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6 Best Practices for Creating Effective Dashboards

Dashboards are an effective tool for distilling data into actionable insights; still, they're often an overlooked and underutilized tool.

Well-planned dashboards can align your organization's efforts, speed up decision-making, track performance outcomes, and increase ROI. Yet too often mistakes are made in the actual creation of dashboards—many times at the expense of efficiency, accuracy and hours of lost time.

In order to see and understand the complete picture and make fast, data-driven decisions, you'll need to build dashboards that can show you what's really happening across many sets of data, correlate patterns across multiple metrics, and provide both a summary and in-depth views of performance. The "single source of truth" dashboard is no myth.

So how do you build dashboards that will live up to this promise? How do you build the dashboards that are just right for your goals, your team, and your company?

Dashboards that meet these needs offer data-agnostic connections and the ability to blend multiple data sources. They also present data visually for faster understanding and allow sharing and mobile options for better collaboration and convenience.

For improved dashboards, start by considering the following six best practices; equally important, keep an eye out for a bonus section with five critical mistakes you don't want to make.

1. Connect to All of Your Data

2. Blend Your Data Together

3. Choose Metrics that Matter

4. Use Better Visualizations

5. Use your Data in the Field

6. Share for Collaboration
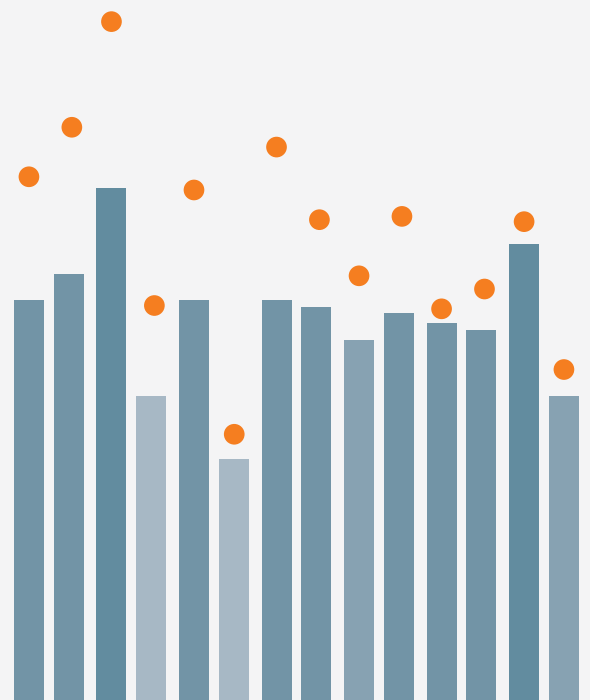
I.

Connect to All of Your Data

"The concept of being mobile and accessing data is what it's all about these days. We wanted to liberate the data and get it out to our users. I'm not having to worry about firewalls and configuring things correctly. It's there in the cloud, secure for my key executives to access anytime—even on a JetSuite aircraft at 40,000 feet."

—Steve Roy, IT director at JetSuite

▶ *Watch to learn how JetSuite uses dashboards to improve performance and decision-making throughout the organization.*

So you have data and you want to analyze and learn from it in a dashboard. Chances are you have a lot of data in many different places. For starters, you need to connect to all of the data—internal or external—that can shed light on the questions you're trying to answer. Don't settle for only data that's easy to access. If you're making key business decisions with dashboards, it is critical to begin with all of your relevant data, no matter where it lives.

There once was a time when organizations aspired to have all of their data in one place. But with today's continuous innovation, it's no longer necessary or even a best practice.

Cloud-based analytics solutions are now on par with on-premise technology in terms of reliability, performance, security and flexibility. The new best practice is having access to data wherever it resides, whether an on-premise warehouse or in the cloud.

JetSuite, a private jet charter company headquartered in Irvine, California, needed to speed up their decision-making with dashboards. But they found that centralizing their data to only a select few decision makers actually slowed the company down.

"I think we've realized over time that centralizing all of that data and trying to have one centralized group come up with all of the data-driven decision making just no longer works. And it's slow, too—it's extraordinarily slow," explained Keith Rabin, president at JetSuite.

