Picturing performance:
IBM Cognos dashboards
and scorecards

Cognos. software

Contents

Abstract

Organizations 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 companies 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, so IT
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."*[1]

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)

Three Layers: The most distinctive feature of a dashboard, writes Eckerson, 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.

Figure 1: Three dashboard applications			
	Monitoring	**Analysis**	**Management**
Purpose	Convey information at a glance	Analyze exception conditions	Improve coordination and collaboration
Components	• Multi-paned screens w/visual elements • Graphs (dials, thermometers, etc.) • Symbols, alerts • Charts, tables with conditional formatting • Alerts	• Analytics (i.e., dimensional, time-series, segmentation) • Forecasting, modeling, and predictive statistics • Visual analysis Reporting	• Annotations • Thread discussions • Meetings • Strategy maps • Workflows

Source: *Performance Dashboards: Measuring, monitoring, and managing your business* by Wayne Eckerson (John Wiley & Sons, 2005).

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 versions 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 companies build each dashboard on a single data infrastructure and application platform to deliver consistent information to every 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, companies deploy dashboards to give their employees an easy-to-understand view of the numbers that matter most, so they can make decisions to keep their businesses running smoothly and at peak performance.

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 business, however, dashboards have repeatedly fallen 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 workers and supervisors to track core operational processes (*see Figure 2*). 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.

Figure 2: Common use cases for operational dashboards, by selected industries					
Financial services		**Manufacturing**		**Retail**	
General	Check clearing Customer notification Portfolio optimization Fraud detection	**Quality management**	Yield Production vs. schedule Repair and returns DPPM	**Inventory/ Supply management**	Critical component receiving Supplier VMI execution In-transit movements
Credit risk	Counter party risk exposure Credit limit exposures Portfolio exposure	**Plant visibility**	Asset utilization/ uptime Labor utilization Production cycle times Yield/scrap tracking	**Demand management**	Forecast consumption tracking Channel inventory/POS activity Promotions activity tracking
Market risk	Real-time value-at-risk (VaR) VaR trend Market risk limit Market stress test	**Operational efficiency**	Equipment use Case per labor hour		
Financial - performance management	Intra-day P&L market crosses P&L limit violation Risk metrics by division Divisional market value	**Fulfillment/ Logistics**	Order fill rate On-time delivery Perfect order tracking Pick/pack/ship efficiency Transportation cost/efficiency		

Figure 3: Common operational dashboard applications, by selected departments			
Finance	**Supply Chain**	**Customer Support**	**Sales**
SOX alerts	Demand to supply balancing	Support center scheduling	Account rep alerts
Shipping/Billing	Transportation status	Spike in complaints	Changes in rep behavior
Track/monitor order to cash		Multiple channel requests	Competition watch

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.

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.

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 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.

For example: if a manufacturer bases its competitive strategy on providing higher-quality goods, the CEO can monitor overall quality as easily as can the plant managers and those on the assembly line or in the factory, with data feeding all three kinds of dashboards simultaneously, with each user seeing the data at the right level of granularity and refreshed at user-appropriate intervals.

The result of all this integration? Simple: business users at every level receive precisely the information they need to make better decisions that improve business performance. Let's look at how IBM Cognos solutions address these issues.

IBM Cognos Now! operational dashboards

Delivered as a hardware appliance or through the software-as-a-service (SaaS) model, IBM Cognos Now! operational dashboards provide continuous monitoring for business operations. They enable operations managers and/or teams to proactively respond to continually changing business conditions or processes with patent-pending streaming technology that ensures continually up-to-date metrics.

IBM Cognos Now! operational dashboards feature:
- Intra-day/hour updates
- Continuous monitoring of operational processes
- Self-service creating and editing capabilities
- User-defined alerts

"Quickie dashboard products that demo great are tempting, but they must be thoroughly evaluated on their ability to support your organization's long-term requirements."

