



SAP White Paper



SUPPLY CHAIN COLLABORATION: THE KEY TO SUCCESS IN A GLOBAL ECONOMY

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EXECUTIVE SUMMARY: THE NEED FOR COLLABORATION

Because of global competition and the rapid adoption of outsourcing, today's organizations are operating in a "networked" business environment. The past decade has witnessed a significant increase in globalization across all industry segments. As a result, supply chains have become highly complex, are global in scope, and include multiple touch points that range from the handling of raw materials to the delivery of finished goods to the customer. In this new environment, supply chains must exhibit a high degree of adaptability, responsiveness, and collaboration.

Organizations are now finding it essential to transform traditional supply chains from linear, sequential processes into adaptive supply chain networks in which communities of customer-centric, demand-driven companies share knowledge, intelligently adapt to changing market conditions, and proactively respond to shorter, less-predictable life cycles.

Adaptive supply chain networks address an organization's most pressing supply chain problems, such as the following issues:

- Outsourcing, nearshoring, and offshoring have resulted in supply networks that require multiple geographically dispersed partners to bring products and services to market.

- Supply chain risk has increased as lead times have become longer and more variable because of geographically dispersed partners who are stretching the supply chain to the limits.
- Reductions in the time available to build products, as well as customer demand for increasing configuration and delivery flexibility, are creating intense time-to-market pressure.
- Low-cost manufacturing has gained parity with traditional suppliers, and high fuel prices are causing companies to look for ways to lower distribution and transportation costs.
- Shrinking capital availability is forcing companies to streamline manufacturing and supply operations and build efficiencies, which are critical to the supply network.
- Customers are armed with information about the real value of products, which is shrinking customer loyalty and requiring customer service levels too expensive for companies that are unable to manage supply chain efficiencies.

Adaptive supply chain networks possess the flexibility to continually sense and respond to the environment in near real time without compromising operational and financial efficiencies. These networks seamlessly connect supply, planning, manufacturing, and distribution operations to critical enterprise applications and provide visibility across the supply network, thereby enabling rapid decision making and optimal execution. Adaptive supply chain networks are the key to supply chain collaboration.

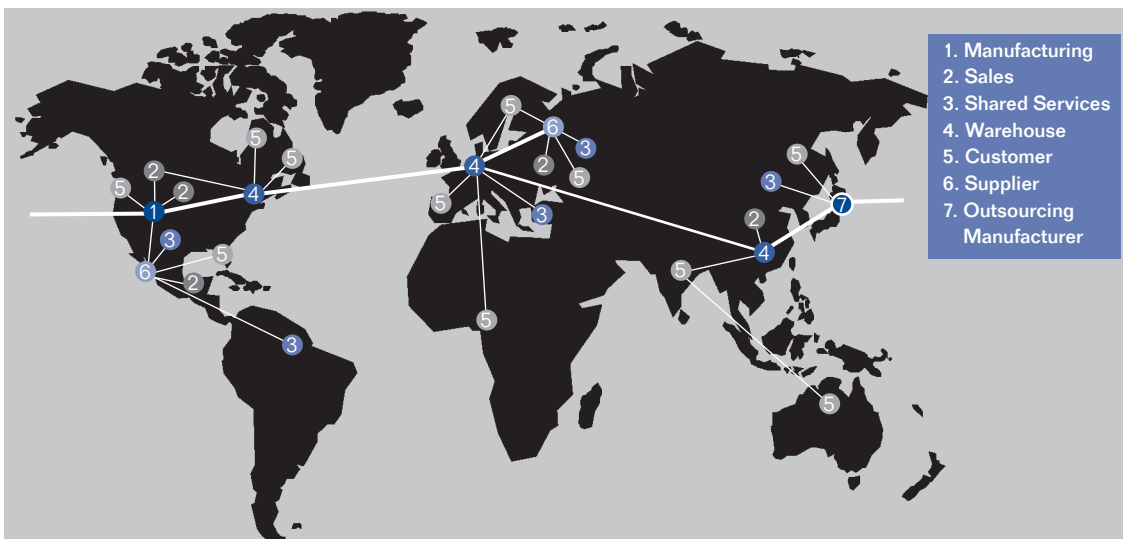


Figure 1: Today's Complex Global Supply Networks

COLLABORATION AT WORK

Collaboration is a competitive weapon that you can use to improve business performance. It allows you to establish strategic partnerships with your suppliers and trading partners in order to set mutually beneficial goals and share business processes and information. Collaboration helps drive market share, sales, and product adoption while maximizing your return on assets (ROA) and return on investment (ROI).

