bar chart view. This would be especially powerful with an additional data layer, such as showing sales by zip code in relation to store locations.

To help communicate more efficiently and engage your audience, consider using graphics to help complement your data visualization in these three ways:

Background
: An attractive background can be a great way to contain a data visualization while communicating what the piece is about. In my opinion, a background with a clear interior container for the charts and graphs is not a distraction, but I do caution you to leave the background as the background. Once background elements overlap or become the primary message of a data visualization, it is counterproductive and takes the end user longer to find the story that your data is sharing.

Icons
: Using icons instead of words to communicate what a number represents helps end users understand what's happening in your data visualization without them even having to read. For example, a dollar icon could be used to represent sales. Icons also help reduce language barriers in the case that your data visualization is viewed internationally.

Marks
: Think about a scatter plot showing the sales by three departments: furniture, office supplies, and technology. You could use a unique shape (i.e., Square, Circle, and Triangle) to represent each of the three departments, but this would cause the end user to look back and forth to the legend to determine which shape represents which department. One alternative would be to use graphics as your marks to cut out the middle man and help your end user process the view faster. For example, a chair, stapler, and phone could represent furniture, office supplies, and technology, respectively.

Using graphics is about first engaging your audience, and then helping them process your data visualization more efficiently.

CHAPTER 99

Tip #14: Use Freeform Dashboard Design

> Conformity is the jailer of freedom and the enemy of growth.
>
> —John F. Kennedy

Using freeform dashboard design is an easy way to tie several of these data visualization tips together including Tip #5: Use the Golden Ratio (Chapter 90) and Tip #12: Balance Data and Design (Chapter 97). Starting all the way back with Tableau version 8.0, data visualization developers have the option to not only select the overall height and width dimensions of their dashboards, but the ability to place charts, titles, filters, and graphics on the exact x and y coordinates of their choosing—down to the pixel.

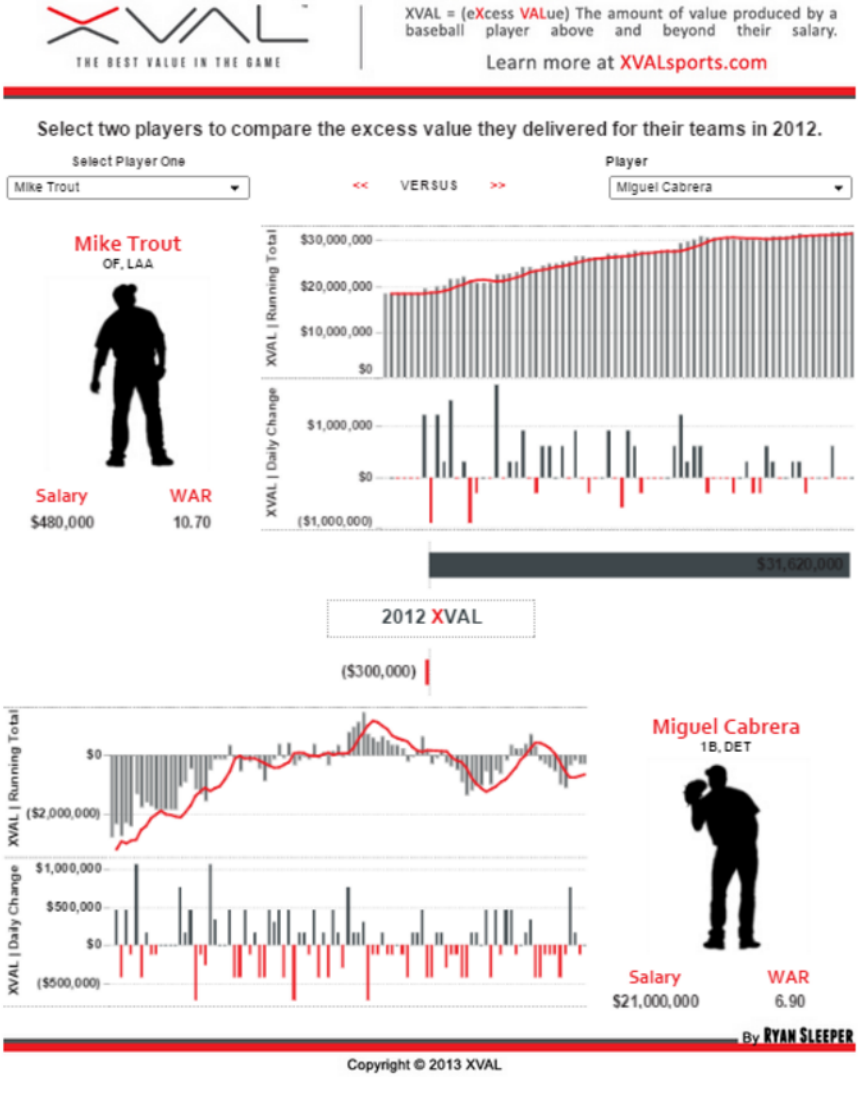
This feature is extremely powerful in that it removes all spatial restrictions and offers designers the freedom to use an entire dashboard canvas. Prior to Tableau 8, all dashboard elements had to literally fit inside of a box. The creative freedom that comes with freeform dashboard design provides additional means for engaging end users and making your data visualization worthy of sharing. The biggest benefit that I see from this update is that Tableau users can now create what are essentially *interactive* infographics. Here are just a few of the possibilities:

- Design a background image for your data visualization that is the same height and width as your final dashboard. Place the image in the dashboard first, then float all of the elements over the image.
- Experiment with the sizing and layout of icons and other graphics to create the best look and feel for your data visualization.
- Place dashboard elements in better relation to related content.

To help illustrate, take a look at a data visualization I originally created in Tableau 7, but gave a makeover in Tableau 8. In fact, this was a contest with the specific objective

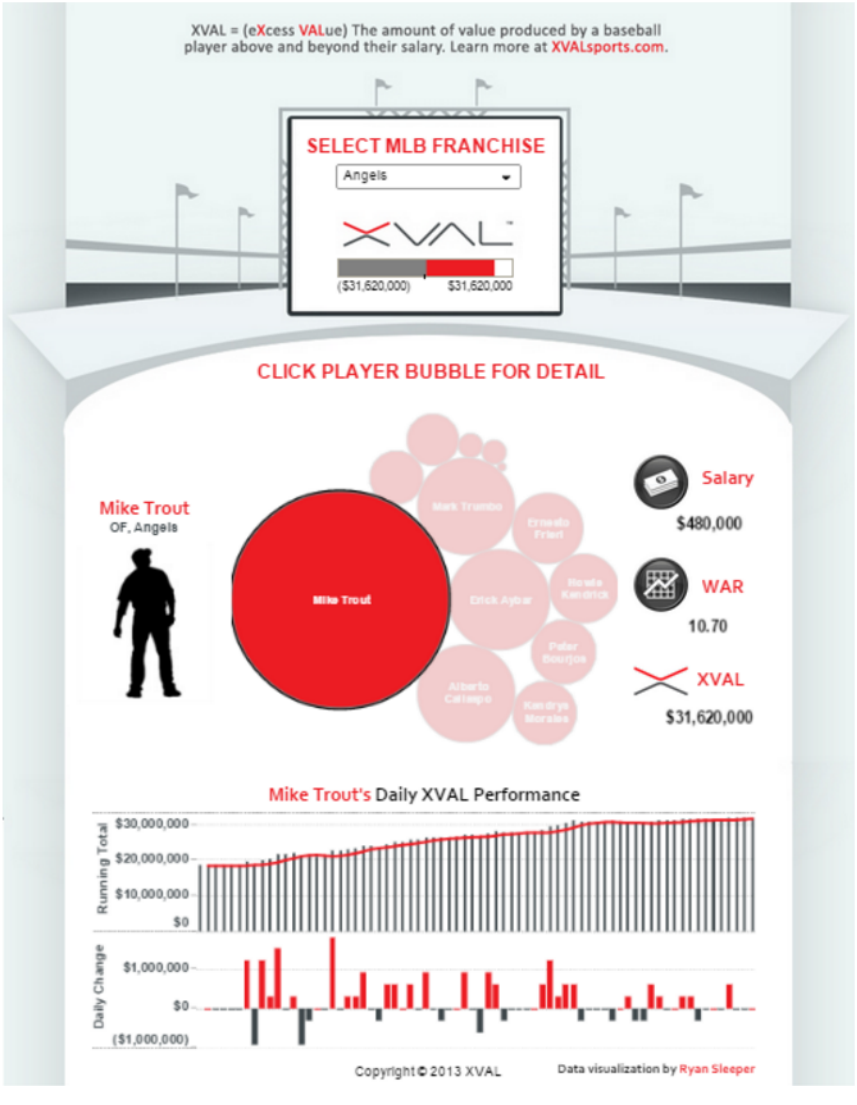
of showing off the new features in Tableau's latest product release— including free-form dashboard design.