Wayne Eckerson, Deploying Dashboards and Scorecards, TDWI, July 2006

Flexibility for business users: IBM Cognos Now! operational dashboards provide the flexibility business users need to build, modify, and personalize their own dashboards without IT intervention. Each user can personalize their dashboard to most effectively present the information they need; charts and graphs can be customized, thresholds and alerts can be set, and new dashboards can be created using a simple point-and-click interface. Personalized alerts can be created right from the dashboard for exception-based management. Finally, Flash-based components provide rich visualization and interactivity.

Cost-effective deployment for IT: IBM Cognos Now! lets IT provide users with unlimited access dashboards and data sources for a low total cost of ownership (TCO). At the same time, though, role-based, data-level security ensures that users see only the data that's relevant to their tasks. Also, a preconfigured hardware appliance means minimal IT effort and resources are needed to get the system up and running. IBM Cognos Now! is built on a Web Services-based services-oriented architecture (SOA) that integrates with IBM Cognos 8 Business Intelligence. It is immediately interoperable with your existing portal applications or can be run as a standalone deployment. With IBM Cognos Now!, IT can build an operational dashboard solution in days.

Figure 4: Sample operational dashboards using IBM Cognos Now!
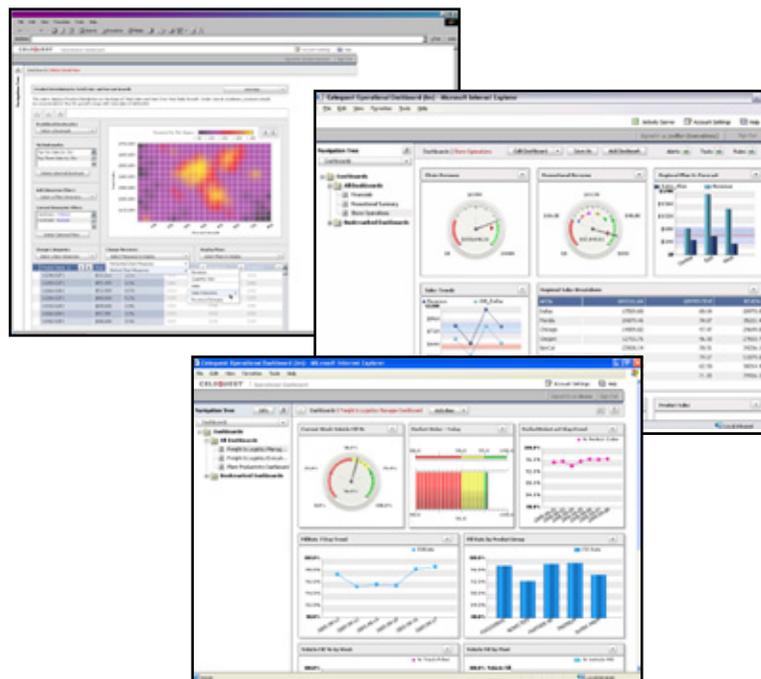
Tactical dashboards with IBM Cognos 8 Business Intelligence

IBM Cognos tactical dashboards provide managers with daily, weekly, or monthly performance updates. They are not updated as frequently as operational dashboards, nor do they need be; rather, they provide managers with access to the full complement of related performance management capabilities through interactive charts and tables.

With tactical 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, if the manager's operations team reports that quality is falling out of acceptable range, or if sales in a quarter are higher than usual, managers can click into the data to understand why. In the first case, for example, it may be that a key supplier has missed its last few shipments; in the second, the cause could be aggressive discounting or more effective marketing. 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 identify the root causes and make the needed adjustments.

Figure 5: Sample tactical dashboards using IBM Cognos 8 BI

IBM Cognos tactical dashboards enable:

- Daily, monthly, and quarterly performance updates
- 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.