Successful collaboration relies on the development of mutual trust between you and your partners, as well as the willingness to share information that can benefit all the members of your collaborative team. The goal is to treat all suppliers, outsourcing partners, customers, and service providers as an extension of your organization.

This mutual level of trust is enhanced by putting in place a set of service-level agreements and associated performance measurement tools that provide everyone with rapid and accurate feedback on how well your collaborative efforts are being executed. For example, the Supply Chain Operations Reference (SCOR) model provides ready-made performance management functionalities for monitoring internal performance.

Another approach is the concept of balanced scorecard reporting, which typically looks at performance from financial, customer, internal business process, and innovation perspectives. Key performance indicator (KPI) reporting, based on a set of predefined metrics that align performance with the objectives of the other members of the supply chain, can help generate mutual gains and savings.

Note that almost every industry is experimenting with supply chain collaboration, creatively adapting the concept to fit its specific needs.

For example, consumer products and retail companies are implementing safety stock levels across their entire supply chains. The idea is to meet a target service level while creating a minimal necessary amount of safety stock for all intermediate and fin-

ished products at their respective locations. Based on point of sale (POS) and other information sources, demand intelligence and demand shaping are helping these companies achieve a new level of responsive replenishment all the way to the store level.

Collaboration is helping the pharmaceutical and automotive industries prevent counterfeit products from entering their supply chains. These collaborative product-tracking and authentication initiatives are leveraging technologies such as radio frequency identification (RFID). Pharmacies, for example, are using RFID to better manage the shelf life of perishable, coded products.

Companies in the high-tech space are looking to get actual production visibility beyond traditional purchase-level response, to better control quality, cost, and availability to improve key customer service metrics such as customer request date.

Capital equipment and manufacturing companies are looking to leverage collaboration technologies to extend lean supply chain principles across the enterprise (for example, extending electronic kanban processes to suppliers).

Regardless of the industry, we see common themes appearing. For example, across all industries, supply chain collaboration operates at the following levels:

■ Strategic

At this level, you and your partners make joint decisions on strategic issues such as the following examples:

- Production capacities
- Product design
- Production facility and fulfillment network expansion
- Portfolio joint marketing
- Pricing plans

■ Tactical

This level involves sharing information with your partners on topics such as the following:

- Forecasts
- Production and transportation plans and capacities

- Bills of material (BOMs)
- Orders
- Product descriptions
- Prices and promotions
- Inventory
- Allocations
- Product and material availability
- Service levels
- Contract terms, such as supply capacity, inventory, and services

■ Execution

At this level, you and your partners engage in an integrated exchange of key transactional data such as the following information:

- Purchase orders
- Production/work orders
- Sales orders
- POS information
- Invoices
- Credit notes
- Debit notes
- Payments

Barriers to Effective Collaboration

Obviously, all three levels of collaborative interaction can bring numerous benefits to you and your partners. However, establishing this kind of rapport can be difficult; there are numerous barriers to effective collaboration that you must either avoid or overcome.

Heterogeneous Infrastructures

Connecting with a wide range of partners, all with different technical functionalities and IT infrastructures, can be costly, complicated, and time consuming. Although phone and fax remain the primary mediums for interaction, other tools and services are enjoying widespread use, such as electronic data interchange (EDI) and RosettaNet, a set of standards and services that provide a common language for e-business transactions and the foundation for integrating critical processes among partners within the global supply chain.

These approaches solve many of the connectivity problems between organizations, but they can be costly and require substantial commitments of IT resources. Also, at present, even with EDI, XML, or virtual private network (VPN) solutions integrated directly into back-end systems, some companies still only dump the data into data warehouse technologies or only partially integrate the data into a business process. You are then able to provide only limited visibility or information, which is not effective in connecting business processes and reducing supply chain decision cycle times.

Supplier and Customer Challenges

Often suppliers and customers have different perspectives on some key supply chain issues. For example, consider the following questions:

- How does the supplier handle demand variability?
- Who is liable for inventory and safety stock?
- Are lead times reasonable, and is the supplier receiving an accurate and stable view of the demand stream?
- How accurate are the customer's forecasts?

Areas of contention can arise around issues such as inventory carrying costs and price protection, particularly in industries characterized by short product life cycles due to obsolescence.

