

# Data Visualization Makes Your Life Easier — See for Yourself!

by Mara Calvello



## What is data visualization?

Data visualization is the process of translating data and metrics into charts, graphs, images, videos, and other visual reports. These visualizations are then used to help companies have a clearer understanding of their performance and goals.

No matter the industry in which your business falls into, chances are you have a large amount of data at your fingertips. Unfortunately, data is only as good as what we make of it, and it serves no purpose when it's just sitting in a data center, completely unused and ineligible. However, when it's correctly processed, data can be digital gold to your business.

When utilizing data visualization, the main goal is to be able to easily read and understand [big data](#) to identify patterns, trends, and outliers in large datasets.

There are many ways to visualize data. Let's go over a few of the most common you'll see when it comes to business intelligence.

# The science behind data visualization

A lot goes into data visualization as it's so much more than just making pretty visuals for company presentations. To really take a deep dive into it, we first need to understand how humans gather and process information.

It all comes down to the work of psychologists Amos Tversky and Daniel Kahn, whose research on how we form thoughts can be broken down into two methods:

- **System I:** Thought processing that is fast and automatic. Humans use this often in our daily lives to do things like read text on a sign, determine the source of a sound, solve  $1 + 1$ , and recognize two colors.
- **System II:** Describes slow, logical, and infrequent calculations. This would be like reciting a phone number, solving for  $28 \times 34$ , understanding complex social cues, and distinguishing the meaning between two signs side-by-side.

With these two systems defined, Kahn was able to explain why humans often struggle to think in terms of statistics. He believes that the thinking behind System I is based on heuristics and biases as humans handle the volume of stimuli that we encounter daily. Examples of heuristics are trial and error, an educated guess, or common sense.

Thanks to these two systems, as well as biases and heuristics, it's important that we ensure that data is presented in a way that correctly works within the System I thought process. When it does, it allows for System II to analyze the data correctly.

Because we process more information through vision than any other sense, data visualization is the perfect way to communicate patterns and insights that we can get through large amounts of data.

## Data visualization examples

When data visualization was starting to gain popularity, the most common technique that businesses were using was spreadsheet software to transform data into a table. Some other common types include charts, graphs, maps, dashboards, and infographics.

Now, there are many more types of data visualization, and some get very specific with how they show data. These include heat maps, Gantt charts, scatter plots, box charts, bubble clouds, cartograms, timelines, treemaps, word clouds, and more.

Which type you choose is going to depend on what sort of trend or pattern you want to showcase. For instance, a line chart displays upwards and downwards trends, while a pie chart easily shows proportions.



No matter which type of data visualization you choose to use to showcase specific patterns and trends, it should have three main elements:

1. Clean data that is accurate and well-sourced
2. Design elements that showcase the data visually
3. Shareability with your specific audience

When all three come together, a visual masterpiece of data is created.

## How to get started with data visualization

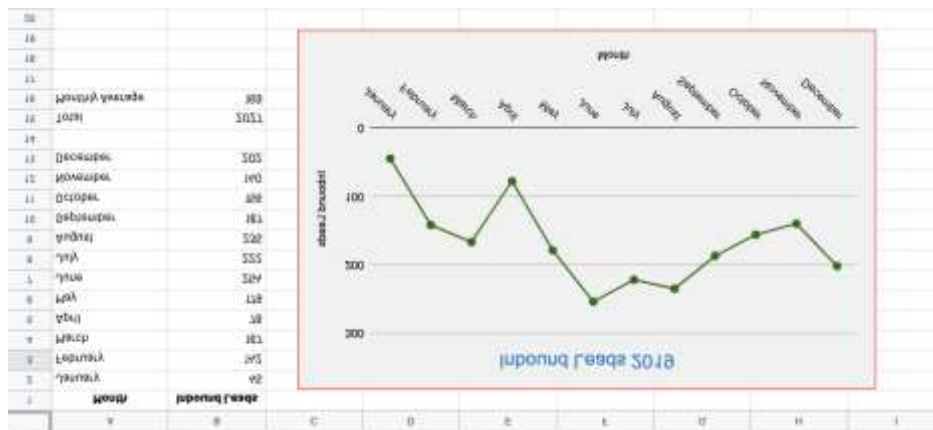
You now have a firm grasp on what data visualization means, so the next step is to actually start visualizing your business intelligence data.

