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# Why supply chain visibility is critical to achieve the perfect order

## Executive summary

Virtually the only way to move perfect orders through complex and inherently imperfect supply chains is by gaining control over supply chain events as they happen. Supply chain visibility technology produces remarkable results in this area because it gives companies an end-to-end view of the order lifecycle across the supply chain, together with the ability to quickly identify and resolve problems in real time.

It does this by:

- Collecting order status information from all sources across the supply chain
- Tracking that information against pre-defined milestones and KPIs
- Employing role-based alerts so that managers in every department (procurement, transportation, supply chain management, warehousing, and more) can successfully manage by exception

For example, True Value, one of the world's largest hardware cooperatives, ships product to over 5000 stores in 54 countries. Every year they process 64,000 inbound loads and over 600 million pounds of freight, importing 3500 containers through 40 different ports. The sheer volume of product from a geographically diverse supplier base made it difficult for True Value to proactively identify and manage exceptions in their inbound supply chain. But with the help of a service-based visibility solution, they were able to increase perfect order performance, realizing a 57 percent reduction in lead times, a 10 percent increase in fill rates, and an 85 percent reduction in backorders.

Results like these are not uncommon when companies gain real-time visibility to supply chain events, together with a system of role-based alerts. Consider: How many more perfect orders could you deliver if there were no blind spots in your supply chain? How much could you save if your procurement, supply chain, transportation, warehouse, and finance managers didn't have to chase down order status but could depend on a system that would notify them only when problems occurred that required their attention? How much more efficient would it be to have them all, literally, on the 'same page' with real-time access



to a single source of truth? How many phone calls, e-mails and miscommunications could be eliminated if alerts such as “shipment delayed at the dock for 24 hours” were sent out to all concerned parties at the same time?

A good supply chain visibility solution can help you resolve supply chain exceptions before they escalate into major problems and can improve the performance of your suppliers and carriers, reducing the number of delays and order errors that occur in the first place. All of this adds up to a sizeable return on investment together with operational improvements across the supply chain.

This paper looks at how supply chain visibility works, what it takes to put it in place, and its ultimate impact on perfect order performance. It also provides guidelines for modeling your order flow, creating role-based alerts, and working with trading partners to create the optimum picture of supply chain events in real time.

### Why you need to act

Supply chain disruptions have serious consequences. Many companies continue to rely on manually-intensive processes to collect supply chain data from disparate systems and multiple trading partners, compiling it into spreadsheets. For example, one retailer reported that it took 35 hours to create a report with consolidated information about supply chain events. This report was then used to make business decisions, even though it was out of date by nearly a week.

Even in the best case scenario, today’s complex supply chains create too much data for manual processes to absorb. This causes a lack of real-time visibility into supply chain events as well as an inability to detect and resolve exceptions in a timely manner. What is needed is an easy to use, service-based solution that sits on top of all your existing ERP, SCM, TMS and order management systems to provide a real-time, holistic picture of the supply chain and set off alarms when things go wrong.

A holistic real-time view of the supply chain is critical to perfect order performance because it allows you to track the complete order lifecycle from creation to payment, with timely access to decision-critical information about orders, shipments, deliveries, invoices and payments. This information can come from external trading partners as well as from internal procurement, transportation, warehouse, and finance applications. By consolidating all actionable data into one central location, you create a single source of truth about the status of your orders.

This centralized data can then be used to create personalized dashboards for decision makers across the supply chain. While everyone will see exception alerts that pertain to their department, managers in different departments can customize their dashboards based on their role in the supply chain. For example, procurement managers may wish to customize their dashboard with a chart that tracks supplier performance over time, while transportation will be more interested in carrier performance.

