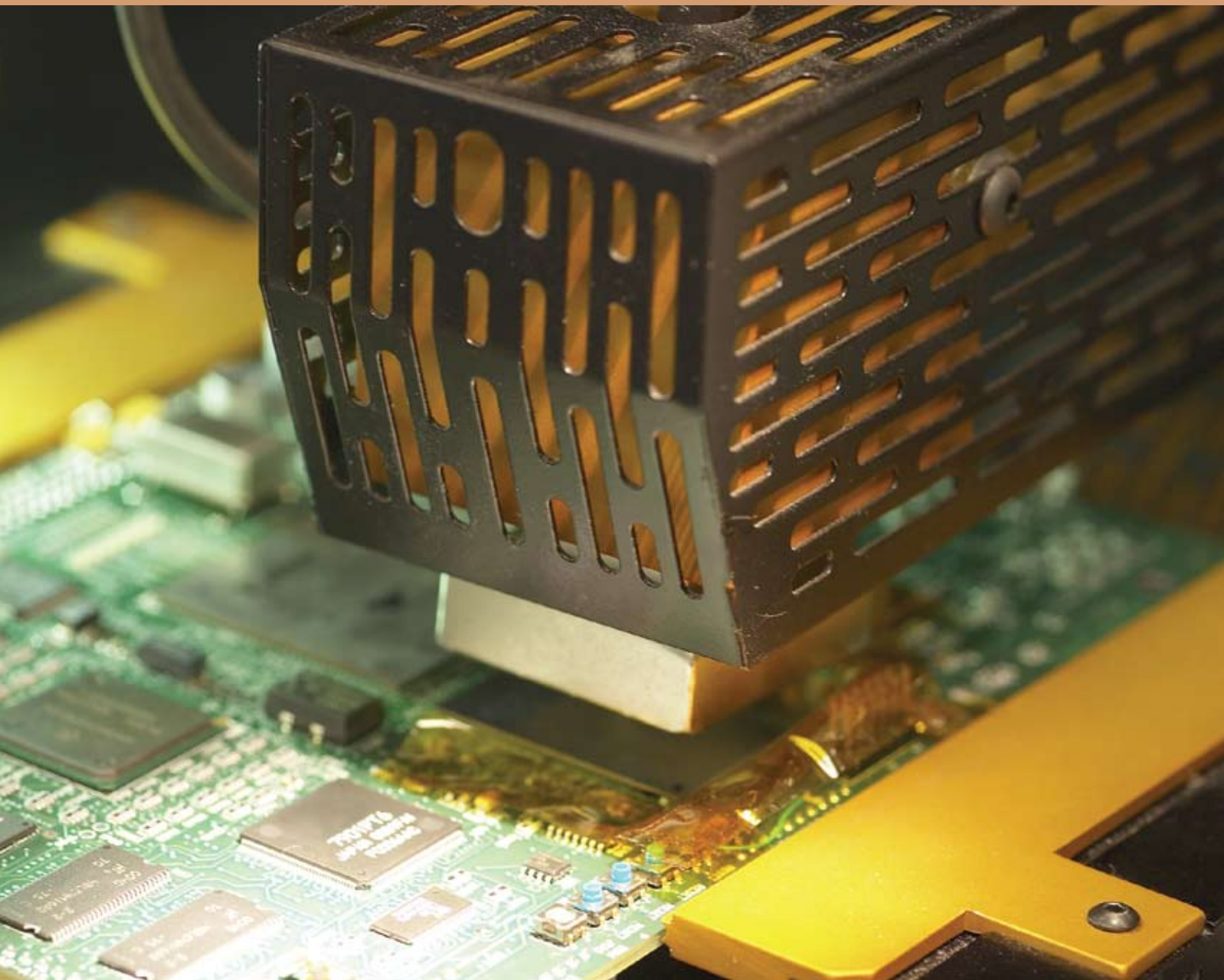


Manufacturing perspectives

The logistics of better performance



In a just-in-time economy, manufacturers can't afford lackluster performance. They have to get the job done faster, better, and cheaper. Problems like downtime, process bottlenecks, or delivery delays can mean missed opportunities and big costs.

Globalization adds to the challenge: everything from offshore plants and labor to outsourcing and political unrest. Supply chains, too, are more complex to manage. Companies not only buy more of their raw materials, components, and design services from far-off third parties; they also rely on contractors to coordinate the movement of their goods.¹

Maintaining competitiveness and sustaining profits isn't easy. When timing and quality control are paramount, manufacturers have to be able to plan, analyze, and measure results across the enterprise.

Business intelligence and enterprise planning – the core capabilities of performance management – can help manufacturing organizations monitor operations, optimize processes, and stay on top of market changes and opportunities, so they're in a better position to manage both supply and demand.

In this paper, we offer two perspectives on manufacturing. First, we explore why gaining visibility across the supply chain can help mitigate potential disruptions and risk. We also look at sales and operations planning, and how business can use it to coordinate product demand with the capabilities of the business.

In the interest of cost and competitive pressures, companies now depend on lean and highly outsourced supply chains to feed their operations. But have efficiency gains also brought higher risks? Many experts think so.

