SAP Solution in Detail
SAP Supply Chain Management

SAP® EVENT MANAGEMENT

POWER AND SOPHISTICATION TO MANAGE YOUR EXTENDED SUPPLY CHAIN

By tracking your logistics and fulfillment management processes, assets, and activities using event management, your company can stay on top of activities across the supply chain and spot potential problems early, before they escalate. The SAP® Event Management application provides the power and sophistication to manage every link in the extended supply chain. It can help boost business performance in several important ways, including risk mitigation, increased customer satisfaction, reduced costs, and more effective collaboration.

THE BEST-RUN BUSINESSES RUN SAP™

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EXECUTIVE SUMMARY

SOPHISTICATED EVENT MANAGEMENT FOR COMPLEX SUPPLY CHAINS

As supply chains, and ultimately your company's logistics and fulfillment management processes, continue to become more global and complex, the overall number of business transactions and activities has increased significantly. Because of these increasing complexities in your business, the need for accurate, timely, and mission-critical information to provide global visibility and support educated decisions is more important than ever. In addition to supply chains becoming more global, the dynamic nature of supply chains – adding suppliers and new customers, working with carriers, incorporating logistics service providers – adds increased risk to managing your supply chain and your business and, ultimately, to your ability to deliver flawlessly to your customers. Having the right tools and processes in place to minimize this risk without negatively impacting your ability to deliver customer satisfaction is key to differentiating yourself from the competition.

Complex supply chains demand a sophisticated ability to monitor, report, adjust to, and analyze the flow of events that occur as business processes play out every day. Being able to manage these events – in coordination with your partners and suppliers of products and services who are involved – is crucial to transforming from a "plan and execute" to a "sense and respond" way of operating.

With the SAP® Event Management application, your company can manage the full range of events taking place across the value chain involving processes, inventories, assets, and partners. Including a broad set of best practices, while still being an open, highly configurable event management and resolution engine, this application provides the tools and framework to monitor, notify, adjust, and analyze business events. From capturing event information to analyzing it against preset milestones, and then alerting appropriate parties to actual and potential discrepancies, SAP Event Management supports real-time responsiveness and adaptive collaboration across the business network.

SAP Event Management provides the power and sophistication to manage every link in the extended supply chain. A wide range of preconfigured visibility processes integrates with the SAP Business Suite software. And because it is built on an open architecture, it can readily be connected to your data warehouse and capture data from carriers and service agents, Web-based event sources, mobile devices, and a myriad of other information sources. Enabled by service-oriented architecture (SOA), SAP Event Management lets you create and query objects from different applications, boosting your supply chain efficiency. This application serves as the single repository for your supply chain activities, collecting information from different domain areas such as warehousing, transportation, global trade compliance, and overall network collaboration with suppliers, carriers, and customers.

Complex supply chains demand a sophisticated ability to monitor, report, adjust to, and analyze the flow of events that occur as business processes play out every day. Being able to manage these events – in coordination with your partners and suppliers of products and services who are involved – is crucial to transform from a "plan and execute" to a "sense and respond" way of operating.

This solution in detail will give you a good, close look at how SAP Event Management works and what it can do to make your company more successful.

THE NEED FOR SPEED, FLEXIBILITY, AND CONTROL

IN A HIGH-PRESSURE BUSINESS ENVIRONMENT

In today's economy, supply chains are called on to do more than ever. They must serve varied markets across the globe, deliver custom-configured products, and support changes of plan at a moment's notice – all with unprecedented speed and precision. More and more data is available from external data sources and trade partners. This data can quickly become overwhelming and make it a challenge to derive actionable business insights. But used intelligently, this data can provide powerful, actionable business insights and control where there was previously a blind spot in your business – without ominous information overload.

Supply chain managers need to monitor and control a complicated range of activities in a high-velocity business environment. They must work with multiple partners to monitor countless interdependent activities and moving components and act quickly to eliminate bottlenecks and delays. Staying on top of today's complex supply chain while keeping business running smoothly is a daunting challenge – especially in a world where the supply chain drives everything from operational efficiency to business competitiveness.

