



A Position Paper



**SUPPLY CHAIN EVENT MANAGEMENT:
SHOULD YOU BELIEVE THE HYPE?**

July 2002

Introduction

In 2000, several industry analysts began talking about a new supply chain management software application category called Supply Chain Event Management (SCEM). AMR defines SCEM as a broad class of applications that supports the following response-oriented business processes:

Monitor – Provides on-going information about supply chain processes, workflows, and events, including the current status of inventories, orders, shipments, production, and supply

Notify – Helps to support real-time exception management through alert messaging, which proactively warns a decision maker if an action must be taken or if a trend is emerging

Simulate – Supports decision making by assessing what will happen if specific actions occur or recommends that an action be taken based on optimization methods and trend analysis

Control – Lets a decision maker change a previous process, such as diverting a shipment or expediting an order; control also extends to the automation of actions to augment or replace human intervention

Measure – Provides measurements, often Key Performance Indicators (KPIs) and metrics, for assessing how well the supply chain performs

[From Nigel Montgomery, Rekha Waheed, AMR Research, "Supply Chain Event Management Enables Companies to Take Control of Extended Supply Chains," September 2001]

After listening to our customers, J.D. Edwards has concluded that SCEM is not a new software application category, but rather a set of value-added extensions to customers' existing J.D. Edwards infrastructure. Should people believe the hype surrounding SCEM? This paper addresses that question, and explains how J.D. Edwards supports SCEM today and in the future.

SCEM'S Focus

SCEM promises to unlock additional value from supply chain processes beyond what has been realized from the implementation of Supply Chain Planning (SCP), Supply Chain Execution (SCE), Customer Relationship Management (CRM), and Enterprise Resource Planning (ERP) systems. SCEM is focused on three things:

- Increasing the velocity of supply chains through *real-time event monitoring*
- Reducing costs between internal and external supply chain partners through improved *collaboration*
- Improving companies' abilities to detect supply chain problems before they occur through better *analytical information*

Traditional SCP, SCE, CRM, and ERP implementations have focused on optimization of business processes and improved execution of transactions within the enterprise. SCEM focuses on optimizing business processes and improving execution of transactions between enterprises. Implementation of SCEM will allow companies to realize incremental gains on their journey to grow revenues, reduce inventories, lower costs-of-goods, and increase fixed asset utilization.

When Implementation of SCEM is Appropriate

The decision to pursue SCEM capabilities should be based on the current sophistication of SCP, SCE, CRM, and ERP systems, the degree the enterprise has an optimized supply chain flow, and the value achievable from collaboration with customers and suppliers. J.D. Edwards sees SCEM as an extension of existing infrastructures. As such, companies don't have to implement a wide array of enterprise systems before getting started with SCEM. For example, a typical SCEM process such as collaborating with customers to improve forecasting can be accomplished with a single add-on module to the existing ERP backbone. On the other hand, if an organization needs real-time monitoring of inventory across six divisions and ten third-party warehouses, J.D. Edwards supports a comprehensive infrastructure for monitoring inventory transactions, optimizing inventory between locations, allowing users to simulate alternative scenarios, and notifying users of problems in real time. Companies should evaluate the decision to pursue SCEM based on their unique requirements.

The Building Blocks For SCEM

J.D. Edwards offers several building blocks on which we have built our SCEM architecture. These are divided into application building blocks and technology building blocks.

Application Building Blocks

The foundation for SCEM within the enterprise is J.D. Edwards' comprehensive solutions for Advanced Planning, Supply Chain Execution, Customer Relationship Management, Enterprise Asset Management, Enterprise Resource Planning, and Business Intelligence.