"So we have to drive decision-making and that power down to our managers, and they have to ultimately be responsible for it. In order to do that, you have to give them [the ability] to take these big data sets that come from different systems and different databases and be able to connect them all together and see the data that they need to see to make their decisions," he continued.

By empowering the organization with all of the right data from many different sources, JetSuite's dashboards have helped everyone become more effective at doing their jobs.

7 Trends in the Cloud
⚙ tableau

As cloud solutions for data visualization become standard in business infrastructure, people are looking for cloud adoption strategies that work. Read this whitepaper to learn more about the latest trends in cloud.

Not only do you have choices on where to store your data, but you also have a choice of where to interact with it. You may build your dashboard from your desktop, but you probably want to make sure that the right people can view and interact with it—wherever they are. Whether it's a co-worker in another region or a sales team of road warriors working from mobile devices, you need to provide secure, convenient access to your dashboards or they won't be used. Staying flexible for your particular needs is key.

 "The concept of being mobile and accessing data is what it's all about these days. We wanted to liberate the data and get it out to our users," explained Steve Roy, IT Director at JetSuite. "I'm not having to worry about firewalls and configuring things correctly. It's there in the cloud, secure for my key executives to access anytime—even on a JetSuite aircraft at 40,000 feet."

There are all kinds of decisions that are happening faster at JetSuite because the organization uses all of their data in many different places. These faster decisions are all possible because JetSuite publishes all of their dashboards to the cloud. And what about those faster decisions? "I would say [they are] more accurate. And those are the things you have to have in business today," Rabin said.

Unlock your data's greatest potential by using all of your data anywhere or way you want—no matter where it lives, in the cloud, or on-premise.

2.

Blend Your Data Together

One set of data alone can be less powerful than two data sets. For example, if you're in sales, a dashboard with profit data alone—without territory, company, or marketing data—has a lessened value as it only supports a limited range of decisions.

Most companies have come to realize the old goal of loading all the data into a single storage destination is a losing game—new data sources pop up regularly and the business needs the data now, not in six weeks or six months.

The answer is combining or blending data from multiple sources. By joining different data sets on a common field, you can get a single, holistic view of things like performance and track completion of goals at every step of your process.

Unilever, a global consumer goods company, uses data dashboards to learn more about consumer and customer trends on a granular level. From long-established names like Dove, Sunlight and Pond's to new innovations such as the Pureit affordable water purifier, Unilever's range of consumer products and brands is as diverse as its worldwide consumer base. That makes for a lot of different data sets to sift though.

Director of analytics, Rishi Kumar discusses how blending data impacts Unilever's ability to answer questions about consumers.

"One of the interesting parts about being in consumer goods is that you get a rich variety of data—you get qualitative data about the sentiments of your brand, but you also get really concrete quantitative data about purchase behavior, so what people are putting into a basket through loyalty cards. You also get broader market perspectives through ACNielsen and IRI and so on," he explained.

"It's important Unilever is able to blend all this data together to understand why people are entering the shop, ultimately filling their basket with Unilever products, and determine based on those drivers what are the likely products or trends that we need to take part in as an organization. The beauty I think really is that you're enabling decisions that would not otherwise be available. There's a sort of higher quality of decision-making," he said.

Unilever's dashboards blend data to help bridge the gap between the global perspective and the local perspective. They enable managers the ability to drill down to the level of detail they each need to understand their questions about their segment of the business.

Regardless of data type, blending your data on common field will elevate understanding and decision-making.

▶ *Watch to learn how Unilever uses data blending to unlock the best information about consumers in their many different markets.*

3.