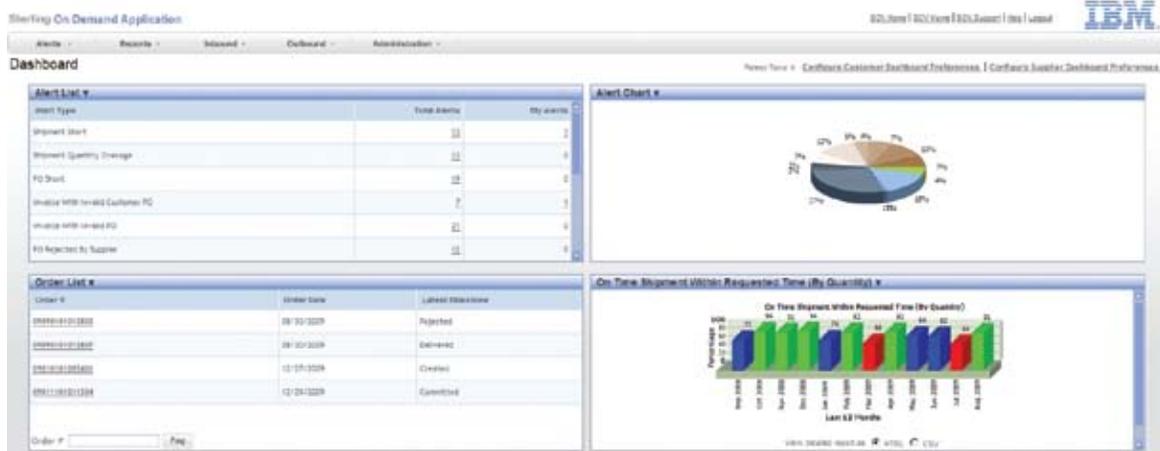


Fig. 1: Sample dashboard for procurement manager

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## Concern about supply-chain disruption risk increases

In its quarterly Business Barometer survey, the Corporate Executive Board reported that, while companies expect revenues to increase, they are worried about supply chain pressures. 51 percent of operations management executives surveyed expect higher supply chain disruption risk, compared to just 37 percent in Q1 2010.

— Industry Week, May 2010

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## Getting the data into the system

The first step, of course, is gaining access to the right data. If your supply chain visibility solution is delivered as-a-Service (SaaS), this process will be very straightforward. A service-based solution can sit on top of your existing ERP applications and B2B networks to take advantage of EDI and other data that's already in play.

Next, you might need a way to easily capture data from partners who are not already sending out purchase order acknowledgements, advance ship notices, and more, in some automated way. This requires self-provisioning and rapid onboarding tools to bring smaller partners into the network.

Once your smaller partners are connected, you'll need to provide them with simple portals where they can enter the data you require. Configurable partner portals should be provided by the vendor of your supply chain visibility solution and should be very flexible so that you can customize them to the exact needs of your suppliers. The easier your portals are to use, the more readily your partners will learn to use them and rely on them as their primary means of communicating status. Partner portals should also be detailed enough to capture all the information you need from each partner, and should enforce a complete and timely response.

Make sure your visibility solution includes self-provisioning tools and rapid partner onboarding capabilities, as well as configurable partner portals. If it does not, your set up time and cost of entry will escalate. A vendor with expertise in partner onboarding who can supply managed services around this area can accelerate this process.

## Management by exception

The management by exception approach is critical to perfect order performance because it allows you to proactively detect, notify, and resolve exceptions before downstream processes or customer service levels are impacted. Note there is a difference between “exception management” and “management by exception” although they are often confused. Exception management is actively monitoring a process and taking corrective action when you spot an anomaly. Management by exception is setting up a model of what you expect to happen, or want to happen, and then having a system automatically track events against that model. If everything goes according to plan, you can focus on other work. But when events deviate from the plan, you are notified immediately and can take corrective action.

Think about it. In complex, high-volume supply chains, it would be futile to monitor every touch point of every order as it moves through the supply chain under optimum conditions. What's important is to be alerted in real time when events go against plan.

