Orchestrating the chain
Supply chain performance management

Cognos® software

Contents

Abstract

The business value of supply chain visibility is simple: it helps you understand your company's performance. It leads you to take action on recent information. It creates a common context for decision-making across every department and at every level.

Planning and business intelligence are an integral part of performance management. These capabilities help you see what's going on in terms of operations and supplier processes. Your organization gains the capability, visibility and intelligence to build an efficient and customer-focused supply chain.

They provide the insight your organization needs to optimize the chain — so you can anticipate problems before they happen, understand the reasons behind results and improve performance.

Overview

In a fast-paced, highly competitive and global economy, organizations can't afford lackluster performance. They have to get the job done faster, and still maintain a high level of quality. Performance is especially critical now. When the economy is in a downturn, cost control, efficiency and agility are paramount.

Increasingly complex supply chains add to the challenge. A supply chain may have hundreds or thousands of interconnected contributors and processes (purchasing, transportation, inventory, production, customer delivery). And this network can reach around the world.

Orchestrating the chain requires more than just mastering logistics. Organizations have invested millions in ERP systems and supporting software applications to help them improve the performance of their supply chains. This approach has improved transaction efficiencies, and streamlined individual aspects of the network.

Yet for the volumes of data they generate, these systems have not delivered what supply chain managers truly need — complete visibility across every aspect of their supply chain.

A recent study by the IBM Institute for Business Value points to a new and critical imperative: supply chain intelligence.

"As they reevaluate current supply chain strategies and initiatives, executives should ask: Which investments are simply making processes faster or more efficient? And which go a step further—making the supply chain decidedly more intelligent and resilient in times of unprecedented instability and risk?"[1]

To keep all the elements in the chain running smoothly, companies have to see what is going on, what is most critical, what decisions they need to make and the impact these decisions will have up and down the extended supply chain.

Supply chain performance management solutions from IBM Cognos provide the complete range of business intelligence and planning capabilities to build and manage an efficient, intelligent and customer-focused supply chain.

These capabilities provide the insight organizations need to optimize the chain—so they can anticipate problems before they happen, understand the reasons behind results and improve overall performance.

Business problems

Barriers to the high-performance, intelligent supply chain

There are many barriers to building a high-performance supply chain. Some of the most common: lack of visibility, unpredictability, incomplete information and local optimization.

Lack of visibility. Even the simplest supply chain generates a tremendous amount of data with its ERP system and supporting applications. This data lets managers perform deep dives into some aspects of their operations, and most ERP systems do provide basic reporting capabilities.

However, these reports are rarely flexible enough to address specific questions or immediate needs. Nor do they encompass the entire supply chain.

The ability to follow a process from raw materials to finished product to customer delivery is critical. Yet the sheer volume of data makes this difficult to achieve. There is also data from customers and suppliers. All of these have their respective applications and data silos.

With this mass of data, it's difficult to focus on exceptions, problem areas and opportunities for improvement or competitor advantage.

Managers also know they need better visibility into their customer needs. Most companies rank customer service as one of their highest priorities. Yet few actually collaborate with customers across key areas, from strategic planning and forecasting to inventory management and cost reduction.

The result? A disconnect between the supply and demand sides of the business.

Unpredictability. The more confidently a manager can predict demand, quantity, costs and targets, the better they can secure suppliers and build processes.

Unpredictability causes variation between expected and actual results. Left uncorrected, the problem is likely to reoccur with continued detrimental impact on the supply chain. Usually, this is because the root cause of the variation can't be found and the process isn't fixed.

When this happens, managers fall into a constant game of catch-up — moving resources and materials around at the last minute, rather than proactively driving performance.

Incomplete information. Lacking the time to fully analyze and understand a problem, managers have no choice but to make hasty decisions based on pre-configured ERP reports that provide a historical or partial view of the issue.

These reports help managers solve their immediate problems, but prevent them from making improvements that can lower costs or improve efficiency on a larger scale.