"In many cases shippers have gone too far in implementing the lean supply chain and have found themselves virtually out of business because of a catastrophic event," says logistics consultant Ted Scherck.²

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¹ Aditya Pande, Ramesh Raman, Vats Srivatsan. "Recapturing Your Supply Chain," The McKinsey Quarterly, Spring 2006.

² "When the Chain Breaks," The Economist, June 15, 2006.

Internal and external risks

Organizations are still vulnerable to events or disruptions that impact their supply chains – everything from cross-border issues and labor unrest to natural disasters and fires, even bankruptcy. For those that depend on a single supplier, one disaster can bring business to a halt.

But having too many suppliers doesn't guarantee immunity, either. In this case "the overall number grows exponentially the further you go down the chain, where problems can be harder to spot," says The Economist.³ "In fact, some firms do not know who is supplying their suppliers—or even where some of their lower-tier suppliers are based."⁴

Markets, too, punish companies that are hit by supply chain disruptions. In the short term, share prices can drop. And the effects may last longer: "Operating income, return on sales, and return on assets are all significantly down in the first and second year after a disruption."⁵

Ways to manage them

There are ways to manage supply chain risks. One of the best strategies is gaining complete visibility across the chain, so you know where and when problems occur and can take informed action.

Transaction systems can help companies achieve this kind of visibility. But the trick here is integrating all the data sources up and down the line – from internal applications to data systems operated by each supplier, often dispersed across the globe.

As The McKinsey Quarterly suggests: "To gather vital information, companies must selectively invest in IT connections between their own systems – supply-chain management software and ERP systems and the systems of their suppliers."⁶

“ In many cases shippers have gone too far in implementing the lean supply chain and have found themselves virtually out of business because of a catastrophic event.”

– Logistics consultant Ted Scherck

³ Ibid.

⁴ Paul Markillie. The Physical Internet. The Economist. June 15, 2006.

⁵ When the Chain Breaks, The Economist, June 15, 2006.

⁶ Aditya Pande, Ramesh Raman, Vats Srivatsan. Recapturing Your Supply Chain. The McKinsey Quarterly. Spring 2006.

Connect the data

ERP systems can't provide this level of functionality. But business intelligence can. The scalable software leverages all the data and presents it consistently to highlight key issues, wherever they occur. And it provides answers while there is still time to act on them.

Here are four ways that business intelligence helps to manage supply chain risk:

- **Dashboards and scorecards:** Provide highly visual information for monitoring supply chain operations. If performance falls into the red or exceeds a threshold, managers can access detailed information through supporting reports and analysis.
- **Business event management:** Supply chain managers receive email alerts when a predetermined disruption or unusual event occurs, such as parts shortages or shipments at risk.
- **Analysis:** Lets managers explore current issues or problems in the supply chain to understand what led to the results. It's the complete information they need to achieve process optimization.
- **Reporting:** Provides up-to-the minute views on key supply chain areas that can be shared across portals and extranets.

What-if planning

Business intelligence gives companies the information to take immediate action when something happens. Enterprise planning lets organizations look ahead so they can be more proactive.

In this case, it's the value of what-if planning. Managers and suppliers use a collaborative platform to forecast and model the effects of different business scenarios. They can analyze things like operational trends or supplier performance and project them forward. If a worst-case event happens, people have the flexibility and contingency plans in place to reduce the impact of shortages or stoppages.

“Some firms do not know who is supplying their suppliers—or even where some of their lower-tier suppliers are based.”

– The Economist

Managing logistics: U.S. Coast Guard

The U.S. Coast Guard's Aviation Logistics Management Information System (ALMIS) project is designed to consolidate disparate flight operations data – such as flight itineraries, aircraft status, maintenance, logistics, and supplier information – into a single system, which is powered by IBM Cognos® Business Intelligence.

The Coast Guard has been able to improve visibility into its supply chain, enable transparent data access and facilitate report generation for its air station personnel, and significantly reduce the costs of its aircraft parts requisition process. Among other benefits, the organization has seen \$2.4 million in annual savings from improved parts forecasting and availability.

“Our success with the ALMIS project is directly attributed to the fact that senior Coast Guard officials are always intimately familiar with what is happening at the core of our operations,” says Commander Donna Cottrell, Chief, Information Systems Division of the U.S. Coast Guard's Aircraft Repair and Supply Center.⁷

The high-risk world of supply chain dynamics

When events happen, it pays to be prepared. Business intelligence and enterprise planning provide a complete view of supply chain indicators across all transaction systems. They help companies plan and respond effectively to keep the business on track no matter what happens up the line—a critical ability in the high-risk world of supply chain dynamics.

A Blueprint for better sales and operations planning

A dynamic marketplace presents manufacturers with a business problem: how to match product demand with production and supply chain capabilities? Unfortunately, many companies fall short of the mark. They're constrained by an ineffective planning process, using disconnected, departmental spreadsheets that rarely reflect overall organizational strategies. The result? Manufacturers experience unpredictable or sub-optimal performance. They may fail to meet customer needs at a critical time, or face higher costs because of unanticipated demand or excess products in inventory.

