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top 5 best practices for  
creating effective dashboards  
and the 7 mistakes you don't want to make



*Healthcare professionals are buried in data that measure and track: relationships and processes, claims and denials, revenue and profit. Unfortunately, because there is so much data, using it to describe and help diagnose problems is often uncommon and underutilized.*

*You've been there: no matter how many reports, formal meetings, casual conversations, or emailed memos, someone important inevitably claims they didn't know about some important fact or insight and says "we should have a dashboard to monitor the performance of X."*

Or maybe you've been here: you've said "yes, let's have a dashboard. It will help us improve ROI (return on investment) if everyone can see how X is performing and be able to quickly respond. I'll update it weekly." Unfortunately, by week 3, you realize you're killing several hours a week integrating data from multiple sources to update a dashboard you're not sure anyone is actually using.

Yet, dashboards have been all the rage and with good reason. They help you and your coworkers achieve a get better grasp on the data — one of your most important, and often overlooked tools. You've read how they help organizations get on the same page, speed decision-making and improve ROI. They help create organizational alignment because everyone is looking at the same thing.

So dashboards are effective. They work. The questions are: how can they work for you? And how can you get started?

### **What is a Dashboard?**

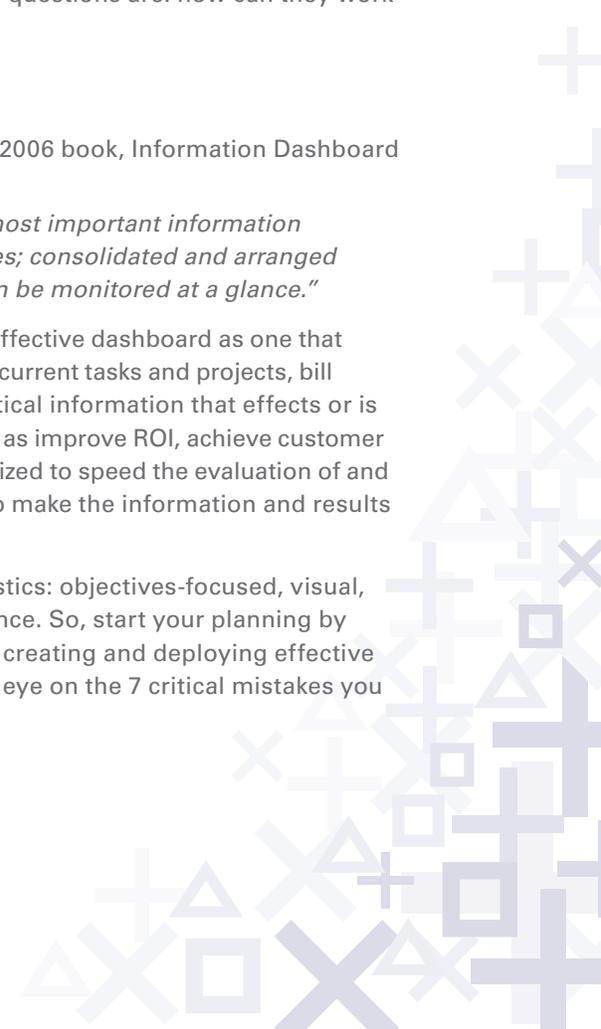
First, let's define what a dashboard is. In his 2006 book, *Information Dashboard Design*, Stephen Few wrote:

*"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."*

Leveraging that definition, we can define an effective dashboard as one that enables users to visually display relevant and current tasks and projects, bill collection, equipment costs and any other critical information that effects or is needed to achieve business objectives (such as improve ROI, achieve customer service goals, and deliver revenue). It is optimized to speed the evaluation of and reaction to current trends and statistics and to make the information and results accessible to colleagues.

Core to both definitions are these characteristics: objectives-focused, visual, relevant, current, and accessible to its audience. So, start your planning by considering the following 5 best practices in creating and deploying effective dashboards. And, just as important, keep an eye on the 7 critical mistakes you don't want to make.

*Note what an effective dashboard isn't. It isn't about complex or cumbersome technology. So don't let technology stop you from evaluating and planning for your dashboard.*



## Choose Metrics Based on Why They Matter

Choosing what metrics to include in the dashboard is critical. Above all, they must be metrics that matter and that are relevant to the job at hand. But that doesn't mean every metric should be included – far from it. You should be highly selective in determining which metrics earn a spot on your dashboard.

In order to find the right set of metrics to include, you need to consider the following:

- What are your organization's core objectives?
- How do your efforts contribute to those objectives?
- Do you have data, either internal or external, that can shed light on the objectives?
- Can you design a meaningful metric that measures those contributions?
- Is this metric truly necessary to explain your contribution to the objectives?
- Can you build a systematic and on-going means of measurement?