Choose Metrics that Matter

Selecting relevant metrics to include in your dashboard is critical. Above all, the metrics must be 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.
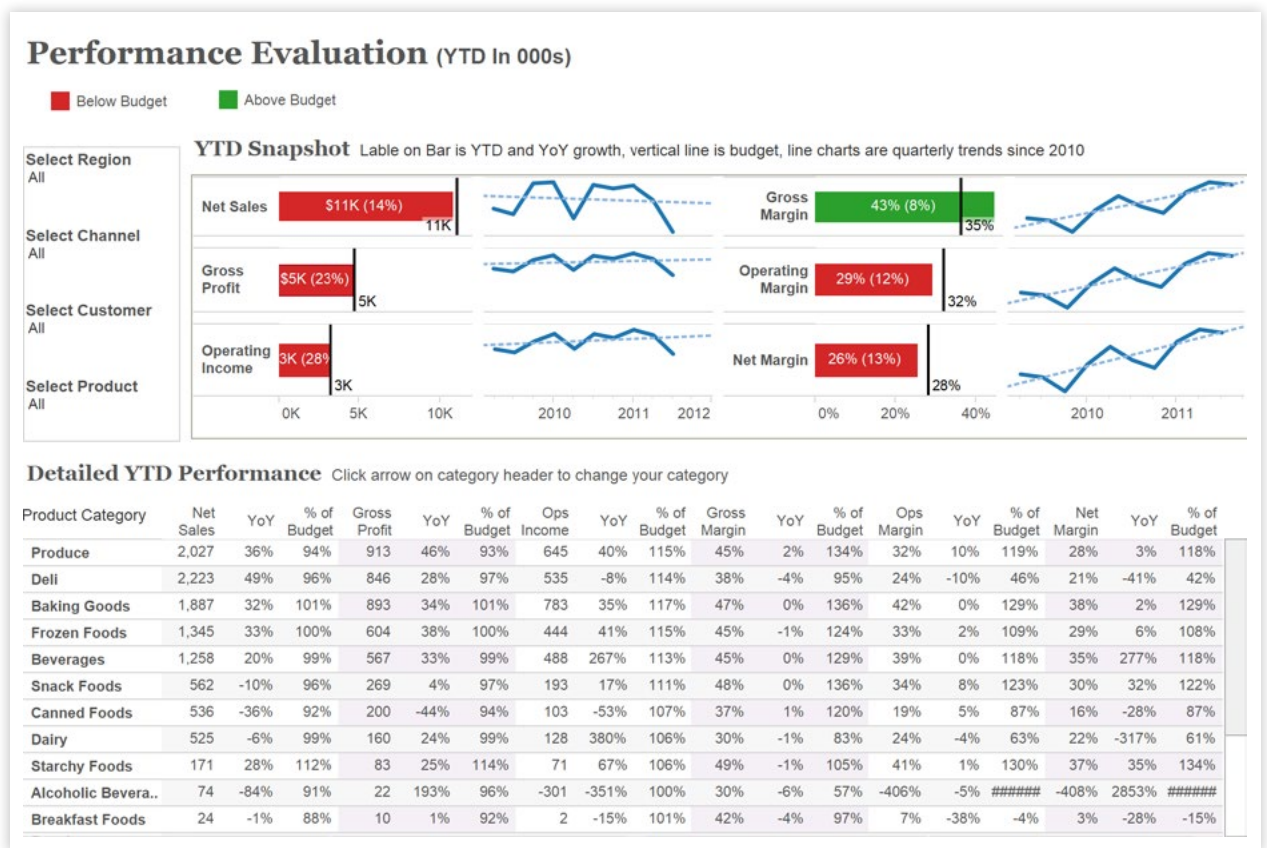
In order to find the right set of metrics to include, you need to consider the following:

· How does each metric contribute to your objectives?

· Can you design a meaningful metric that measures those contributions?

· Is this metric truly necessary to contribute to the objectives?

· Can you build a systematic and ongoing means of measurement?

· If you're operating in a highly competitive market, then consider incorporating third-party marketshare metrics.

· The litmus test is whether you can clearly explain how every metric on your dashboard connects to your organization's objectives.

While most performance metrics allow leaders to discover what is happening, the right metrics will help users ask and answer questions to discover why. Be sure you can clearly explain how every metric on your dashboard connects to organizational objectives and the mission.

For example, this dashboard showcases how to measure performance properly.

By measuring year-to-date (YTD) performance against budget in the same period over two years, detailed metrics match up directly with the goals and help answer questions like:

- What are the growth rates?

- Are there outliers or abnormal trends?

- Have the performance goals been met?

