

The Power of Graphs to Deliver Your Business Message

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This article is about preparing and presenting graphic information in a meaningful and effective way, in order to gain understanding, support or a decision from someone.

Information is a unique resource, fundamentally unlike any other. Like other resources, one of the things you can do with information is to pass it on to others. Unlike other resources, information is the only resource that duplicates as it is transferred from one person to another. The original owner still has it and for the cost of some moments of attention, another person, the recipient, has it too.

Its value increases as it moves through a chain of events which starts with raw material (data) and ends with a finished product (knowledge in the right hands contributing to a wise decision).

No one has as much power as a person making a presentation. He – or she – controls the content, the audience, the pace and the passion. Being in front of an audience is an exceptional opportunity. Being ready for it is critical.

Here are some guidelines and assumptions to help get the results you want from a graphic presentation:

- Always know exactly what outcome you want from the presentation
- Know as much as you can about your audience
- Always assume that the audience is at least as smart as you are
- Always be prepared for any eventuality
- Be prepared to help the audience understand.

Know What Outcome You Want

Always know exactly what outcome you want from the presentation. When you prepare a graph, it is done with a goal in mind. Presentations are usually either persuasive or informative. If it is persuasive, you are perhaps seeking approval and funding from senior management, buy-in from clients or collaboration from peers. If you are seeking a decision or commitment, don't forget to ask for it prior to the end of the presentation. If it is informative, you are not trying to change someone's behavior or beliefs, you are simply presenting the facts, such as the progress on a project.

Regardless of the level or type of presentation, it is crucial that you know what outcome you want and be prepared to create the environment in which that outcome will occur. You must be clear on the desired outcome and be able to state it in a single short sentence. Only then are you ready to create and deliver the presentation.

Know the Audience

Know as much as you can about your audience. Depending on the size of the audience, you may be able to determine the values, constraints and needs of the group before the presentation. Why would this information be important? When you know the audience's values, constraints and needs, you can be sure to address them in your presentation. If the expected audience is large, you may be limited to more general ideas about the audience: are they experienced or inexperienced in the subject matter?

Respect the Audience

Always assume that the audience is at least as smart as you are. It is a common error to assume that the topic is too esoteric for the audience and therefore the solution is to simplify it. This is almost always a mistake. You do not need to *simplify* the content – you need to *clarify* the content. Clarity is the hallmark of a person who understands what he is doing.

A lack of clarity is often the result of trying to over-simplify or of actually not understanding the content or not understanding how to present it. Using acronyms, abbreviations or jargon may make it difficult for the audience to follow the presentation. Unless you are absolutely sure that the audience understands all technical terms, explain them the first time that they are used.

Be Prepared

Always be prepared for any eventuality. The advent of advanced computer presentation hardware and software programs makes it easy to deliver presentations using only a computer and a projection device. Have you been yet to a presentation where the computer failed and the presenter did not have an alternate method of delivery? If you haven't, you will.

A highly publicized presentation where this happened was at the huge High Point International Home Furnishings Market, where Faith Popcorn was the speaker. "The presentation was all done up in acid green screens, emblazoned with mauve and burgundy graphics, punctuated by pithy anecdotes and made eminently human and accessible by the sudden failure of Popcorn's electronics. Not in the least daunted, Faith forged on and ad libbed her latest prognostications."¹

If you don't have her chutzpa, then make sure you have a backup way to deliver the graphics. Have a backup copy of your presentation on CD and, if feasible, have a backup computer and projection device available if needed.

Help the Audience Understand

Most people respond well to graphics. There is, however, a smaller group who understand data in tabular form rather than graphic. Make sure that you have the data available in a form which meets the needs of both groups. Make the detailed tabular data available as a handout.

¹ As reported in the Ottawa Citizen, 23 February 1999, p E4.

Summarize at the Beginning for a Busy Audience

As a rule, the more senior the audience, the more you have to start the presentation with the main idea. For example, if the presentation is made to the CEO or public sector equivalent, start by telling her that you want \$26 million dollars for a new widget production facility – then show her why it is a good idea. It is certain to get her attention.

Senior executives expect summary information, but you must be prepared to show whatever detail they need to back up the summary. In any case, have tabular detail available as a handout.

Steps to a Successful Presentation

There are four tasks needed to prepare a successful presentation. They are:

- Analysis of data
- Selection of options
- Selection of material
- Development of presentation materials.

Analysis of the data and selection of options

Analysis of the data is necessary so that the all the rest may follow. The options, if any, to be presented are based on the underlying data. A common error in developing presentations is to skip the detail because senior management only want summary information.

It is true that they want summary information, since time is their most precious asset, but they fully expect that the summary information is resting on a bedrock of detail. In a report, for example, executives in a hurry may read only the executive summary, but they know where to find the detail. The same holds true for a presentation.

Selection of material

Selection of material is closely allied to the desired outcome of the presentation. You have to select only information that is relevant to the position being taken. It must also be current, complete and succinct. You must not fail to present any negative information which has a bearing on the proposed decision. Sometimes lying is just not telling the whole truth.

Development of Presentation Materials

Graphic displays are functional tools. What they should do is:

- Show the data
- Let the viewer think about the substance of the data displayed rather than about the method of display or the graphic design
- Avoid distorting the data's message
- Present many values in a small space
- Make large data sets meaningful

- Encourage the viewer to compare data
- Serve a purpose; describe, explore, explain, tabulate or decorate.