The process of going about this takes five steps:

1. **Collect:** Obtain the data you need. Data can be collected from a number of resources, like a file on a computer or other types of digital documents.
2. **Prepare:** Parse through the data that is collected and filter it as you see fit. Not everything within a large dataset is going to be applicable to the goal you have set. Then, apply statistical methods to discover patterns within the data.
3. **Visualize:** Choose the method by which the data will be shown. This could be a bar graph, pie chart, heatmap, or line graph.
4. **Generate report:** Create the report to make sure it is clear and engaging. Consider basic colors, graphic design theory, size, shape, and labels to make sure it gets the best message across.
5. **Share:** Present the findings that the data shows to other members of your team.

One of the easiest ways to practice data visualization is by getting familiar with spreadsheet software like Google Sheets and Microsoft Excel. Learning a handful of basic formulas and chart formats, as well as design elements like what makes one chart stand out over another, will come in handy when creating compelling visualizations.

Below you can see a simple line chart that you can create using a spreadsheet.



While this isn't the fanciest and most complex data visualization, it's a quick and simple way to showcase your findings if you don't have much time or much experience with data.

Even though the data on the left and the data on the right is the same, the data within the line graph makes it easy to follow the trends of inbound leads month to month and see the dip in inbound leads in April as well as the surge in May.

## The importance of data visualization

For companies with larger sets of data from multiple sources, it may be useful to consider data visualization software. Instead of having to input data yourself or link multiple spreadsheets, these tools automate the entire data collection and visualization process with many more charts and graphics options.

Most data visualization tools will integrate with other software in your tech stack. For example, you can have your CRM and marketing automation metrics visualized in a single space instead of having to bounce between tools. Overall, it's more efficient.

Another advantage of these tools? Real-time updating.

Spreadsheets may be a free option for simple data visualization, but the data is often retrospective and won't provide a clear picture of what to expect next. If a company relies on real-time data, having a tool that provides these insights on both mobile and desktop can be a huge plus.

Whether data visualization is being used to show changes over time, display correlations between relationships, or determining complex metrics, it is often the most effective way to get a point across.

## Benefits of data visualization

Our eyes are naturally drawn to colors and patterns. We can quickly identify orange from blue and a circle from a triangle. We are naturally visual beings, which is why we so often gravitate towards magazines, television, and movies. Data visualization is just another form of this, making it easy to identify trends and patterns in charts.

Because of this, there are many benefits to utilizing data visualization:

- Gives people the ability to absorb information quickly, improve insights, and come up with faster and more accurate decisions
- Monitors company key performance indicators (KPIs)
- Increases understanding of what the data shows and what next steps will be
- Tracks and visualizes static and live metrics
- Provides the ability to share insights with everyone as it easily distributes information
- Eliminates the need for businesses to rely on a data scientist to understand the data
- Companies can achieve success faster and with fewer mistakes
- Identifies areas of the business or business plan that need more attention

## Who uses data visualization?

No matter which industry you find yourself working in, data visualization is important in almost every career since all industries can benefit from making data easier to understand.

Whether a teacher uses it to analyze the results of an exam or a computer scientist uses it to discover advancements within artificial intelligence, it plays an important role in big data projects.

**Sales and marketing:** Sales and marketing teams often pay attention to sources of web traffic, trends within the traffic, and how it can help the company generate revenue. Data visualization for sales makes it easy to see the ebb and flow of web traffic and how it correlates to sales and marketing efforts.



**Politics:** A common way that data visualization is used throughout politics is by utilizing geographical maps that show the party of each state, as well as how each district voted in various campaigns and elections.