From capturing event information to analyzing it against preset milestones, and then alerting appropriate parties to actual and potential discrepancies, SAP Event Management supports real-time responsiveness and adaptive collaboration across the business network.

KEEPING WATCH ON THE SUPPLY CHAIN
WITH SAP EVENT MANAGEMENT

It's a tough challenge, but it's not impossible. With SAP Event Management, your company can manage the events taking place across the supply chain that involve processes, inventories, assets, and partners. This solution helps you do everything from the simple, such as tracking shipments, to the sophisticated, such as monitoring complex business flows within major processes. You can manage information across heterogeneous systems and multiple tiers at every stage of the supply chain process – from price quotation to receipt of product. You can detect, evaluate, and solve problems in real time as well as work with partners to create a community of businesses that can collaborate in a responsive, adaptable supply chain.

SAP Event Management supports monitoring, notification, adjustments, and analysis of business events in support of adaptive collaboration across the business network (see Figure 1). It gives your company the tools and framework necessary to meet your specific event-monitoring needs.

Monitor and Track

SAP Event Management lets your company monitor and track actual events against relevant expected milestones within a process. Processes could include but are not limited to the tendering of a load, the goods issue of an order, the departure of a truck, the receipt of the goods at the customer's location, and the movement of transportation vehicles or containers. The solution includes an extensive set of templates and predefined events encompassing industry-specific best practices.

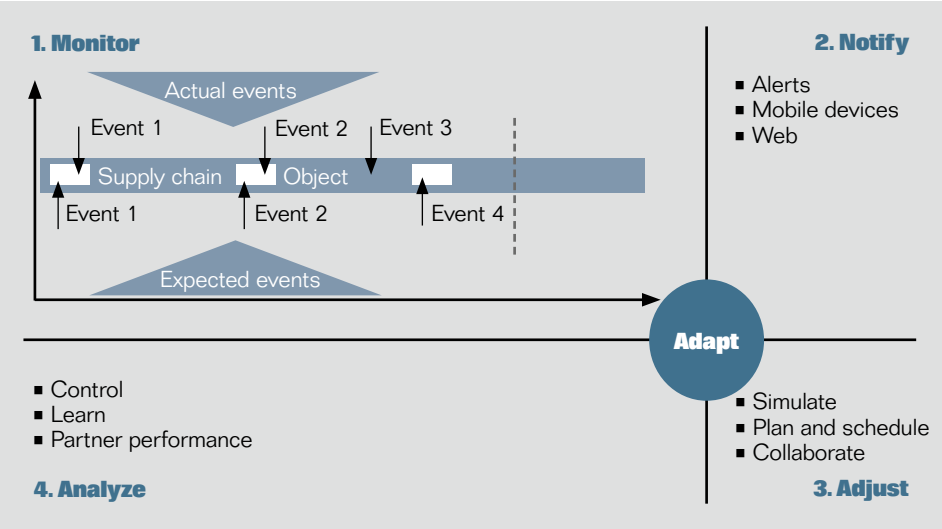

Figure 1: SAP® Event Management – Monitor, Notify, Adjust, and Analyze Business Events

As SAP Event Management monitors activity, it identifies and flags problems – for example, when a shipment is late, or if the correct quantity has not been shipped. In many cases, the application can handle problems automatically, using standard operating procedures. For example, if a preferred carrier does not respond to a tender within a certain time, SAP Event Management can send a second request or reminder. Examples of exceptional situations include the following:

- A specific event is overdue.
- A specific unexpected event is reported.
- A measurement value is outside the tolerances.

Notify

When a problem occurs, SAP Event Management notifies a predefined set of users or partners and supplies them with the information needed to resolve the situation, either locally or collaboratively with several partners. In communicating across the supply chain, SAP Event Management can provide personalized views of events, giving your company as well as your customers and suppliers targeted, relevant information and appropriate viewing rights. Because SAP Event Management can present only those events that are out of compliance, you can readily focus attention on problems rather than having to search through large volumes of data looking for anomalies. When an exception occurs, the respective stakeholders are notified via an alert. The software supports both manual and automatic exception resolution.