Local optimization. Organizations are spreading supply chain operations across the globe. Yet much optimization is still done at a local level — by product, facility, country or region. Few companies make global optimization a top priority or allocate human resources to achieving it.

This localized approach to optimization is to be expected, given that most managers see silos of information rather than a complete, integrated view. Also, without a clear link to strategy, managers can't see or predict the impact their actions will have further down the line. Their actions can bring about delays, cost increases or shortfalls that ultimately impact customer satisfaction.

Business drivers

Overcoming barriers with supply chain performance management

Supply chain performance management solutions from IBM Cognos encompass the complete range of business intelligence and planning software, scorecards and dashboards, event management.
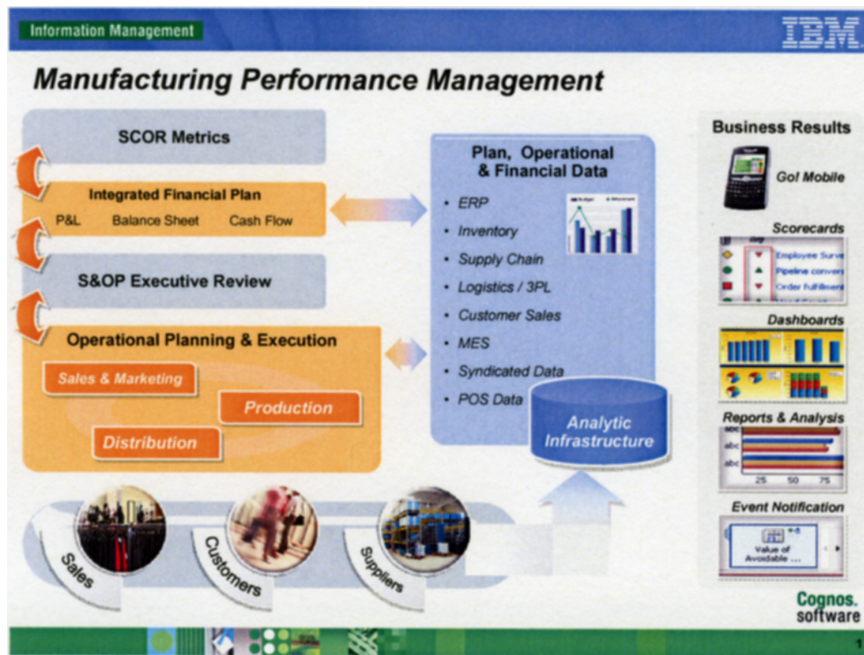
"Ordinary companies apply cost reduction techniques within individual functions (such as transportation or manufacturing), but top ones apply lean-management tools throughout the supply chain."

McKinsey[2]

Visibility

IBM Cognos performance management provides organizations with complete visibility into and across their supply chain. It can bring together data residing in different systems and at multiple levels of granularity.

Managers can monitor performance at the global level, analyze results across processes, products or suppliers, and drill down to transaction-level detail. They can identify key metrics, measure performance and receive alerts when performance is off-track and make immediate corrections.

Predictability

With supply chain performance management, future results become more predictable. Through regular reporting and analysis, managers can identify events, trends or other conditions that lead to problems. This helps them become proactive and eliminate problems before they occur.

Managers can analyze trends in operations, and build financial models and sales forecasts that help them make better decisions about resources and suppliers as well as new products. They can drive effective S&OP planning to integrate demand with supply and financial plans.

Companies can also take pre-emptive action to prevent inventory shortfalls, delays and other events that hurt performance.

Complete information

IBM Cognos provides managers, partners, suppliers and customers with the complete and consistent information they need to produce meaningful and actionable analysis. Reports, analysis and other information can be distributed through a centralized portal or extranet.

Effects of decisions can be evaluated so people understand the cost-to-serve and make better decisions. Complete information enables better collaboration. If a flaw or delay is identified, managers, suppliers, partners and customers can be alerted and work out a collaborative solution.

