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13 Essential Data Visualization Techniques, Concepts & Methods To Improve Your Business – Fast

By Bernardita Calzon in Dashboarding,
May 11th 2022



“By visualizing information, we turn it into a landscape that you can explore with your eyes. A sort of information map. And when you’re lost in information, an information map is kind of useful.” – [David McCandless](#)

Did you know? [90% of the information](#) transmitted to the brain is visual.

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data-driven insights to formulate actionable strategies and implement valuable initiatives is essential. Digital data not only provides astute insights into critical elements of your business but if presented in an inspiring, digestible, and logical format, it can tell a tale that everyone within the organization can get behind.

Data visualization methods refer to the creation of graphical representations of information. Visualization plays an important part in data analytics and helps interpret big data in a real-time structure by utilizing complex sets of numerical or factual figures.

With the seemingly infinite streams of data readily available to today's businesses across industries, the challenge lies in [data interpretation](#), which is the most valuable insight into the individual organization as well as its aims, goals, and long-term objectives.

That's where data visualization comes in.

Due to the way the human brain processes information, presenting insights in charts or graphs to visualize significant amounts of complex data is more accessible than relying on spreadsheets or reports.

Visualizations offer a swift, intuitive, and simpler way of conveying critical concepts universally – and it's possible to experiment with different scenarios by making tiny adjustments.

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shorten business meetings by 24%.

Moreover, a [business intelligence strategy](#) with visualization capabilities boasts a ROI of [\\$13.01 back](#) on every dollar spent.

Therefore, the visualization of data is critical to the sustained success of your business and to help you yield the most possible value from this tried and tested means of analyzing and presenting vital information. To keep putting its value into perspective, let's start by listing a few of the benefits businesses can reap from efficient visuals.

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Benefits Of Data Visualization Skills & Techniques

As we just mentioned in the introduction, using visuals to boost your analytical strategy can significantly improve your company's return on investment as well as set it apart from competitors by involving every single employee and team member in the analysis process. This is possible thanks to the user-friendly approach of modern [online data analysis tools](#) that

use data in the shape of interactive graphs and charts in their decisions making process. Let's look at some of the benefits data visualization skills can provide to an organization.

- **Boosts engagement:** Generating reports has been a tedious and time-consuming task since businesses and analytics came together. Not only are static reports full of numbers and text quickly outdated, but they are also harder to understand for non-technical users. How can you get your employees to be motivated and work towards company goals when they might not even understand them? Data visualizations put together in intuitive dashboards can make the analysis process more dynamic and understandable while keeping the audience engaged.
- **Makes data accessible:** Following up on the accessibility point, imagine you are an employee that has never worked with data before, trying to extract relevant conclusions from a bunch of numbers on a spreadsheet can become an unbearable task. Data visualizations relieve them from that burden by providing easy access to relevant performance insights. By looking at well-made graphs and charts, employees can find improvement

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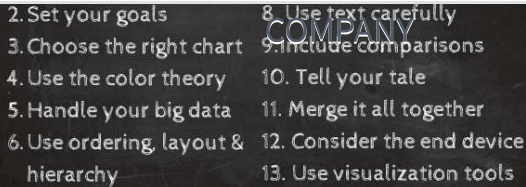
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instance, your marketing team can monitor the development of their campaigns and easily understand at a glance if something is not going as expected or if they exceeded their initial expectations.

- **They save time:** No matter the business size, it is very likely that you are working with raw data coming from various sources. Working with this raw data as it is can present many challenges, one of them being the amount of time that it takes to analyze and extract conclusions from it. A time that could be spent on other important organizational or operational tasks. With the right data visualization tools and techniques, this is not an issue, as you can quickly visualize important performance indicators in stunning charts within seconds. Like this, you can build a complete story, find relationships, make comparisons, and navigate through the data to find hidden insights that might otherwise remain untapped.

