

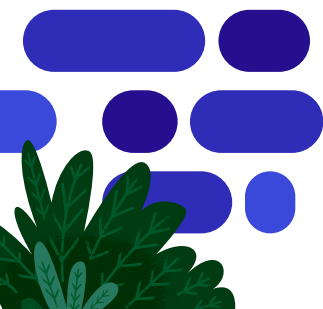


How to Build Dashboards that Persuade, Inform, and Engage



Contents

Introduction	03
Part 1: Informing begins and ends with your audience	04
• Ask the right questions	04
• Consider your audience’s level of expertise	05
• Adapt your story accordingly	05
Part 2: Producing persuasive dashboards is all about partnership	07
• Show your work. Iterate relentlessly	07
• Encourage critiques	08
Part 3: Eight keys to creating dashboards that delight and engage	09
• Add interactivity to encourage exploration	09
• Limit your number of views	10
• Use color carefully	10
• Design for screen size	11
• Enable fast loading	12
• Add the finishing touches	14
• Always remember—less is so much more	15
• Test your dashboard for usability	16
Resources	17
About	18



Introduction

Think about a great conversation you've had, with no awkwardness or self-consciousness, just effortless communication. In data visualization, there is a similar concept. Your audience should smoothly absorb and use the information in a dashboard without distractions or turbulence—this is described by people in the data viz world as “flow.”

So how do you create flow for your audience? As a dashboard designer, it's your job to create the smoothest possible experience for users, without unwelcome or obtrusive elements. This is how you create dashboards that:

- Persuade—work with stakeholders to provide sound reasoning for your audience to take action
- Inform—present data in a visual format to make it easier to understand and analyze
- Engage—adapt your dashboards to your audience and help them drill down to find the information they need

This guide, designed specifically for Tableau data analysts and business users across lines of business, shows you how to achieve all these goals and more and provides numerous resources to master the art of dashboard creation.

“Dashboard design is not about making dashboards ‘pretty.’ It's making them functional and helping the user to get the information they need as efficiently as possible.”

ALEXANDER WALECZEK, ANALYTICS PRACTICE LEAD AND TABLEAU AMBASSADOR



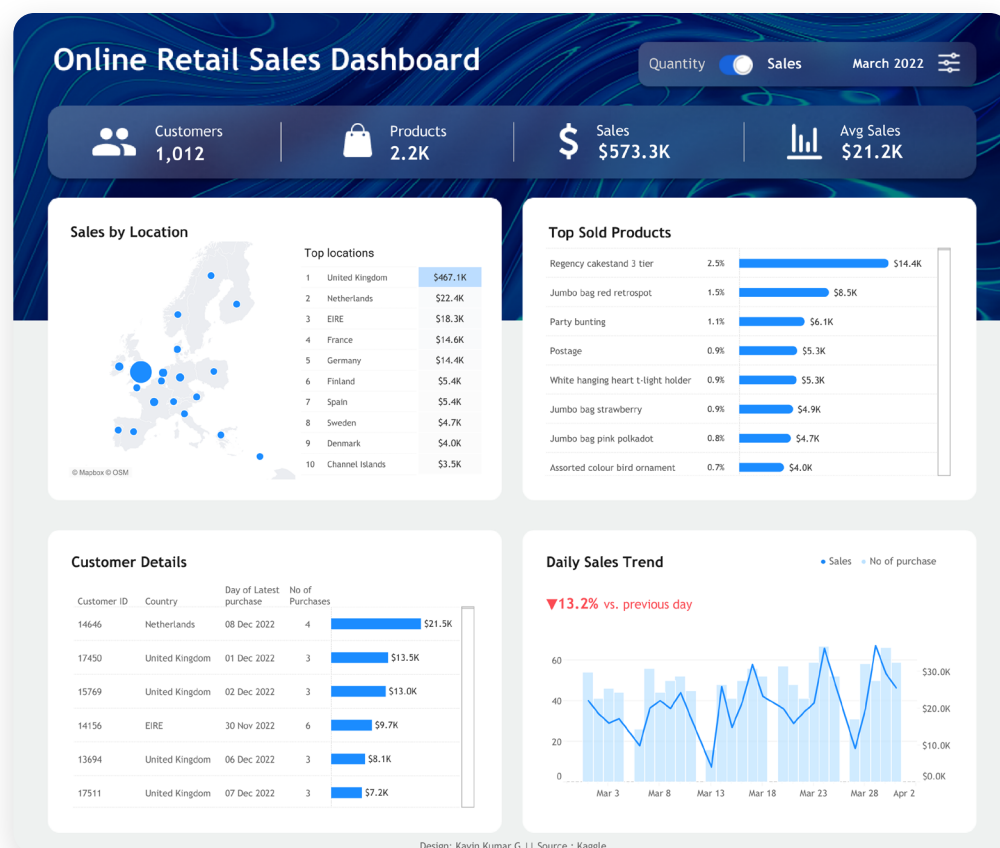
Informing begins and ends with your audience