Global optimization
IBM Cognos performance management solutions provide the cross-functional visibility into supply chain performance that helps managers see beyond individual data silos. Cause-and-effect relationships and clear links to strategy are made visible, so managers can see and understand the impact of their decisions up and down the line.

In addition, data integration, multilingual, multi-currency capabilities and proven scalability enable deployments that span applications, countries, languages, currencies and user groups.

The solution

How it works

IBM Cognos helps organizations answer the fundamental questions in supply chain performance management: How are we doing? Why? What should we be doing? Managers need to answer all three questions to manage performance effectively. Without knowing how they're doing, they can't be proactive. They must constantly react.

Without knowing why, managers can't identify problems or make improvements. Without knowing what they should be doing, managers are forced to act in a vacuum; they can't understand the impact of their decisions or see opportunities for change.

How are we doing?
To assess how they're doing, managers can use scorecards and dashboards separately or together, depending on their specific business goals. However they are used, both capabilities help them look across their data silos to assess performance across departments inside and outside the company, and across regions and products.

Scorecards and dashboards are also interactive. When results or events exceed a threshold, managers can seamlessly drill-through to supporting reports and analysis to find out why.

Dashboards

Dashboards are real-time, visual snapshots of the supply chain. They provide a high-level overview of performance across any number of key areas — including supply chain cycle time, shipment performance, quality, cost-to-serve and supplier response.

Managers can use dashboards to monitor supplier performance by a specific metric such as on-time delivery. They can use them to map and monitor a process from start to finish. Dashboards also provide immediate, exception-based information on critical metrics that require attention. Results are presented using gauges, maps or other intuitive displays.
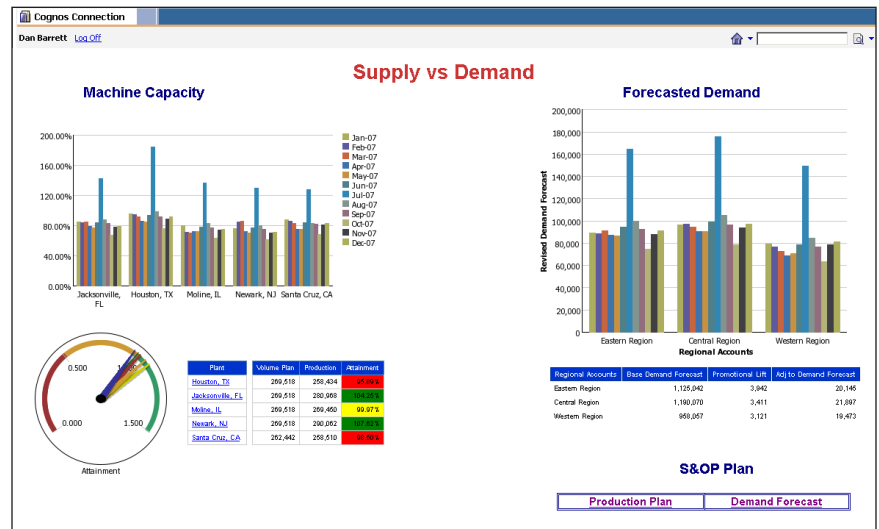
Scorecards

Scorecards also let managers monitor performance across key performance indicators (KPI), but they provide an extra level of detail by displaying results against pre-established targets and by plotting changes in performance as neutral or as part of a trend.

Managers are easily directed to the indicators that need immediate attention or are getting worse, so they can set up initiatives and projects to correct or improve performance.

In addition, scorecards help managers understand how their supply chain supports strategic goals. This knowledge helps them set up and monitor the appropriate KPIs and ensure that end-to-end activities support these goals.

Scorecards also support the Supply-Chain Operations Reference-model (SCOR) developed by the Supply Chain Council. The SCOR model provides a framework that links processes, metrics, best practices and technology to improve supply chain management.