13 Essential Data Visualization Techniques

- 
2. Set your goals
 3. Choose the right chart
 4. Use the color theory
 5. Handle your big data
 6. Use ordering, layout & hierarchy
 8. Use text carefully
 9. Include comparisons
 10. Tell your tale
 11. Merge it all together
 12. Consider the end device
 13. Use visualization tools

Now that you have a better understanding of how visuals can boost your relationship with data, it is time to go through our top techniques, methods, and skills needed to extract the maximum value out of this analytical practice. Here are 13 essential data visualization techniques you should know.

1. Know Your Audience

This is one of the most overlooked yet vital concepts around.

In the grand scheme of things, the World Wide Web and Information Technology as a concept are in their infancy - and data visualization is an even younger branch of digital evolution.

That said, some of the most accomplished entrepreneurs and executives find it difficult to digest more than a pie chart, bar chart, or a neatly presented visual, nor do they have the time to delve deep into data. Therefore, ensuring that your content is both inspiring and tailored to your audience is one of the most essential data visualization techniques imaginable.

Some stakeholders within your organization or clients and partners will

deeper into the insights your **COMPANY** gathered. For maximum impact and success, you should always conduct research about those you're presenting to prior to a meeting, and collate your report to ensure your visuals and level of detail meet their needs exactly.

2. Set Your Goals

Like any business-based pursuit, from brand storytelling right through to digital selling and beyond - with the visualization of your data, your efforts are only as effective as the strategy behind them.

To structure your visualization efforts, create a logical narrative and drill down into the insights that matter the most. It's important to set a clear-cut set of aims, objectives, and goals prior to building your [management reports](#), graphs, charts, and additional visuals.

By establishing your aims for a specific campaign or pursuit, you should sit down in a collaborative environment with others invested in the project and establish your ultimate aims in addition to the kind of data that will help you achieve them.

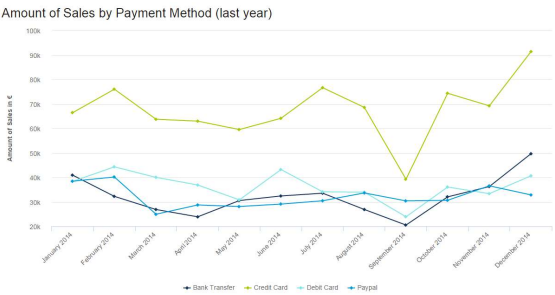
One of the most effective ways to guide your efforts is by using a predetermined set of relevant KPIs for your project, campaigns, or ongoing commercial efforts and using these insights to craft your visualizations.

Chart type

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One of the most effective data visualization methods on our list; is to succeed in presenting your data effectively, you must select the right charts for your specific project, audience, and purpose.

For instance, if you are demonstrating a change over a set of time periods with more than a small handful of insights, a line graph is an effective means of visualization. Moreover, lines make it simple to plot multiple series together.



click to enlarge

An example of a line chart used to present monthly sales trends for a one-year period in a clear and glanceable format.

Here are six other effective chart types for different data visualization concepts:

a) Number charts

Amount of Sales Year to Date vs Last Period

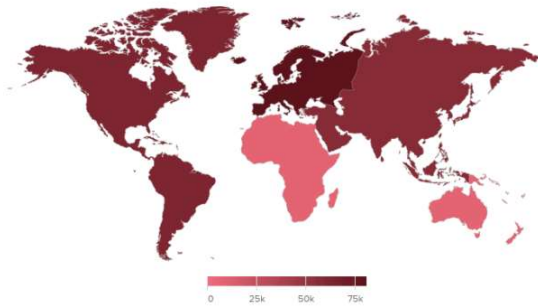
2,017,683 €

▲ 40%

looking to showcase an immediate and interactive overview of a particular key performance indicator, whether it's a [sales KPI](#), site visitations, engagement levels, or a percentage of evolution.

b) Maps

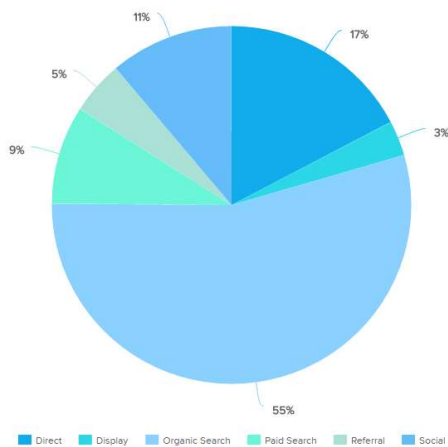
Sessions By Continent (Last 6 Months)