*Figure 6: Sample tactical dashboards using IBM Cognos 8 Go! Mobile*

*"Dashboards and scorecards
are critical elements
in supporting business
performance management
processes, which enable
executives to more
effectively communicate,
monitor, and adjust business
strategy and plans.."*

Wayne Eckerson, Deploying Dashboards
and Scorecards, TDWI, July 2006

Scorecards with IBM Cognos 8 Business Intelligence

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, R&D) affects outcomes in another (for example, Sales). This is often done through a strategy map.

Figure 7: Scorecards built with IBM Cognos 8 BI
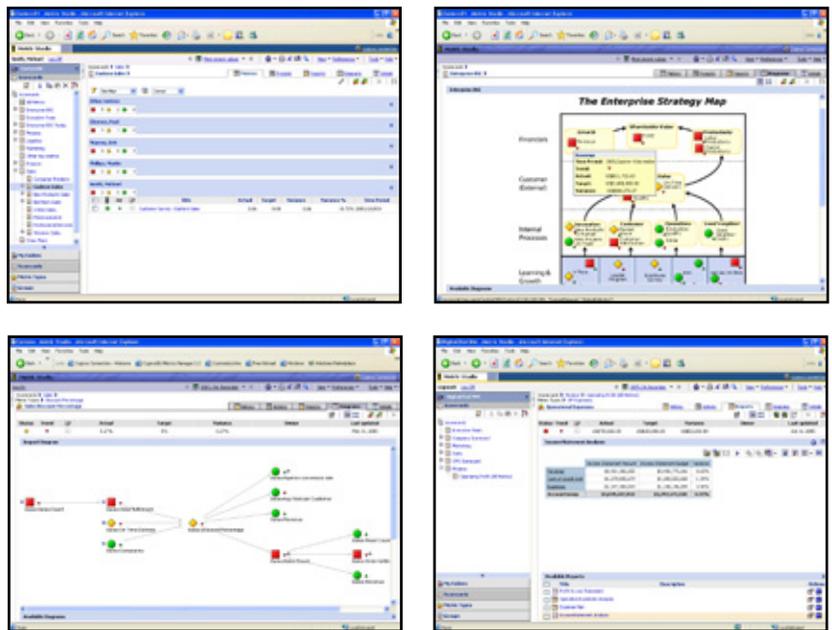
In addition, scorecards must enable executives to drill into supporting details in related reports, or conduct multidimensional analysis to determine why a metric is performing a certain way. When executives change targets, forecasts, or resource allocations, these changes must also be simultaneously 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). Therein lies their appeal, and the reason why companies 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.

The value and components of a full PM system offered by IBM

Many factors influence your company'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 Marketing decisions improve demand, then Sales and Operations needs to know to ensure the supply is ready. In this way, your good decisions cause other good decisions. The end result is better alignment, accountability, and performance.

Figure 8: The IBM Cognos Performance Management Framework

The performance management system from IBM integrates software, services, best practices, and partners. The result — a common understanding and accountable actions based on answers to your performance management questions:

- *How are we doing?* Measuring and monitoring performance with scorecards and dashboards tracks your key metrics.
- *Why?* Reporting and analysis let you see data, gain context, understand trends, and spot anomalies.
- *What should we be doing?* Planning, budgets, and forecasts let you set and share a reliable view of the future.

Software, services and best practices

Software for performance management

IBM provides an integrated performance management software platform — reporting and analysis, planning, or measuring and monitoring — for any area of your organization. Our software capabilities include:

Reporting and analysis

Integrated reporting and analysis software delivers user-friendly information from all of your data sources so you can:

- Align the organization with a shared, single version of the truth.
- Place information in context, find trends, and spot variations, risks, and opportunities.
- Understand the why? behind your results and trends

Planning and consolidation

Finance and other department managers with cost or revenue generation responsibilities use integrated planning, budgeting, and forecasting software to:

- Create plans and budgets that connect, unlike spreadsheet-based systems.
- Adapt plans organization-wide as business conditions change.
- Engage departments outside of Finance in the planning process for greater accuracy and buy-in.