Supply chains are well suited to management by exception because they have well-defined nodes where the same activities occur over and over. *Figure 2* is an example of an inbound international flow.

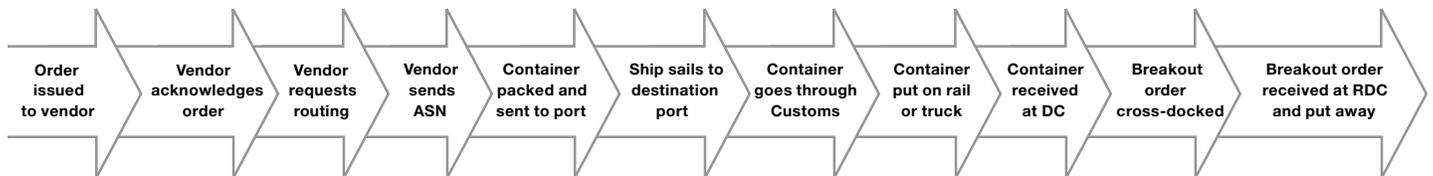


Figure 2: International inbound flow

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In our example, once the order is issued, the vendor must acknowledge the order, request routing information, and send an advance ship notice when the order is ready to ship. From there the vendor must pack a container and get the goods to the port. The goods then travel across the ocean, onto another dock, through customs, onto a train, through a cross-dock operation and finally on to the regional distribution center. Each node is well defined.

Once you have outlined the basic flow, you will need to define what you expect or want to happen at each node and think about what could go wrong. Therefore, a second chart might include an acceptable threshold for each step in the process (number of days or hours) as well as notes on possible exceptions and who would need to be notified if a disruption occurred.

Event	Threshold	Potential problems	Who to notify
Vendor acknowledges order	12 hours	Vendor loses order; vendor cannot fulfill; vendor does not send ACK	Procurement, finance
Vendor requests routing	24 hours	Carrier not approved	Procurement, transportation
Vendor sends ASN	2 weeks	Vendor does not send ASN; vendor cannot fulfill on time, in full or with correct pricing	Procurement, finance, SCM, transportation, warehouse
Container packed and sent to port	2 days	Vendor cannot get container; container does not pass inspection; truck breaks down; traffic, lines at the port	Procurement, finance, SCM, transportation, warehouse
Ship sails to destination port	12 days	Storm delay; container damaged; port delay	Vendor, procurement, SCM, transportation, warehouse
Container goes through Customs	24 hours	Dock congestion; Customs hold; work slowdown	Vendor, SCM, transportation, warehouse
Container put on rail or truck	24 hours	Rail capacity; rail ramp volume; carrier availability	SCM, warehouse
Container received at DC	7 days	Traffic; weather; truck route availability	Procurement, SCM, warehouse
Breakout order cross-docked	1-2 days	Backup at yard; labor shortage; carrier availability	Procurement, SCM, RDC
Breakout order received at RDC and put away	2-3 days	Volume; labor shortage	Procurement, SCM, RDC

Fig. 3: Thresholds, potential problems, who to notify

Now you are ready to set up the alerts. Your supply chain visibility solution should both:

- Supply you with a complete list of common alerts you can configure to your requirements
- Allow you to create custom alerts

As an example, *Figure 4* illustrates a starter alert for a late shipment. All you have to do is enter the number of hours you are willing to wait for the advance ship notice to come through and tell the system who needs to be notified if that threshold is exceeded.

While it looks simple on paper, supply chain management by exception is extremely powerful in practice. It's like a surveillance camera over your entire supply chain that only records potential bottlenecks, coupled with an alarm system that sets off rapid, preventative action in every department. If a supplier receives and acknowledges an order committing to meet the fulfillment requirements, but then cannot fulfill an order according to promise, procurement can find another source of supply, warehouse workers can fulfill from safety stock, and finance can initiate chargebacks for the delay. In a manufacturing environment, production managers can adjust their schedules according to when raw materials will be on hand. Instead of blind spots and firefighting and phone calls saying, "Where's my stuff?" you can pinpoint the source of every delay to manage your supply chain more efficiently. Every alert enables you to drill down and find the source of the exception. And every exception feeds performance

monitoring modules, so you can get definitive answers to questions like "Which suppliers are consistently missing delivery dates or shipping the wrong product?" This brings us to the issue of scorecarding and measuring partner performance.