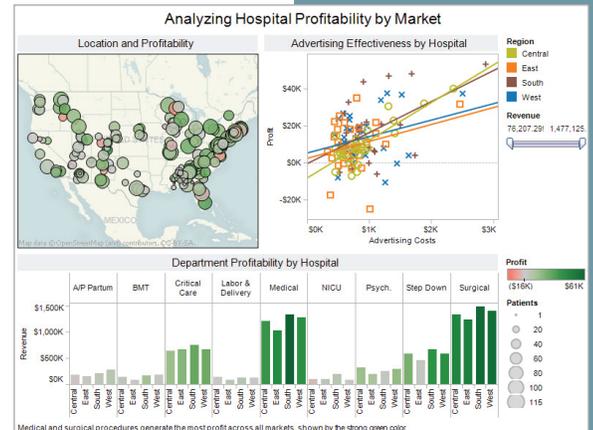
Start with a clear understanding of executive objectives and how you contribute. If your organization is in growth mode and new patients are key, then measure your new patient acquisition rates. If you're operating in a highly competitive market, then incorporate third party market share metrics. You likely have other specific metrics that are leading indicators of overall corporate goals; these are important to include only if the relationship of those metrics to the corporate goal is clear. So, for example, if your colleagues understand that the number of daily website visitors is a leading indicator of brand awareness, include it in your dashboard. Be sure you can clearly explain how every metric on your dashboard connects to organization objectives.

## Keep It Visual

Dashboards are meant to be fast and easy to read. Report and text-based tables are not fast or easy to read. This is a case where a picture really is worth a thousand words. Because the human brain processes a single number, a visualization or a picture as single "chunks" of information, a report or data table filled with numbers requires the brain to store and remember multiple chunks while visualizations or pictures require single chunks. So the process of comprehension and insight is dramatically faster with visualization.

Instead of your dashboard users pondering how to read and interpret your views, he or she can actually focus on what the views in your dashboard are telling him or her. A well-designed, highly visual dashboard will be more widely adopted by your audiences.

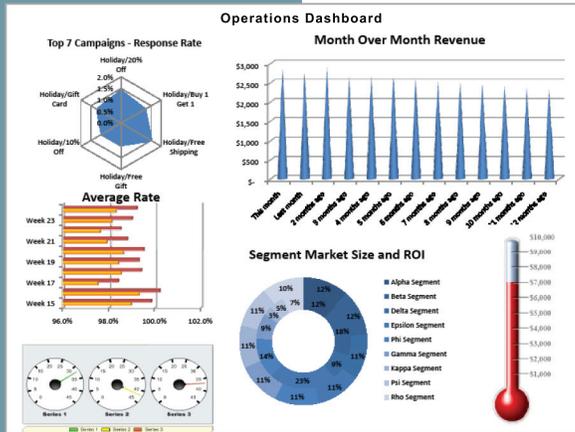
And, because you've carefully selected your metrics to map to corporate objectives, visualization will be not only useful in speeding people's understanding but also



You should be highly selective in determining which metrics earn a spot on your dashboard.

**Bottom line: Ask yourself how your dashboard metrics connect to the bottom line.**

**Does everyone understand the metrics that matter?**



potentially help cross inevitable chasms between departments. Colleagues will literally see the direct translation of the individual department objectives into the broader companywide business objectives.

Things you should embrace when designing a dashboard include the use of colors, shapes, lines, thicknesses, degrees of shading, and any other tools that leverage visual perception. Things to avoid include overly cute widgets, 3D graphic treatments, and graph types not commonly seen. Why are visualizations such as bar graphs, line graphs, heatmaps and scatterplots so popular? They are clear and everyone knows how to read them. So while it's tempting to show off your PowerPoint charting skills, adding as many shapes and colors as possible until absolutely nothing is easy to understand—resist.

Stay away from overly cute widgets and hard-to-read graphs.

*The easier and more intuitive you make the process of customization, the more likely they will be to use your dashboards.*

### Make it Interactive

Your dashboard will put everyone who sees it on the same page. But once on the same page, viewers each will have their own questions and areas where they want to know more. Your dashboard needs to allow viewers to customize it so that they get the information they need.

Interactive, highly visual dashboards should enable your audiences to perform basic analytical tasks, such as filtering the views, drilling down, and examining underlying data – all with little training. Viewers need to be able to literally get the big picture from the dashboard that everyone sees and then be able to drill down into a view that tells them what they need to know to get their jobs done. Whether you accommodate this need by using automated software features or you produce multiple views designed for functions and roles, allowing people to gather data relevant to their situation is key.

### Keep it Current or Don't Bother

Make sure that the data underlying your dashboard is current and that your selected metrics reflect current business challenges.

Data can be from this quarter, this week, this hour—whatever the right timeline is for your business. Data that is out-of-date is not necessarily worse than no data. But, out-of-date data does lend a false sense of confidence to decisions. You think you're making fact-based decisions but the data is no longer representative of or relevant to your current situation.