Lack of Effective Metrics

Metrics that include performance measurements from all members of the supply chain are essential. Instead of focusing on optimizing their own company's operations, members of an extended, adaptive supply chain need to work collaboratively to assure mutual gains and savings. This means you have to extend your "line of sight" across your entire supply chain to measure the performance of activities and organizations that are not under your direct control. Without end-to-end visibility across your supply chain, making performance improvements becomes extremely difficult.

Security and Safety

Security across the entire supply chain, ranging from coping with hackers and other malefactors to planning comprehensive disaster recovery, is essential.

Upstream, Downstream, and Internal Collaboration

Supply network collaboration can take place upstream between your company and your suppliers and outsourcing partners, downstream between you and your customers, and within the four walls of your organization, as follows:

Supplier and contract manufacturer collaboration refers to a collaborative business process between the manufacturer and its suppliers in a typical buy-sell relationship. With the increase in globalization and outsourcing, supplier collaboration has become even more complex. For example, a manufacturer working with several contract manufacturing suppliers may also be collaborating with a number of component suppliers. In turn, some of these component suppliers may be providing goods not only directly to the manufacturer, but also to some of its contract manufacturing suppliers. This creates a complex web of connections that can make it difficult for all parties involved to share essential data regarding shipments, supplies on hand, quality, manufacturing capacity, and other factors that impact productivity. Add to this the fact that you are often dealing with multiple time zones, cultures, and languages, and you see the enormity of the challenge.

Customer collaboration includes the business processes that result when the manufacturer is the seller and distributors, wholesalers, or retailers are the customers.

Collaboration within your organization is also a key to success. One often-talked-about but not-necessarily-well-executed interdepartmental discipline is the sales and operations planning (S&OP) process. The S&OP process comprises a series of integrated and interdependent business reviews that are structured and focused to ensure that the tactical plans in all of the

business functions and geographies are aligned and in support of the company's strategy and financial goals. If your organization lacks a comprehensive S&OP process and has not included partner capabilities in the demand and supply plans that feed into your S&OP process, supply chain collaboration can be crippled.

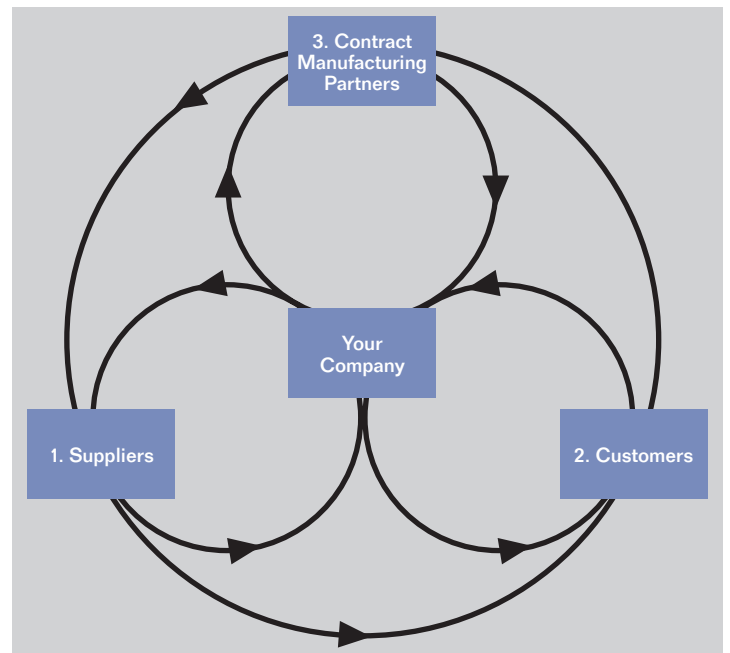


Figure 2: The Three Participants of Supply Network Collaboration

The Deployment of Collaborative Technologies

As companies start to invest in supply network collaboration, different deployment options come to the forefront. Many companies want to keep this type of data behind the firewall and implement collaborative processes in a traditional manner. However, there is also interest in deploying the collaborative processes in a hosted environment. Both approaches have their merits, but at all times the key to successful collaboration is a solution that allows you to easily bring on board suppliers, customers, and other partners, as well as adopt an infrastructure that supports multiple levels of complexity and communication formats.

