VISIBLE PERFORMANCE.
PREDICTABLE RESULTS.

COGNOS SUPPLY CHAIN
PERFORMANCE
MANAGEMENT

COGNOS®

THE NEXT LEVEL OF PERFORMANCE™

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First, the promise: to build the most innovative new product in your industry, bring it to market six months ahead of the competition, at a lower cost than your current products. Raw materials and finished products are moving smoothly and predictably around the world and arriving at their destinations in the correct quantities and at precisely the right time. Errors are identified and adjustments are made at the source. Suppliers and partners are responding in kind. A single source of consistent and up-to-date information lets everyone watch it all happen.

The results? Satisfied customers. Predictable performance. Increasing market share and higher profitability.

Now, the reality: A key supplier misses a shipment. There are missteps in product quality. Transportation providers consistently deliver a week late. Inventory surpluses in Oakland and chronic shortages in Cincinnati. Surprise changes in demand. A shortage of working capital and relentless pressures to lower your costs.

The results? Frustrated customers. Unpredictable results. Dwindling market share and shrinking profits.

For supply chain managers, these realities are all too familiar. Manufacturers the world over have invested millions in ERP systems and various supporting software applications to help them improve the performance of their supply chains. This approach has improved efficiencies, centralized data storage and collection, and streamlined key processes. Yet for the volumes of data that they generate, these systems have not delivered what supply chain managers truly need – *complete* visibility, across *every* aspect of their supply chain.

A supply chain may have hundreds, even thousands of interconnected components and contributors. To keep them all running smoothly, managers need to see what's going on, what's most critical, what decisions they need to make, and the impact these decisions will have up and down the extended supply chain. They need a performance management system that delivers four key capabilities:

- **Visibility** across the entire supply chain, from sourcing raw materials to delivery of finished goods.

- **Predictability**, to prevent shortfalls and excess inventory, to improve readiness, and to be sure that a supply plan is executed as expected.

- **Complete information** about production, transportation, and partner and supplier performance to ensure responsiveness to customer needs.

- **A global perspective** to optimize processes across countries and continents.

These capabilities combine to provide managers with insight into overall performance, advance warning of problems, and the reasons behind the results.

BARRIERS TO THE HIGH-PERFORMANCE SUPPLY CHAIN

There are many barriers to building a high-performance supply chain. In this paper, we will examine the four most common:

- lack of visibility, due to data silos

- lack of predictability, due to a lack of visibility and the inability to identify changes necessary to get processes back on-track

- incomplete information, due to incompatible or incomplete reporting systems

- optimization at the local level

Lack of Visibility/Data Silos

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. Managers have a choice: work from an incomplete view, or spend hours compiling information to create it.

A high-performance supply chain performance management system must enable visibility *across* operations. The ability to follow a process from the moment raw materials ship from the supplier to the moment finished product arrives at the customer is critical. Yet the sheer volume of data that managers need to work with makes this difficult to achieve. On the sell side, data about sales, accounts receivable, fulfillment, finished goods inventory, and logistics. On the buy side, data about purchasing, accounts payable, raw materials and semi-finished goods inventory, production and logistics. There is also data from customers, logistics providers, and suppliers. All of these have their respective applications and data silos.

The system must integrate data from all of these sources and present information consistently, in a way that provides different views of performance (customer-centric, product-centric, process-centric); highlights issues clearly; and provides answers when managers still have time to act on them, rather than after the fact.

Managers also know they need better visibility into their customers' needs. They rank customer service as their second-highest priority, trailing only quality.[1] However, a recent survey by Deloitte shows that a mere eight percent collaborate with customers across key areas, from strategic planning and forecasting to inventory management and cost reduction.

The reason? Poor visibility. The result? Strains on key processes. Deloitte observes:

"It is no surprise manufacturers report that visibility of customer forecast data and inventories at key customer and supplier sites is largely mediocre. This strains production planning, work floor systems, logistics systems, and other supply chain activities. Few companies have developed and synchronized the supply and demand sides of their businesses to reduce the barriers to flexibility and profitability."[2]

This lack of visibility leads to the second barrier to high-performance supply chains: the lack of predictability.