### Performance monitoring

Supply chain performance monitoring and reporting is critical to achieve the perfect order because it leads to better cooperation from suppliers. Your visibility solution should give you the capability to:

- Track supplier performance against established performance metrics and scorecards
- Proactively notify suppliers and partners when an order is out of compliance
- Detect the root cause of exceptions and assist buyers in evaluating the cost of exceptions in terms of delays and penalties

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*“The better data you have, the better decisions you can make. Having end to end visibility allows us to pick and choose the high priority alerts and then drill down into the cause of the alert.”*

— Greg Linder, Director of Supply Chain Operations, True Value

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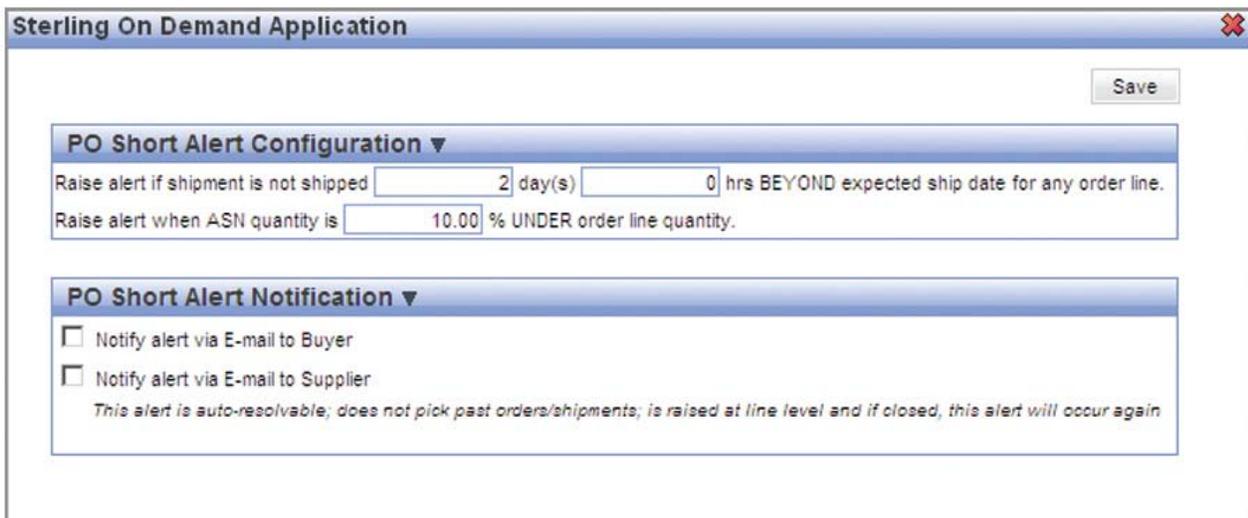


Fig. 4: Configure alerts

Sometimes supplier and carrier performance will improve as soon as they are aware you have visibility tools in place, rather like the presence of a surveillance camera deters crime. When suppliers know the timeliness of their shipments is being tracked and monitored, on-time performance rates tend to increase within weeks.

Visibility performance monitoring can also help you track your own performance against Service Levels Agreements to avoid chargeback penalties. If you need to dispute a chargeback, you can audit key events to determine when delays were caused and by whom.

### Continuous improvement

Once you have implemented a visibility solution, it will give you a more accurate, end-to-end picture of your supply chain “as is” with an easy way to measure how orders flow through your supply chain. Almost immediately, you will be able to identify weaknesses and areas for improvement. Your visibility solution should anticipate this change, and ensure that it is easy to adjust rules, adapt alerts, and add or delete partners and milestones.