A CLOSER LOOK AT SUPPLY CHAIN COLLABORATION

Greater connectivity and collaboration between you and your trading partners creates numerous benefits for both your suppliers and your customers, including the following advantages over a less-collaborative process:

- Lower inventory levels and higher inventory turns
- Lower fulfillment (transportation and warehousing) costs
- Lower out-of-stock levels
- Shorter lead times
- Improved customer service
- Early sensing of demand and gaining of market intelligence
- The ability to shape demand
- Visibility into customer demand and supplier performance
- Earlier and quicker decision making

These added benefits are particular to suppliers:

- Faster order-to-cash cycles
- Insight into their own performance
- Better capacity utilization
- Increased inventory turns
- Increased order fill rates

Supplier Collaboration

Supplier collaboration allows even your smallest partners to join in your strategic and tactical supply chain efforts. This cooperation helps reduce transactional costs because it replaces fax and e-mail as primary modes of communication. As a result, most of the errors that tend to creep into the cumbersome manual processes are eliminated.

One highly successful approach is to deliver supplier collaboration functionality and preassembled premium content through a supplier portal. Content is provided by a suite of Web-enabled services that allow suppliers direct access to your supply chain management applications. You can even integrate into the supply network those smaller suppliers that do not have an EDI infrastructure, by allowing them Web access to packaged bundles of role-based services. The supplier portal integrates all the underlying collaborative elements, including supplier self-service, inventory collaboration functionality, and access to collaboration folders.

You often see the following processes in your supplier collaboration:

- Purchase order and release processing
- Supplier-managed inventory
- The kanban process
- Dynamic replenishment
- Invoice/credit/debit processing

Purchase Order Processing

An effective collaborative application provides a comprehensive platform for managing and automating the purchase order process, resulting in faster cycle times and reduced errors that are an inevitable part of manual purchase order processing.

This approach also allows smaller, less sophisticated suppliers to participate in the purchase order process without an EDI connection.

Release Processing

Release processing is the communication of customer scheduling-agreement releases to suppliers. Releases reflect net customer requirements over time and usually contain a firm order horizon and a forecast horizon.

By minimizing administrative steps, automating the release process leads to a reduction in errors and results in real-time, accurate communication of requirements and the associated commitments from suppliers.

Supplier-Managed Inventory

Through supplier-managed inventory processes, suppliers can offer their customers a value-added service by performing the replenishment-planning task for their business partners. Besides giving the supplier increased visibility into actual demand, supplier-managed inventory also recognizes that suppliers often may have more knowledge and control over the logistical processes involved. By increasing visibility into actual demand as well as inventory levels, supplier-managed inventory programs

allow suppliers to make better decisions on how to deploy goods across various customers' locations, which leads to increased customer service levels, lower transportation costs, reduced inventory levels, and lower sales costs.

The Kanban Process

Kanban is a signal-based replenishment concept related to lean or just-in-time (JIT) production that historically uses cards to signal the need for replenishment of an item. Leveraging collaborative technologies, the kanban process allows customers to electronically issue the kanban replenishment signals to suppliers in real time. The supplier can quickly and accurately determine requirements and be proactively alerted to exception situations such as a new or empty storage location.

Dynamic Replenishment

Dynamic replenishment is a process that enables suppliers to compare customer forecast or planning data with their own production plans to better match supply and demand. It also allows suppliers to compare a customer's firm commitments or orders with the suppliers' orders.

This approach enhances the visibility of normal material requirements planning (MRP)-driven execution processes such as purchase order processing or release processing. It allows suppliers to flexibly adjust to shifts in customer requirements or supply shortages. The approach increases order fill rates and reduces raw materials, finished-goods inventory, and expediting costs.

Invoicing Processes

Automating the invoice/credit/debit processes enables a complete closed-loop process for all supply side processes (purchase order, release, supplier-managed inventory, kanban, and dynamic replenishment). This should include the complete invoicing process, from creation to payment, and enable suppliers to have visibility into the status of all invoices, debits, credits, and payments. In addition, organizations should be able to initiate self-billing through an automated evaluated-receipt-settlement process.

Outsourced Manufacturer Collaboration

Managing outsourced manufacturing relationships, or contract manufacturers, is of increasing importance for many companies, large and small, in a variety of industries because of its ability to reduce operating costs, improve new product time to market, and increase ROI on capital investment. However, to successfully implement an outsourcing strategy, you must shift your focus from owning and organizing assets to working collaboratively with partners.

This collaboration must extend beyond simply exchanging information regarding order fulfillment. Collaborative efforts must reach across the entire supply chain to help streamline essential processes such as product development and pricing and product manufacturability, as well as reduce manufacturing costs and improve responsiveness to customer demand.

A new level of visibility into the work order status is also essential to ensure seamless visibility across all manufacturing processes, both internal and outsourced.