A scorecard can integrate SCOR elements, allowing managers to monitor processes and measure supplier performance based on industry standards. The *IBM Cognos SCOR Blueprint* is a scorecarding application that includes more than 400 predefined metrics and linkages to the SCOR Performance Attributes.

The *IBM Cognos SCOR Blueprint* provides:

• A comprehensive metrics approach that includes a predefined metrics database and impact diagrams.

• Standard performance reports and analytics, as well as alerts.

• Insight into underperforming metrics.

• Defined metrics ownership and responsibility.

Benchmarks and your supply chain

Benchmarking allows you to compare the metrics of a process or method against an industry standard (such as the SCOR model) or another company best practice

The challenge is knowing how to define and use benchmarking data most effectively to improve supply chain performance. AMR Research offers seven success factors:

- **Keep your eye on the end-to-end goal.** Focus on the entire supply chain rather than a particular aspect.
- **Select the right metrics.** Clarify the purpose of the benchmark to help you focus on the best metrics.
- **Define a feasible scope.** Find a level of granularity that is manageable and meaningful.
- **Compare based on supply chain characteristics, not products.**
- **Get the process right.** Use the right resources and be realistic about time frames.
- **Turn the data into action.** Use interdependencies between metrics to determine the most appropriate improvement projects.
- **Make it sticky.** Ensure benchmarking measures are usable and sustainable over time.

"Measuring performance and periodically benchmarking it are critical components to the ability to excel over time. The best companies do this right. However, while doing all of this is important, good processes and governance will only get you halfway there.

"Most important in this effort is the clarity that you are benchmarking to improve end-to-end supply chain performance in the context of company goals and making it an ongoing process to drive continuous improvement."[3]

Read the full AMR Research report: *Benchmark Your Supply Chain: Seven Factors for Success*.

Event management

Event management provides proactive alerts to supply chain managers when either a predetermined business situation or an unusual event occurs – such as a material part shortage, quantities rejected or customer shipments at risk.

Alerts are also delivered through email, mobile devices, dashboards and portals to provide further information that managers can use to correct the situation. This provides them with the complete information they need to take action and resolve issues at the earliest possible instance. Event management can also track the progress of measures implemented to correct a problem.

Why?

When they understand the *why* behind results, managers can identify problems or make improvements. Reporting and analysis lie at the heart of IBM Cognos supply chain solutions. Combined, these capabilities extend the visibility provided by scorecards and dashboards to let managers explore and analyze their supply chain performance at any level of detail, and combine it in ways that extend beyond the capabilities of most ERP systems.

Both capabilities are interactive and can provide direct access to supporting detail, further analysis, scorecards or the transactional systems themselves.

Reporting

Like dashboards, reporting provides up-to-the-minute views into key supply chain areas that can be shared across portals and extranets. However, reports also provide greater detail and context about suppliers, throughput, inventory and other areas, as well as the ability to perform ad hoc queries to find answers that aren't readily apparent.

Using sales pipeline reports, for example, managers can forecast the impact of changes and adjust production plans based on anticipated sales volumes. This will ensure they have the capacity to deal with demand, while at the same time ensuring the right inventory levels.

With reporting, managers can:

• View exception reports to understand critical issues in the supply chain.

• Build ad hoc reports on any aspect of performance without the need for IT intervention.

• Identify the processes and operations that generate unfavorable variances.

• Reconcile inventory, production and demand information to meet customer demands.