Performance Evaluation (YTD In 000s)

■ Below Budget ■ Above Budget

YTD Snapshot Lable on Bar is YTD and YoY growth, vertical line is budget, line charts are quarterly trends since 2010

Select Region
All

Select Channel
All

Select Customer
All

Select Product
All

Net Sales $11K (14%)
Gross Profit $5K (23%)
Operating Income 3K (28%)

Gross Margin 43% (8%)
Operating Margin 29% (12%)
Net Margin 26% (13%)

Detailed YTD Performance Click arrow on category header to change your category

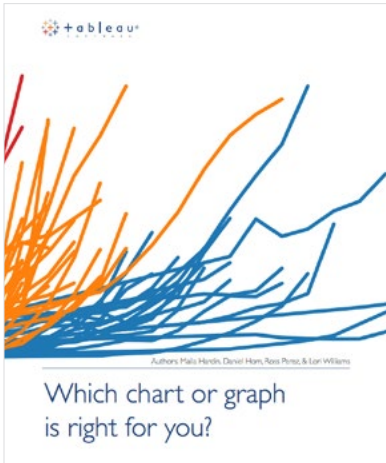| Product Category	Net Sales	YoY	% of Budget	Gross Profit	YoY	% of Budget	Ops Income	YoY	% of Budget	Gross Margin	YoY	% of Budget	Ops Margin	YoY	% of Budget	Net Margin	YoY	% of Budget
Produce	2,027	36%	94%	913	46%	93%	645	40%	115%	45%	2%	134%	32%	10%	119%	28%	3%	118%
Deli	2,223	49%	96%	846	28%	97%	535	-8%	114%	38%	-4%	95%	24%	-10%	46%	21%	-41%	42%
Baking Goods	1,887	32%	101%	893	34%	101%	783	35%	117%	47%	0%	136%	42%	0%	129%	38%	2%	129%
Frozen Foods	1,345	33%	100%	604	38%	100%	444	41%	115%	45%	-1%	124%	33%	2%	109%	29%	6%	108%
Beverages	1,258	20%	99%	567	33%	99%	488	267%	113%	45%	0%	129%	39%	0%	118%	35%	277%	118%
Snack Foods	562	-10%	96%	269	4%	97%	193	17%	111%	48%	0%	136%	34%	8%	123%	30%	32%	122%
Canned Foods	536	-36%	92%	200	-44%	94%	103	-53%	107%	37%	1%	120%	19%	5%	87%	16%	-28%	87%
Dairy	525	-6%	99%	160	24%	99%	128	380%	106%	30%	-1%	83%	24%	-4%	63%	22%	-317%	61%
Starchy Foods	171	28%	112%	83	25%	114%	71	67%	106%	49%	-1%	105%	41%	1%	130%	37%	35%	134%
Alcoholic Bevera..	74	-84%	91%	22	193%	96%	-301	-351%	100%	30%	-6%	57%	-406%		-5%	######	-408%	2853%	######
Breakfast Foods	24	-1%	88%	10	1%	92%	2	-15%	101%	42%	-4%	97%	7%	-38%	-4%	3%	-28%	-15%

In this dashboard, the top six sets of views are net sales, gross profit, operating income, gross margin, operating margin, and net margin. Each set of views shows YTD results (the bar), growth from last year (the number in parenthesis), budget (the vertical line), and quarterly trends (the line chart). At the bottom is a detailed cross-tab where we break down the top six sets of measures by product category. You can use the "Product Category" header box to switch your view to region, channel, or customer segments. You can also use the filter panel on the top level to filter the entire dashboard.

Click into this dashboard to interact and learn more from this data set.

4.

Utilize Better Visualizations

Dashboards are meant to be easy and fast to read. Number-based tables and spreadsheets are often the opposite. This is a use case where a picture really is worth a thousand words.

When asking big questions, you'll need freedom and flexibility to explore your answers in different visual structures. In today's marketplace, the basic, built-in charts are just table stakes, and the real data wins are found in multiple types of advanced visuals.

Core to modern visualizations:

- **Variety**

  Not everything has to be a pie chart or a bar chart. Because the human brain processes a number, a visualization, or a picture as single "chunk" of information, the process of comprehension and gaining insight is dramatically faster when data is visually displayed on a dashboard in various graphs and charts.

  Utilizing multiple types of visualizations, colors and filters in a dashboard, you can quickly understand and share the complete picture and get to the bottom of all those questions that standard reports just don't anticipate.