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[1] *The Challenge of Complexity. Critical trends in supply chain management across global manufacturing.* Deloitte, 2003.

[2] ibid.

Lack of Predictability

Predictability is knowing that a plan will unfold as it should, at a known cost. The more confidently a manager can predict demand, quantity, costs, and targets, the better able they are to secure suppliers and build processes. Sourcing can happen sooner. Production can ramp up earlier. Lead times can be reduced. Buffer inventory investment can be minimized. Problems can be identified and resolved before a production run begins.

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 the globe at the last minute, rather than proactively driving performance.

Incomplete Information

The constant game of catch-up is often due to the third barrier: incomplete information. Lacking the time to fully analyze and understand a problem, managers have no choice but make hasty decisions based on pre-configured ERP reports that provide a historical or partial view of the problem.

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. In the high-performance supply chain, every piece of information is delivered in the greater context of the entire process. Effects of decisions can be evaluated so that 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.

Local Optimization

Manufacturers are spreading supply chain operations across the world. Yet according to Deloitte, most optimization is still done at a local level – by product, function (say, production), facility, country, or region.[3] 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 cannot see or predict the impact their actions will have further down the line. Their actions can bring about delays, changes, cost increases, or shortfalls further down the line that ultimately hurt customer satisfaction.

[3] *i*bid.

OVERCOMING THE BARRIERS:
COGNOS SUPPLY CHAIN PERFORMANCE MANAGEMENT

Cognos Supply Chain Performance Management (SCPM) encompasses the complete range of business intelligence and enterprise planning software capabilities that companies need to build and manage a high-performance supply chain: interactive scorecards and dashboards, business event management, reporting and analysis, data integration,[4] planning, budgeting, forecasting, and consolidation. All capabilities are completely integrated and delivered as a scalable and proven solution.

Cognos SCPM is designed for rapid deployment and ease of use. Users access its capabilities through a simple Web browser, at any time, anywhere. This enables enterprise-wide deployments that promote rapid user adoption and greater productivity. Integration with common industry portals and extranets lets customers, partners and suppliers access dashboards, reports, alerts, and other important content. Cognos also has strong partnerships with the leading ERP and supply chain application vendors including SAP, SSA, QAD, INFOR, JDE (Oracle), Manugistics, Kinaxis, Acorn Systems, Smarttime, and Agile.

Enabling Key Capabilities

Cognos SCPM enables the four key capabilities of the high-performance supply chain:

Visibility: Cognos SCPM provides supply chain managers 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 performance across processes, products, or suppliers, and dive down to transaction-level detail when

necessary. They can identify key metrics, measure performance, receive alerts when performance is off-track, and make immediate corrections.

Predictability: Cognos SCPM enables predictability in key processes. Through regular reporting and analysis, managers can identify events, trends, or other conditions that lead to problems. This helps them become pro-active and eliminate problems before they occur. Future results become more predictable. Managers can analyze trends in operations and project them forward, and also build predictive financial models that help them make better decisions about resources and suppliers. They can take pre-emptive action to prevent inventory shortfalls, delays, and other events that hurt performance.

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

Global Optimization: Cognos SCPM provides the complete and 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 enables deployments that span applications, countries, languages, currencies, and user groups.

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[4] Scorecards, dashboards, reporting, analysis, data integration, and business event management are core components of Cognos 8 Business Intelligence, a single BI product built on a single, Web services-based architecture. For a more detailed discussion of Cognos 8 BI capabilities, please read the Cognos White Paper, *The Full Promise of Business Intelligence*.

Proven Results

Cognos SCPM has brought tremendous value to some of the world's largest manufacturers. Nineteen of the 20 largest CPG manufacturers use Cognos, as do the top 10 automakers. Eighty-six companies in the Fortune 100 use Cognos. By acting as the performance management layer on top of their existing supply chain applications, companies such as Bridgestone, Zarlink Semiconductor, and Hyundai Car (UK) have all experienced demonstrable improvements in their supply chain performance. For example:

- Bridgestone reduced its reporting on gross profit and net variance from two days to 30 minutes using Cognos planning software.