Measuring and monitoring

Integrated software for scorecards, dashboards, and financial consolidation draws on information from all of your data sources so you can:

- Measure how you perform against targets and hold people accountable for them.
- See trends and changes in operational and financial metrics.
- Comply with regulations such as IFRS and Sarbanes-Oxley.

IBM Cognos Software Services: Consulting, education and support

Software is only part of a performance management solution. Many dashboard projects fail if companies fail to understand what they want the dashboards to do. This is where companies can benefit from a strong team of consultants to bridge the gap between the IT and business user.

IBM Cognos Software Services brings the full range of our personnel, resources, and expertise to your deployment to help you achieve the next level of performance. Whether you are new to IBM Cognos solutions or a longtime customer, IBM Cognos education and consulting services has the resources and a proven, results-based methodology to help you ensure successful deployment.

IBM Cognos Software Services can:

- Build a best-practices-based deployment through our IBM Cognos Solutions Implementation Methodology (SIM).
- Build your organizational knowledge and internal capacity to use the IBM Cognos solution.
- Expand your deployment with new capabilities or an expanded user base.
- Provide solutions and resolve issues quickly with our award-winning online support.
- Design and deploy a Business Intelligence Competency Center (BICC).
- Accelerate your deployment and promote user adoption.

Best practices for performance management: Accelerate your return and value

Adapting industry best practices for your organization delivers more value, faster for your performance management system. IBM offers several best practices sources for prospects and customers, including:

The Performance Manager decision areas: Based on extensive and wide-ranging research of the most successful performance management deployments, IBM has identified 42 information sweet spots, or decision areas, where applying reports, metrics, and plans can make a tremendous difference to your organization's performance.

IBM Cognos Innovation Center for Performance Management: The IBM Cognos Innovation Center brings together technology experts, finance professionals, and industry thought leaders to share techniques, technologies and best practices in performance management. Its resources include:

- IBM Cognos Performance Blueprints: pre-defined data, process and policy models that help organizations speed their software deployments and drive faster ROI. Organized by industry and function.
- Resources & publications: On-demand Web seminars, white papers, exclusive roundtable discussion events, and newsletters.

IBM and Stephen Few: Report design white paper series

In these original white papers written for the IBM Cognos Innovation Center, data visualization expert Stephen Few explores the rules of visual perception, how they affect our understanding of what we see, and the practical repercussions they bring about for performance management professionals. The series features:

Visual Communication: Core Design Principles for Displaying Quantitative Information

Looking at research into the link between visual perception and understanding, and translating the findings into practical techniques that you can use to communicate more clearly with your data.

Visual Pattern Recognition: Meaningful Patterns in Quantitative Business Information

Examining the data patterns and relationships common in most business reports (rank, part-to-whole, deviation, correlation, etc.) and providing practical guidelines for communicating these relationships effectively using points, lines, and bars. A richly illustrated and detailed work.

Data Visualization: Past, Present, and Future

Spanning more than 2,000 years of recorded human history, this paper examines the birth and evolution of data visualization, from early Egyptian tables used to organize astronomical information through to bar charts, tree maps, and geo-spatial visualization tools (such as Google Earth).

Stephen Few has worked for over 20 years as an IT innovator, consultant, and educator. Today, as Principal of the consultancy Perceptual Edge, Stephen focuses on data visualization for analyzing and communicating quantitative business information. He provides consulting and training services, writes the monthly Visual Business Intelligence Newsletter, speaks frequently at conferences, and teaches in the MBA program at the University of California at Berkeley. He is the author of two books: *Show Me the Numbers: Designing Tables and Graphs to Enlighten* and a new book entitled *Information Dashboard Design: The Effective Visual Communication of Data.*

IBM Cognos TechTalk & TechTalk Insider

For customers, our TechTalk Insider portal delivers valuable, practical insights from IBM Cognos experts through a full library of Proven Practice documents as well as live and archived Customer Information Series Web seminars.