Consider the following viz:



Notice that every item is in its own container, with no overlap. I did not have much choice but to waste a great deal of real estate in the center of the dashboard where the main player comparison takes place.

Now take a look at the freeform dashboard design:



With freeform dashboard design, I was able to create an attractive background image and float everything on top of that image exactly where I wanted it, resulting in an interactive infographic. I was also able to place icons for Salary, WAR (an advanced baseball statistic), and XVAL (an advanced baseball statistic) in better relation to their titles and values.

I would be remiss if I didn't point out that the trade-off for the type of flexibility and precision that floating objects provide is that they require additional effort and atten-

tion to detail. Most beginning Tableau users start with tiled objects, and that is the best choice for rapid iteration. Starting with tiled objects is perfectly OK, but as your skills progress, you will find the most flexibility and design-friendly options with floating objects.

CHAPTER 100
Tip 15: Tell a Story

> Storytelling is the most powerful way to put ideas into the world today.
>
> —Robert McAfee Brown

In an ideal scenario, the stories in your data are so compelling that they are self-explanatory. Unfortunately, this is rarely the case. What's worse, at times we are so close to the data and insights that we don't realize that our data visualizations need additional context in order to be properly understood.

If we want our data visualizations to be understood, elicit sharing, and—eventually—*cause action*, we need to help tell the data-driven stories in our dashboards. Here are just a few ways to help complement a data visualization with written anecdotes:

- In Chapter 92, I remind data visualization practitioners to "not neglect the set-up." By adding some context to open a dashboard, you clearly communicate what your work is about. This works even better if you are able to ask a single question that the rest of your dashboard attempts to answer. This guides end users and helps them find the answer on their own, giving the discovered insights a better chance to stick with your audience.
- I also use "inline insights" as a tactic for communicating my analysis of the data. To do this, I will simply build a text box into my data visualizations that provides real estate for me to add my own two cents about my findings and recommendations.
- Thirdly, don't underestimate the power of annotations. Many times, the practice of data visualization is extremely dependent on context. For example, if I am analyzing web analytics data and see a large spike in traffic, I would like to know what offline tactics may have driven the spike. I may be able to see that the spike was a result of an increase in direct traffic, but without input from advertising stakeholders, I will not be able to fully explain the trend. Perhaps our company

launched a television commercial during the timeframe in question. These are the pieces of context that I like to add in the form of annotations.

- Finally, if you have a chance to be in the room when an end user interacts with your data visualization, try to—literally—*tell a story*. Why did you make the visualization? What were the key findings? What *actions* should we take next?

With a firm grasp on the technical tactics in Tableau, a strategic approach to data visualization, and some elements of storytelling, your work will have the best-possible chance at causing positive actions.

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About the Author

Ryan Sleeper is a data visualization designer, author, speaker, trainer, and consultant specializing in Tableau. He is the only person in the world to earn all three titles of Tableau Zen Master, Tableau Iron Viz Champion, and Tableau Public Visualization of the Year author.

Colophon

The animal on the cover of *Practical Tableau* is a Malachite Kingfisher (*Corythornis cristatus*). There are five subspecies of kingfisher, and this one is small, measuring around 5.1 inches in length.

Its upperparts are blue, and it has black banding with green and blue on its forehead. Adult birds have bright metallic blue upperparts and bright red legs. Their heads have a crest of black and blue feathers, and there are white patches on the throat and back of the neck. Young birds have black bills, whereas adults have reddish-orange bills.

Malachite kingfishers typically nest in tunnels above water, burrowing upward into the nesting chamber. They lay eggs on a pile of fish bones and other debris. Kingfisher's calls are short and shrill, described as a chuckling *li-cha-cha-chui-chui*.

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