Supply Network Collaboration – Extending the Supply Chain

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September 11th, 2007
Industry Eyes Big Savings from Supply Chain Collaboration

By Ian Young in Berlin

The European chemical industry could achieve annualized cost savings of up to €15 billion ($18 billion), or 2% of its combined sales, by implementing a range of initiatives to strengthen its supply chain, according to the findings of four high-level industry working groups. The initiatives require an unprecedented level of collaboration among logistics service providers (LSP) and chemical companies, and a new approach to ways in which the industry has traditionally been operated, serviced, and regulated.

...Supply chain excellence brings lower unit costs, higher capital productivity, increased customer retention, and better end-to-end value for customers....

Chemical Week – November 2, 2005
Vulnerability Map as Central Monitor

Automated Feed

Central Monitor

Drill-Down and Trigger Response

- Supplier Performance
- Delivery Performance
- SC Event Management
- Open Ratings
- Catastrophe Management
- Simulation

Evaluate mitigation options
Adapt system behavior
Define/execute contingency plan
Simulate responses

Source: Yossi Sheffi and James B. Rice Jr., MIT SLOAN MANAGEMENT REVIEW, 2005
Integrated Planning (Collaboration) Scenario

- Strategic Planning
- Demand/Supply Planning
- Sales and Operations Planning
- Management Evaluation & Analysis
- Chem Company
- Event Tracking and Administration
- Suppliers
- Customers
- Toll Manufacturers
- Supply Network Collaboration

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Supply Network Collaboration (SNC)

- **Suppliers**
  - Simple SMI
  - Advanced SMI w/Replenishment Orders

- **Toll Manufacturers**
  - Work Order Progress
  - Mile Stone Progress
  - WIP Usage and Collaboration

- **Chem Company**
  - Demand-based Replenishment
  - ATP Checks
  - Replenishment Order Creation
  - Finished Goods Update

- **Customers**
  - Inventory, Stock, Consumption and Forecast
  - Min/Max-based Replenishment

- **Real-Time Sensing**
  - PO Collaboration
  - ASN & Invoicing
  - Work Orders

- **Integration Points**
  - Advanced SMI w/Replenishment Orders
  - Demand-based Replenishment
  - ATP Checks
  - Replenishment Order Creation
  - Finished Goods Update

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All Suppliers Are Not Equal

TOP STRATEGIC SUPPLIERS
Automated, optimized communication (B2B, EDI) with typical business pain points as
- Expensive connectivity efforts
- Poor visibility of mid/long term forecasts, inventory and capacity
- Low supplier performance accuracy

NON-STRATEGIC SUPPLIERS
Unstructured, not optimized communication (Phone, Fax) with typical business pain points as
- Unsynchronized supply and demand situation
- Long order cycle times
- Disruptions from last minute changes
- Immense maintenance efforts of data
- High supply risk and costs
Evolution of Supplier Interactions

Present

- Phone and fax remain primary medium for interaction
- Document exchange through EDI (expensive)
- Supplier extranets showing strong adoption and growth
- Pilot collaboration with selected suppliers

Future

- Phone not primary, but still relevant for many interactions
- XML gains industry extensions, compliments EDI
- Extranets become more functionally rich
- Collaboration often mandated by trading partners
SAP SNC – Supplier Collaboration

Link ANY type of suppliers through different channels

- **Low Volume – Web Browser Only**
  - Web Browser

- **Mid Volume – Web & File Up/Down Loads**
  - Up/Down Load Files

- **High Volume – B2B Integrated**
  - Backend System

Network Hub Provider

CUSTOMER

SAP NetWeaver

SAP SNC

- **Browser**
- **XML**
- **File Up/Down Load**

SUPPLIERS

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eJIT - Release Processing

**Scenario Description**

**eJIT**

**Just In Time Deliveries**

Suppliers hold inventory at their site and deliver based on scheduling agreement call-offs released by Novartis.