Ask the right questions

To inform your readers and keep them engaged, you need to know the basics, such as:

- What does my audience need?
- How often will they look at this data?
- What do they already know about this subject?
- Have they used dashboards before?

For example, If you are designing for a busy salesperson with 15 seconds to spare for key performance indicators, you'd want to make the most important information available at a glance and ensure that your dashboard is mobile friendly and fast to load. However, if you're designing for a team that will be reviewing quarterly dashboards over several hours, you might want to provide more detailed views of the data.



Design: Kavin Kumar G | Source : Kaggle

The power of dashboards lies in their ability to queue up specific views for side-by-side analysis. Understanding your audience's data skills will help you design with the right level of sophistication. Source: [Tableau Public](#); [Kavin Kumar G](#), author

Consider your audience's level of expertise

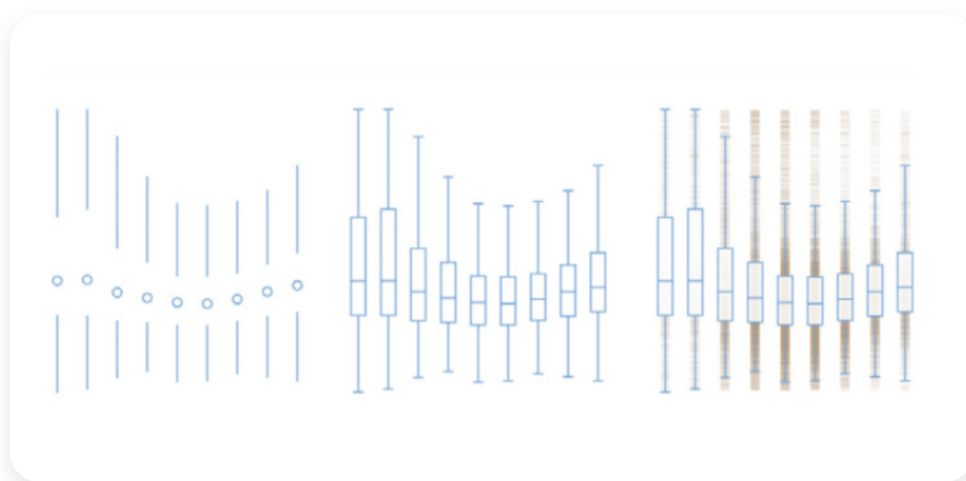
Get a better sense of your audience's skill level by asking about their priorities and how they consume data to inform the best way to present the data. This information will dictate key design decisions. For example, a beginner might need more action-oriented labeling for filters or parameters than an advanced user. Here are four of the best ways to assess the dashboard and data skill levels of your audience:

- **Informal conversation:** Have a casual discussion to gauge their familiarity with data concepts and comfort with data analysis tools.
- **Request examples:** Ask for data-related projects they've worked on to assess their ability to work with data effectively.
- **Task-based evaluation:** Assign a simple data analysis or visualization task and evaluate their approach and output.
- **Learning interest:** Assess their enthusiasm for learning by asking about their interest in data-related training and involvement in data communities.

Adapt your story accordingly

Tailoring your dashboards for the intended audience will make them far more impactful.

Here are three visualizations of the distribution of tornadoes in the United States, representing the first nine months of the year.

