The Principles of Effective Dashboards

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Abstract

The dashboard has emerged as a business framework to manage and share information in context. Dashboards provide an at a glance view of business performance for many individuals in an organization. They give companies a factual and timely window into performance, they help them identify anomalies that could turn into significant business issues, and provide an entry point for digging deeper into root causes. Gartner defines the dashboard as, "intuitive interactive displays of information, including dials, gauges, sliders, check boxes and traffic lights. These displays indicate the status of an item or the state of a performance metric compared with a goal or target value."[1] This form of ubiquitous business visibility helps the company improve performance over time, and ensures the right people are making the right decisions using the right information.
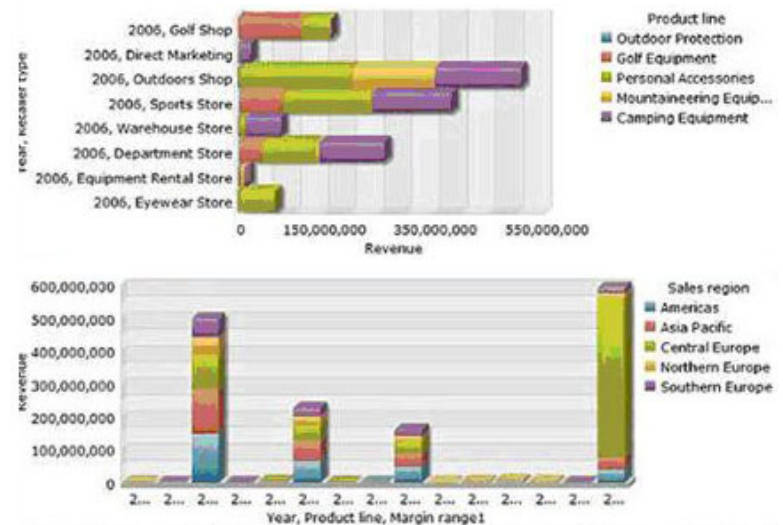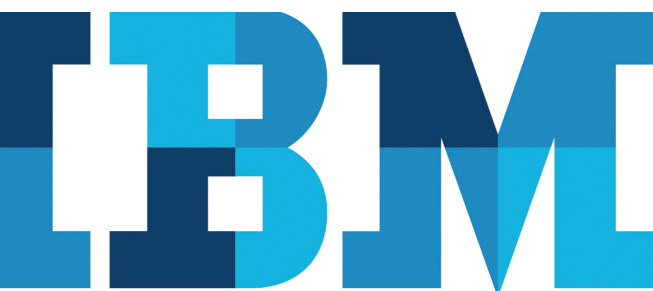
Figure 1: Dashboards provide an at a glance ubiquitous view of business performance for many individuals in an organization.

Overview

Dashboards mean different things to different people. Not all dashboards are created equally. Color, shading, the use of white space and animated graphics can provide significant benefits by enabling individuals to quickly grasp the information presented in a dashboard. However, some solutions focus on creating a complicated experience that fails to leverage data visualization best practices and can leave users confused. According to Gartner, "The main purpose of a dashboard is to enable managers to quickly and routinely comprehend how they are performing against their KPIs, not to provide an environment for complex data analysis."[2] IBM Cognos® 8 Business Intelligence takes a flexible approach to dashboarding that recognizes the different ways people interact with information, and the different business realities they face.

Business problems

Business intelligence (BI) and performance management solutions are used frequently by power users and other specialists. Getting more value from your existing BI investments means getting business intelligence into the hands of everyday business users at all levels of the organization.

The result—decision makers can integrate new intelligence tools and processes into their workflow and use information to do their jobs.

Prior to engaging in a discussion of the merits of an enterprise Dashboarding strategy, it is important to outline some of the common challenges associated with ensuring broad usage of business intelligence tools and information:

- **Technical skills and training may be limited or bandwidth constrained.** Most decision makers are not power users. Redesigning and streamlining functionality across disparate sets of tools to make the features more obvious is neither cost effective nor an efficient use of skilled IT resources. For example, incorporating an easy to personalize search tool can significantly improve the potential for a business user to integrate it into day-to-day workflow.