Advanced Planning – Robust optimization capabilities for demand and supply planning at the strategic, tactical, and operational levels of the business, rich decision support and what-if simulation capabilities, and a true real-time messaging architecture

Supply Chain Execution – Solid warehouse management and transportation management capabilities closely integrated with planning, order management, and financial systems

Customer Relationship Management – Traditional sales/marketing automation and contact center functions, plus equipment service and warranty management, integrated collaborative forecasting, order promising, and the ability to support value-added business processes such as vendor managed inventory (VMI)

Enterprise Asset Management – Tracking and maintaining the physical assets for running the business and keeping utilization high

Enterprise Resource Planning – The backbone information system for the enterprise including the management of financial, inventory, sales order, and procurement transactions

Business Intelligence – A comprehensive set of supply chain KPIs and business analytics that can be configured to the unique needs of each company

Technology Building Blocks

J.D. Edwards delivers a comprehensive technology foundation in which two components stand out from the competition for the management of supply chain events.

Distributed Object Messaging Architecture (DOMA) – DOMA is a distributed Internet-enabled architecture that enables n-tier messaging, with each tier offering another way to distribute application processing and increase user response. DOMA enables a server to automatically and proactively send data updates to clients, without requiring client queries. Thus, clients and servers become peers, which we now refer to simply as objects. The relationship between these objects is based on “contracts” rather than transactions, resulting in bidirectional data flow. Information can be modified by any object, and every object that has contracted for that information automatically receives the updated information.

Tactical level planning with the Advanced Planning solution is fully DOMA-enabled, allowing demand and supply plans to be synchronized and optimized in real-time. Intelligent agents can automatically monitor a business situation and take action on routine occurrences, notifying users only when complex problems arise.

Extended Business Processes – J.D. Edwards Extended Business Processes are built upon J.D. Edwards Extended Process Integration (XPI™) technology to deliver robust business-to-business collaboration. Simple Extended Business Processes can leverage technologies such as EDI or e-mail. However, most use extensible markup language (XML) to provide a much richer collaborative framework.

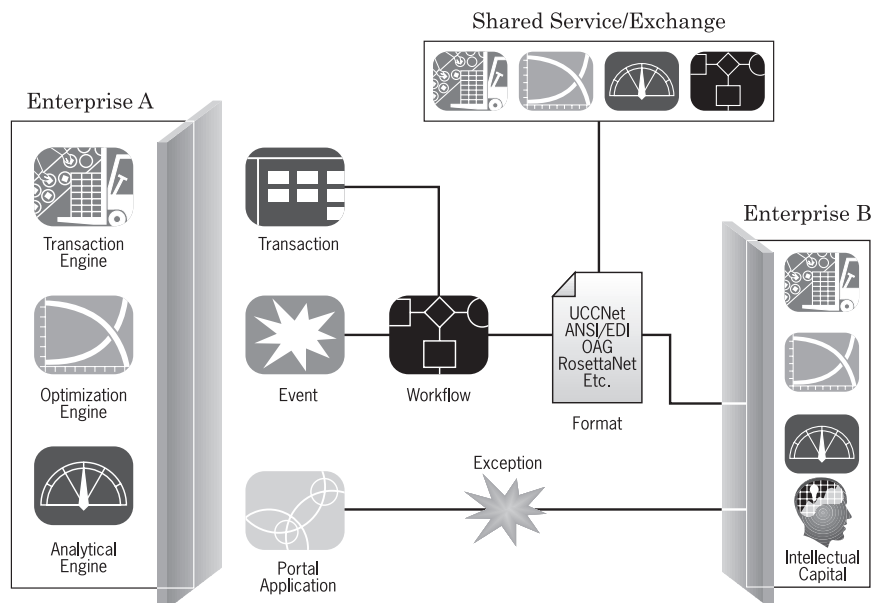


Figure 1: Anatomy of an Extended Business Process

As illustrated in Figure 1, Extended Business Processes enable collaboration on two basic types of information:

Transaction – A package of information between businesses. Examples include a sales order or a purchase order.

Event – Notification of the occurrence of an event. Examples include inventory falling below a reorder point or a late supplier delivery.