• Report on performance by department, employee, machine, customer, supplier and operation.
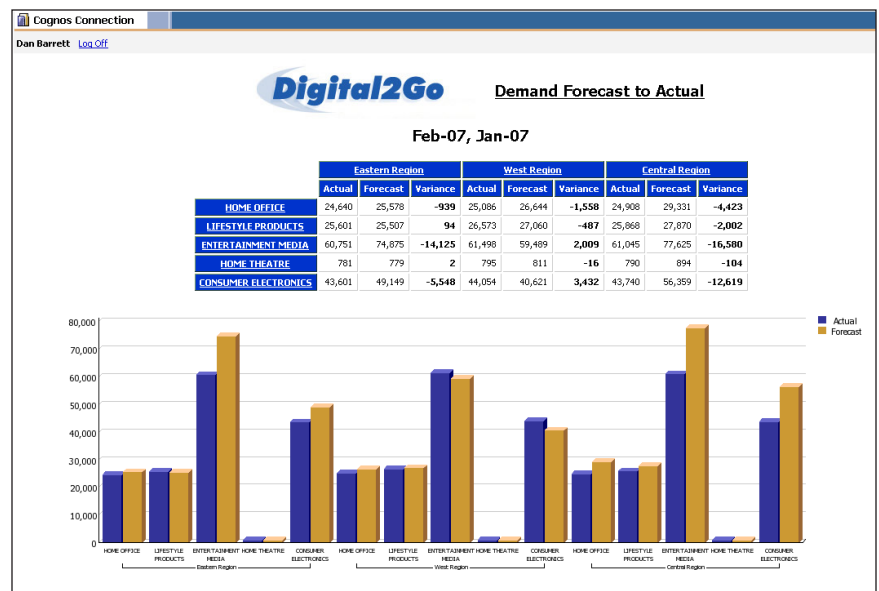
Analysis

Analysis lets managers explore and assess current issues, successes or problems in the supply chain to understand what led to the results. This helps them better understand the factors that contribute to poor performance and take actions to resolve them. Managers can identify cost reduction areas, root causes, and areas for performance and productivity improvement.

Managers can also bring together performance data from every aspect of their supply chain and combine it in different ways to find the point where production, forecasts, supplier performance and other elements intersect to provide the greatest gains.

With analysis, managers can:

• Redistribute inventory to respond to increased customer demand in a different region.

• Identify under-performing suppliers.

• Focus on logistics performance to improve delivery and reduce costs.

• Reassess and optimize product mix for a specific region.

Data integration

Given the numerous applications that an organization implements to support its supply chain process, it is increasingly difficult to bring information together to gain a supply chain process view.

Supply chain performance management provides a common metadata model that applies consistent business rules, definitions and calculations to the data, regardless of its source or structure. Information can be collected from any of the multiple applications used throughout the business.

This means managers can move confidently across data and applications to find answers without being limited by incompatible data formats or conflicting definitions. They gain a common performance management view across the entire supply chain, regardless of the transaction applications they use.

Managers spend less time looking for the right information and spend more time making – and acting on – fact-based decisions.

What should we be doing?

Enterprise planning capabilities provide the predictability required in the high-performance supply chain. Planning offers an environment for managers, suppliers and partners to collaborate on forecasts and see the effects of different business scenarios – to model and determine the best fit between operational goals, financial targets and customer service.

Cross-functional teams can set plans, allocate resources, monitor usage, then validate and adapt. Everyone works collaboratively to define goals and create forecasts, and evaluate alternative scenarios to maximize operational effectiveness.

Managers have better and more timely visibility into plans, plus the ability to compare them to actual results to see whether they are off-track and take the appropriate actions.

Plans can be evaluated and realigned – daily, if required – as business conditions change. This helps suppliers and partners readjust their own plans to avoid shortages or stoppages. Ultimately, this means better alignment of plans with current and forecasted market conditions and control over financial and operating performance.

A recent study by McKinsey bears this out. Organizations with high-performing supply chains tend to use common management best practices; one of which is integrated planning.