When automating these processes, you must support the information-sharing, collaboration, and monitoring activities that are needed to effectively manage the relationship with a contract manufacturer. The most commonly deployed business processes are as follows:

- **Contract manufacturing purchasing** is a purchase order-based process in which the purchase order has an associated production BOM attached to it. The contract manufacturer can then access the purchase order and collaborate on both finished-goods and component levels and update changes to the customer's enterprise resource planning (ERP) software. This allows you to run internal planning functions using the latest supply commitments from the contract manufacturer.
- **Supply network inventory (SNI) visibility and monitoring** of inventory, supply, and demand information across multiple tiers is critical to ensure that all parties are sharing the actual status at all times. As such, the SNI process gives visibility into component-level planning and stock at both the

component supplier's and contract manufacturer's locations, and the technology has minimum and maximum stock-limit tracking, including on-screen color changes and e-mail alerts.

- **The work order process** is the most sophisticated and granular way of collaborating and tracking contract manufacturer activities that represent the production activities at the contract manufacturer's facility. The work order must communicate the finished-goods need, allow for changes to the BOM in a collaborative manner, track production progress, project finished-goods date and quantity changes on the basis of the current production status, and capture consumption of components and materials owned by the customer.

Customer Collaboration

Customer collaboration is gaining traction in many industries that are pushing to become more demand driven. Customer collaboration embraces the ability to sense demand signals and automatically replenish the customer's inventory on the basis of actual demand. This is most commonly seen in consumer products and other industries that operate downstream distribution structures that extend to retailers.

This approach supports the following benefits:

- Enables the shift from a manufacturer "push" to a balanced, demand-driven "push-pull" supply chain
- Combines forecast and demand-driven supply chain strategies
- Ensures intelligent short-term demand management for baseline and promotion processes and automates the response to changing demand
- Helps manufacturing companies fulfill store-level-based replenishment requirements such as cross-docking

Unlike traditional forecast-driven replenishment, with a customer collaboration strategy, replenishment processes become more responsive and are triggered primarily by actual customer demand information. POS and electronic product code (EPC) data also adds to visibility across the entire supply chain and enhances the process. It allows manufacturers and retailers to manage and execute joint promotions that can take into account last-minute changes.

This also provides the visibility needed to effectively receive or calculate out-of-stock information automatically and use the resulting information for sales forecasting and promotion planning. You can then share forecasts, POS and inventory data, and other vital information with business partners.

Exception reporting also needs to be part of this business process. By resolving missing data and exception situations, you can execute forecasting, replenishment, and fulfillment planning more expeditiously.

Responsive customer replenishment processes allow you to respond more rapidly and efficiently to short-term demand fluctuations in the baseline and promotion business processes. Thus, you realize increased sales and fewer lost sales from stock-outs.

Other forms of customer collaboration functionalities include more traditional vendor-managed inventory (VMI) functionalities, including replenishment logic based on minimum and maximum stock balance limits. By using your customer's consumption data, running a forecast, and conducting replenishment order planning, you can fully manage the inventories at the customer's site.

Forecast collaboration — also known as collaborative planning, forecasting, and replenishment (CPFR) — is a process supported by the Voluntary Interindustry Commerce Standards (VICS) Association, which in part manages the pure forecast collaboration pieces between a supplier and a customer. CPFR is also supported effectively in a customer collaboration strategy. A forecast can be both received from a customer and generated by the supplier on the basis of historical data. Providing this information on a jointly accessible Web site allows the partners to collaborate to reach a consensus, or agreed-upon, forecast, which in turn can be used to drive VMI replenishments, be fed into a demand-planning tool, and be sent back to the customer.

Overall, this CPFR approach improves your processing speed and leads to better distribution-planning schedules. Real-time and automated communications mean reduced data entry and customer order errors. One of the major benefits is improved collaboration between the supplier and customer.

When it comes to store replenishment collaboration, many retailers are already sharing POS data with their suppliers. Some are now taking the next step by asking their manufacturers to take part in the store replenishment process. This approach goes beyond conventional VMI and continuous replenishment programs that concentrate on retail inventory.

Store replenishment collaboration involves both the retailer and manufacturer in a collaborative arrangement that includes sharing information on retail events and store POS forecasts. Both parties also work together to use information such as demand forecasts, store clustering, presentation and safety stock targets, assortment optimization, order sizing, and lead times and distribution methods.

The benefits are worth the transition. Because store replenishment collaboration is the closest link the manufacturer has to the end consumer, it directly impacts shelf availability. Both the retailer and the manufacturer benefit from better visibility into customer takeaway, improved replenishment accuracy, and improved in-stocks, overstock reduction, and promotion. The collaboration provides a direct window into consumer response to new products, existing shelf distribution, and the effectiveness of promotions. The manufacturer and other suppliers can leverage this new influx of information to optimize their supply chain operations.