Extended Business Processes manage direct machine-to-machine links and workflow between businesses. For example, if Enterprise A generates a purchase order to buy goods from Enterprise B, the J.D. Edwards Extended Business Process would convert the purchase order to Enterprise B's desired format (e.g. RosettaNet) and route it to Enterprise B's system where it would become a sales order. Workflow could dictate that Enterprise B's third-party logistics provider also receives notification of the order so that delivery can be arranged from the closest warehouse location.

Extended Business Processes also manage exceptions where humans must intervene in the process to make decisions. The user interacts with the process through a Portal application receiving context-sensitive information to understand the problem and its impact on the supply chain, and simulate alternative solutions. These building blocks allow J.D. Edwards to deliver a complete architecture for SCEM.

J.D. Edwards SCEM Architecture

J.D. Edwards SCEM operates at two distinct levels across the extended enterprise enabling collaboration with customers and sell-side private trading exchanges (PTXs) as well as suppliers and buy-side PTXs (see Figure 2). Based on data in the company's ERP and SCE systems, a supply chain model is created that allows for cost and constraint-based optimization among all sites. Supplier and customer sites can also be represented in this model if there is value in including them in the optimization. All nodes within this supply chain model are linked via the DOMA architecture facilitating real-time messaging and alerts about hundreds of different event types (e.g. inventory below safety level, pending stock-out, new order received, transportation mode unavailable, etc.). Messages and alerts delivered via the Internet include context-sensitive drill-down capability to bring users directly to the source of the problem and make recommendations for resolution. Changes don't wait for overnight batch re-optimization but are resolved in real time.

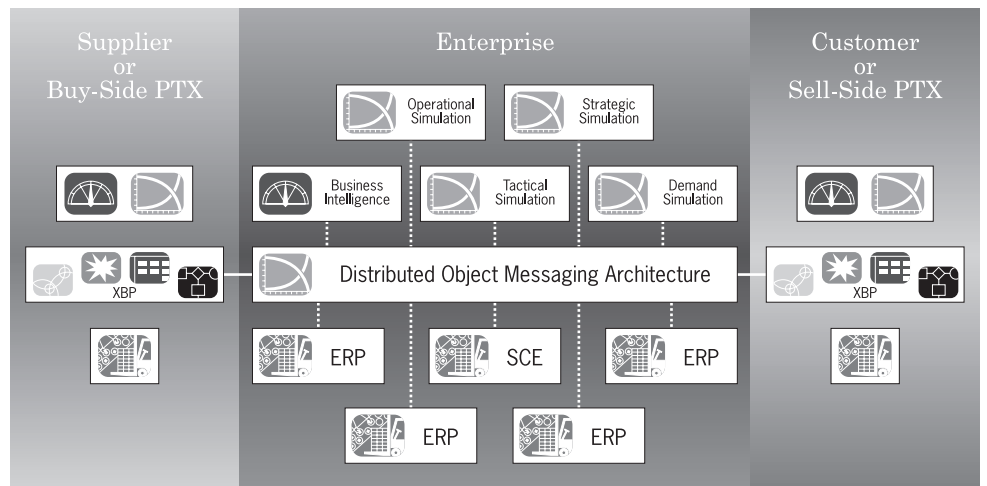


Figure 2: J.D. Edwards SCEM Architecture

DOMA links a rich set of planning and what-if simulation capabilities for demand and supply at the operational, tactical, and strategic levels while tying in real-time transactional updates from multiple ERP and SCE systems. Legacy systems and non-J.D. Edwards systems can be integrated to DOMA using a flexible toolset. Business Intelligence provides online KPIs and reporting based on extended enterprise data.

Beyond the optimized supply chain model, Extended Business Processes are used to link to a wider array of customers' and suppliers' systems. Transaction and event messages from partners' internal planning, transactional, and analytical applications are manipulated by the Extended Business Process utilizing standard formats and defined workflows so they can be used by the enterprise.

