



# **Picturing Performance:** IBM Cognos dashboards and scorecards for healthcare

## Contents

### 5 Business problems

Why do you use a dashboard or scorecard?

### 5 Business drivers

Operational dashboards: Focus on monitoring

Tactical dashboards: Emphasis on analysis

Scorecards: Managing strategy

### 8 The solution

Dashboarding and scorecarding with IBM

What sets us apart

Dashboards

Scorecards

### 11 Dashboards, scorecards and performance management

The value of a full performance management system offered by IBM

The performance management framework

Five things to consider

### 15 Conclusion

## Abstract

Healthcare organizations around the globe are increasingly using dashboards to provide at-a-glance views of current business performance and decision-making. But not all dashboards are the same, so organizations must be careful to adopt dashboard strategies that provide each user group with information that is appropriate to their role, gets updated on a schedule that meets their needs, and is shared consistently across the entire enterprise. A series of disconnected dashboards is of no value to an organization, so IT investments must accommodate these factors, and others, to ensure a successful dashboard deployment.

## Overview

In his TDWI Best Practices Report *Deploying Dashboards and Scorecards* (July 2006), Wayne Eckerson provides a helpful definition of an oft-misunderstood term:

*“Dashboards and scorecards are multilayered performance management systems, built on a business intelligence and data integration infrastructure, that enable organizations to measure, monitor, and manage business activity using both financial and non-financial measures.”<sup>1</sup>*

Dashboards and scorecards share three basic characteristics, or, what Eckerson calls “*The three threes.*” These characteristics are: applications, layers and types. Let’s look at these in more detail:

**Three Applications:** Every dashboard contains these three applications: monitoring, analysis and reporting, Eckerson writes. These sets of related functionalities are woven together seamlessly and built on an information infrastructure designed to fulfill user needs. (see Figure 1)

*Figure 1: Three dashboard applications*

	<b>Monitoring</b>	<b>Analysis</b>	<b>Management</b>
Purpose	Convey information at a glance	Analyze exception conditions	Improve coordination and collaboration
Components	<ul style="list-style-type: none"> <li>• Multi-paned screens w/visual elements</li> <li>• Graphs (dials, thermometers, etc.)</li> <li>• Symbols, alerts</li> <li>• Charts, tables with conditional formatting</li> <li>• Alerts</li> </ul>	<ul style="list-style-type: none"> <li>• Analytics (i.e., dimensional, time-series, segmentation)</li> <li>• Forecasting, modeling, and predictive statistics</li> <li>• Visual analysis Reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Annotations</li> <li>• Thread discussions</li> <li>• Meetings</li> <li>• Strategy maps</li> <li>• Workflows</li> </ul>

**Three Layers:** The most distinctive feature of a dashboard, writes Erickson, is its three layers of information:

1. Graphical, abstracted data to monitor key performance metrics.
2. Summarized dimensional data to analyze the root cause of problems.
3. Detailed operational data that identifies what actions to take to resolve a problem.

Much like peeling the layers of an onion, he writes, a performance management system lets users peel back layers of information to get to the root cause of a problem. Each layer provides additional details, views and perspectives that enable users to understand a problem and identify the steps they must take to address it.

**Three Types:** Finally, writes Eckerson, dashboards come in three types: operational, tactical and strategic. Each type features the three applications and layers, albeit in different ways.

**Operational dashboards** track core operational processes and often display real-time data. These dashboards emphasize monitoring more than analysis or management.

**Tactical dashboards** track departmental processes and projects and emphasize analysis more than monitoring or management. They are often implemented using portals and run against data marts or data warehouses.

**Strategic dashboards** (or scorecards) monitor the execution of corporate strategic objectives at each level of the organization and emphasize management more than monitoring or analysis. They are often implemented to support a Balanced Scorecard methodology.

Any organization can and should deploy multiple version of each type of dashboard, writes Eckerson, as each employee is responsible for different aspects of corporate performance. The critical aspect to remember is that organizations need to build each dashboard on a single data infrastructure and application platform in order to deliver consistent information to each user.