Source: [NYTimes](#)

**Healthcare:** Those in the healthcare industry typically use choropleth paths, like the image above, to see health data. These maps show specific geographical areas that are assigned a specific color in relation to a numerical value.

This makes it easy for healthcare professionals to see how each variable, such as mortality rates of lung cancer, changes across specific regions.

For every 100 U.S. adults...

4 KNOW THEY HAVE SLEEP APNEA<sup>1,2</sup>



22 DON'T KNOW THEY HAVE IT<sup>1,2</sup>

Take our sleep apnea quiz and see if you should talk to your doctor.  
[ResMed.com/quiz](https://www.resmed.com/quiz)

1 Peppard PE et al. Am J Epidemiol 2013 | 2 Young T et al. Sleep 1997

Source: [Modus](#)

**Finance:** Professionals within the finance sector may find themselves using data visualization as a way to track the performance of their investment decisions when knowing if they should buy or sell an asset.



A type of visualization called a candlestick chart can be used as a tool to see how the price has changed over time, detect trends, and display important information.

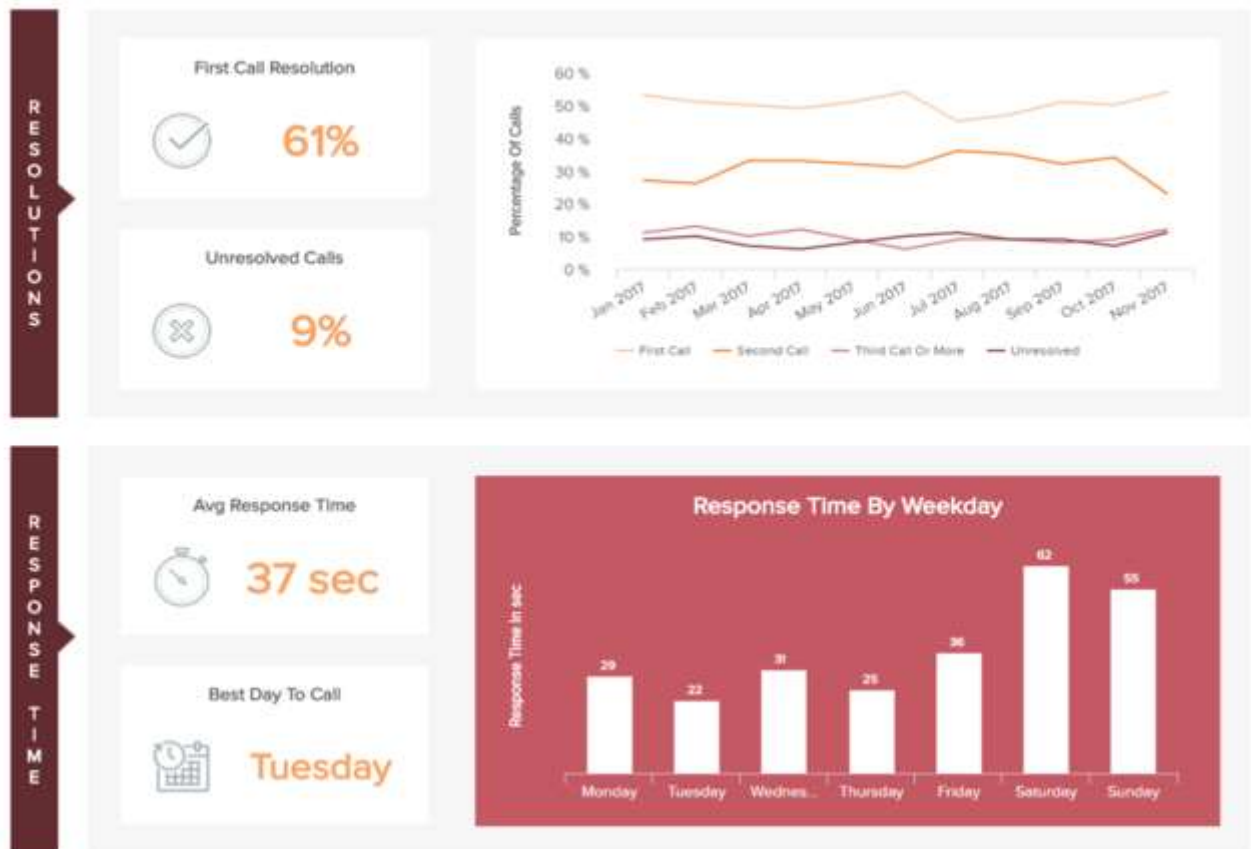


Source: [Forbes](#)

**Customer service teams:** Whether a customer service team is in a contact center or receiving questions from customers through a help desk, there are a variety of instances where data visualization can be used.

For instance, representatives can visualize the number of calls they have taken that day, how many are waiting to be answered, and how long the average call has been. For support teams, they'll be able to see how many tickets they have resolved and how many are still in the queue.

## Call Center Team Dashboard



Source: [Data Pine](#)

**C-level executives:** As a C-suite employee, data visualization is used to monitor KPI dashboards to keep track of all company goals and how they're progressing. This ensures that a CEO doesn't have to take the time to check in with every team, but so they can track metrics in one place. Similarly, C-level executives can take dashboards into important board meetings to help illustrate how the company is performing as a whole.

As an example, checkout the data visualization we at G2 once used to see where we were on specific goals, how far it was through the month, and more.





## Data visualization tools

When it comes to [data visualization software](#), there's a wide variety of options you can choose from. This software translates data and metrics into charts and graphs to help companies track business metrics and key performance indicators in real-time.

These tools are specifically designed to benchmark and visualize important metrics and are not intended to be used for data analysis. While some of these products may offer drill-down or data-joining functionality, their primary purpose is to provide dashboards and visualizations to monitor data.