- **Assignments always changing.** Decision makers don't have the luxury of doing one job for years on end. Generalists are often cycled from one role or team to the next as business needs dictate. Less flexible or adaptable tools may be left behind as the user moves from one role to the next.

- **Degree of needed interaction may vary.** Because the roles and the skills of the decision makers can cover such a wide range, some will be comfortable using and working with BI tools independently, while others will require significantly more initial and ongoing support. The BI solution needs to accommodate this broad range of user types and their needs.

"No example of data visualization occupies a more prominent place in the consciousness of business people today than the dashboard. These displays, which combine the information that's needed to rapidly monitor an aspect of the business on a single screen, are powerful additions to the business intelligence arsenal. When properly designed for effective visual communication, dashboards support a level of awareness — a picture of what's going on — that could never be stitched together from traditional reports."

~ Stephen Few, Data Visualization, Past, Present, and Future, © 2007, p.5.

Business drivers

Companies don't have days to spare to come to a decision. They need to make the call almost as soon as the issue becomes apparent. This need for speed puts organizations in a difficult position: Either make the decision without the benefit of detailed analysis – because using conventional tools might take time you don't have – or risk missing deadlines and losing agility.

The need for enterprise solutions that facilitate immediate situational awareness and deliver advanced data management and visibility to the broadest possible audience has never been greater. Dashboard solutions – not products – represent an important means of leveraging existing BI infrastructure beyond the specialists who have used and benefitted from it for years.

The following principles serve as an effective guide to understanding how dashboards can be used to better manage performance, and create new opportunities for business optimization:

- **Dashboards mean different things to different people.** There is no one size fits all and no single definition that applies across the board. To some, a dashboard could mean a flashy, interactive technology that promotes high levels of user involvement. To others, it's a static, at-a glance report or a drillable interface that makes it easy to derive additional insight. A truly usable dashboard solution recognizes that users have different comfort levels with technologies, and their individual roles dictate how and why they need this capability. Close alignment between the user's role and the user interface enables productivity and acceptance.
- **Turn insight into action.** A dashboard should provide decision makers with information that allows them to move from insight to action quickly. It should enable an approach to exploring issues that can also predict potential outcomes and allow a course change before future issues arise.
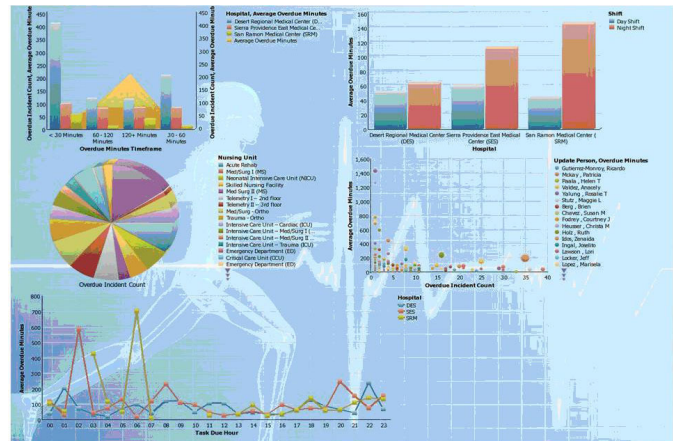

Figure 2: A dashboard should provide people with information that allows them to move from insight to action quickly.

- **Dashboards are only effective if users trust the information.** Data consistency is crucial to the success of any dashboard solution. Without consistent information, why have a dashboard? No matter how spectacular the interface is, it means little unless it is being fed with trusted data from an enterprise-class platform. Indeed, without a solid information foundation, there's little need to have a dashboard in the first place, as the results won't improve organizational decision-making. In addition, without reliable and consistent data, the value of predictive analysis is limited at best.
- **Dashboards need to be open to new contexts.** Business users are challenged to find the most relevant information in the context they need to make decisions. Dashboard views should be delivered beyond the boundaries of standard BI products to reach into and interoperate with multiple applications and environments. A dashboard must also be flexible to add new contexts – and, therefore new insights – to the information at hand. It needs to be easy to add new data such as market data or adopt new visualizations to drive more insight and address new business questions.