First of all, maps look great which means they will inspire engagement in a board meeting or presentation. Secondly, a map is a quick, easy, and digestible way to present large or complex sets of geographical information for a number of purposes.

c) Pie charts

Sessions by Channel

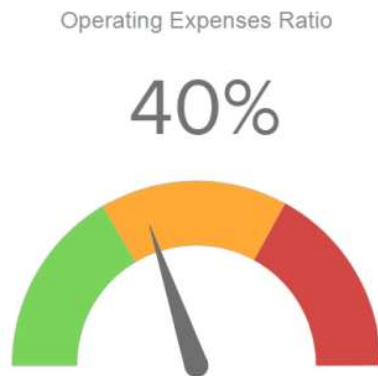


While pie charts have received a bad rep in recent years, we feel that they form a useful visualization tool that serves up important metrics in an easy-to-follow format. Pie charts prove

certain variable over a static timeframe.

And as such, pie charts will make a valuable item in your visualization arsenal.

d) Gauge charts



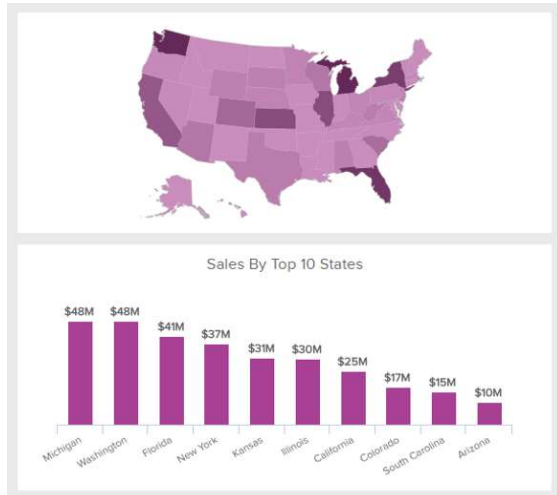
This example shows the operating expense ratio, strongly related to the profit and loss area of your finance department's key activities, and this color-coded health gauge helps you gain access to the information you need, even at a quick glance.

Gauge charts can be effectively used with a single value or data point. Whether they're used in financial or executive dashboard reports to display progress against key performance indicators, gauge charts are an excellent example to showcase an immediate trend indication.

e) Bar or column chart

One of the most common types of visuals, the bar chart is often used to compare two or more values in the same category such as which product is sold the most in the women's

interactive bar charts such as the one displayed below. There you can see a detailed breakdown of sales by country. This way you can easily understand at a glance where to focus your promotional efforts, for example.



d) Area chart

Area charts are perfect when you want to show how different values developed over time. It combines a line and a bar chart to show how numeric values changed based on a second variable. For example, we can see an area chart in action below tracking the P/E ratio. This [financial analytics](#) metric measures the value of a company's shares compared to an industry benchmark (second variable). It gives investors an idea of how much they would pay for stock shares for each dollar of earnings.



To find out more, and expand your data visualization techniques knowledge base, you can explore our selected [data visualization types](#) and a simple guide on how and when to use them.

4. Take Advantage Of Color Theory

The most straightforward of our selected data visualization techniques - selecting the right color scheme for your presentational assets will help enhance your efforts significantly.

The principles of [color theory](#) will have a notable impact on the overall success of your visualization model. That said, you should always try to keep your color scheme consistent throughout your data visualizations, using clear contrasts to distinguish between elements (e.g. positive trends in green and negative trends in red).

As a guide, people, on the whole, use red, green, blue, and yellow as they can be recognized and deciphered with ease.

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With an overwhelming level of data and insights available in today's digital world - with roughly [1.7 megabytes of data](#) to be generated per second for every human being on the planet by the year 2020 - handling, interpreting, and presenting this rich wealth of insight does prove to be a real challenge.