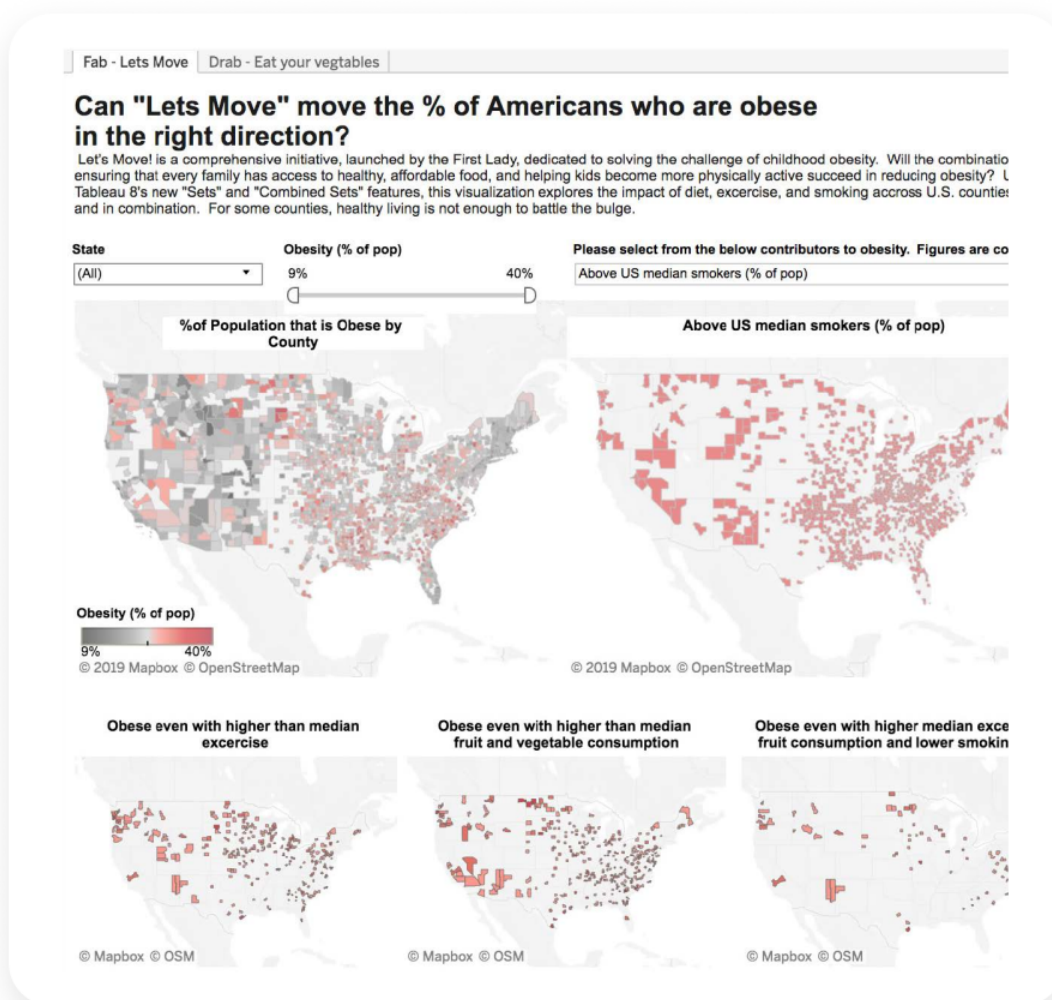


Each vertical line represents the time of day, with midnight at the top and noon in the middle. All three visualizations show, among other things, that tornadoes are much more likely to take place in the afternoon during the summer.

The difference between them is in the amount of visual information used to tell the story. At the left, we have an extremely minimal presentation, which increases in complexity as we move to the right. None of these are inherently better than the rest. The viz on the left may be perfect for audiences intimately familiar with the material; for them, simplicity and removal of redundancy would be quite welcome. For newcomers to the topic—or people who will only look at this visualization once—the explicitness of the visualization on the right might be best. So how do you know when something is clutter versus something important? This is where your colleagues come in.



This example, by [Anya A'Hearn](#), shows a range of choices. Each of these dashboards was meant to communicate to specific audiences. And each demands different skills and challenges. The density of the data and many interactive options make it more appropriate for advanced users with existing knowledge of the topic.



The dashboard above offers a variety of ways to interact with the data, across a number of variables.