Here's a look at the top ten data visualization software from G2's Spring 2020 Grid® Report.

**DISCLAIMER:** Some reviews may be edited for clarity.

### 1. SAP Lumira

SAP Lumira makes it easy for users to take full advantage of the massive amounts of data available to their business. It seamlessly makes sense of all data on multiple platforms to go beyond spreadsheets and basic data presentations. Best of all, it does this without predefined scripts, complicated queries, or complex reports.

#### What users like:

“SAP Lumira enables our company to interpret massive amounts of internal data available and turn it into a visual report. This helps allow a sense of all data in various layouts and interpretations to better business decisions and modifications. The software helps us do complete reporting and is an easy to use and understand platform with limitless options to present our data, sort, and find it.”

- [SAP Lumira review](#) by Trevor C.

#### What users dislike:

“The only thing I don’t like about SAP Lumira is the limitations related to standard graphs and charts available. Sometimes we need to take technical help to implement custom graphs and charts. This should be improved and functional users can drag and drop charts or plug in to use new charts and graphs.”

- SAP Lumira review by Avishek K.

## **2. Google Chart Tools**

Google Chart Tools is a powerful, simple to use, and free way to create interactive charts using a rich gallery of data tools. Users can customize charts so they are unique to their company’s data, and easily connect charts and controls into an interactive dashboard.

### **What users like:**

“I love that Google Charts is a free service. I like the fact that it is not hard to create a chart with this tool. Google Charts have reasonable defaults, but can also be customized in countless ways. I love the fact that with the Google Chart, you can easily see the data at hand. You do not have to work too hard to figure things out. I feel like it is better than the line bar.”

- Google Chart Tools review by Jasmine M.

### **What users dislike:**

“What I don't like about Google Chart Tools is the navigation options...too many clicks to get to where you need to go. I'm not sure of the costs, but I do know it costs the company extra money to maintain it on each of our computers.”

- Google Chart Tools review by Lani C.

## **3. Databox**

Databox gives users the ability to connect all of their data in one place, visualize performance trends, monitor progress toward your goals, make more informed decisions, collaborate and report as they go with custom views, and take deep-dives for each function in their organization. This tool tracks the performance of a company, teams, and individuals anytime and anywhere.