- **Current & Interactive**

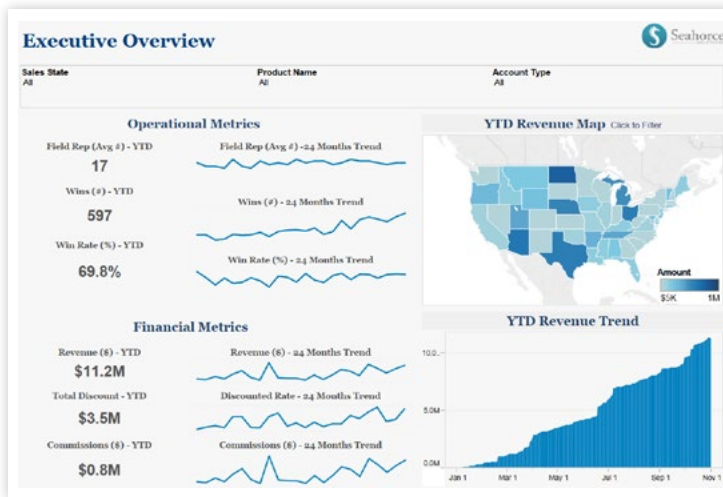 Need answers on the fly in an important meeting?

  Data can be from this quarter, this week, this hour, or thirty seconds ago—there's no doubt about it, real-time data will elevate your operations.

  Interactive dashboards with a current data feed can enable important analytical tasks, such as filtering views, adjusting parameters, performing quick calculations, and drilling down to examine underlying data. Answer the unanticipated questions immediately with a few mouse clicks.

- **Forward Looking**

  Utilizing visuals to look at a time trend for a seasonal influence gives you the ability to forecast and plan appropriately. Make decisions by applying data for historically slow quarters, summer slumps, and end-of-year booms.

Authors Maila Hardin, Daniel Hom, Ross Perez & Lori Williams

Which chart or graph is right for you?

▶ *Which chart or graph is right for you? Read this whitepaper next and take a deeper dive into improving your dashboards with better visualizations.*

For sales executives, operational efficiency and financial results are top priorities. By employing these better visualization tips, this executive overview dashboard provides a scan-friendly overview of key executive metrics such as number of reps, number of wins, win rates, revenue, sales discount, commissions, plus a YTD revenue map and a trend chart. This simple, yet powerful dashboard allows all involved parties to monitor individual performance, regional performance, comparative sales results and upcoming pipeline opportunities.

Click into this executive overview dashboard to interact and learn more from these sales operations visualizations.

5.

Use your Data in the Field

It's true, people are spending less time at their desks, but they still get more work done. That's because they aren't any less informed by data while on the go.

The good news is that the mobile solutions for analytics tools, which emerged years ago, are reaching a level of maturity for business users. Mobile analytics is transitioning from limited, standalone apps to analytics that integrate seamlessly with the tools you use everyday. Mobile business intelligence is finally fulfilling the promise of a 30-year-old industry: to provide information when and where it's needed.

This means mobile workers on the road, in different parts of a warehouse, or in different cities can all analyze data and collaborate within the same supply chain.

The Coca-Cola Bottling Co. Consolidated (CCBCC), the largest independent Coca-Cola bottling firm in the U.S., needed to solve a huge bottleneck reporting issue due to a limited availability of reports.

By providing more than 800 employees with daily dashboard updates on mobile devices, CCBCC has significantly improved their ability to track, combat and shrink a million-dollar dilemma.

CCBCC 's senior business analyst Shawn Crenshaw explains how the company uses data in the field to improve the operational supply chain.

"We do most of the reporting for sales and delivery, so anything that ranges for the people selling the product to people delivering the product, we handle that reporting. We range from marketing to a home market, which is essentially where you see the big stores at Walmart, in the pub, at your grocery stores, how we're doing in those stores, to the delivery of the actual product," Crenshaw said.

For example, CCBCC deploys a daily field operations dashboard, primarily for workers making the actual case deliveries. Prior to having access to this dashboard, delivery teams spent an enormous amount of time trying to figure out which deliveries to make next. They needed to know where the most profitable, most efficient deliveries could be made, and not spend days and hours solving that puzzle.