Adjust

SAP Event Management can generate and propose alternative solutions for problems. For example, if a shipment leaving one city for another is too late to reach the scheduled ocean carrier, SAP Event Management may suggest air transport or waiting for the next ship – and allows evaluation for the options proposed.

Analyze

As SAP Event Management captures and stores specific event-context and time-specific data, it can then feed summarized statistical information into the SAP NetWeaver® Business Warehouse (SAP NetWeaver BW) component, which automatically updates key performance indicators (KPIs) delivered with the business content. It can also update custom KPIs defined by the user. Summarizing differences in times and events leads to insights such as dwell time within a customer's location or delay time at a port of call. Discrete actions can be analyzed as well. For example, the KPI "perfect order fulfillment" measures whether a customer received the exact quantity of the product ordered on the date (and time, if necessary) when it was requested. A delivery event could be used to capture the exact time and date that the delivery arrived at each customer location (which might be different from the date and time that the goods receipt was eventually logged into the customer's system) to provide high-integrity metrics.

Adaptive Collaboration

When problems do require attention, SAP Event Management lets supply chain partners collaborate to find and implement agreed-upon solutions. By using the lessons learned from historical event data, SAP Event Management allows the supply chain to be truly adaptive. For example, if a carrier is consistently unreliable, event management information can help ensure that planning and execution systems exclude that carrier in the future. Or if the lead time for a collaborative demand-planning process is exceeded repeatedly, SAP Event Management may suggest readjusting the collaboration procedures. Event management information can be readily integrated into business intelligence systems for supply chain decision making and general reporting purposes.

SAP Event Management capitalizes on SAP's experience in linking technical and business systems to provide real-time information. The application is powered by the SAP NetWeaver technology platform, the open integration and application platform that provides comprehensive integration of all systems – including SAP and non-SAP software for internal as well as external (shipper, supplier, or customer) data and transactions. With the ability to track objects and events on both SAP and non-SAP software systems, you have everything you need to monitor, notify, simulate, and measure supply chain activities.

More and more data is available from external data sources and trade partners. This data can quickly become overwhelming and make it a challenge to derive actionable business insights. But used intelligently, this data can provide powerful, actionable business insights and control where there was previously a blind spot in your business – without ominous information overload.

SAP EVENT MANAGEMENT PROVIDES INSIGHT TO ACTION

AND ALERTS WHEN EXCEPTIONS OCCUR

SAP Event Management is an open, extensible, rules-driven engine that provides visibility into logistics and fulfillment processes for both planning and execution (see Figure 2). It is not limited to the supply chain but can be viewed as a tool that enables monitoring and tracking of any process or object, providing alert notification when exceptions occur.

The Basics

Basic elements of SAP Event Management include the following:

- Each relevant business object or process is represented by an event handler in SAP Event Management, including IDs, attributes, and statuses.
- Milestones and expected measurements contain information about what is planned to happen to the object or process.
- Actual events and measurements are posted manually or captured from within another SAP application or external system.
- Attachments (for example, digitized signatures) can be posted with an event.
- SAP Event Management reacts to event postings (or lack thereof) according to the rules and milestones mentioned above.
- Monitoring is handled through a Web interface that supports role-based access to all data, providing a thorough authorization and filter mechanism. This role-based approach makes it possible to view the same business process from various points of view. The Web interface with accompanying security can be made available to outside partners so they can see the status of their events of interest.
- Events can be summarized through direct links and predefined content within SAP NetWeaver BW.
- Event postings (such as status updates) can occur automatically (such as messages uploaded using electronic data interchange [EDI]), via fast online entry features or through mobile entry. All relevant SAP Event Management interfaces are available, including remote function call, BAPI® programming interface, intermediate documents (IDocs), EDI or application link enabling (ALE), and the SAP NetWeaver Process Integration offering. Web link transmission with an event handler or event message allows the customer to navigate to a tracking service provider's Web site. SAP's standard interface is available and shipped with any application in the SAP Business Suite (on a plug-in basis). The interface allows the company to flexibly define which application objects may be relevant for SAP Event Management and to transfer an event to SAP Event Management when an application object is created or deleted or relevant status changes occur. All important business objects are already technically enabled.