## Business problems

### Why do you use a dashboard or scorecard?

For the same reason that car companies build cars with fuel gauges and speedometers – healthcare organizations deploy dashboards to give their employees an easy-to-understand view of the organizational performance metrics that matter most so they can make decisions to keep their operations running smoothly and provide a valued patient experience.

In the automotive industry, dashboarding has always been a simple and necessary component: low fuel = buy fuel; high speed = slow down or get speeding ticket.

In healthcare, however, balanced scorecards and dashboards are much more complex, repeatedly falling in and out of favor, their successes and failures as much attributable to immature technologies as to uncertainties about the goals they were meant to achieve. To help you decide the right dashboard deployment for you, let's look further into Eckerson's categories.

## Business drivers

### Operational dashboards: Focus on monitoring

Operational dashboards enable front-line staff and supervisors to track core operational processes. Monitoring is their key capability. These dashboards provide operational managers and staff immediate visibility into KPI performance, allowing them to make quick decisions or take corrective action as soon as a problem or opportunity arises. Typically, operational dashboards also generate alerts that notify users of exception conditions in the processes being monitored. For example, call center, web inquiries or scheduling processes – those that impact real-time consumer response and patient satisfaction – can be monitored with timely insight to ensure a quality first impression for patients.

**Tactical dashboards: Emphasis on analysis**

Tactical dashboards help managers and analysts track and analyze departmental activities, processes and projects. Analysis is their key strength. They display at-a-glance results in a BI portal or professionally authored report format that contains charts and tables that users need to monitor the projects or processes for which they are accountable. Users can drill down or through the data using multidimensional (OLAP) analysis and advanced reporting to pinpoint the causes of trends or issues. For example, tactical dashboards are often utilized in tracking revenue cycle performance. When deployed correctly, they can provide the analytical detail needed to inform key decisions and workflow process changes.

**Scorecards: Managing strategy**

Scorecards let executives and senior staff chart their progress against strategic objectives. A scorecard is a strategy management application that helps organizations measure and align the strategic and tactical aspects of their businesses, processes and individuals via goals and targets. Because of their role in executive decision-making, scorecards demand a more structured approach and framework than operational and tactical dashboards and as such, often make use a methodology such as The Balanced Scorecard, TQM or Six Sigma. Typically deployed at the enterprise and/or the facility level, scorecards deliver quick, at a glance comparative data to key business units and service lines.

**Dashboard demos: Beware these “quickie” sins**

*“Most dashboards that are used in business today fail,”* writes data visualization educator and expert Stephen Few in his 2007 article, *Why Most Dashboards Fail*. *“At best they deliver only a fraction of the insight that is needed to monitor the business . . . Beyond the hype and sizzle lives a unique and effective solution to a very real need for information. This is the dashboard that deserves to live on your screen.”*

In his report, *Deploying Dashboards and Scorecards*, Wayne Eckerson also warns against what he calls “quickie” dashboards that may look good in a demo but quickly reveal their limitations. These sins include being:

**Too flat:** limited drill-down capability or interactivity with source data.

**Too manual:** require intensive IT expertise and time to maintain and modify.

**Too isolated:** quickie dashboards constitute data silos that undermine a company’s ability to create a single view of performance across units, products and customers.

**Too inaccurate:** merging data from disparate systems requires the combined expertise of IT and business users. Don’t underestimate this task or assume technology can easily solve it.

**Too cool:** attractive displays that are perceptually ineffective. Beware of 3-D look and feel, chrome-plated gizmos and so on. The dashboard must show the data dimensions necessary to make a decision, clearly and accurately.

## The solution

### Dashboarding and scorecarding with IBM

IBM offers the full range of dashboards – operational, tactical and strategic – to help organizations monitor, measure and manage their performance. IBM Cognos® dashboards provide an at-a-glance view of all-important operational, tactical and strategic information to meet the needs of the complete range of business users within an organization. What's more, you can pursue a dashboard deployment with IBM knowing that the data, metrics and thresholds are all integrated and share a common data source.