This architecture is flexible enough to support the level of event management required by the supply chain business process and the level of trust that exists between trading partners. Two examples illustrate this:

Example 1: Tight Integration of SCQM Processes – A company offers VMI services as a key part of its customer value proposition. With narrow margins on each product, keeping inventory low is the name of the game. Each customer location is included in the supply chain model. Inventory replenishment is optimized from company warehouses managed as a safety stock network. Extended Business Processes deliver daily information on inventory and consumption at customer locations. Tactical simulation projects inventory at each customer location and generates real-time alerts to warehouses, manufacturing, and suppliers should inventory be predicted to drop below safety limits.

Example 2: Loose Integration of SCQM Processes – A company issues discrete purchase orders (POs) to suppliers on a daily basis. Operational simulation determines daily replenishment requirements that are fed to the procurement system. An Extended Business Process delivers EDI-based POs to each supplier and processes the supplier's acknowledgement. Expected PO due dates are then updated in the planning system using DOMA. If due dates are not met, alerts are generated to internal users who follow up with the supplier.

What To Look For In An SCEM Solution

As a relatively new collection of extension applications and technologies, the SCEM landscape can be difficult to navigate. Here are some things to look for in further investigation of SCEM:

- Underlying supply chain planning and execution applications capable of quick response for day-to-day, hour-to-hour exception management, coupled with access to in-memory data populated in real time from backbone systems rather than just extracted data.
- The ability to generate alerts in real time based on net-change planning information, and retract alerts that have not been acted upon if and when a problem is resolved.
- The ability to include customers, suppliers, and other external partners within an optimized supply chain plan, or collaborate at arms-length, based on business process requirements.
- Applications and technologies that support pre-defined, yet customizable business processes rather than building-block EAI technologies that must be fully customized during implementation.
- Simultaneous management of events, transactions, and workflow via machine-to-machine or portal-based interfaces.
- Low cost of ownership due to pre-established integration between the SCEM layer and backbone SCP, SCE, CRM, ERP, and EAM applications.
- Flexible integration tools to connect the SCEM layer to third party and legacy applications within a company's infrastructure or within the extended supply chain.
- Online linkages to Business Intelligence allowing monitoring of KPIs and alerting based on defined tolerances.

J.D. Edwards supports each of these areas to offer a comprehensive SCEM solution to our customers. We encourage customers to look carefully before buying and implementing SCEM.

Conclusion

So, with all the recent hype surrounding supply chain event management should companies add SCEM capabilities to their supply chain portfolios? The answer to that question is based on whether there is value they can *realize* by improving the velocity of their supply chains, reducing costs between external trading partners or predicting actions based on better analytical information. It seems obvious that there is value in these areas, but not all business or supply chains are at the point where that value can be effectively tapped. J.D. Edwards Value Assessment methodology can help in making the right decisions about technologies like SCEM.



J D E W A R D S

J.D. Edwards World Solutions Company
World Headquarters
One Technology Way
Denver, CO 80237, USA
800 727 5333 / 303 334 4000

J.D. Edwards UK Ltd.
Serving Europe, the Middle East, and Africa
Colorado House
300 Thames Valley Park Drive
Reading
Berkshire RG6 1RD, UK
44 1189 091 700

J.D. Edwards World Solutions Company
Serving Latin America and the Caribbean
806 Douglas Entrance, Suite 570
Coral Gables, Florida 33134, USA
305 442 7800

J.D. Edwards Pte Ltd.
Serving Asia Pacific
No. 1 International Business Park
The Synergy, #06-01/04
Singapore 609917
65 227 3391

www.jdedwards.com

The materials contained herein constitute J.D. Edwards restricted information and are not intended for external dissemination. The materials are summary in nature, subject to change, and intended for general information only. The materials reflect current plans for future software or enhancements that may require additional license fees to obtain, and are not a commitment of J.D. Edwards to develop or deliver such software or enhancements.

J.D. Edwards™ is a registered trademark of J.D. Edwards & Company. JDE™ is a trademark of J.D. Edwards & Company. The names of all products and services of J.D. Edwards used herein are trademarks or registered trademarks of J.D. Edwards World Source Company. All other product names used herein are trademarks or registered trademarks of their respective owners.

© J.D. Edwards World Source Company 2002.