### Where the ROI comes from

In summary, a good supply chain visibility solution will allow you to:

- Create a holistic view of your supply chain by consolidating order status information from internal applications and external trading partners
- Define the key milestones in your order flow
- Identify virtually all events that could interrupt the flow of orders across the supply chain
- Define custom role-based alerts so that everyone who needs to know about an exception is notified in real time
- Build supplier and carrier scorecards from accumulative data to improve performance over time
- Quickly accommodate changes such as new suppliers, new alerts, changes to the order flow

This leads to efficiencies and cost savings across the supply chain. Looking at an inbound scenario, the savings come from your ability to:

- Reduce stock outs by tracking critical inbound orders
- Reduce lead time variability by tracking orders against predefined milestones and alerting whoever needs to take action when orders are delayed between milestones
- Reduce expediting costs by notifying buyers of supply chain disruptions as soon as they occur; buyers can often find an alternate source of supply that does not require expediting
- Reduce manual order tracking costs by requesting electronic status updates

Looking at an outbound scenario, the savings result from your ability to:

- Improve customer satisfaction through more perfect orders and proactive notification of potential delays
- Reroute or reallocate product in-transit to meet customer needs
- Improve delivery performance by monitoring carrier performance and identifying reoccurring issues
- Reduce costs due to non-compliance
- Reduce time and costs associated with disputes
- Improve delivery performance and reliability

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### Improving perfect order performance at True Value

True Value saw an opportunity to become more proactive in resolving supply chain exceptions. With IBM® Sterling Supply Chain Visibility, they were able to create a central repository of order lifecycle information that combined data from internal procurement, warehouse, and transportation systems with external data from their freight forwarder, broker, and carriers. This gave them a view of the entire order lifecycle. Next they created custom process models and a system of alerts to minimize delays and avoid potential bottlenecks.

As such, Sterling Supply Chain Visibility played an important role in the company's larger supply chain initiative that led to a 57 percent reduction in lead times, a 10 percent increase in fill rates and an 85 percent reduction in backorders.

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### **Added benefits of using IBM**

Sterling Supply Chain Visibility can help you improve perfect order performance and limit both the impact and number of supply chain disruptions. Delivered as-a-Service, it gives you end-to-end visibility across global supply and fulfillment networks together with expert tools to manage your inbound and outbound orders by exception. Sterling Supply Chain Visibility extends the already high return on investment of supply chain visibility because it includes access to:

#### **The IBM Sterling Dynamic Business Network**

With Sterling Supply Chain Visibility, you will automatically be connected to IBM Sterling dynamic business network, a community of 30,000 businesses that includes 9,000 carriers. Many companies find that many of their suppliers and 85-100 percent of their carriers are already on the IBM Sterling network, which significantly reduces startup costs and time to benefit. Connectivity to the network also gives your company a vast databank with which to measure performance trends and set expectations for supplier performance. It can also accommodate the connectivity needs of your entire supplier and carrier community with EDI, FAX, Webforms, AS2, and In Network Translation.

### **Well-designed tools that stand the test of complex supply chains**

IBM has 30+ years of experience automating supply chain communications. This deep understanding of how supply chains work and what can go wrong gives you an advantage in planning and implementation. Many of the milestones and alerts you will need are already there, so you won't have to start from scratch. And you can rely on IBM for self-provisioning tools and partner portals that stand the test of complex, high-volume, and technologically diverse supply chains.

#### **Managed services that lower your TCO**

If you need supply chain visibility experts to help with planning or implementation, IBM offers a managed services team to help ensure you meet your goals. IBM® Sterling B2B Integration Services lowers your cost of ownership by reducing start-up costs, accelerating time-to-benefit, and helping to ensure predictable operations costs.



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