"With the ability to be mobile, now delivery workers have the option to be on the truck, looking at their iPad, understanding how they're doing when they are driving to a certain location or route they are on."

—Kevin King, Director of Reporting and Analytics at CCBCC

▶ *Watch this on-demand webinar to learn how the Coca-Cola Bottling Co. used iPads to deploy dashboards to their field delivery and sales teams*

"With the ability to be mobile, now delivery workers have the option to be on the truck, looking at their iPad, understanding how they're doing when they are driving to a certain location or route they are on," said Kevin King, director of reporting and analytics at CCBCC.

"The guys in the field love this, because they want to have the ability to see data in real-time for on-the-spot decision making," he continued.
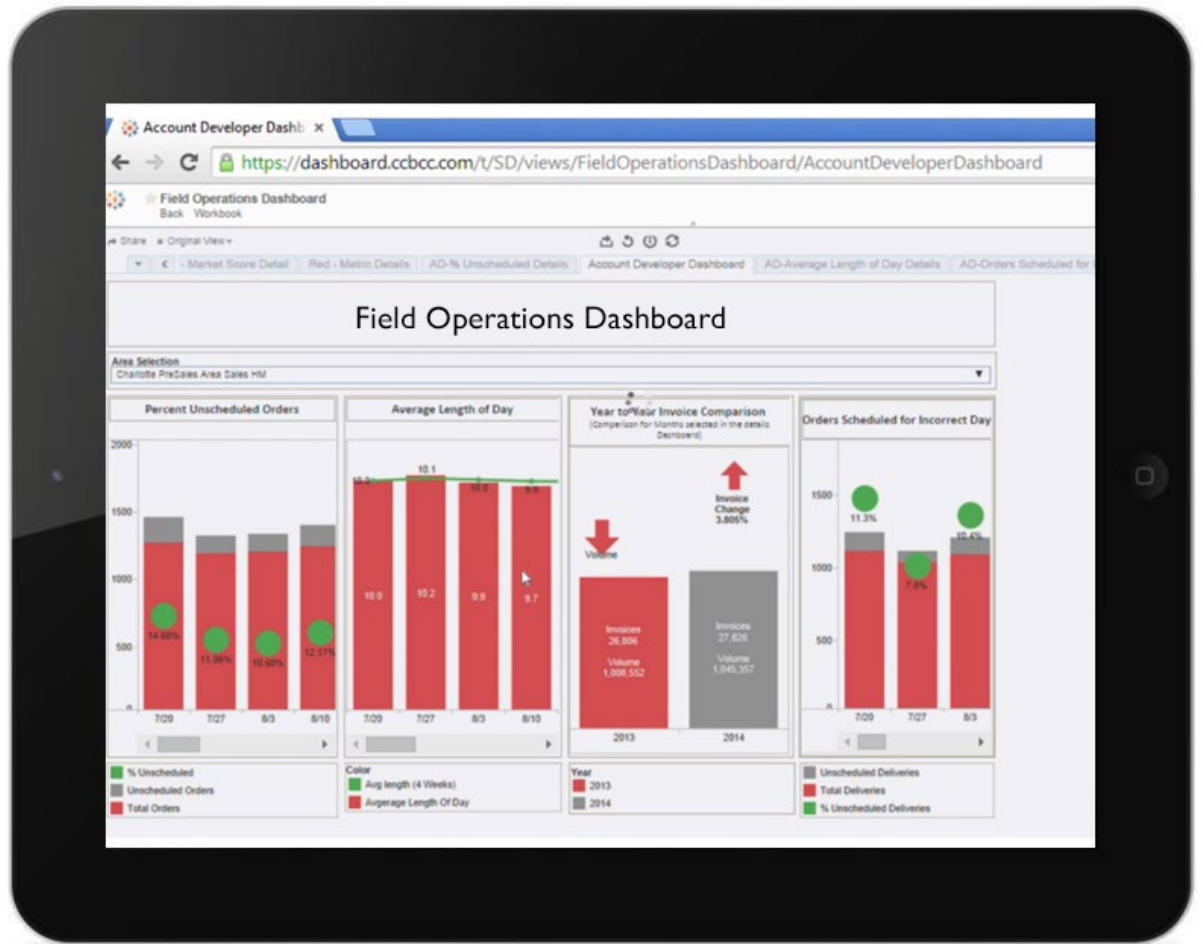
This dashboard is an example of how CCBCC uses a field operations dashboard to make decisions on the go. It is broken down into various areas of need for delivery teams such as invoices, delivery performance, timelines for delivery of cases. It also has the ability to drill down to see more detail in specific territories and branches.