IBM Cognos 8 BI dashboards and scorecards enable healthcare organizations to consolidate performance data from disparate sources into a coherent system that people can trust. They can create a single view of the truth in flexible dashboards, graphical displays, scorecards and reporting capabilities that help them firmly pinpoint opportunities and roadblocks in key functional areas. The result of all this integration? Business users at every level receive precisely the information they need to make better decisions that improve business performance.

### What sets us apart

IBM Cognos is the only vendor that delivers a complete performance management system – a system that is designed not as multiple tools, applications or systems, but as a single performance management enterprise architecture that can meet the needs of all users across the organization. Founded on a purpose-built SOA platform that is open and fits complex environments, our system allows healthcare organizations to leverage existing investments in transactional systems, data sources, application servers, security systems, portals and more. We deliver the full range of capabilities that both executive level and departmental users need to monitor their operations, make better decisions and plan for better business outcomes.



## Dashboards

IBM Cognos dashboards provide managers with daily, weekly or monthly performance updates, as well as real-time updates for monitoring automated operational processes. They provide managers with access to the full complement of related performance management capabilities through interactive charts and tables.

With dashboards, managers can drill into or through related reports and other data sources (for example, OLAP cubes) to explore and understand the trends and issues affecting performance at the operational level. If for example, a service line manager's financial team reports that volumes or margins are falling out of acceptable range – or if quality metrics are trending in the wrong direction – managers can click into the data to understand why. In the first example, it may be that a key referring physician has changed schedules. In the second example, the trend may be identified across different shifts or certain procedures, providing more insight to care teams. In both of these cases, data from the operational dashboard prompts a frontline manager to act and spurs a higher-level manager to explore a broader data set to identify the root causes and make the needed adjustments.

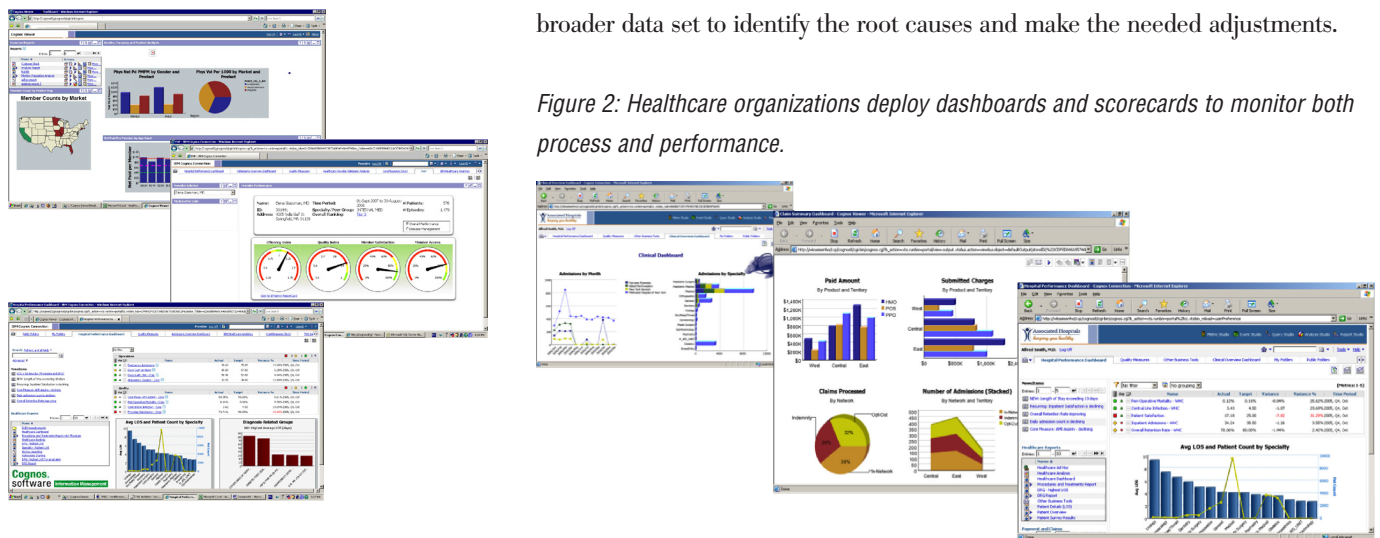


Figure 2: Healthcare organizations deploy dashboards and scorecards to monitor both process and performance.