If you're still evaluating IBM Cognos solutions, you can access a rich store of archived, on-demand Web seminars and product demos, as well as attend live events to hear directly from successful IBM Cognos customers, partners, and product experts.

Powered by IBM Cognos Software and other partner opportunities

"Powered by IBM Cognos Software" partners offer performance management solutions that combine IBM Cognos technology with their deep domain expertise. Get solutions using IBM Cognos technologies and focused on key business areas and/or industries. The result: faster, predictable results for you.

Our broad range of partnerships help you purchase, deploy, and service your business intelligence and performance management requirements.

'Powered by IBM Cognos Software' partners have extensive expertise in industries including:

- Banking & Insurance
- Health Care & Life Sciences
- Manufacturing
- Federal & Civilian Governments

- Higher & K-12 Education
- Retail & Wholesale
- Travel & Hospitality
- Oil & Gas

Five things to consider

Eckerson concludes his paper with five key considerations for IT teams to apply to their dashboarding initiatives. Let's look at how IBM Cognos solutions meet these considerations:

1. You get what you pay for: You can deploy an inexpensive dashboard 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.

The IBM Cognos view: IBM offers dashboards that feature both low total cost of ownership (TCO) and scalability to large user and data volumes. IBM Cognos Now! includes a license for unlimited users, data sources, and dashboards per appliance. You can deploy a single, integrated operational dashboard quickly, with minimal ongoing maintenance. Tactical and strategic dashboards are built using IBM Cognos 8 BI, enterprise software proven to scale to the largest and most complex IT infrastructures.

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.

The IBM Cognos view: All IBM Cognos dashboards are proven to scale to thousands of users accessing large and constantly changing data stores. IBM Cognos Now! streams operational data from disparate sources into a patent-pending 64-bit memory-based streaming data flow engine that caches data and analytical information in memory, ensuring uniform query response times as more users are added. Tactical and strategic dashboards are built using IBM Cognos 8 BI, enterprise software proven to scale to the largest and most complex IT infrastructures. Further, IBM Cognos Software Services can help you plan your dashboard deployment in a way that ensures a smooth and gradual roll-out to your user base.

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.

   The IBM Cognos view: IBM Cognos Now! features an event-driven architecture that enables a continuous stream of business data, providing fresh views of key metrics for constant measuring and monitoring of business operations. The 64-bit, patent-pending data streaming engine consistently delivers information in a few seconds, regardless of query volume or number of users.

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.

   The IBM Cognos view: Building dashboards with IBM means drawing data from a centralized, integrated and secure data source that everyone can use and trust. Regardless of the type of dashboard or the capability in use (drilling down, analysis, IBM Cognos 8 Go! Mobile, etc.), all functions are performed against this store, ensuring consistent results across divisions and departments. Further, IBM now offers data quality software from Informatica, further strengthening IT's ability to provide consistently clean, accurate data.

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.

The IBM Cognos view: In the new business book, The Performance Manager, IBM identifies 42 "sweet spots" of information — key decision areas — in core business functions such as Sales, Marketing, Finance, and Customer Service. Based on extensive research of the most successful performance management deployments to-date, the book outlines the key metrics that managers need to monitor on their dashboards. In addition, IBM Cognos dashboards provide the flexibility users need to build the hierarchy system that Eckerson recommends. Finally, the IBM Cognos Innovation Center for Performance Management provides a wealth of best practices expertise, IBM Cognos Performance Blueprints, and professional development opportunities with a host of world renowned experts in performance management who can help you design and deploy the metrics you need to monitor most.

Conclusion

High-performing 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. Companies 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 moves as quickly as they receive orders from their Web site. 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 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, IT 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: www.ibm.com/cognos

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] Wayne W. Eckerson, Deploying Dashboards and Scorecards, TDWI Best Practices Report, July 2006.