Sales and Operations Planning

Sales and operations planning (S&OP) is a widely used collaborative process that allows the organization to introduce critical supply chain information into the decision-making process.

With globalization and outsourcing, much of the information impacting an organization's decision-making process is generated externally to the enterprise. Given these trends, organizations are finding that a comprehensive S&OP process is even more important. The S&OP decision-making process ensures that your business is continually managed to meet agreed-upon strategies, goals, and commitments, despite constant changes in your environment.

The S&OP process comprises a series of integrated and interdependent business reviews, structured and focused to ensure that the tactical plans in all of the business functions and geographies are aligned and in support of the company's strategy. You are protected against unwelcome surprises: the process identifies and allows you to plan what you can do now to handle contingencies that may not appear on your radar screen for up to a year and a half.

S&OP allows you to introduce collaborative information into the decision-making process. When used as part of your collaborative efforts, it enables better communications between cross-functional groups and your trading partners.

A good S&OP process allows you to achieve an optimal balance between demand and supply, reduce shortages, and improve cash flow. You reduce lead times as well as finished-goods inventory and transportation costs. You are better able to collaborate with all members of your extended supply chain and to serve your customers.

The Role of Sensory Technology

When properly implemented, sensory technology such as RFID enables you to deliver a level of visibility into the supply chain that was previously unavailable. It provides the automated functionalities to feed real-time data into your supply chain systems.

For example, you can track and trace EPCs across the supply network, receive alerts when problems arise, and share EPC-related data with your trading partners. You can also attach RFID tags to pallets, cases, or single product units to remotely sense movement of goods through the supply chain. Having immediate information about the location and status of goods can help improve decision making at tactical and execution levels.

Sensory technology is being widely adopted by a number of industries. For example, pharmaceutical companies are developing fine-tuned tracking abilities to prevent counterfeit drugs from entering the supply chain. Retailers are increasingly relying upon granular tracking data to reconcile the shipment and receipt of goods. By sharing this data with suppliers, these companies can better manage inventory at retail sites. As the cost of item-tracking technologies such as RFID comes down, other industries are expected to adopt similar initiatives. The visibility provided by sensory technology allows companies to quickly and intelligently respond to changing market conditions. To be effective, sensory technology initiatives require the participation of multiple trading partners that automatically exchange information, such as about the flow of goods through the supply network.

A comprehensive sensory system based on open standards usually includes all the reporting mechanisms and KPIs needed to support your own and your partners' supply chain networks.

Collaborative supply chain sensory technology applications include the following functionalities:

- Goods issue and receipt via automatic shipping and receiving processing, based on bar-code and RFID reads
- Generation of advanced shipping notices (ASNs), with associated EPC information
- Writing and coding of tag identification on the basis of the EPC standard
- Tracking of packing and loading of units, cases, and pallets
- Handling of unit-level tracking, with alerts to flag out-of-stock items, incorrect shipping quantities, or other situations
- Pallet-, case-, and item-level tagging
- Analysis of key supply chain and inventory metrics

PERFORMANCE MEASUREMENT IN A COLLABORATIVE ENVIRONMENT

A collaborative supply chain environment that encompasses all members of the value chain – from the organization to its most distant trading partners and suppliers – requires continuous and careful monitoring and evaluation.

Effective supply chain metrics and collaboration go hand in hand. Capturing and evaluating meaningful performance measures can help you align activities across your entire supply chain, target profitable market segments, and obtain a competitive advantage. However, your organization may have a limited set of metrics in place that do not extend beyond your own operations to include other members of the collaborative supply chain. This lack of visibility makes it difficult to integrate, synchronize, and optimize interenterprise processes.

Needed is a fully coordinated, closed-loop supply chain management solution that monitors events, sends alerts, and evaluates performance across your entire network. You and your partners can synchronize, manage, and evaluate activities across your supply chain network through the functionalities provided by supply chain event management, supply chain performance management, and S&OP.

Supply Chain Event Management

Once you can capture supply chain events, the next step is to model relevant milestones at every point in your supply chain process, such as the receipt and processing of inbound goods or distribution and proof-of-delivery activities.

A collaborative system monitors activities based on RFID, barcode, and other tracking functionalities and provides alerts when delays happen or events take place out of sequence or simply fail to occur. In many cases, the application can assess the impact of a delay through its links with other planning and execution systems. When a problem occurs, the application allows you and your partners to work collaboratively to resolve it.