“ To gather vital information, companies must selectively invest in it connections between their own systems – supply-chain management software and ERP systems – and the systems of their suppliers.”

– The McKinsey Quarterly

⁷ Nucleus Research and CIO Decisions Magazine Recognize U.S. Coast Guard with Technology Award for Outstanding ROI Results,” Cognos news release, August 2, 2005.

They may miss opportunities because resources are focused in the wrong place. Or they spend too much time and effort manually reconciling sales demand with operations supply capability.

A better way to manage supply and demand

Colin Snow, vice-president and research director of operational and supply chain performance management at Ventana Research, says these are precisely the reasons why a more dynamic, coordinated approach is called for.

“As new opportunities arise, manufacturers need to plan quickly and in detail. Success is contingent on a number of ingredients – enterprise-wide integration of systems, ubiquitous information visibility across the supply chain, a strong ‘what-if’ capability, and deep analytics for comparing outcomes, so management can anticipate the impact of potential actions across business functions.”⁸

An Accenture survey of supply chain executives makes similar conclusions. Companies are rushing to capitalize on opportunities in emerging markets such as China and India. And 93 percent of respondents see global operations as a central part of their strategy. Nearly all are attempting to upgrade their operations, yet implementing an effective sales and operations planning process ranked as their biggest challenge.⁹

Enter the *IBM Cognos Sales and Operations Planning (S&OP) Performance Blueprint* – an integrated performance management framework that helps manufacturers align sales and operations to drive better informed, more effective planning.

“The *Cognos Sales and Operations Planning Blueprint* empowers organizations to react quickly to ad-hoc exceptions – like changes in demand, supply, capacity, and product – plan effectively and measure the progress of responses against key performance objectives,” says Snow.¹⁰

A blueprint for better sales and operations

The *IBM Cognos S&OP Blueprint* integrates planning activities across finance, operations, production, purchasing, sales, and marketing. Using a common platform and workflow, departments coordinate their sales and production plans. Sales and marketing forecast product demand and revenue, and plan campaigns.

“As new opportunities arise, manufacturers need to plan quickly and in detail. success is contingent on a number of ingredients – enterprise-wide integration of systems, ubiquitous information visibility across the supply chain, a strong ‘what-if’ capability, and deep analytics for comparing outcomes...”

– Colin Snow, Ventana Research

⁸ Cognos Unveils New Performance Solutions to Help Manufacturers Improve Sales & Operations Planning and Trade Promotions Management,” Cognos News Release, June 13, 2006.

⁹ Jaume Ferrer and Johan Karlberg, “How to Build a Successful Global Operations Model,” Accenture Outlook 2006, No. 2.

¹⁰ “Cognos Unveils New Performance Solutions to Help Manufacturers Improve Sales & Operations Planning and Trade Promotions Management,” Cognos News Release, June 13, 2006.

At the same time, schedulers can carry out capacity, cost, and throughput modeling of products and plants to determine the right combinations. While production identifies capacity, labor, materials, and machinery financial constraints to meeting demand. And the supply organization evaluates supplier capabilities in-line with the materials and build plans.

Once they're rolled up, management and finance teams can review, analyze, and align plans with corporate goals and objectives. Using this coordinated process, it's much easier to reconcile sales and demand forecasts with supply plans and financial goals.

There is also more time for analysis and rolling forecasts. Since the business can quickly adjust plans and targets as needed, it stays on top of market changes or new opportunities and issues such as supply chain disruptions.

A first for manufacturing

Built using IBM Cognos 8 Planning and IBM Cognos 8 Business Intelligence, the *IBM Cognos S&OP Blueprint* is the first in a series of manufacturing *blueprints* planned by IBM Cognos solutions. Developed by the IBM Cognos Innovation Center for Performance Management, the *blueprints* provide targeted, pre-built data, process, and policy models based on proven best practices in manufacturing planning, budgeting, and forecasting.

"IBM Cognos Performance Blueprints provide executives and managers with the information and sophisticated insights required to effectively assess the trade-offs that are vital to ensuring the right mix of production, outsourced resources, and trade promotions to maximize sales effectiveness and meet demand," says Paul Hoy, director of manufacturing solutions at IBM Cognos solutions.

Beyond spreadsheets

Departmental, spreadsheet-based planning will fall short in helping manufacturers effectively manage supply and demand. Instead, companies need enterprise-wide forecasting and planning capability, to effectively coordinate both market needs and the capabilities of the business. *IBM Cognos Performance Blueprints* provide an ideal way to jump-start the process.

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– Colin Snow, Ventana Research

About IBM Cognos BI and Performance Management

IBM Cognos business intelligence (BI) and performance management solutions deliver world-leading enterprise planning, consolidation and BI software, support and services to help companies plan, understand and manage financial and operational performance. IBM Cognos solutions bring together technology, analytical applications, best practices, and a broad network of partners to give customers an open, adaptive and complete performance solution. Over 23,000 customers in more than 135 countries around the world choose IBM Cognos solutions.

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