- Zarlink Semiconductor saved $40 million through increased efficiencies using Cognos reporting and analysis.

- Hyundai Car (UK) identified savings of £75,000 over two years by reducing spend on external supplier data.

Benefits Beyond The Supply Chain

The benefits of Cognos SCPM extend beyond the supply chain. Companies can use it to connect supply chain data to other enterprise applications such as finance, HR, CRM, and third-party benchmark data. In this way, Cognos SCPM not only improves the performance of a supply chain, it connects an entire company to a single source of mission-critical information and increases the value of existing IT investments. People across the organization can access Cognos SCPM for the accurate, up-to-date information they need to collaborate on issues and make better business decisions. The benefits of Cognos SCPM become those of the entire organization.

CUSTOMER SUCCESS: U.S. COAST GUARD SAVES MORE THAN $7 MILLION WITH COGNOS

The U.S. Coast Guard was recently recognized for the successful implementation of its Aviation Logistics Management Information System (ALMIS) initiative, which makes use of Cognos business intelligence. The U.S. Coast Guard's win marks the third consecutive year that a Cognos customer has received a Technology ROI award

The ALMIS project was designed to consolidate disparate flight operations data – including flight itineraries, aircraft status, maintenance, logistics and supplier information – into a single system, thereby eliminating duplicate data entry, reducing system downtime, and facilitating information access.

By leveraging Cognos business intelligence, the Coast Guard is 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.

According to Nucleus Research, this has translated into:

- $5.2 million in annual savings from reduced system downtime.

- A one-time savings of $3.5 million through streamlined warehouse inventory controls.

- $500,000 in annual savings from the prevention of requisition reorders.

- $2.4 million in annual savings from improved parts forecasting and availability.

Cognos SCPM helps supply chain managers answer the fundamental questions in performance management:

- How are we doing?
- Why?
- What should we be doing?

Just as the questions are connected, the fabric of information fueling the answers must connect as well. Managers need to answer all three questions to manage performance effectively. Without knowing how they're doing, managers can't be pro-active. 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? (Dashboards, Scorecards, and Business Event Management)*
Managers can use scorecards and dashboards separately or together, depending on their specific business goals. However they are used, both capabilities help

mangers look across their data silos to assess performance across departments inside and outside the company, and across regions and products. They provide managers with a personalized information center for monitoring and managing supply chain operations, whether it takes the form of a graphical update on overall performance, a comparison of actuals against targets for key performance indicators, or both.
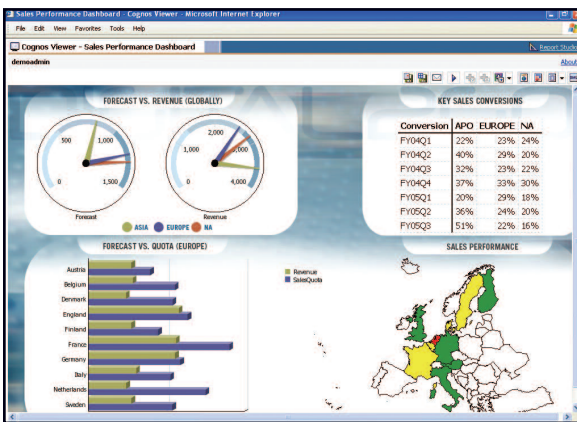
Dashboards
Dashboards are visual snapshots of supply chain performance. For many Cognos customers, dashboards are the first point of entry into their SCPM system because they provide a high-level overview of performance across any number of key areas. For example:

- Supply chain cycle time
- Shipment performance
- Inventory
- Quality
- Cost-to-serve
- Supplier responsiveness
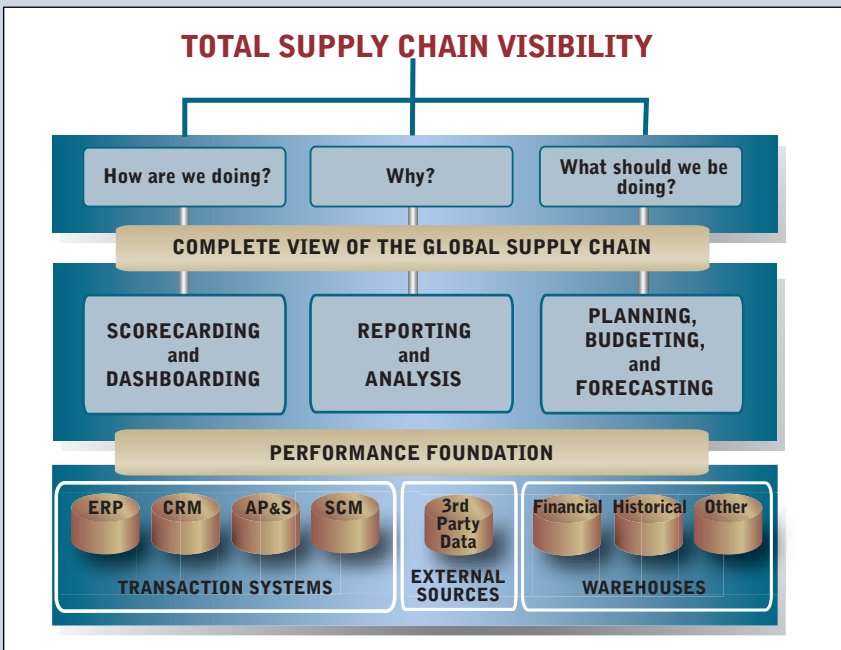
The Cognos Supply Chain Performance Management System enables complete visibility across data sources and applications.

Managers can use dashboards to monitor supplier performance by a specific metric such as on-time delivery. They can also use dashboards to map and monitor a process from start to finish. Results are presented using automotive-style gauges, maps, or other intuitive displays.


Create dashboards that communicate complex information graphically with the same capability you use for all reporting.

Scorecards

Scorecards also let managers monitor performance across key performance indicators, but provide an extra level of detail by displaying results against pre-established targets and 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 mangers understand how their supply chain supports strategic goals. This knowledge helps them set up and monitor the appropriate KPIs and make sure that end-to-end activities support these goals. For example: a company looking to differentiate itself by providing lower-cost products will have a much different process and supply chain than a company that plans to win on quality. The former will have a bias towards low-cost suppliers; the other will seek out suppliers of higher-quality materials. The KPIs tracked via the scorecards may be completely different in the two situations.
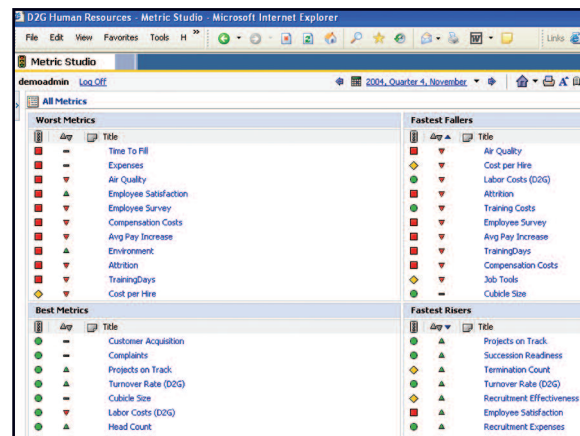

Deliver dynamic scorecards that are more than pretty pictures; let people drill down on their metrics to make better business decisions.

Cognos dashboards and scorecards are also interactive. When performance falls into the red or exceeds a threshold, managers can move seamlessly from the high-level gauges and maps to supporting information contained in the underlying reports and analysis with a single mouse click.