Supply Chain Performance Management

Performance management functionalities allow you and your supply chain partners to define, measure, analyze, share, and improve KPIs such as costs, efficiency, and asset usage. In a collaborative supply chain environment, these functionalities allow you and your partners to quickly identify and react to delays, as well as identify and investigate areas of potential waste.

Supply chain performance management constantly tracks key performance measurements and automatically generates an alert when performance deviates from standards.

The technologies that support the performance management functionality include operational and analytic software. Operational software generates the data, production plans, stock, and delivery dates that are used to calculate KPIs. Extractors transfer data from this operational software to analytic software at predetermined intervals.

On a strategic level, this type of advanced supply chain performance management creates a window into the performance of your entire supply chain. In a collaborative environment, it provides you with the visibility you need into your own and your partners' performance. Performance management gives you the necessary feedback to create true, closed-loop supply chain management, which is key to driving continuous improvement, delivering superior performance, and ensuring that your supply chain continues to be efficient and competitive.

THE COLLABORATIVE SUPPLY NETWORK AND SAP

SAP provides all the functionalities and tools you need to create and maintain a truly adaptive and collaborative supply network.

The SAP® Supply Chain Management (SAP SCM) application is the only complete supply chain management application that allows you to adapt your supply chain processes to an ever-changing competitive environment. SAP SCM transforms your supply chain from sequential processes into an adaptive supply chain network.

SAP SCM offers you not only planning and execution software to manage enterprise operations, but also visibility and collaboration technology to extend those operations beyond corporate boundaries. The application enables network-wide visibility, collaboration, and analytics across the extended supply chain. The result is measurable improvements through cost reductions, service-level increases, and productivity gains, ultimately leading to stronger profit margins.

Using collaboration functions that improve visibility into supply and demand, you can work with partners to reduce inventory buffers, increase the velocity of raw materials and finished goods through the pipeline, improve customer service, and increase revenues.

Essentially you are working with a demand-driven supply network – a system of technologies and processes that sense and react to real-time demand signals across a supply network of customers, suppliers, and employees. Collaboration allows you to share this demand intelligence with the members of your extended supply network for both strategic and tactical purposes.

Network-wide visibility across the entire supply chain lets planners and key decision makers perform strategic as well as day-to-day business planning. You can monitor and analyze the performance of the extended supply chain using predefined KPIs. In addition, you can test situations to determine how the supply chain network can address changes in the market, the business, or customer demand.

SAP Supply Network Collaboration

The SAP Supply Network Collaboration application is a Web-based solution within SAP SCM that is designed to help you enhance visibility, collaborate more effectively with suppliers, and increase the overall speed, accuracy, and adaptiveness of your supply network. With SAP Supply Network Collaboration, you and your supply network partners share inventory and transactional information easily and seamlessly.

SAP Supply Network Collaboration connects you and your business partners on a shared, easy-to-use platform. It serves as a single point of entry for your company and your business partners. The Web interface allows both large enterprises and smaller companies with less sophisticated IT environments to use the application. You and your partners may wish to work with just the application's supplier-managed inventory process, just the release processing, or a combination of both processes. Whatever your choice, SAP Supply Network Collaboration helps provide visibility into all your supply network processes.

For companies in the customer's role, SAP Supply Network Collaboration provides the following benefits:

- You can more easily delegate the responsibility for your inventory to a business partner and thus profit from the business partner's greater planning expertise.
- You obtain an overview of all your suppliers' routine activities at a glance on your customer-specific overview, whenever you wish.
- You can rely on notifications automatically issued by the software system to inform you about critical situations in real time, so regular monitoring is not required.
- Your company's stock is constantly replenished without effort for procurement. You can reduce the risk of material shortage on one hand and excessive holding costs on the other.
- Your production runs smoothly, with minimal risk of bottlenecks or production downtimes caused by material shortages.
- Your costs are reduced through the reduction of manual activities and processes.
- Standard approaches to easily bring partners on board enable quick adoption and rapid ROI.

- On a partner-by-partner basis, SAP Supply Network Collaboration can be leveraged as a strategic supplier application or a supplier portal that quickly multiplies the number of integrated online transactions throughout the supply base.