To help you handle your big data and break it down for the most focused, logical, and digestible visualizations possible, here are some essential tips:

- Discover which data is available to you and your organization, decide which is the most valuable, and label each branch of information clearly to make it easy to separate, analyze, and decipher.
- Ensure that all of your colleagues, staff, and team members understand where your data comes from and how to access it to ensure the smooth handling of insights across departments.
- Keep your data protected and your data handling systems simple, digestible, and updated to make the visualization process as straightforward and intuitive as humanly possible.
- Ensure that you use [business dashboards](#) that present your most valuable insights in one easy-to-access, interactive space - accelerating the visualization process while also squeezing the

6. Use Ordering, Layout, And Hierarchy To Prioritize

Following on our previous point, once you've categorized your data and broken it down to the branches of information that you deem to be most valuable to your organization, you should dig deeper, creating a clearly labeled hierarchy of your data, prioritizing it by using a system that suits you (color-coded, numeric, etc.) while assigning each data set a visualization model or chart type that will showcase it to the best of its ability.

Of course, your hierarchy, ordering, and layout will be in a state of constant evolution but by putting a system in place, you will make your visualization efforts speedier, simpler, and more successful.

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7. Utilize Word Clouds And Network Diagrams



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To handle semi-structured or decidedly unstructured sets of data efficiently, you should consult the services of network diagrams or cloud words.

A network diagram is often utilized to draw a graphical chart of a network. This style of layout is useful for network engineers, designers, and data analysts while compiling comprehensive network documentation.

Akin to network diagrams, word clouds offer a digestible means of presenting complex sets of unstructured information. But, as opposed to graphical assets, a word cloud is an image developed with words used for particular text or subject, in which the size of each word indicates its frequency or importance within the context of the information.

8. Use Text Carefully

So far, we've made it abundantly clear that the human brain processes visuals better than text. However, that doesn't mean you should exclude text altogether. When building efficient graphics with your data, the use of text plays a fundamental role in making the graphs understandable for the

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The most common text elements you can find in data visualizations are often captions, labels, legends, or tooltips just to name a few. Let's look at each of them in a bit more detail.

- **Captions:** The caption occupies the top place in a graph or chart and it tells the user what he or she should look for in that visual. When it comes to captions you should always avoid verbosity. Keep them short and concise and always add the units of measurement.
- **Labels:** Labels describe a value associated with a specific data point in the chart. Here it is important to keep them short, as too long labels can crowd the visual and make it hard to understand.
- **Legends:** A legend is a side section of a chart and it shows and it gives a brief description to help users understand the data being displayed. For example, what each color means. A good practice when it comes to legends is to arrange them per order of appearance.
- **Tooltip:** A tooltip is a visualization technique that allows you to add extra information to your graphs to make them more clear. Now, adding them under each data point would totally overcrowd them. Instead, you should rely on interactive tooltips that show the

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By following these best practices you will make sure your text brings an added value to your visuals instead of making them crowded and harder to read.

9. Include Comparisons

This may be the briefest of our data visualization methods, but it's important nonetheless: when you're presenting your information and insights, you should include as many tangible comparisons as possible. By presenting two graphs, charts, and diagrams together, each showing contrasting versions of the same information over a particular timeframe, such as monthly sales records for 2016 and 2017 presented next to one another, you will provide a clear-cut guide on the impact of your data, highlighting strengths, weaknesses, trends, peaks, and troughs that everyone can ponder and act upon.

10. Tell Your Tale

Similar to content marketing, when you're presenting your data in a visual format with the aim of communicating an important message or goal, telling your story will engage your audience and make it easy for people to understand with minimal effort.

[Scientific studies](#) confirm that humans, in large, respond better to a well-told story, and by taking this approach to your visualization pursuits, you will not

presentations, but you will increase your chances of conveying your most critical messages, getting the buy-in and response you need to make the kind of changes that will result in long-term growth, evolution and success.