> *Scorecards and dashboards let managers look beyond data silos to monitor the performance of their entire supply chain.*

Business Event Management

Business Event Management (BEM) is also a common entry point to Cognos SCPM because it sends email alerts to supply chain managers when either a pre-determined business situation or an unusual event occurs. Alerts can also be delivered to a manager's dashboard or portal and provide direct access to further information that they can use to correct the situation. This provides managers with the complete information they need to take action and resolve issues at the earliest possible instance. BEM can also track the progress of measures implemented to correct a problem.
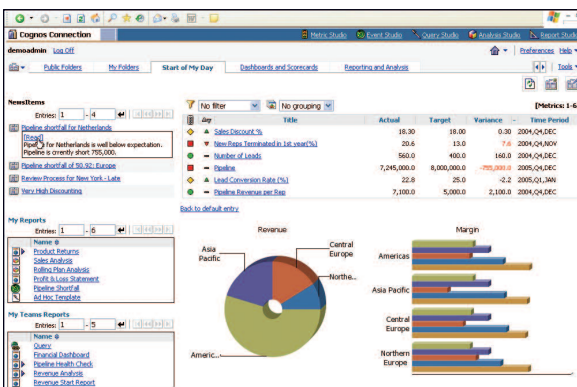

A user receives a news item alert in their BI browser that notifies them of a potential pipeline issue and delivers background information to jump-start the decision-making process.

Why? (Reporting and Analysis, Data Integration)

Reporting and analysis lie at the heart of Cognos SCPM. Combined, these two capabilities extend the visibility provided by scorecards and dashboards to let managers explore and analyze every aspect of 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 also provides up-to-the-minute views on 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.
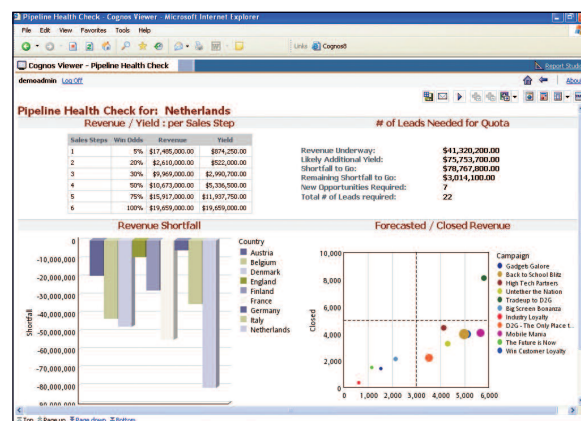
With drag-and-drop authoring, create compound reports that bring together disparate data sources and then distribute the information widely. See the big picture with scorecards and seamlessly connect with the underlying detail.

With reporting, managers can:

- 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

The analysis capability of Cognos SCPM lets managers explore and analyze 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 directed at solving the core problems. Using simple drag-and-drop actions, managers can identify cost reduction areas, root causes, and areas for performance and productivity improvement.

Spot trends with multidimensional analysis against both OLAP and relational sources.

Managers can also bring together performance data from every aspect of their supply chain and then combine it in different ways to find the point where production, forecasts, supplier performance, and other elements intersect to provide the greatest gains. For example: if a company plans to expand its product line, managers can build a model of the best-performing suppliers or the most reliable transportation providers and apply this profile across the entire supplier list to identify the best ones. This puts them in a position to make the entire supply chain more effective by bringing about improvements in efficiency or cost savings that extend beyond their own area of responsibility.

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.

Reporting and analysis provide greater visibility into performance than most ERP systems and provide the global perspective and complete information managers need to achieve wide-ranging process optimization.

