



Dashboard Confusion

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Once again, marketing alchemists have cooked up a bowl of confusion with only a few simple ingredients. Everyone in the business intelligence (BI) space is wild about dashboards, but few proponents are talking about the same thing. This state of perplexity often occurs after the birth of a new buzzword. Around a decade ago, I remember asking my IBM account manager how IBM defined the new term in vogue at the time — data warehousing. His response was classic and refreshingly honest: "By data warehousing, we mean whatever the customer thinks it means." In other words, no matter what data warehousing means to you, we do it (and are ready to accept your purchase order for it).

Dashboard Differences

What is a dashboard? We need a useful definition since communication isn't possible without a common understanding. Defining something usually involves identifying the common characteristics observed in a population of examples. However, the name dashboard is used by diverse phenomena today. The only common threads are that dashboards appear on computer screens and involve information. That's hardly a useful definition. Take a look at the results from recent Internet research to see how the term is applied.

In "New Digital Dashboards Help Drive Decisions" (BtoB, July 14, 2003), Jeffrey Schwartz states:

There are dozens of software packages that mine data repositories and present details on how a business is performing. Sometimes called analytics or business intelligence software, they aggregate data from disparate internal and external sources and display it in the form of customized views. The fashionable term for these views is digital dashboards.

Is a dashboard just the latest fashionable term for the "customized views" of "analytics or business intelligence software"?

When I visited DataWarehousingOnline.com and clicked on Executive Dashboard articles, I received 18 Web pages of links. The exact same links appeared when I separately clicked Balanced Scorecard, Data Quality and Integration, and Data Mining. Either the links weren't working properly, or this site believes that all these terms refer to the same thing. Sadly, this is a fairly accurate portrayal of how the term is used, but not a very useful definition.

Mistaken Identity

Some ascribe a meaning to the term "dashboard" that is synonymous with the term "portal." The Free On-Line Dictionary of Computing defines "digital dashboard" as "a personalized desktop portal that focuses on business intelligence and knowledge management." I concede that dashboards can be used as portals, serving as launch pads to various sources of information, but to equate dashboards and portals is a misunderstanding that robs both of their unique character and contribution.

In contrast to those cited, the following description specifies very distinct characteristics of a dashboard:

Able to universally connect to any XML or HTML data source, robust dashboard products intelligently gather and display data, providing business intelligence without interrupting work flow ... An enterprise dashboard is characterized by a collection of intelligent agents (or gauges), each performing frequent bidirectional communication with data sources. Like a virtual staff of 2437 analysts, each agent in the dashboard intelligently gathers, processes, and presents data, generating alerts and revising actions as conditions change.

(Gregory L. Hovis, DM Direct, February 2002.)

The fact that a dashboard presents data is definitely central to the concept, but must it connect to any XML and HTML data source and be enabled by intelligent agents that never stop their feverish bidirectional communication with data sources? This specification strikes me as overly dependent on or biased toward particular technologies.

In my opinion, the best definition found by searching the Internet appears in a paper written by Dan Dubriwny and Kurt Rivards of Advizor Solutions: "Are You Drowning in BI Reports? Using Analytical Dashboards to Cut Through the Clutter."

They provide visibility into key performance indicators (KPIs) through simple visual graphics such as gauges, charts and tables within a web browser. Dashboards are appealing because they:

- *Present a wide number of different metrics in a single consolidated view*
- *Roll up details into high-level summaries*
- *Provide intuitive indicators, such as gauges and stoplights, that are instantly understandable - for example, red bar means problem, green bar means everything is on plan.*

In many respects a reporting dashboard can be likened to a dashboard in an automobile. It provides an 'at-a-glance view' of the current operational state of the vehicle.

Now we're getting somewhere. Characteristics such as "metrics in a single consolidated view," "high-level summaries," and "intuitive indicators ... that are instantly understandable" tell us something useful about the essential nature of dashboards.

A Working Definition

Ready to pin it down? My bias is simple: I want a definition that captures the essence of this thing we call a dashboard, expressing it in a way that is meaningful and useful. I want to promote a definition we can all share, so we can move on to fruitful discussions about how we can use dashboards most effectively as a medium of insightful business information. I don't want to define the term to uniquely specify any particular BI vendor's solution.

I believe that the real meaning of a dashboard is not based on any particular type of information (such as KPIs), but in the way it displays information to serve a particular purpose. This can be expressed in a single sentence:

A dashboard is a visual display of the most important information needed to achieve one or more objectives; consolidated and arranged on a single screen so the information can be monitored at a glance.

Just as the automobile's dashboard provides all the critical information needed to operate the vehicle at a glance, a BI dashboard serves a similar purpose whether you're using it to make strategic decisions for a huge corporation, run the daily operations of a team, or perform tasks that involve no one but yourself. The means is a single-screen display; the purpose is to efficiently keep in touch with the information needed to do something.

Additional Characteristics

This is the fundamental nature of dashboards. Now let's add some supporting attributes required for dashboards to do their job effectively.

- **High-level summaries.** The information displayed in a dashboard should consist primarily of high-level summaries, including exceptions, to communicate at a glance. It quickly tells you what's happening, but not why it's happening, just like the gauges, meters, and indicator lights on a car. Diagnosis requires further investigation and detail. A dashboard can serve as the starting point for this investigation, letting you drill down into further detail to perform an analysis, but this feature isn't required for something to be called a dashboard.
- **Concise, clear, and intuitive display mechanisms.** Display mechanisms that clearly state their message without taking up much space are required so the entire collection of information will fit into the limited real estate of a

single screen. If a graphical representation that looks like a fuel gauge, traffic signal, or thermometer is relevant and appropriate for a particular piece of information, that's what you should use. However, insisting on sexy widgets or displays similar to those found in a car when other mechanisms would work better is counterproductive.

- **Customized.** The information on a dashboard must be tailored specifically to the requirements of a given person, group, or function; otherwise, it won't serve its purpose to help achieve specific objectives.

Have I left anything out?

- **Metrics or KPIs?** In most cases, dashboards are all about measurements. Monitoring performance typically relies on metrics, but useful information isn't always quantitative, such as a list of new prospective sales leads or the imminent due dates of a project. If the job requires measures that have been officially defined as KPIs, you should include them, but not exclusively when other information is required as well.
- **Real-time information?** If dashboard users need real-time information to achieve their objectives, then the dashboard should display it. Otherwise, periodic snapshots work fine.
- **Web browsers?** If the best available infrastructure is the Internet or an intranet, the dashboard should be viewed through a Web browser. However, there is nothing about a dashboard that necessitates a specific architectural platform, like a Web browser.

A dashboard is a type of display or style of presentation, not a specific type of information or technology. Keep this distinction clear, and you will be free to focus on what really matters: using dashboards to work faster and smarter. That's a worthwhile topic for another day.

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About the Author

Stephen Few has worked for over 20 years as an IT innovator, consultant, and teacher. Today, as Principal of the consultancy Perceptual Edge, Stephen focuses on data visualization for analyzing and communicating quantitative business information. He provides training and consulting services, writes the monthly *Visual Business Intelligence Newsletter*, speaks frequently at conferences, and teaches in the MBA program at the University of California, Berkeley. He is the author of two books: *Show Me the Numbers: Designing Tables and Graphs to Enlighten* and *Information Dashboard Design: The Effective Visual Communication of Data*. You can learn more about Stephen's work and access an entire library of articles at www.perceptualedge.com. Between articles, you can read Stephen's thoughts on the industry in his blog.