Producing persuasive dashboards is all about partnership

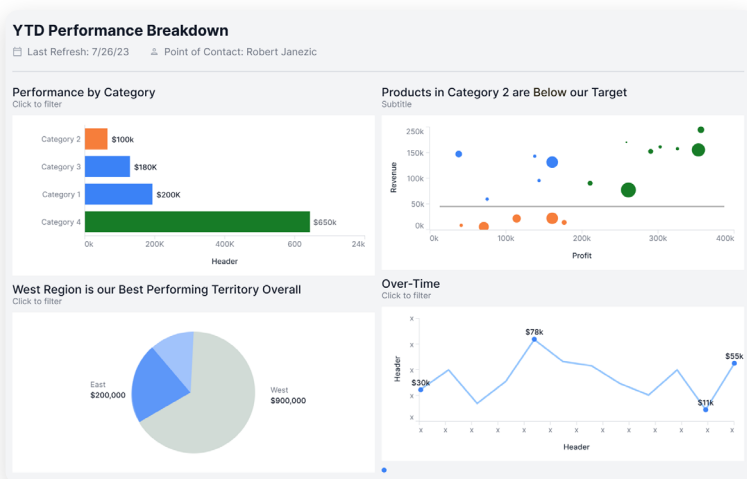
When it comes to crafting persuasive dashboards that leave a lasting impression, partnership is the name of the game. By working closely with your line-of-business stakeholders, you can foster the buy-in and engagement you need to tailor the dashboard to their requirements and expectations. And that's the ultimate art of dashboard persuasion.

Show your work. Iterate relentlessly.

As you build a culture of analytics, strive for a culture of critique—supportive, collaborative, frequent critique. The more versions of something you create, and the more feedback you solicit along the way, the better the final product will be. Don't get isolated or stuck. Start working on something and then show it to someone else. Use the feedback and get back to work. Continue that process until you're happy with the result. Think of what it takes to make a diamond. The heat, pressure, and time required are extraordinary. So is the result.



Create clarity: Without descriptive titles and a clear objective, data visualization can lead to confusion.



Use guided analytics to unveil insights: Tell a story with guided analytics using colors to highlight insights that will support informed decision making.



Encourage critiques

To create a culture of critique, a few things are necessary. For one, you have to trust your colleagues. If you and your coworkers respect each other, you'll trust each other's feedback. Also, you need thick skin. Since your final product is ultimately for the benefit of users and clients, your dashboard design should revolve around their needs, not your own preferences. Writers often talk about how they have to "kill their darlings"—meaning sometimes their favorite part of a story or script might have to be cut. The same thing can happen for designers. Keep your eye on the big picture and be honest if something isn't working.

Expert tip

It also helps to have a public place—on a real or virtual wall—for sharing work. Making work public creates constant opportunities for feedback and improvements.



Eight keys to creating dashboards that delight and engage

Add interactivity to encourage exploration

Tuning in to your audience will help you engage them with interactive features for drilling down to the information they need.

Filters

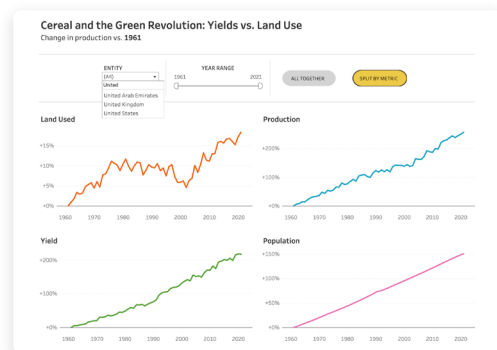
The power of dashboards lies in the author's ability to queue up specific views for side-by-side analysis. Filters supercharge that analysis and engage your audience. For example, you can have one view—your most important one—act as a filter on the other views in the dashboard, like this.



In this dashboard highlighting shipping trends, users can filter the data to highlight details that are relevant to them.

Filter Cards

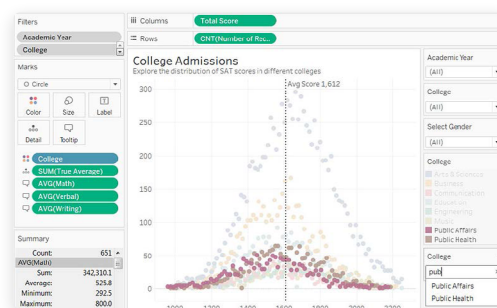
You can also display Filter Cards for different types of data. For example, show filters as multi-select checkboxes, single select radio buttons, drop-down lists, etc. You can include a search box and edit the title of your filter to give your viewers clear instructions for interacting with the data.



This dashboard shows different types of filters: drop down, range, select.