Goods delivered directly to production and paid at goods receipt time according to agreed payment terms.

**Benefits for Suppliers**

- Elimination of Waste in the Ordering Process
- Increased Demand Visibility and Transparency
- Limited Production and Inventory Optimization

**Benefits for Novartis**

- Inventory Reduction in Volume and Value
- Elimination of Waste in the Purchasing and Invoicing Process (e.g. Mail, Phone, Fax)
## eSNI - Supplier Managed Inventory

### Scenario Description

**eSNI (Supplier Managed Inventory)**

- **Supplier Managed Inventory**
  - Suppliers schedule / plan replenishments to Novartis based on daily updated demand and on the agreed min/max quantities.
  - Goods paid at goods receipt time according to agreed payment terms.

### Benefits

**Benefits for Suppliers**

- Elimination of Waste in the Ordering Process
- Increased Demand Visibility and Transparency
- Production, Inventory and Delivery Optimization

**Benefits for Novartis**

- Inventory Reduction in Volume and Value
- Elimination of Waste in the Purchasing and Invoicing Process
- Shifting Planning and Replenishment Tasks to the Suppliers

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**Scenario** | **Description** | **Benefits for Suppliers** | **Benefits for Novartis**
--- | --- | --- | ---
**eSNI** | **Supplier Managed Inventory**
Suppliers schedule / plan replenishments to Novartis based on daily updated demand and on the agreed min/max quantities.
Goods paid at goods receipt time according to agreed payment terms. | - Elimination of Waste in the Ordering Process
- Increased Demand Visibility and Transparency
- Production, Inventory and Delivery Optimization | - Inventory Reduction in Volume and Value
- Elimination of Waste in the Purchasing and Invoicing Process
- Shifting Planning and Replenishment Tasks to the Suppliers

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**Scenario:** eSMOI - Supplier Managed & Owned Inventory

**Description:**
Suppliers schedule / plan replenishments to Novartis based on daily updated demand and on the agreed min/max quantities.

Goods booked into consignment and only paid at the end of the consumption period according to agreed payment terms.

**Benefits for Suppliers:**
- Elimination of Waste in the Ordering Process
- Increased Demand Visibility and Transparency
- Production, Inventory and Delivery Optimization

**Benefits for Novartis:**
- Inventory Reduction mainly in Value without risks for Production Interruption
- Elimination of Waste in Purchasing and Invoicing
- Shifting Planning and Replenishment Tasks to the Suppliers
SNC: Toll Manufacturing Purchasing Process

Real-time, synchronized, collaboration on subcontracting PO’s enable more accurate execution between a customer and a toll manufacturer:

- Customer can change or cancel PO’s and items
- Approval process based on rules such as quantity and date deviations can be done via web UI, includes collaboration on quantities used
- Customer’s ERP system gets periodic updates of WIP consumption at the toll manufacturer’s location
- Includes supplier invoice creation based on shipments, or ERS handling of invoices, and payment status updates

Legend:
- Business Partner
- Business Process Step/Action
- Business Object
SNC: Work Order Process

Real-time, synchronized, collaborative Work Orders enable more accurate execution between a customer and a toll manufacturer

- Work Orders exist as a collaborative object and facilitator of manufacturing status data between a customer and a toll manufacturer
- Advanced on-screen collaboration on Work Order initiation, changes and updates based on statuses
- Collaborate on order BOMs up front, before production starts
- Project finished goods end date and quantity using production phase updates
- Capture consumption periodically and update ERP accordingly

Collaboration Process Flow: WO

Customer

Create/Change WO
WO Update/Change/Approve
WIP Inventory Update
Receive ASN
Goods Receipt
Receive Invoice
Payment status update

Toll Mfg:er

Receive WO
Change/Send/Approve WO
WIP Inventory Update
Create ASN
ASN Update
Create Invoice
Invoice Update