### **What users like:**

“Databox is able to integrate way more platforms and data sources than any others that I know (without spending an arm and a leg). The integrations are also simple to set up on your own, which proves to me that they have an effective and replicable system on their backend. A lot of other competitors require their own team to set up integrations for you, which usually indicates that their solution is too clunky and unpredictable to make available for customers to do it themselves. It is for the exact opposite reason that Databox is awesome and my preferred choice for an aggregated reporting tool.”

- Databox review by Samuel P.

### **What users dislike:**

“Some parts of it are slightly prone to bugs - sometimes number formatting can be difficult to understand, you're limited to the amount of data you can collect per query, so you have to work around this with their in-built calculation tools. Compared to more expensive competitors, there are fewer options for customization and the BI options such as modeling, prediction and data discovery are limited.”

- Databox review by Rory B.

## **4. Mode**

Mode helps organizations make better decisions by unlocking the value in their data. As the single source of truth for ad hoc analysis, data tools, and dashboards, Mode's collaborative analytics platform makes a profound impact on an entire organization's ability to use its data effectively.

### **What users like:**

“Mode is a software that is flexible and combines different forms of database storing to achieve a truthful result. When using Mode, I like that we can style reports in different methods such as JavaScript, HTML, and others. Scheduling reports to be sent to customers is pretty easy and takes no time to do, as well as storing data that can be searched easily in case someone requests it. I think that Mode is a software that is very visual, and it comes with features that are pretty and interactive, therefore they are easy to use.”

- Mode review by Alexia W.

### **What users dislike:**

“The only downside to working within Mode is the speed of editing and running notebooks. Queries themselves are very fast, but editing the notebooks is slow enough that I usually build them out to almost full functionality outside of Mode before copying them in.”

- Mode review by Joseph V.

## **5. Visme**

Visme is an intuitive online tool that allows non-designers and professionals to create beautiful interactive presentations and infographics right in their browser. It provides a great starting point with hundreds of easy-to-edit templates and thousands of icons and images, along with the ability to upload your own assets, and add media (including video and audio) to create compelling visual content that goes beyond traditional content.

### **What users like:**

“It's so intuitive! It's very drop and drag, and similar to other programs which makes it easy to adopt. You can make presentations, reports, files, etc. Even better, you don't have to be a graphic designer, they have built-in shapes, forms, and more, to make it easy to make graphics!”

- [Visme review](#) by Emily M.

### **What users dislike:**

“I would love to see Visme take their platform and build a video creation tool for shareable social videos. For example, simple text and graphic posts that have animated text fly in and out. The only other thing I wished it could do is once you save your presentations as a PowerPoint.”

- [Visme review](#) by Ian C.

## 6. Google Data Studio

Google Data Studio provides users the ability to transform raw numbers into beautiful visuals with just a few clicks, for free. Data Studio lets you effortlessly connect to all your data and turn that data into beautiful, informative reports that you can fully customize, present, and share.

### What users like:

“The data is updated automatically when linking it to any platform that I want to measure, I can add new panels and obtain different KPI combinations to better measure the results of the work done, it is fully customizable and I recently discovered that in the same panel I can visualize data from multiple platforms.”

- [Google Data Studio review](#) by Andrea T.

### What users dislike:

“With the current functions I am more than satisfied, however, I would recommend that they expand the amount of compatibility to extract data automatically as emails, in the same way, have pre-designed templates for the most common platforms so as not to have to do it through third-party plugins.”

- [Google Data Studio review](#) by Constanza M.

## 7. DashThis

DashThis is a digital marketing reporting tool integrated with over 30+ data sources, plus its own file manager that helps users add any other data they might have to their wide variety of dashboards. It also features above and beyond customer support, so users aren't left alone with a question regarding one of its features.

### What users like:

“I love that it has simple, clean designs that make complex data digestible to our clients and internal staff. It's a great way to monitor the progress of our efforts and the impact of various tactics that utilize multiple 3rd-party platforms. Integration is easy, fast, and data visualizers can be customized.