Highlight Actions

Highlight Actions are another powerful feature you can leverage, where a selection in one view highlights related data in the other views. For more advanced scenarios, you can use Set Actions or Parameter Actions to add deeper levels of interactivity.



This visualization uses Highlight Actions to increase interactivity. Searching “public” in the wildcard filter highlights the categories of colleges—in this case, public affairs and public health.



Limit your number of views

It's easy to get excited and want to cram your dashboard with every relevant view. But if you add too many, you'll sacrifice the big picture. In general, stick to two or three views. If you find that the scope needs to grow beyond that, create more dashboards or use a story—a sequence of visualizations that work together to guide the viewer through information.

Expert tip

Use two to three views. If you need more, create more dashboards or use a story.

Use color carefully

Just like you can have too many views, you can also have too many colors. Color used correctly enhances analysis. Too many colors creates visual overload for your audience, slowing analysis and sometimes preventing it.

Ineffective use of color

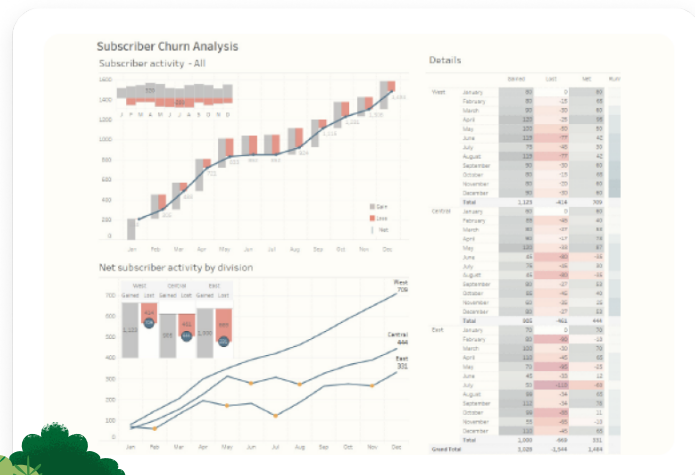
Uses harsh, more saturated colors and inconsistent shading, making it much harder for the viewer to see the relationship between the charts.



More effective use of color

This revised version of the same dashboard has a modern design with minimal colors, creating a gentle formatting.

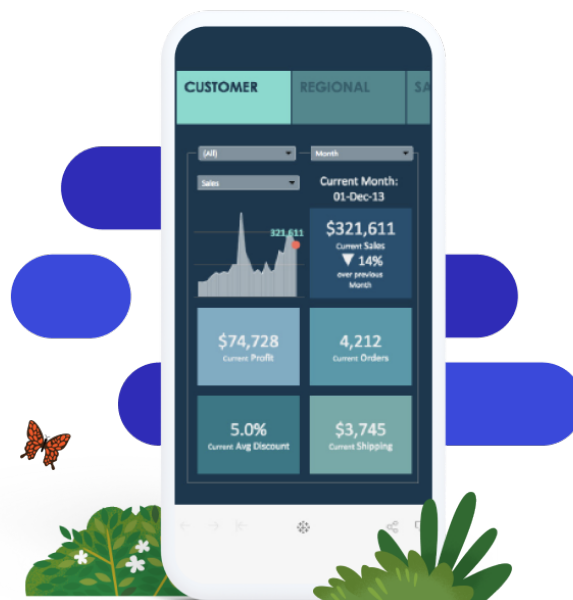
Source: Subscriber Churn, [The Big Book of Dashboards](#)



Design for screen size

Surface the most important KPIs: Remember that your audience won't always be able to drill down on a small screen, so when you design for mobile phones or tablets, show only the most important metrics. In practice, this means creating dashboards with elements that are easy to click and have limited, intentional interactivity.

Stack content vertically for phone screens: Most people use their phones in portrait mode. Unless you need to show a wide map view or timeline, prioritize optimizing your dashboard vertically for phones.



In this dashboard, there are no more than three interactions. This simplicity reduces confusion and helps with overall user experience on mobile.

How to use Tableau screen size features

- In Tableau, phone layouts are automatically generated whenever you create a new dashboard, arranging the dashboard's contents algorithmically in a phone-friendly manner.
- To manually add and arrange items to reflect changes to the Default dashboard, choose "Edit layout myself."
- To see how your dashboards appear on different devices, review and add device layouts with Device Preview.
- New feature for mobile: it's now possible to change theme to dark mode.