To do so, you should collate your information, thinking in terms of a writer, establishing a clear-cut beginning, middle, and end, as well as a conflict and resolution, building tension during your narrative to add maximum impact to your various visualizations.

11. Merge It All Together

Expanding on the point above, in order to achieve an efficient data storytelling process with the help of visuals, it is also necessary to merge it all together into one single location. In the past, this was done with the help of endless PowerPoint presentations or Excel sheets. However, this is no longer the case thanks to modern dashboard technology.

Dashboards are analytical tools that allow users to visualize their most important performance indicators all on one screen. This way, you avoid losing time by looking at static graphs that make the process tedious. Instead, you get the possibility to interact and navigate them to extract relevant conclusions in real-time. Now, [dashboard design](#) has its own set of best practices that you can explore, however, they are still similar to the

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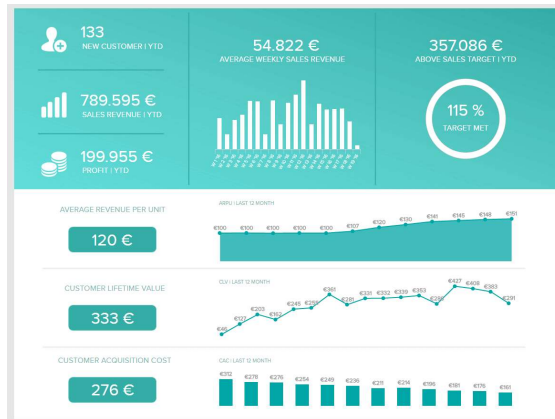
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dashboard to put all of this into
perspective.



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As seen in the image above, this [sales dashboard](#) provides a complete picture of the performance of the sales department. With a mix of metrics that show current and historical data, users can take a look into the past to understand certain trends and patterns and build an efficient story to support their strategic decisions.

12. Consider The End Device

As we almost reach the end of our list of insightful data visualization methods, we couldn't leave a fundamental point behind. We live in a fast-paced world where decisions need to be made on the go. In fact, according to Statista, [56,89%](#) of the global online traffic corresponds to mobile internet traffic. With that in mind, it is fundamental to consider device versatility when it comes to building your visuals and ensuring an excellent user experience.

one intuitive business dashboard to tell a complete story. When it comes to generating visuals for mobile, the same principles apply. Considering that these screens are smaller than desktops, you should make sure to only include the graphs and charts that will help you convey the message you want to portray. You should also consider the size of labels and buttons as they can be harder to see on a smaller device. Once you have managed all these points, you need to test on different devices to ensure that everything runs smoothly.

13. Apply Visualization Tools For The Digital Age

We live in a fast-paced, hyper-connected digital age that is far removed from the pen and paper or even copy and paste mentality of the yesteryears - and as such, to make a roaring visualization success, you should use the digital tools that will help you make the best possible decisions while gathering your data in the most efficient, effective way.

A task-specific, interactive [online dashboard](#) or tool offers a digestible, intuitive, comprehensive, and interactive means of collecting, collating, arranging, and presenting data with ease - ensuring that your techniques have the most possible impact while taking up a minimal amount of your time.

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Summary & Next Steps

As seen throughout this guide, data visualizations allow users and businesses to make large volumes of relevant data more accessible and understandable. With markets becoming more competitive by the day, the need to leverage the power of data analytics becomes an obligation instead of a choice, and companies that understand that will have a huge competitive advantage.

We hope these data visualization concepts served to help propel your efforts to new successful heights. To enhance your ongoing activities, explore our cutting-edge business intelligence and [online data visualization](#) tool.

To summarize our detailed article, here is an overview of the best data visualization techniques:

1. Know your audience
2. Set your goals
3. Choose the right chart type
4. Take advantage of color theory
5. Handle your big data
6. Use ordering, layout, and hierarchy to prioritize

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- 8. Use text carefully
- 9. Include comparisons
- 10. Tell your tale
- 11. Merge it all together
- 12. Consider the end device
- 13. Apply visualization tools for the digital age

To get a more in-depth insight on what visualization techniques can do for you, try our [14-day trial](#) completely free!

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