Legend:
- Business Partner
- Business Process Step/Action
- Business Object
Work Order Display w/ Proposed Quantity

![Work Order Details](Supply Network Collaboration - BVT_10_CU - Business Partner: BVT_09_CU)

**Work Order 1573**

- **Requested Qty:** 12.00 (SCM)
- **Product:** BVT_COMPUTER@SPT002
- **Product Desc:** BVT_COMPUTER
- **Cust. Batch:**
- **Phase Sequence:** ASSY => INSTALL => TEST => Transport
- **W0 Prog:** Medium
- **Delivery Dates:** 17.04.2007
- **Status:** Completed
- **Status Change:** 12.04.2007 22:11:53 CET, 51 minutes ago
- **Supplier:** BVT_TROY
- **PO No.:** 4500009856
- **PO Test No.:** 10
- **PO Document Date:** 26.03.2007
- **Price:** 10.000.00 EUR
- **Ship-To Loc. No.:** SUBVT_TROV@SPT002
- **Ship-From Loc. TZone:** CET
- **Ship-From Loc. TZone:** CET

**Tracking**

- **Requested Quantity:** 12.00
- **Unconfirmed:** 0
- **Agreed Quantity:** 0
- **Shipped:** 0
- **Ready to Ship:** 0
- **Remaining Quantity:** 12.00
- **Not Started:** 0
- **In Process:** 0

**Delivery Overview**

- **Product:** BVT_COMPUTER@SPT002
- **Ship Date/Time (CET):** 19.04.2007 00:00:00
- **Due Date/Time (CET):** 17.04.2007 00:00:00
- **Quantity:** 12.00
- **SCM:** Request
- **Required Action:** P00_C00T
- **Status:** Rejected
- **Required Action:** P00_C00T
- **Date:** 12.04.2007 00:00

**Production Overview**

- **Phase ID:** ASSY - INSTALL
- **Start Date/Time (CET):** 12.04.2007 00:00:00
- **Projected End Date/Time (CET):** 14.04.2007 00:01:33
- **Projected Yield:** 12.000000

**Actions:**

- **My Actions:**
  - Publish Changes: 12.04.2007 21:01:33

**Notes:**

- **Latest Notes:** Showing All Notes (0)
- **Acknowledgement:** Acknowledge that you have read the notes.
Supply Network Inventory is a cross-partner supply, demand and inventory monitoring and visibility process

- Customers, Suppliers, Contract Manufacturer’s and 3PL’s can all update their individual supply, demand and inventory positions.
- Configurable visibility concept as to which partner and user has access to another partner’s data.
- Proactive monitoring using min/max thresholds on calculated future inventories.
- Allows for aggregation of data across multiple plants belonging to different partners.

Legend:
- Business Partner
- Business Process Step/Action
- Business Object
Key Take Aways...

Increases the Accuracy and Velocity of the Supply Chain

- Provides global visibility of inventory and demand
- Enables several collaboration processes like SMI, Release, Purchase Order Process and Dynamic Replenishment
- Improves customer service & increase revenue while reducing inventory levels on both customer and supplier side

Reduces Time to Value & Realizes Faster ROI

- Simple, stand-alone decoupled solution
- Easy to install, implement and configure
- Bring your suppliers on board fast and easy

Connects People & Processes Together

- Integrates with any backend system (non-SAP)
- Open XML message integration & infrastructure
- Suppliers can integrate via web browser or XML
Supply Chain Collaboration Benefits

**Customer Benefits**
- Reduced RM & FG inventory
- Real time automated planning updates
- Reduced supply risk
- Improved customer service levels
- Reduced expediting costs
- Improved order fill rates

**Improved ROI**
- Increased revenue
- Lowered costs
- Improved asset utilization
- Reduced total inventory

**Supplier Benefits**
- Faster order to cash cycle
- Increased inventory turns
- Increased order fill rates
- Better capacity utilization
- Increased forecast & order accuracy