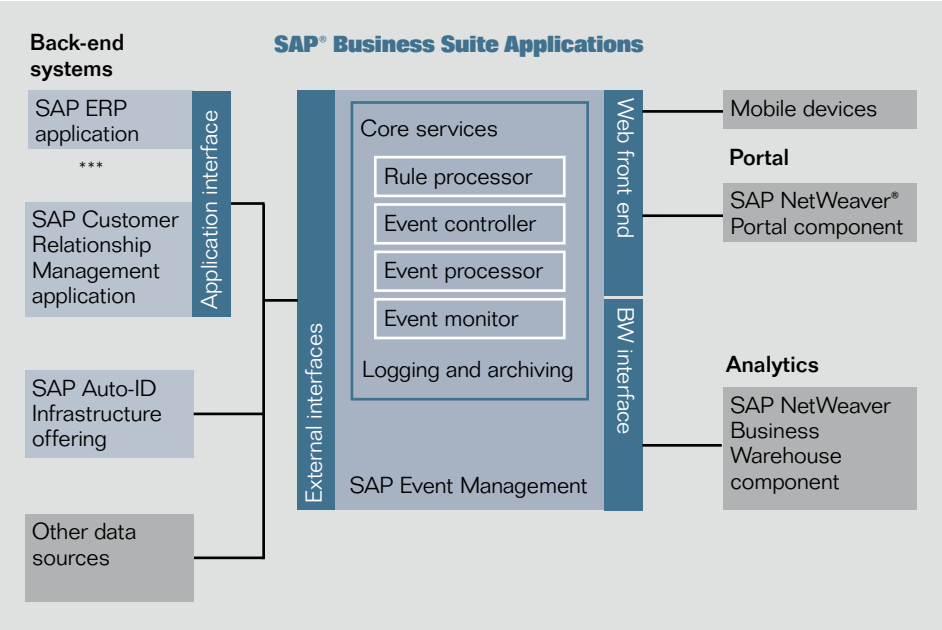

Figure 2: SAP Event Management – The Big Picture

PRECONFIGURED VISIBILITY PROCESSES

INTEGRATING ACROSS APPLICATIONS

A visibility process is a template enabling quick implementation, which can be readily activated and adjusted to your respective needs. SAP provides these preconfigured business process templates to:

- Add business content to SAP Event Management, providing a starting point for customers, partners, and consultants
- Show the range of functions offered with SAP Event Management
- Provide useful examples of how companies use SAP Event Management

In SAP Event Management, SAP supports many preconfigured supply chain processes that integrate with applications ranging from enterprise resource planning (ERP) to auto-ID to other supply chain management software.

Processes Integrating with SAP ERP

These processes include the following:

- **Procurement**
  - Describes the procurement visibility process for production materials
  - Covers events from purchase order creation to payment, including order acknowledgment, shipping notifications, goods receipt, and invoice functions
  - Can be combined with the transportation visibility process to also cover shipment-related events
  - Offers role-based access for supplier and buyer
  - Provides KPIs on the supplier cycle time, on changes to the purchase order, and on the percentage of specific attributes
- **Production malfunction**
  - Describes the visibility within production
  - Covers events from the release of the manufacturing order to the related goods receipt, including machine breakdowns
  - Closes the gap between planning and execution by notifying the planner in the event of a machine breakdown, and combines production and plant maintenance–related information
  - Offers role-based access for the production planner and supervisor while providing KPIs on manufacturing orders affected by a machine breakdown and also rescheduled orders
- **Fulfillment**
  - Monitors the delivery process and provides active tracking of those deliveries that are part of less-than-truckload shipments for the customer
  - Reports events from within the company as well as by business partners
  - Triggers follow-up activities in the form of e-mails to the customer in case of a delay
  - Can update SAP NetWeaver BW so the business process can be analyzed
- **Transportation**
  - Covers transportation for international inbound and outbound shipments, including customs, sea, and road transportation
  - Deals with complex transportation networks using transportation chains
  - Provides role-based access for customer (sales executive) and forwarding agent
  - Provides KPIs on the adherence to planned durations as well as customs processing

SAP Event Management supports monitoring, notification, adjustments, and analysis of business events in support of adaptive collaboration across the business. It gives your company the tools and framework necessary to meet your specific event-monitoring needs.