That being said, be realistic: you don't necessarily need up-to-the-minute data. It's more than possible that a dashboard of last month's metrics is meaningful enough to help guide and inform this month's activities. And, sometimes seeing metrics change by hour is just noise.



Almost as important as having current data is having the ability to change and update the metrics represented in your dashboard. You need to be current in terms of what you're measuring. This quarter, the number of new patients might matter most. But next quarter, as you get more sophisticated in your use of dashboards and the supporting data, the focus may be on customer satisfaction, doctor rankings and growth this year compared to last.

### **Make it Simple to Access and Use**

Making your dashboards easily accessible is critical. Web distribution is ideal – especially if your dashboards can constantly pull current data and can adhere to IT protocols and security standards. Products that provide web-based sharing and collaboration of data analytics, dashboards and visualization, are available and are easy enough for even someone with limited technical abilities to support.

If you can't publish to the web in a way that is easy to maintain and update, then consider alternatives like posting files on websites, Wiki's or blogs. Of course, with file-based distribution, you'll always have a data synchronization issue (i.e., people reading old versions) and the security of your data may be more cumbersome but at least you can develop good habits about the importance of dashboards and collaboration.

Be realistic about your creation and distribution plan. Create a prototype, distribute it through your planned means and ask for feedback. Just like any other successful project, the key is to test, test, test. As you have more experience and learn what people are using, you can enhance the actual dashboard and your means of distribution.

### **Summary**

Dashboards are powerful because they can help you use relevant, current information to understand clearly how you are performing with respect to the overall organization's goals as well as help to explain your contribution to interested colleagues. Essential to the success of a dashboarding project are:

- Choose metrics based on why they matter
- Keep it visual
- Make it interactive
- Keep it current or don't bother
- Make it simple to access and use

If you're already engaged in a dashboarding effort, take note of these five best practices and evaluate how your efforts measure up. If you're not, it's not only time to ask yourself why not, but can taking one on help give better visibility to your business objectives.



## 7 Mistakes to Avoid

### **1. Starting off with too much complexity.**

It's easy to get overly ambitious and want to provide highly detailed, real-time dashboards covering each and every business challenge that also allow users to customize in multiple dimensions. But instead of spending multiple weeks or even months working through your first iteration, you'll be better off working through several short cycles of prototype, test and adjust.

### **2. Using metrics no one understands.**

Your metrics are probably so familiar to you that even something as simple as "conversion rate" seems obvious in its definition. But the reality is, your dashboard needs to use metrics or concepts that your broader audience understands.

### **3. Cluttering the dashboard with unimportant graphics and unintelligible widgets.**

Keep your dashboard simple in its visual appeal. Resist the temptation to make your dashboard too flashy or over-designed, with gauge-like graphics and widgets. As pretty as those may seem, they get in the way with your dashboard's objective: rapidly and easily informing your audience.

### **4. Waiting for complex technology and big BI deployment projects.**

Sure, some of traditional Business Intelligence tools provide fancy capabilities that are nice to have. But implementations often take a much longer time than originally anticipated so waiting for a traditional BI project to materialize may mean months or years of delay. Fortunately, there are dashboard tools and strategies that can get you going now.

### **5. Underestimating the time or resources to create and maintain the dashboard.**

Because a dashboard is typically one page or one screen, it is easy to assume that it should be quick and simple to create and maintain. But in fact, a dashboarding project takes on-going resources to design, launch and maintain.

### **6. Failing to match metrics to the goal.**

Often, working dashboards showcase the activities of the a single department. Instead, your dashboard should connect your department's efforts to your organization's actual goals and objectives.

### **7. Using ineffective, poorly designed graphs and charts.**

Take care in how you design your graphs and charts. For example, 3D charts offers no increase in viewer comprehension. Garish colors can interfere with interpretation. Choosing a pie chart for more than 6 values makes the graphic virtually impossible to read. There are clear principles for designing good data visualizations; see our resource list for a guide.



## Resource List

Books (Information Dashboard Design and Show Me the Numbers) and articles by Stephen Few

Books and articles by Edward Tufte

“Marketing Dashboards: Visualizing Smarter Marketing Decisions” research report by Jeff Zabin of the Aberdeen Group

“Telling Great Stories with Data” whitepaper by Susan Moore along with Tableau Software

Writings on good analytic design from Juice Analytics

Writings on good presentation techniques from Presentation Zen

Whitepapers, on-demand web seminars, articles and examples at the Tableau Software Learning Center

## About Tableau Software

Tableau Software, a privately held company based in Seattle WA, provides business intelligence software applications that are fast to install and easy to learn. The power of web-based data visualization and business intelligence enables business people to quickly make discoveries and share insights from all types of databases from Excel spreadsheet to large data warehouses. Get a free trial copy of Tableau Software at [www.tableausoftware.com/trial](http://www.tableausoftware.com/trial).