I've tried a lot of different reporting platforms in my time and have been discouraged by their learning curves. DashThis gives you a personal point of contact who can walk you through set-up and implementation and is so quick to respond. My favorite aspect of DashThis is the clean design of the dashboard organizer and the process of integrating outside platforms is SO easy.”

- [DashThis review](#) by Madison L.

### What users dislike:

“I wish that with one report you could compare different time frames. Currently, to compare year over year, you have to have a separate report to also look at month over month.”

- [DashThis review](#) by Megan S.

## 8. iDashboards

iDashboards provides easy-to-use, visually appealing, and cost-effective data visualization software for clients in a wide variety of industries. With customizable and flexible dashboard solutions that easily integrate with key data sources, users can quickly and effectively view and analyze critical performance metrics, ultimately leading to enhanced decision-making capabilities.

### What users like:

“iDashboards allows us to make large amounts of data available to all staff. This keeps everyone informed on our progress toward goals. Customer support is very responsive and always able to help us solve whatever problem we might encounter. Updates are communicated in advance and well thought out. It's easy to use and learn.”

- [iDashboards review](#) by Rebecca S.

### What users dislike:

“The errors displayed within the charts can sometimes be confusing. However, the support team, user manual, and the knowledge base articles have been really helpful in diagnosing where the problem lies. The ability to slice up a custom layout for a dashboard has to be done in a very methodical manner which takes some trial and error to finally get to the desired layout...that is one aspect which could use some improvement.”

- [iDashboards review](#) by Chad G.

## 9. Geckoboard

Geckoboard offers users quick-to-setup live TV dashboards that improve key metrics your business uses to make decisions. Using Geckoboard, businesses set goals for their most important metrics and monitor their up-to-the-minute progress towards each metric on TVs around the office. As a result, users are able to stay focused and optimize their activity to drive faster growth.

### What users like:

“It's completely configurable. Need something specific to your use case? Just use custom components! The API is super simple, pull or push. We were able to quickly produce an API wrapper which we use to push all kinds of data to our various boards, and it's simple enough that the display is understood by almost all employees here at the company. We love having it displayed during meetings, and it's one of the most commented aspects of the meetings that we get feedback about.”

- [Geckoboard review](#) by Kori F.

### What users dislike:

“I wish there was an easier way to customize the dashboard without uploading a CSS file. It would also be nice to be able to indicate data type when creating a widget (currency, percentage, etc.). A drag and drop theme editor would be great!”

- [Geckboard review](#) by Jordan E.

## 10. Grapher

Grapher is a fully-function graphing application for scientists, engineers, and business professionals. With over 80 unique graph types, data is quickly transformed into knowledge. Virtually every aspect of the graph is customizable. Users can easily enhance graphs with legends, titles and labels, summation plots, graph magnifiers, and statistical reports.

### What users like:

“I really like the speed of the software and how easy it is to make a graphic. The interface is very intuitive and easy to use. The documentation of the software is very complete. The PDF manual is excellent and the help of Grapher also. I would like to include examples made by users.”

- [Grapher review](#) by Alberto V.

### What users dislike:

“It can be somewhat of a hassle to move and edit lines and other figure additions on a plot. I would like to see the lines, arrows, etc. move/scale with the graph. I would like to have a default font style option so that I do not have to continue to change styles when adding headings.”

- [Grapher review](#) by Brandon B.

## Make an impression with data visualization

In today’s high-velocity business environment, it’s all about “how fast can you get me results and in what ways can you show me the success?” Time is money, and if you’re planning on an hour-long, text-filled presentation to your directors and stakeholders, you might want to reconsider.

Instead, a well-designed presentation with a few visuals displaying KPIs will have much more of an impact. Of course, being able to describe the content of these visuals will only help your cause.

So, the next time you’re asked to present the results of last quarter’s marketing efforts, be sure to explore your data visualization options.