It's important to know whether you should be designing your dashboard to be "mobile first". See this [blog post](#) for some useful tips.

Enable fast loading

One of the best ways to disengage users is to create dashboards that take even a minute to load. Ideally, your dashboard should load in seconds. Here's a couple ways to optimize your dashboards for speedy loading.

- **Determine the source of the issue.** Sometimes long load times are caused by your data, your dashboard, or a combination of the two. Wherever possible, especially on production views, perform calculations in the database to reduce overhead. Aggregate calculations are great for calculated fields in Tableau, but perform row-level calculations in the database when you can.
- **Limit data in your dashboard.** You can achieve this either by creating filters on a data source or creating an extract. Extracts are typically much faster than a live data source, and are especially great for prototyping. Keep in mind that extracts are not always the long-term solution. When querying against constantly-refreshing data, a live connection often makes more sense when operationalizing the view.

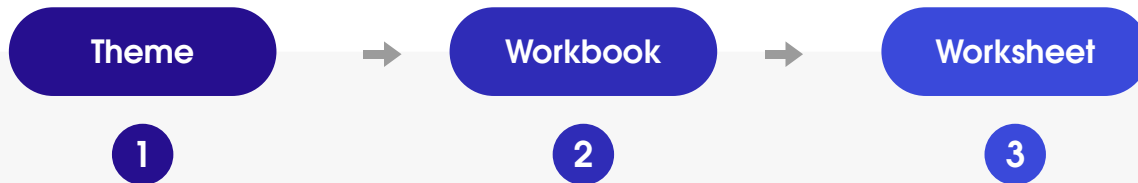
For more optimization tips

- Check out the blog, "[How to Improve Dashboard Load Times with People and Processes](#)".
- Consult the [How to Optimize Workbook Performance](#) in the Online Help. Knowing Tableau's Order of Operations may also help you shave time off your load times.

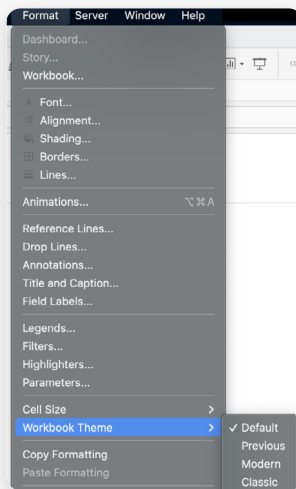


Tips and tricks for designing dashboards efficiently

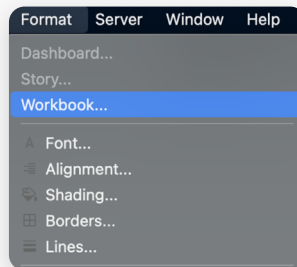
As you change the look and feel of your work, use a “largest to smallest” workflow. This will help you work quickly and keep you from accidentally overwriting your changes. From a formatting perspective, the hierarchy of a dashboard looks like this:



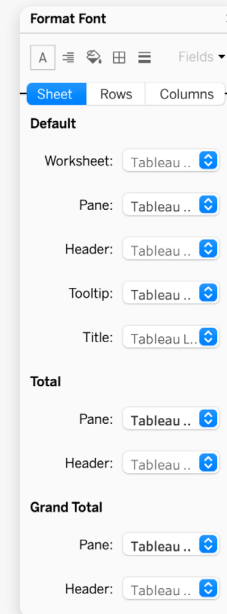
Start by confirming that you’re using the right theme (Tableau’s latest and greatest is always called Default). Choose one by going to Format > Workbook Theme.



Next, format at the workbook level. Here, you can change fonts, titles, and lines across your entire workbook. Then, create consistency with formatting. Select Format > Workbook in Tableau to adjust the formatting for your entire workbook.



Finally, move on to the worksheet level. For example, you might want to remove all the borders in a text table or add shading to every other column in a view. Save this step for last because when you make formatting changes at this level, they apply only to the view you’re working on.



For tips on how to quickly give your dashboard a new look, including how to use your own custom fonts and colors, check out [Rebrand a Dashboard](#) in the Online Help.

“It’s easy to be distracted by formatting and finding the perfect color, size, and position for elements. It’s best to do this towards the end, after reviews by the end users, to not waste effort because entire charts suddenly change and all formatting is lost.”