- **Seasonal procurement**
  - Provides visibility throughout procurement processing, from the time a seasonal purchase order is created until the articles are available in the distribution center
  - Offers tight integration into the procurement controlling workbench with role-based access for the supplier; part of the retail seasonal procurement add-on
- **Railcar management**
  - Offers tracking and on-site yard management functionality for railcars
  - Allows the customer to view the location and status of railcars at a plant, warehouse, rail yard, or other facility
  - Monitors crucial events of outbound and return trips, such as switching, loading, unloading, cleaning, weighing, inspecting, and sealing
  - Supports event posting using mobile devices

By using the lessons learned from historical event data, SAP Event Management allows the supply chain to be truly adaptive.

Processes Integrating with the SAP Auto-ID Enterprise Offering

These processes include the following:

- **Outbound and inbound delivery**
  - Provides visibility throughout outbound delivery processing, based on deliveries and their handling units in SAP ERP
  - Covers events from warehouse activities to proof of delivery (POD) by the customer
  - Supports role-based access for customer (sales executive) and warehouse manager
  - Optionally, allows posting of the packing and loading events with the help of the SAP Auto-ID Infrastructure offering
- **Returnable transport items**
  - Provides visibility across a closed-loop returnable transport item (RTI) process covering the outbound, inbound, and return process
  - Allows internal monitoring of RTIs as well as monitoring by business partners, evaluating current and historical cycles with the respective statuses and material associations
  - Integrates with SAP Auto-ID Infrastructure; but where a radio-frequency ID (RFID) infrastructure is not available at the receiving business partner, users can also manually report events to SAP Event Management
- **Object event repository – product tracking and authentication:** As a component of the SAP object event repository, SAP Event Management plays a key role for the management and visibility of serialized objects through auto-ID technologies such as RFID. When embedded with the SAP object event repository, SAP Event Management manages the process of product tracking and authentication, providing functionality to support business processes that track serialized information through the supply chain. It also authenticates that the serialized product originated from a trusted source and arrived at the intended destination. This functionality is based on the serialized content stored in the SAP object event repository in conjunction with business information from back-end business systems.

Processes Integrating with Advanced Supply Chain Management Applications

These processes include the following:

- **Visibility processes in SAP Transportation Management:** In the shipment-execution stage, SAP Event Management monitors the important stages of each shipment, as well as the status of the transported goods. The application collects this data from different sources and compares it automatically with the planned dates and timelines. The collected information updates the SAP Transportation Management application.
- **Visibility process in SAP Supply Network Collaboration**
  - Purchase order visibility allows tracking of and alerting to issues that relate to the creation, changing, and confirmation of a purchase order created through the SAP Supply Network Collaboration application
  - Responsive replenishment visibility generates expected events of the replenishment process, including specific dates and times, either with a report (inbound messages) or automatically during order document creation. Any delay of an expected event then leads to an alert, which can be monitored within the central alert monitor. The visibility process for inbound messages helps the planner or dispatcher to detect missing information such as replenishment order notification and confirmation, as well as dispatched (advance shipping notice, or ASN) and received (POD) delivery notification.

EVENT MANAGEMENT TECHNOLOGY

SOA SERVICES SUPPORT COLLABORATIVE BUSINESS PROCESSES

Gain complete visibility into your supply chain with low total cost of ownership. As part of the SAP Supply Chain Management application, SAP Event Management can also be installed as an add-on to the most relevant applications (for example, SAP ERP), thus combining the full range of event management functionality with the leanest possible footprint.