Data Integration

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

What Should We Be Doing? (Enterprise Planning)

The enterprise planning capabilities within Cognos SCPM provide the predictability required in the high-performance supply chain. Enterprise planning provides an environment for managers, suppliers, and partners to collaborate on forecasts and model the effects of different business scenarios. Cross-functional teams can set plans, allocate resources, monitor usage, then validate and adapt. Everyone can work 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. With Cognos SCPM, planning becomes a continuous, dynamic process. 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.
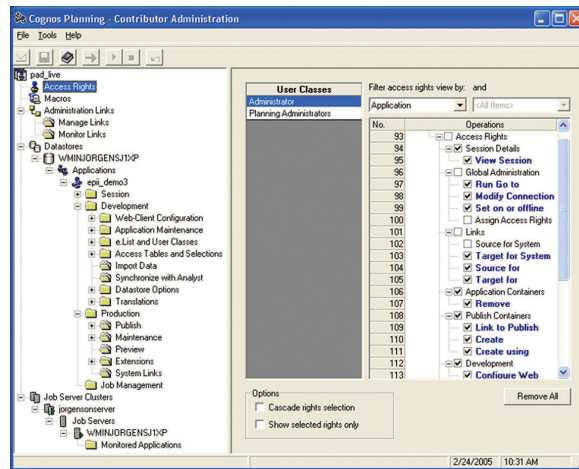
Cognos Planning allows administrative functions to be distributed and localized to remove system bottlenecks.

Cognos Planning lets managers integrate planning into their daily activities for greater predictability about the impact of their decisions.

THE POWER OF A COMPLETE SOLUTION

Because Cognos SCPM is an integrated solution, managers can also report off and analyze planning data. Rather than force organizations to manage compliance and performance systems separately, Cognos provides the opportunity to manage both systems using a single and fully integrated approach. They can populate their scorecards with actual and target data directly from their plan, creating a truly closed-loop supply chain performance management system. This lets organizations establish a unified view of both their compliance and performance processes and establish greater control over all of the underlying data. Finance gains the added advantage of using full BI capabilities against planning and budgeting data to identify opportunities and analyze trends.

COGNOS PERFORMANCE APPLICATIONS: BUILT-IN BUSINESS VALUE

Managers looking to accelerate their supply chain optimization efforts often choose Supply Chain Analytics, one of the Cognos Performance Applications. Cognos Performance Applications deliver a quick ROI because they contain pre-built reports, metrics, and data models based on best practices, as well as built-in connections to the most common data sources.

With Supply Chain Analytics, managers can find answers to their most common questions, including:

- Which suppliers are the most reliable? Which have balances outstanding?

- How many days of inventory exists in each warehouse? Are we meeting demand?

- How close are my material forecasts to actual results?

- What lead times are required to fulfill an order?

- Which plants have completed the highest number of work orders on time?

- Which plants are performing best against our cost targets? Has this changed over time?

With the information found in Cognos Supply Chain Analytics reports and metrics, managers can monitor and report on performance in a variety of key areas:

Stock overview and valuation: see the stock you are carrying, its location, and value. Understand your inventory investment and how it is distributed.

Demand: determine whether your stock levels and fluctuations let you meet customer demand. Quality and yield: understand yield and yield losses across all plants or for specific operations. Analyze the relationship between scrap, quantity, cost, and lost profits.

Organizational effectiveness: analyze and report on time-to-delivery, quality, and costs by plant, department, or shift.

Material usage and cost: make better decisions about routing, material usage, and substitutions.

Time-to-delivery: monitor and analyze product cycle time, inventory aging, and downtime.

Procurement: evaluate buyer volume, budget distribution, and relationships to consolidate or redistribute purchasing.

Material demand: understand what's required and when. Improve purchasing effectiveness by analyzing internal demand patterns for specific materials.