ALEXANDER WALECZEK, ANALYTICS PRACTICE LEAD AND TABLEAU AMBASSADOR

Add the finishing touches

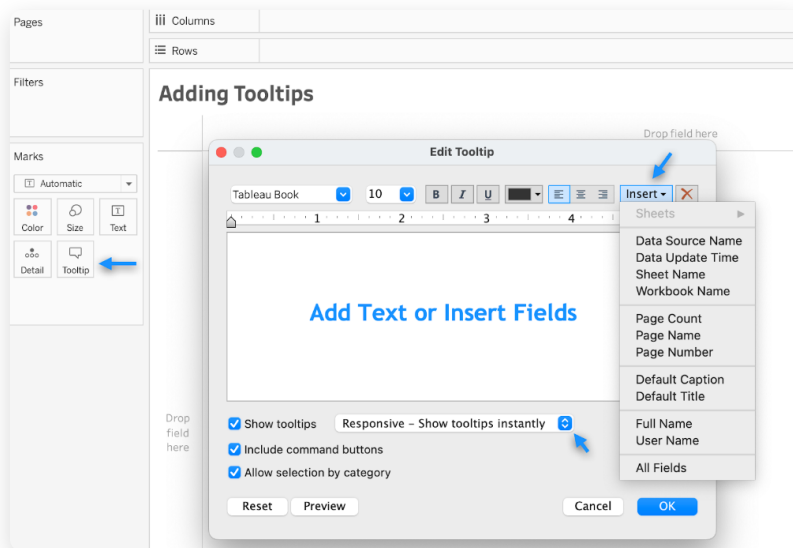
Tooltips help you take dashboards up a notch by integrating important details that add clarity for your audience. Here are a couple ways to use them most effectively.

Use tooltips to reinforce your story

Once you're done with the main design work, take a look at your tooltips. Tooltips are a fantastic opportunity to reinforce your dashboard story and add helpful context to your view.

How to add tooltips

Tableau populates a view's tooltips automatically, but you can easily customize them by clicking Worksheet > Tooltip.

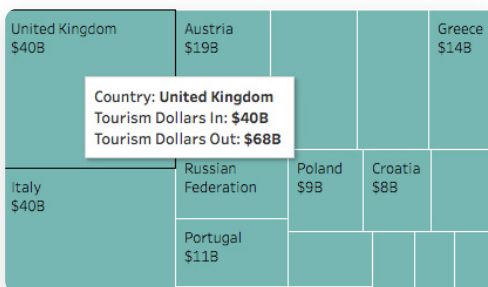


When creating tooltips, you can add from fixed text and other worksheets in the book to fixed links.

Expert tip

Put the most important elements of your tooltip at the top to highlight the most important information.

International Tourism by Region and Country



At first glance, this tooltip doesn't tell users what they need to know— what is the international tourism income for each country, related to its overall GDP?