- **Dashboards must be easy to manage.** IT resources are a scarce and valuable resource in most organizations. IT needs to maintain control to effectively manage organizational data, align the technology infrastructure to the business strategy, and to reduce total cost of ownership and assure service levels are met. IT's involvement can enable an environment where dashboard views can be authored once and accessed anywhere, which maximizes utility to the business.

Solution

IBM Cognos 8 BI offers a wide range of dashboard styles, all based on a proven infrastructure, to meet the divergent needs of today's businesses and their users. Far beyond a one-size-fits-all solution, IBM Cognos 8 BI dashboard solutions work on mobile platforms, on portals and in Microsoft® Office. IBM Cognos Go! Dashboard is an operational business intelligence solution that extends this capability even more widely, by allowing users to create their own dashboards, while discovering previously created reports they might have not been aware of. By meeting the full breadth of the needs of decision makers, IBM Cognos 8 BI enhances the organization's ability to work from a single version of the truth, and avoids the pitfalls of disconnected and untrusted data that plague companies that may have deployed BI, but haven't extended it beyond a limited audience of specialists.

"Today, data visualization is increasingly taking its rightful place as an important part of business intelligence. It is being talked about, investigated, requested by people who work with data, purchased by people who hold the purse strings, and used by a growing percentage of people in the workforce, especially analysts."

~ Stephen Few, Data Visualization, Past, Present, and Future, © 2007, p.4.

IBM Cognos 8 BI securely enables the road warrior checking supply chain performance from a mobile device to have just as much flexibility as the senior executive reviewing organizational performance for the most recent quarter from his laptop. Even better, this flexibility doesn't require custom "one-off" authoring for each use case. Instead, content can be created once and easily shared on any number of platforms or usage scenarios. In many cases, the dashboard or report author doesn't even know – or need to care – how, where, or when the resulting visualization will be viewed.

Figure 3: IBM Cognos 8 BI enhances the organization's ability to work from a single version of the truth.
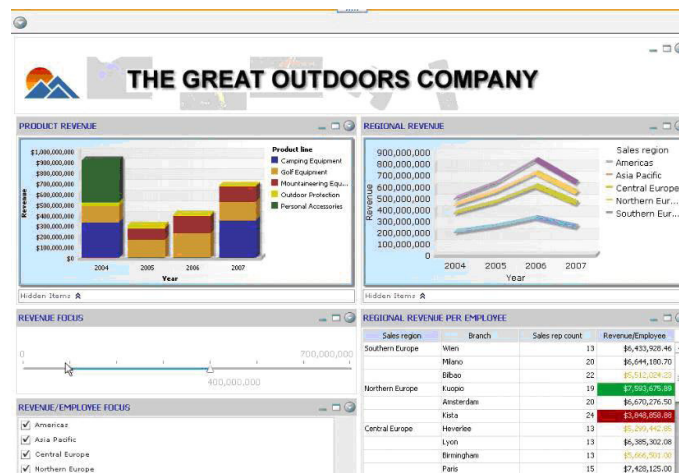

Figure 4: IBM Cognos 8 BI offers a wide range of dashboard styles, all based on a proven infrastructure, to meet the divergent needs of today's businesses and their users.

IBM Cognos 8 BI provides a flexible solution that adapts to a wide variety of needs, unlike traditional point product offerings. Its scalability helps it evolve alongside the organization's data management and workflow requirements, and deliver insight using different styles depending on how a given individual is working.

Conclusion

The IBM Cognos 8 BI architecture recognizes that organizations, if they hope to derive optimal value from their BI investments, need to distribute easy-to-use, flexible analytical tools to more stakeholders than ever before. It enables one repository, one report, one dashboard scalable with the enterprise that melds to whatever business need, whatever user and whatever platform works best for a given scenario. This form of fundamental flexibility gives analytical and decision-making capabilities to all users of an organization to optimize business performance.

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.

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Endnotes

[1] "Tips for Implementers: The Basics of Good Dashboard Design," James Richardson, Gartner, Inc., November, 2009

[2] Ibid

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