For companies in the supplier's role, SAP Supply Network Collaboration provides the following benefits:

- You can take over replenishment for your customers more easily, because the application assists you in monitoring all products you are responsible for, at whatever location, at a glance, on the supplier-specific overview. No sophisticated software environment is needed.
- You have visibility into your customers' inventory levels and demands, thus helping you enhance your planning and scheduling of shipments.
- Automatic alerts and notifications help you notice critical situations in advance and give you sufficient time to proactively avoid problems.

The SAP NetWeaver® Platform

The SAP NetWeaver® platform empowers the collaborative functionalities of SAP SCM. It allows you to flexibly and rapidly deploy, execute, monitor, and refine the software that enables your business processes and strategies. With SAP NetWeaver, you can deploy innovative business processes across the organization while making use of your existing software and systems.

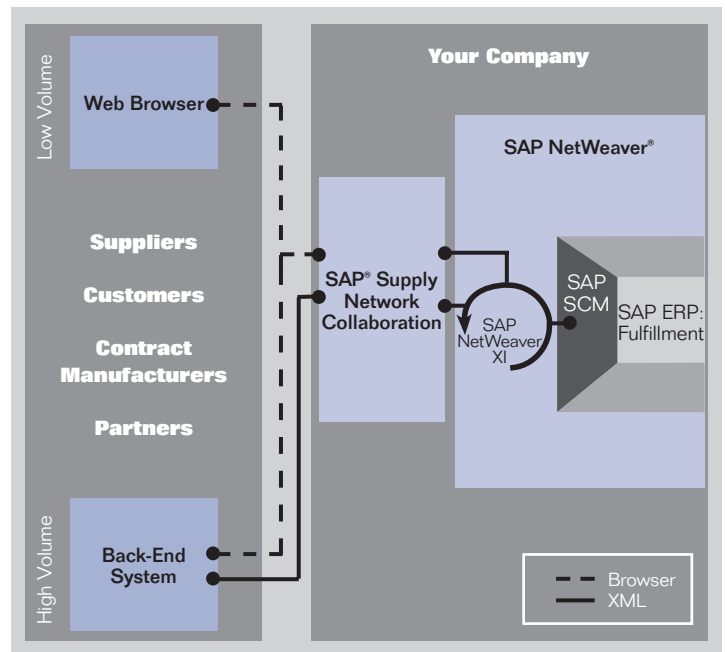


Figure 3: SAP Supply Network Collaboration Powered by the SAP NetWeaver Platform

The SAP NetWeaver platform allows your applications and business partners' systems to work together consistently to perform business processes, exchanging information and executing transactions smoothly and operating as if they were a single system. SAP NetWeaver provides end-to-end process integration by enabling application-to-application processes and business-to-business processes, performing business process management and business task management and enabling platform interoperability.

POWERED BY SAP NetWeaver

With SAP NetWeaver, you can seamlessly connect your own business processes with those of your partners by using message-based and standards-based methods for process integration. You can offer various communication channels as well as process coordination and monitoring. Also, SAP NetWeaver allows you to connect RFID technology directly to software that needs to sense and control automated signals in real time.

Using SAP NetWeaver, you can provide business information management through enterprise reporting, query, and analysis; business planning and analytical services; enterprise data warehousing; enterprise knowledge management; and enterprise search. These IT activities are enabled by components of SAP NetWeaver, such as the SAP NetWeaver Business Intelligence component, the SAP NetWeaver Exchange Infrastructure (SAP NetWeaver XI) component, and the knowledge management functionality of the SAP NetWeaver Portal component.

Your Supply Network Solution

With its powerful supply chain performance and event management functionalities, SAP SCM, powered by SAP NetWeaver, allows you to work closely with your partners to coordinate, manage, and evaluate activities across the extended supply network. You can perform the following tasks:

- Respond faster to deviations from plans
- Resolve problems quickly and ensure timely delivery
- Reduce lead and cycle times
- Increase customer satisfaction
- Measure return on supply chain investments
- Improve visibility across the entire supply chain

To learn more about how SAP can help your organization improve supply chain performance, call your SAP representative today or visit us on the Web at www.sap.com/scm.

SAP SCM is powered by the SAP NetWeaver platform. SAP NetWeaver unifies technology components into a single platform, allowing organizations to reduce IT complexity and obtain more business value from their IT investments. It provides the best way to integrate all systems running SAP or non-SAP software.

SAP NetWeaver also helps organizations align IT with their business. With SAP NetWeaver, organizations can compose and enhance business applications rapidly using enterprise services. As the foundation for enterprise service-oriented architecture (enterprise SOA), SAP NetWeaver allows organizations to evolve their current IT landscapes into a strategic environment that drives business change.

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