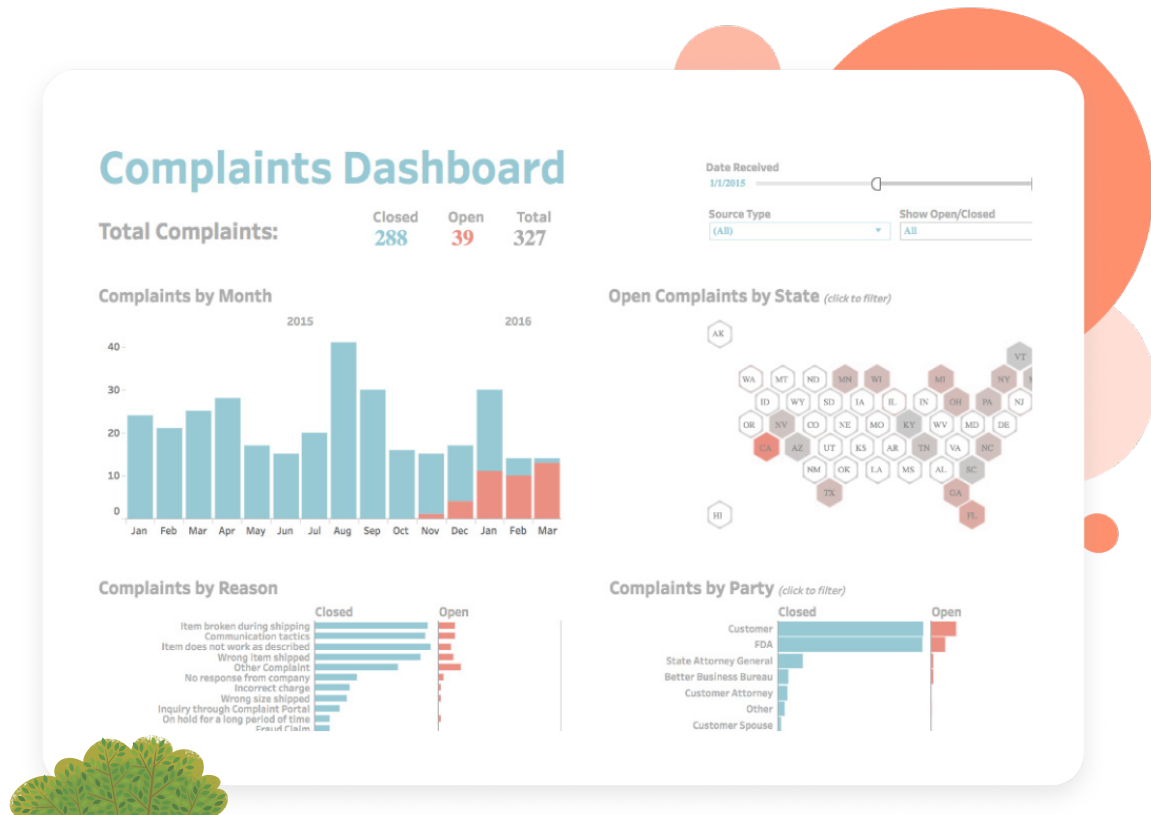
This revised tooltip emphasizes the most important elements—the country, its inbound and outbound tourism dollars, and the GDP of the country.

Always remember — less is so much more

Excess information, confusing graphics, and unnecessary features can also make a dashboard difficult to use and understand.

Take a step back and consider your dashboard from the perspective of someone who’s never seen it. Every element should serve a purpose. If a title, legend, or axis label isn’t necessary, consider getting rid of it.

Simplifying your dashboard design is often an iterative process, so keep going back to existing dashboards with fresh eyes. To start, look at the latest dashboard you created: Does it have too much on it? Is there anything you can remove or rearrange to add clarity?



This dashboard is a good example of simple, clean design. When you eliminate clutter and simplify your colors and layout, it is much easier to understand the data and gain insight.

Source: Complaints Dashboard, [The Big Book of Dashboards](#)

Test your dashboard for usability

After you build a prototype, ask your audience how they're using the dashboard and if it helps them answer their pressing questions.

Have they created their own versions of the dashboard? Are they digging into certain views and ignoring others? Use this information to tweak the existing dashboard or develop new ones. Learning how your dashboards are received will help inform future designs and influence how data is leveraged within your organization.

5 Must-Ask Questions to Evaluate Your Dashboard's Usability with Stakeholders: A Post-Project Check-In

The questions below can help you gather feedback, identify areas of improvement, and ensure that your dashboards meet your stakeholders' goals.

- 1 How has the dashboard impacted your decision-making process and overall performance?
- 2 Are there any specific features or functionalities that you find particularly helpful or lacking in the dashboard?
- 3 How much effort does it take to find the insights you need?
- 4 How are you acting on insights from the dashboard?
- 5 Which insights from the dashboard are most relevant and actionable? Which are not?



Resources

Ready to learn more about building dashboards with Tableau? Check out the following resources.

Reference

[The Big Book of Dashboards](#)

Tableau Blog

[How to Improve Dashboard Load Times with People and Processes](#)

[5 Tips for Mobile-first Dashboard Design in Tableau](#)

Tableau Online Help

[Create a Dashboard](#)

[Best Practices for Effective Dashboards](#)

[Size and Lay Out Your Dashboard](#)

[Create Dashboard Layouts for Different Devices](#)

[Build Accessible Dashboards](#)

[How to Optimize Workbook Performance in the Online Help](#)

[Order of Operations](#)



About Tableau

Tableau helps people transform data into actionable insights. Explore with limitless visual analytics. Build dashboards and perform ad hoc analyses in just a few clicks. Share your work with anyone and make an impact on your business. From global enterprises to early-stage startups and small businesses, people everywhere use Tableau to see and understand their data.