COGNOS SUPPLY CHAIN ANALYTICS: KEY FEATURES UP CLOSE

This report, Production Routing Effectiveness, is drawn from the Cognos Production Module.
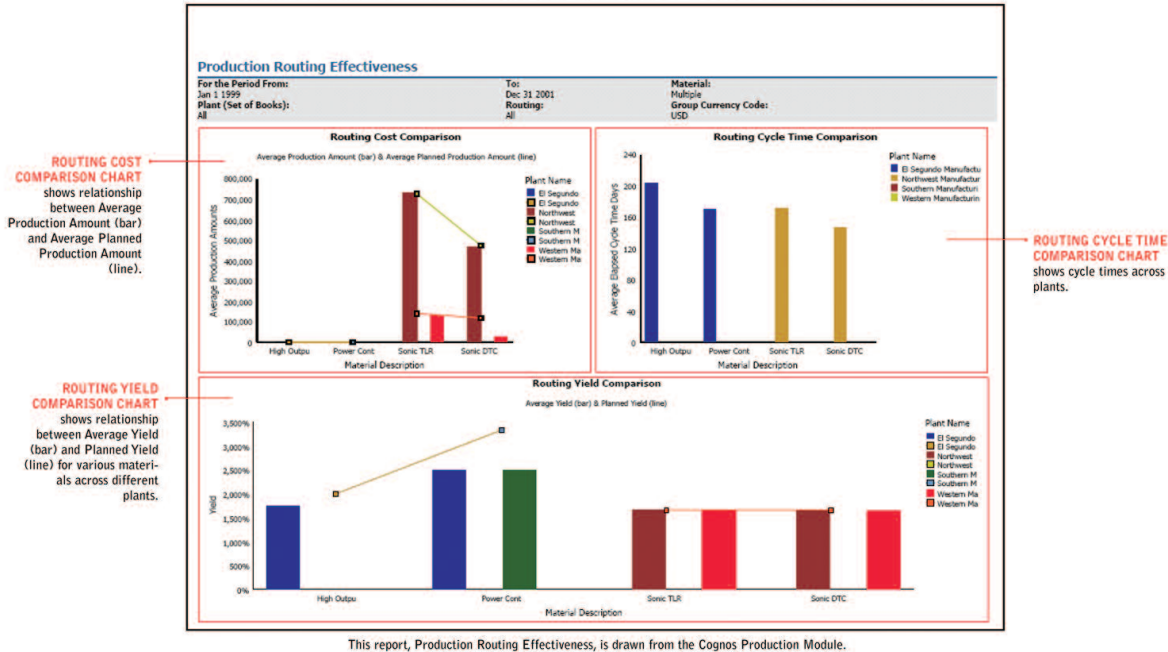
Reports in Cognos Supply Chain Analytics are based on best practices.

Cognos Supply Chain Analytics draws on four modules:

Inventory Analysis: reports and analysis covering demand, material movement, forecasting, and stock valuation.

Production Analysis: reports and analysis covering quality, downtime and scrap rates, routing, costs, material usage, shift labor, and yield.

Procurement Analysis: reports and analysis covering vendor performance, demand, and purchasing power.

Accounts Payable: reports and metrics covering cash outflow, supplier relationships, discounts, terms of payment, and overdue accounts.

COGNOS AND DELOITTE: A POWERFUL PARTNERSHIP

For customers choosing to work with a professional services firm, Cognos and Deloitte offer a joint solution that improves supply chain planning, monitoring, and execution across the enterprise.

Customers can take advantage of the combined experience of Cognos and Deloitte to implement supply chain performance management worldwide. Our Supply Chain Performance Accelerator (SCPA) Consulting methodology includes:

- evaluation of appropriate metrics

- data integrity assessments

- linkage between metrics

- processes, incentives, organization structure and strategy

- business metrics driven by production, logistics, procurement, and supply chain.

The benefits of the SCPA include:

- reduced risk

- increased ROI, delivered quickly

- knowledge sharing

- strategic relationship with industry leaders.

WHY COGNOS?

Cognos is the leading provider of business intelligence (BI) and corporate performance management (CPM) solutions. Industry and financial analysts recognize our leadership. Cognos has a long history of innovation – we build the world's best-selling OLAP software and the first BI platform to take full advantage of a fully Web services-based architecture. Our software has delivered proven, often dramatic ROI to customers in every major industry, around the world. Cognos is also a member of the Dow Jones Sustainability Index.

Founded in 1969, Cognos now serves more than 23,000 customers in more than 135 companies.

For more information about Cognos solutions for manufacturing, visit **www.cognos.com/manufacturing**

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