6.

Share for Collaboration

Sharing information is what dashboards are all about. Dashboards are so powerful because they get everyone looking at the same page. If no one can access or interact with your dashboard, it won't matter if you've mastered the list above. This is why it's important to make sure that your dashboards are easy to share and view.

Try using simple browser-based distribution to share your dashboards, especially if they can pull recent data and adhere to security. Make it easy for people to click on a link and go right to the dashboard, whether they're at their desk or on their mobile device.

Your organization may also want to embed dashboards in existing reporting tools, intranets and other internal web-based resources.

As you get your dashboards off the ground, test your distribution plan and get feedback. Like any successful project, the key is good testing. As you gain experience and learn what people are using, you can enhance and update your dashboards, as well as the distribution process.

Once different users interact with the same data sets, viewers will have unique questions about what they see. It is important that every user within an organization can interact with the same data to get the answers to the different questions they have.

For example, this dashboard, connected directly with Google Analytics allows users to easily follow a link, click and interact with visualizations to see traffic trends for a website. Anyone within an organization can take a deep dive, play and explore this information very quickly.

This dashboard is connected with Google Analytics and shows website traffic trends by country, section of website visited and number of visits in a given time period. Users can drill down to examine visitor behavior by visualizing the breakdown of exits, bounces and conversions. Click into this dashboard to interact and learn more.

The Five Don'ts

Now that we've outlined the must-dos of dashboards, here is a quick list of common 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 that cover every business challenge and offers users lots of drill-down options. Don't spend weeks or months coming up with a "perfect" dashboard. Instead, work in short cycles of prototype, test, and adjust.

2. **Using metrics no one understands**

    The way you show and label metrics might make sense to you, but are they meaningful to others? Your metrics can be so familiar to you that you don't take the step to validate them with others. Make sure your metrics not only support the objectives of the dashboard, but also make sense to the audience that will encounter it.

3. **Cluttering the dashboard with low-value graphics and widgets**

    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 of your dashboard's objective: rapidly and easily informing your audience. Keep your dashboard simple in its visual appeal.

4. **Waiting for complex technology and big business intelligence deployment projects**

    Traditional business intelligence implementations often take much longer than originally anticipated. Waiting for a traditional BI project to materialize may mean months or years of delay. Use applications that help you build and distribute dashboards quickly.

5. **Underestimating the need to maintain the dashboard**

    Rolling out a dashboard is not a once-and-done exercise. If you don't check in with your audience to validate the metrics are relevant and the data is updated, it won't get used. Make sure you're validating the usefulness of your dashboard on a regular basis.

Visual Analysis Best Practices
Simple Techniques for Making Every
Data Visualization Useful and Beautiful

▶ *Read this whitepaper for additional
simple techniques for making every
visualization useful and beautiful.*

Conclusion:

What number can you hit? What deals can you close? How can you improve your supply chain? How many lives can be saved? What changes can you make this very moment for a better outcome?

The hallmark of data-driven dashboards is the ability to see and understand data at the speed of thought. By allowing both business leaders and knowledge workers alike to ask and answer questions in real-time, dashboards turn insights into action and inspire true innovation.

About Tableau

Tableau Software helps people see and understand data. Offering a revolutionary new approach to business intelligence, quickly connect, visualize and share data with a seamless experience from the PC to the iPad. Create and publish dashboards and share them with colleagues, partners or customers, no programming skills required. See how Tableau can help your organization by starting your free trial at tableau.com/trial.
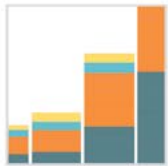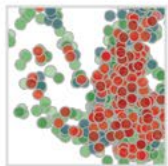
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