These companies "tightly integrate forecasting, supply planning, and production-scheduling processes. […] They are twice as likely as ordinary companies to use planning and performance information to adjust inventory levels and storage locations dynamically."[4]
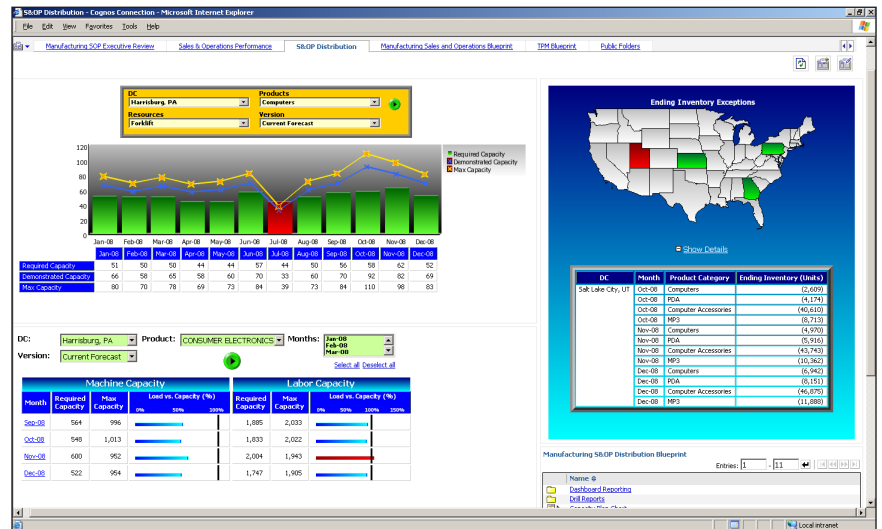
Sales and operations planning

Organizations need enterprise forecasting and planning capability to effectively coordinate both market needs and the capabilities of the business.

The *IBM Cognos Sales and Operations Planning (S&OP) Performance Blueprint* integrates planning activities across finance, operations, production, purchasing, sales and marketing. It complements existing ERP and supply chain applications, and provides a multi-year view so companies can identify the best scenarios and use their transaction systems to execute them.

Using a common platform and workflow, departments coordinate their sales and production plans. For example, sales and marketing forecast product demand, new product introduction and revenue, and plan campaigns. At the same time, schedulers carry out capacity, cost and throughput modeling of products and plants to determine the right combinations.

Production can create a demand-driven supply plan and identify capacity, labor, materials and machinery financial constraints to meeting demand. As well, the supply organization evaluates supplier capabilities in-line with materials and builds plans.

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

They can build a multi-year financial and operational plan to simulate P&L, balance sheet and cash flow implications for demand and supply.

There is also more time for analysis and rolling forecasts. Since the organization 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.

Conclusion

A complete solution

A company can no longer rely on siloed reporting, analytics or planning to manage their supplier networks. IBM Cognos supply chain solutions enable an integrated approach to supply chain management.

Organizations can create a management plan that links top-level strategy with departmental plans. As well, S&OP serves as the basis for aligning sales, marketing, supply chain and finance.

Using metrics (often based on the SCOR Model), management can monitor end-to-end supply chain performance. And plans can be adjusted as needs change.

Finally, the reporting of actual results provides visibility into performance in relation to targets and external benchmarks, creating a closed-loop supply chain performance management system.

With IBM, organizations have comprehensive insight across applications and data sources to help them manage today's complex supply chains.

About IBM Cognos BI and Performance Management

IBM Cognos business intelligence 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.

Request a call

To request a call or to ask a question, go to www.ibm.com/cognos/contactus. An IBM Cognos representative will respond to your enquiry within two business days.

Endnotes

1 *IBM Global Chief Supply Chain Officer Study: The Smarter Supply Chain of the Future*, IBM Institute for Business Value, January 2009.

2 Bruce Constantine, Brian D. Ruwadi and Joshua Wine, *Management practices that drive supply chain success*, The McKinsey Quarterly, February 2009.

3 Debra Hofman, Jan Barrett, and Lora Cecere, *Benchmark Your Supply Chain: Seven Factors for Success*, Industry Value Chain Strategies Report, AMR Research, May 2008.

4 Bruce Constantine, Brian D. Ruwadi and Joshua Wine, *Management practices that drive supply chain success*, The McKinsey Quarterly, February 2009.