**IBM Cognos dashboards enable:**

- Daily, monthly and quarterly performance updates for tactical initiatives; and real time monitoring through IBM Cognos Now!
- Analysis of departmental activities and performance
- One-click to related performance management capabilities (forecasts, budgets, etc.)
- Single, accurate data source
- Support for IBM Cognos 8 Go! Mobile

Further, managers can also access IBM Cognos tactical dashboards on their BlackBerry devices using the IBM Cognos 8 Go! Mobile feature. This provides managers access to the same dashboards they would access through their browser, without the need for IT to create and maintain a duplicate environment. Managers can also make full use of IBM Cognos 8 Go! Office, which enables them to display their dashboards in Microsoft® PowerPoint® presentations.

**Scorecards**

A scorecard includes a collection of all your important metrics, each with an associated target, thresholds for good and poor performance and a clearly identified owner. However, a proper scorecard must provide more than red, green or yellow status indicators. To enable executives to manage strategy effectively, scorecards must reveal the relationships among and between each metric, as well as the ways in which performance in one area (for example, the admission process) affects outcomes in another (for example, patient satisfaction scores). This is often done through a strategy map.

In addition, scorecards must enable executives to drill into supporting details in related reports, or conduct multidimensional analysis to determine why a metric is performing a certain way. When executives change targets, forecasts or resource allocations, these changes must also be simultaneously reflected in the tactical and operational dashboards (as well as their related forecasts, HR and marketing plans, etc.) throughout the organization. In this way, scorecards perform a vital role in a performance management system.

**IBM Cognos scorecards enable:**

- Monthly and quarterly performance updates
- Performance against pre-set targets and thresholds
- One-click to related performance management capabilities (forecasts, budgets, etc.)
- Strategy maps & impact diagrams

## Dashboards, scorecards and performance management

Dashboards provide such critical information in a single display (often a single computer screen image). Therein lies their appeal, and the reason why healthcare organizations often deploy them as a “front door” to their performance management initiatives. A successful performance management solution, however, comprises other management functions – analysis, reporting, budgeting, forecasting, decision-making – operating as part of a dynamic, fluid and integrated whole. Therein lies the value of the IBM Cognos solution.

Like any other strategic initiative, performance management initiatives and utilization of dashboards and scorecards are most successful when coupled with the strategic vision and endorsement from the senior executive team. IBM Cognos software supports the development of a collaborative environment, promotes accountability through aligned performance metrics and enables healthcare organizations to make better decisions about their business: from operations and quality, to service line management, resource planning, capital expenditure planning and strategic initiatives.

**The value of a full performance management system offered by IBM**

Many factors influence your organization's performance. But few areas under your management are more important than your organization's decision-making ability. Getting answers and acting on them means integrating reporting and analysis, planning, and measuring and monitoring – across your organization. This integrated approach is the IBM Cognos performance management system.

By integrating information, technology and people, your decision-makers can become performance managers. Performance managers look at metrics, plans and reports in their functional area to make the best possible decisions. They also use this same approach to connect with others. For example, if service line directors forecast improve demand, then related patient care and ancillary departments can be informed and plan appropriately for increased volumes, and likewise modify staffing plans. In this way, your good decisions cause other good decisions and the end result is better alignment, accountability and performance.

**The performance management framework**

IBM Cognos software provides a performance management framework that allows healthcare organizations to measure and monitor performance, plan for the future and provide clinicians and administrators with reporting and analysis that enhance clinical care and business operations.

