



**Optimizing the  
healthcare supply chain:**  
Applying performance  
management capabilities to  
supply chain management

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## Abstract

The business value of visibility into a healthcare organization's supply chain is simple: cost containment and optimization of performance. It leads you to take action on recent information, and it creates a common context for decision-making across every department and at every level.

Planning and business intelligence (BI) are an integral part of performance management. These capabilities help you see what's going on in terms of operations, supplier processes and costs, while your organization gains the capability, visibility and intelligence to build an efficient and patient-focused supply chain. Planning and BI provide the insight your organization needs to optimize the supply chain – so you can anticipate problems before they happen, understand the reasons behind results and improve performance.

## Overview

In today's tough times, healthcare organizations are seeking ways to provide safer, higher-quality and more cost-effective care. They are dealing with resource challenges, decreasing reimbursements and an uncertain economic climate, yet they must continue to deliver critical services to the communities that they serve.

Ask most healthcare executives and service line directors about their key strategies for growth, and the same answers tend to pop up: increase market share; improve patient satisfaction and loyalty; serve patients cost-effectively; improve the quality of care; and understand the need of the patient community so the institution can offer the right services at the right time. Performance is especially critical now. When the economy is in a downturn, cost control, efficiency and agility are paramount.

Increasingly complex healthcare supply chains add to the many challenges facing healthcare organizations. A supply chain may have hundreds or thousands of interconnected contributors and processes (including group purchasing requirements, authorizations, purchasing, transportation and inventory storage processes).

Add to this the growing challenge of physician preference items, and very quickly the amount of data the supply chain manager must deal with can become an insurmountable challenge.

Optimizing the supply 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?”<sup>1</sup>

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. IBM® Cognos® supply chain performance management solutions provide the complete range of BI and planning capabilities needed to build and manage an efficient, intelligent and patient-focused supply chain.

## 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 and incomplete information.

**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 physician preferences or provide a view into the entire supply chain.

The ability to involve physicians in supply chain decisions is critical, yet the sheer volume of data makes this difficult to achieve. Comparative reporting is paramount in bringing clinician stakeholders to the table for discussions. Yet the data required is often isolated within the operating room – separate from the procurement system – with information residing in multiple applications and data silos.

With this mass of data, it's difficult to focus on trends, outcomes, exceptions, problem areas and opportunities for improvement and collaboration. Managers also know they need better visibility into their physician needs. Most healthcare organizations rank physician preference items as one of their highest priorities for impacting costs. Yet few actually collaborate with physicians or engage them 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 – ordering last-minute items, retaining excessive inventory, and moving resources and stock – 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.

## Business drivers

### Overcoming barriers with supply chain performance management

Performance management capabilities and supply chain performance management solutions based on IBM Cognos software encompass the complete range of business intelligence and planning software, including scorecards and dashboards and 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<sup>2</sup>*

#### **Visibility**

IBM Cognos performance management solutions provide organizations with complete visibility into and across their supply chain so managers can bring together data residing in different systems and at multiple levels of granularity. Managers can monitor performance at the procedure 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 so they can make immediate corrections.

#### **Predictability**

With supply chain performance management, future results become more predictable. Through regular reporting and analysis, managers can identify events, patterns, 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 volume forecasts that help them make better decisions about resources and suppliers as well as new service lines. Healthcare organizations can also take pre-emptive action to prevent inventory shortfalls, delays and other events that hurt operational performance and care delivery.

#### **Complete information**

IBM Cognos software provides managers, partners, suppliers and physicians 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 to support dialog and decision-making between clinicians and administrators. 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.

## The solution

### How it works

IBM Cognos software helps healthcare 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 organization, and across regions and service lines. 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 a metric for on-time delivery ratings. They can use them to map and monitor a fulfillment process from start to finish. Dashboards also provide immediate, exception-based information on critical metrics that require attention, and results are presented using gauges, maps or other intuitive displays.

### **Benchmarks and your supply chain**

Benchmarking allows you to compare the metrics of a process or method against an industry standard or organizational metric. 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 timeframes.
- 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.”<sup>3</sup>

Read the full [AMR Research report: Benchmark Your Supply Chain: Seven Factors for Success](#).

### **Scorecards**

Scorecards also let managers monitor performance across key performance indicators (KPIs), 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 cost-containment objectives and strategic goals. This knowledge helps them set up and monitor the appropriate KPIs and ensure that end-to-end activities support these goals.

### **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 supplier disruption, quantities rejected or 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 financial projections against service line performance for example, managers can forecast the impact of changes and adjust acquisitions based on anticipated procedures or patient 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, distribution and demand information to meet patient volumes.
- Report on performance by facility, department, surgical suite, physician and supplier.

### **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 projected volumes, forecasts, supplier performance and other elements intersect to provide the greatest gains. With analysis, managers can:

- Redistribute inventory across the enterprise to respond to fluctuations in volumes.
- Identify under-performing suppliers.
- Focus on logistics performance to improve delivery and reduce costs.
- Reassess and optimize the preference mix for a specific service line or procedure.

### **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 and then validate and adapt. Everyone works collaboratively to define goals and create forecasts, and to 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 so they can swiftly 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.

### New intelligence for a smarter healthcare supply chain



We are experiencing a revolution, and information is at the heart of it. Healthcare organizations that are taking advantage of this new wealth of information are able to make more intelligent decisions and are rising to the top. They're managing large volumes of information in real-time, incorporating analytics and predictive modeling,

pervasively collecting and sharing information across the entire value chain and speeding time to value by delivering trusted, accurate and timely information to the right decision makers.

IBM Cognos software is a prime example of how healthcare organizations can leverage this new intelligence to create sustainable competitive advantage through a smarter supply chain. The implications for the supply chain are dramatic. To address this massive industry shift, healthcare organizations will need a different kind of supply chain – one that is much smarter and far more pervasive. A smarter healthcare supply will be far more interconnected, allowing healthcare organizations to share information, make decisions collaboratively and manage the supply chain in real-time.

A smarter healthcare supply chain also is more intelligent. Healthcare organizations can rely more on advanced analytics, simulation and modeling tools to evaluate increasingly complex and dynamic risks and constraints and manage the supply chain more methodically – with visibility into real-time supply chain status.

IBM Cognos supply chain performance management solutions provide the complete range of BI and planning capabilities needed to build and manage an efficient and intelligent supply chain. These capabilities provide the insight healthcare organizations need to optimize the chain – so they can anticipate problems before they happen, understand the reasons behind results and improve overall 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.”<sup>4</sup>

In healthcare, being able to manage inventory to patient volumes and operating room scheduling facilitates cost savings and more effective resource utilization.

## Conclusion

### A complete solution

A healthcare organization 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 and service line volumes. Using metrics, departmental KPIs and comparative reporting, 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, healthcare organizations have comprehensive insight across applications and data sources to help them manage today’s complex supply chains and optimize operations to meet today’s financial challenges.



## 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.

For further information or to reach a representative please visit [www.ibm.com/cognos/healthcare](http://www.ibm.com/cognos/healthcare).

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### 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.
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