practices. In our experience, you can greatly improve planning accuracy by viewing customer demand patterns as close to real-time as possible, so you know who is buying what and where. For example, a global consumer electronics manufacturer needed to increase its supply chain visibility to meet the fast-changing requirements of major retail customers. The company developed a new supply planning process, where each retailer submits weekly sales forecasts based on actual point-of-sale data (the so-called forecasted POS) to the company’s designated supply chain managers, who adjust them as needed. The managers and the retailer then jointly prepare a forecasted POS, which the retailer uses to generate planned orders. The company translates the retailer’s orders into material requirements and passes them on to its suppliers. Everyone in the supply chain is working with the same information, which reflects the true market rate of demand,

and the whole communications cycle takes only a week to complete. The new process has significantly improved the company's performance at key retailers and has reduced the amount of sales lost in the channel.

Another problem many companies experience is the lack of process transparency, which makes it difficult to detect and deal with problems when they arise. As a result, some organizations have to dedicate entire teams to putting out raging fires—dealing with exceptions, expediting urgent orders, fending off angry customers, or chasing suppliers. Visibility enables you to continuously monitor order status—from the point an order is placed to the time the product is delivered. For example, if a company had an early warning about a delayed shipment from one manufacturing location, it could arrange for product to be sent from another.

In addition, the lack of process transparency forces staff to spend much time searching for the information that could have prevented these fires—if it's available at all. This is a widespread knowledge management problem. Studies by IDC, the Working Council of CIOs, the Ford Motor Company, and Reuters all show workers spend from 15% to 35% of their time navigating their systems in search of relevant information. And 40% of corporate users can't find the information they need to do their jobs. (Susan Feldman, "The High Cost of Not Finding Information," *KM World Magazine*, March 2004).

The crystal ball can help fix these problems by making the business environment more predictable. For example, one-screen access to inventory, customer, order, and supplier information in an integrated system empowers staff to quickly resolve issues. As a result, you can convert

the firehouse into a simpler, more focused organization and retrain the firefighters to handle higher-value, knowledge-based responsibilities.

### How to Implement Visibility

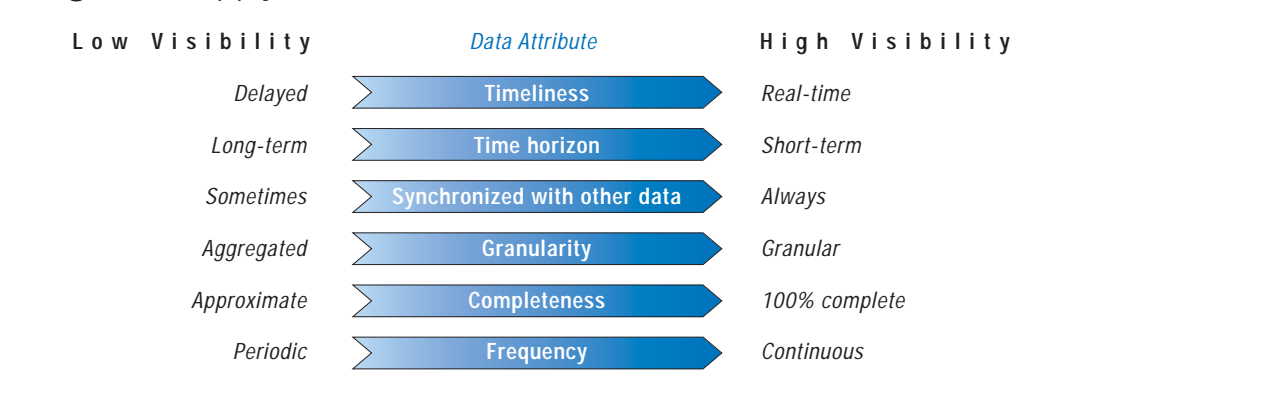
Visibility is not about collecting a lot of random information. A solid visibility strategy identifies the right set of data to provide immediate answers to the right set of questions—then develops an approach to systematically collect and analyze this data. The crystal ball must be custom designed for your company. Its scope and focus depend on your business model and basis of competition. If the model requires a view into your customer or supplier data, you'll also need to carefully nurture relationships that will allow you access to this data.

Many companies learned the hard way that collecting more data hasn't helped them improve operational performance. Instead of realizing the hoped-for returns on visibility investments, they ended up overloaded with information and unable to decide which signals to respond to, and how.

But you can avoid these pitfalls by considering the following questions: What information do we need to see? At what level of detail? How will we get the required data? And what will we do with it?

**Determine your information requirements—**Your specific information needs depend on your company's business strategy and basis of competition. For example, if you compete on superior delivery performance, you need a high level of visibility into the status of your order-fulfillment process—knowing exactly where orders are in the process, what commitments have been made to customers, and whether these commitments are

Figure 3: Supply Chain Information—How Much Detail Do You Need?



likely to be met. Or, if you have significant offshore supplier operations for critical components, you need good visibility into the status of purchase orders and shipments. That means establishing tight integration with your suppliers' information systems and negotiating to ensure you'll have advance warning of incoming supply issues.

**Determine how much detail you need**—The right level of detail depends on how the information will be used for decision-making. This can be determined along several dimensions (Figure 3). Not surprisingly, more-detailed, real-time information is typically more expensive and process-intensive. In addition, the volume of data increases exponentially as the level of detail increases, so you need to consider the trade-offs between having the data available and the investment in the resources required to use it effectively. For this reason, the business requirements should dictate which data visibility attributes are important to capture and at what level of detail.

For example, if you're in a fast-moving industry, such as apparel or consumer electronics, you may want to arrange with your retail partners to receive point-of-sale data for each SKU (stock-keeping unit) on a daily basis. On the other hand, the manager of the distribution center serving retail stores may require hourly or real-time data. In a less-dynamic industry, a more aggregate level might do—say, by product family, regionally, and on a daily or weekly basis. The degree of detail and frequency also depends on who will be using the information: A warehouse manager may need hour-by-hour or even minute-by-minute, order-by-order updates to detect delays or issues while a vice president of supply chain may find that daily or weekly performance updates aggregated to a product-family level are adequate.

**Determine how to capture information**—How will you get the required information? If the data comes from internal sources, are you already collecting that data, or do you need to set up a new collection mechanism? Are you expecting customers or suppliers to provide the information? If so, have you considered how the data should be transferred to you, in what format, and how often?

Once you have established the sources and the requirements, you can decide which tools can best

get you the desired data, and whether you need to make any new investments in IT systems. Investments in advanced visibility applications, such as event-management applications, point-of-sale systems, or Radio Frequency Identification technology, are often significant and require solid business justification. For less dynamic supply chains or more static processes, a periodic data sharing via simple file transfers may be adequate. In our clients' experience, treating this as an IT job—without first considering the process, organizational, and performance-management implications—usually brings disappointing results.

**Determine how you'll use the information**—It's not enough to have the information—you need to know how to respond. A good approach is to develop a system for deciding what information to react to and how. Leading-edge visibility systems can sort incoming signals and execute rules-based escalation policies for dealing with changing conditions. Effective companies conduct their own business-impact analyses to assess the incoming signals, establish thresholds for filtering out "the noise," and define simple standardized responses for dealing with emerging issues at their early stages.

Increased visibility helps to turn the unforeseen into the foreseeable, resolve problems early on, and deal with issues as soon as they emerge. Visibility aficionados compare it to discovering the tip of an iceberg at the horizon—there's a lot more to explore underneath the surface. But you don't have to develop the perfect crystal ball to see results. Even small increases in visibility can dramatically improve supply chain performance and the bottom line.

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