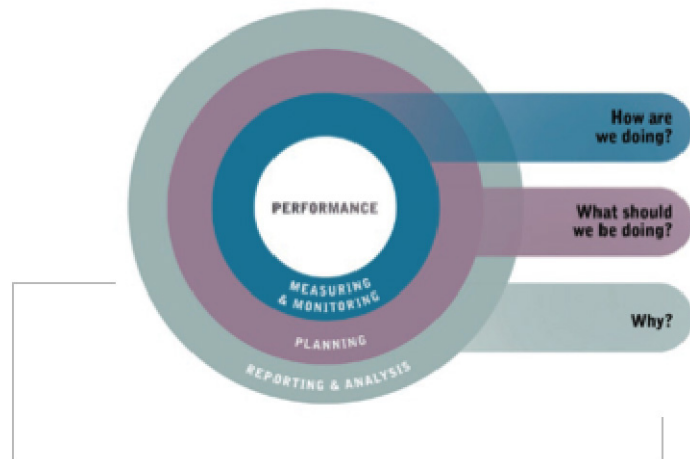


Figure 3: IBM Cognos software provides a performance management framework that allows healthcare organizations to make information accessible and consistent throughout the enterprise.

When decision-makers are looking to improve operations, they ask questions in three fundamental areas to drive performance improvement decisions:

- *How are we doing, and where are we right now?*
- *Why are we where we are, and how did we get here?*
- *What should we be doing differently?*

IBM Cognos software helps users to measure and monitor the business, and it provides reporting and analysis capabilities that allow users to analyze historical data and understand trends. Planning becomes the lynchpin of this performance management framework, as it allows decision makers to analyze a forward-looking perspective to gain a clear understanding of what the organization should be doing. IBM Cognos software enables healthcare organizations to deliver targeted and timely information to users throughout the organization to optimize performance and enable better decisions.

## Five things to consider

Eckerson concludes his paper with five key considerations for IT teams to apply to their dashboarding initiatives. Healthcare organizations should remember each of these considerations when evaluating the myriad of dashboard vendors and point solutions on the market today.

- 1. You get what you pay for:** You can deploy inexpensive dashboards today, writes Eckerson; however, you will eventually need to replace them as word spreads about the success of your solution and you need to scale it up without compromising performance and response times.
- 2. Plan for the long haul:** Word about successful dashboard solutions spreads like wildfire. If you've delivered a successful solution, you'll be bombarded with requests to deliver them to other departments. The number of users may grow rapidly, placing undue burden on your IT infrastructure. If you're not careful, response times will plummet, along with your reputation.
- 3. Plan for real time:** A performance management system populated with more timely data lets executives and managers proactively optimize performance. So even if your users don't ask for more than daily updates, be prepared to deliver them. Select dashboard solutions that support event-driven processing and can prove their scalability across users, sources and data volumes.
- 4. Develop on a single platform:** It's very easy for managers to build or buy their own solutions independent of each other. These dashboard silos eventually compete with each other for resources, and undermine an organization's ability to get a single picture of performance.
- 5. Develop effective metrics:** Among the many best practices in this area, Eckerson advises companies to avoid cluttering dashboards with more metrics than a user can understand or act on. If you have more than seven, writes Eckerson, you should create hierarchies using folders, tabs or drill-downs to preserve the clarity and simplicity of the display.

## Conclusion

High-performing healthcare organizations need information that will improve their decision-making in a way that drives better performance. And more often than not, they need it in an easy-to-understand, at-a-glance format that leads them to making those decisions. Increasingly, this format is the dashboard.

However, not all dashboards are created equal; nor are all dashboards the same. Healthcare organizations pursuing a dashboard strategy must ensure that each user receives information that is specific to their role and task, and that is refreshed according to the frequency of their decisions. Operational managers need information that provides timely analysis to the services they oversee. Executives, on the other hand, may only need to see updated results every month.

Dashboards must be easy to use, provide the right level of interactivity and enable users to drill down into the results. Also, the dashboards must be integrated across the organization and share a common data source. Finally – and most important – dashboards must be deployed within the context of a performance management strategy, with metrics, thresholds and targets all tied to commonly understood and shared business goals. To build a successful dashboard deployment, healthcare organizations and their IT departments must take into account these and many other considerations in their user base. In a performance management system, disconnected dashboards that do none of the above are of little value to anyone.



## 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

- <sup>1</sup> Wayne W. Eckerson, *Deploying Dashboards and Scorecards*, TDWI Best Practices Report, July 2006.