Enabled by SOA services, SAP Event Management allows your company and its trading partners to create and query objects in SAP Event Management from both SAP and non-SAP applications, and thus supports the monitoring of collaborative business processes in the supply chain. These services can also be used as a basis for setting up specific user interfaces or building composite applications.

SOA services help make capturing geographic coordinates and sensor data, tracking service-provider data feeds, and voice recognition more efficient.

Because SAP Event Management is built on an open architecture, it can readily be connected to a data warehouse such as SAP NetWeaver BW and capture data from carriers and service agents, Web-based event sources, mobile devices, RF systems, global positioning systems, and other information sources.

SAP EVENT MANAGEMENT BOOSTS BUSINESS PERFORMANCE

FEWER PROBLEMS, GREATER BENEFITS

By tracking your logistics and fulfillment management processes, assets, and activities using event management, your company can stay on top of activities across the supply chain and spot potential problems early, before they escalate. SAP Event Management can help boost business performance in several ways, including:

- **Risk mitigation**
  - Meet increased regulatory pressure
  - Comply with the following:
    - EU General Food Law Regulation 178/2002
    - Bioterrorism Act 2002 (United States)
    - U.S. FDA, Florida, California Pedigree
- **Increased customer satisfaction**
  - Keep customers informed about their order status
  - Reduce the probability of late or incomplete orders
  - Offer customers qualified loopholes in critical situations
  - Resolve unexpected events collaboratively within the supply chain
  - Free employees to focus on important customer satisfaction issues, rather than routine tasks and administration
- **Reduced costs**
  - Improve control over business processes
  - Eliminate blind spots in the supply chain
  - Automate many vendor management activities
  - Flag problems immediately
- **More effective collaboration**
  - Provide order status information to all your business partners
  - Increase adherence to agreed-upon collaboration procedures
  - Immediately involve all relevant partners to resolve problems

SAP Event Management provides the power and sophistication to manage every link in the extended supply chain. Implementation is made simpler with ready-to-use sets of event profiles and business objects that ship standard with the SAP Business Suite applications. And because SAP Event Management is built on an open architecture, it can readily be connected to a data warehouse such as SAP NetWeaver BW and capture data from carriers and service agents, Web-based event sources, mobile devices, RF systems, global positioning systems, and other information sources.

For More Information

To learn more about SAP Event Management and how it can help you manage events across your supply chain, please contact your SAP sales representative or visit us on the Web at www.sap.com/scm.

QUICK FACTS

www.sap.com/contactsap

Summary

The SAP® Event Management application provides the power and sophistication to manage every link in your extended supply chain. By tracking your logistics and fulfillment management processes, assets, and activities, your company can stay on top of activities across the supply chain and spot potential problems before they escalate.

Business Challenges

- Enable the supply chain to serve varied global markets, deliver customized products, and support rapid changes of plan
- Manage increasing flow of data from external data sources and trade partners, extracting business intelligence without information overload
- Control complicated range of activities with multiple partners and countless interdependent activities and components

Key Features

- **Activity monitoring and tracking –** Follow actual events against expected milestones within a process
- **Extensive templates and predefined events –** Get up to speed quickly with industry-specific best practices
- **Problem notification –** Provide predefined users or partners with the information needed to resolve the situation; generate and propose alternative solutions
- **Analysis –** Capture key data and feed statistical information into the SAP NetWeaver® Business Warehouse component, which automatically updates key performance indicators
- **Support for adaptive collaboration –** Let supply chain partners collaborate to find and implement agreed-upon solutions

Business Benefits

- **Mitigate risk** through the ability to meet increased regulatory pressure and compliance requirements
- **Increase customer satisfaction** by keeping customers informed of their order status and reducing late or incomplete orders
- **Reduce costs** through better control over business processes, eliminating blind spots in the supply chain, and automating many vendor management activities
- **Achieve more effective collaboration** by providing order status information to your business partners and increasing adherence to agreed-upon collaboration procedures

For More Information

To learn more about SAP Event Management, please contact your SAP sales representative or visit www.sap.com/scm.

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