Much of the material in this paper is derived from three books by Edward R. Tufte, who has spent a lifetime becoming a master of graphical display of information. The three books, all published by Tufte's own Graphics Press, are: *The Visual Display of Information*, published in 1982; *Envisioning Information*, published in 1990; and *Visual Explanations*, published in 1997. Check out his books at http://www.edwardtufte.com/tufte/books_vdqj.

According to Tufte, graphical excellence:

- Is the well-designed presentation of interesting data – a matter of substance, of statistics and of design
- Consists of complex ideas communicated with clarity, precision and efficiency
- Is that which gives to the viewer the greatest numbers of ideas in the shortest time with the least ink in the smallest space
- Is nearly always multivariate
- Requires telling the truth about the data.

Data graphics are intended to display measured quantities by using a combination of colors, points, lines, numbers, shading, symbols, text and a coordinate system.

Many of us view charts of statistical data with skepticism, but there is little reason to assume that graphics are any better or worse than text at supporting lies. The graph is often confusing and deceiving because of errors made by the graphic's designer. Without proper labeling, referencing and context, a graph may be misleading and/or useless. Without proper labeling, referencing and context, at best a graph becomes a pretty picture.

Design Variation

If a graphic is to be both comprehensible and truthful, several principles should be observed. First, the representation of numbers on the surface of the graphic should be directly proportional to the underlying data. Second, the number of dimensions in the graphic should equal the number of dimensions in the data.

Third, and perhaps most important for clarity, clear and detailed labeling should be used. Avoid the use of codes, legends or anything that leads the viewer's eyes away from the graphic. Write everything out on the graphic to avoid ambiguity or loss of clarity. Remember, the aim is clarity, not simplicity.

Design variation masks real data variation. See Figure 1 as an example of design variation. It shows a 3-D design, with wide ribbons of data snaking across a very strong dark gridded background. The data variation is obscured by the unnecessary design variation. Other design variation errors can include:

- Changes in scale in both the horizontal and vertical axes
- Changes in the three-dimensional scale of objects showing cubic measure
- Failing to account for the impact of inflation or deflation when showing graphics involving money over years of time
- Changes in size of text to enhance the desired point of view – small text for low spending, large text for higher spending, as an example
- Changes in perspective to put some data in the foreground
- Failing to use a common baseline
- Failing to use a baseline of zero
- Using arrows to emphasize directionality.

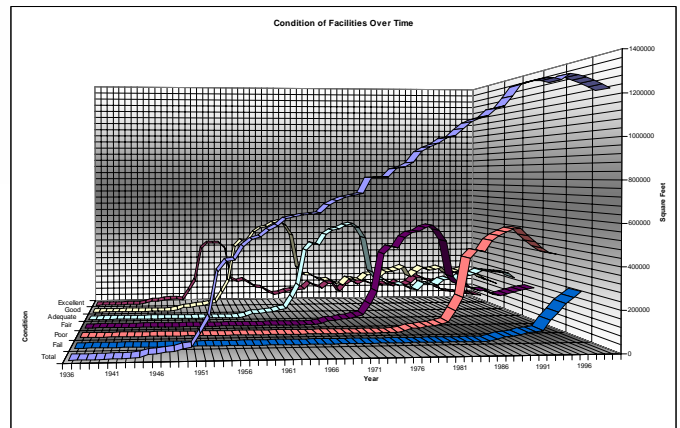


Figure 1 An example of design variation

Figure 2 is derived from exactly the same data as Figure 1. The data is used to show how a clear line graph can be created to show data variation of the percent of real estate rated poor or failing over a time scale. In this case, the data variation to be displayed is the trend towards failure of a campus of buildings.

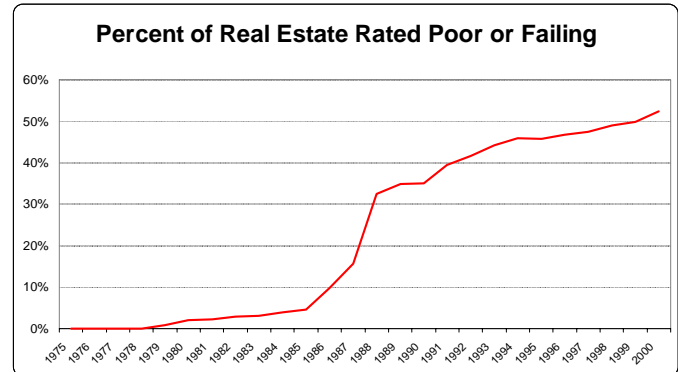


Figure 2 - A clear, clean graph from the same data as figure 1

What is the Message?

Graphics are not somehow neutral. They carry a message and the message they carry ought to be the one intended by the person who commissioned the graphic or who created it. Whenever design variation error occurs, it masks or confuses the real data variation that the graphic is supposed to be showing.

Determine what specific message we want to send to the audience. The presentation on graphs at World Workplace shows a number of graphs, all based on the same data, graphics that succeed or fail, sometimes spectacularly, to convey the intended message.

In addition to design variation, another graphic characteristic that is required for data integrity is context. The question that should always be asked is: “Compared to what?” The principle is that graphics must never show data without its context.

When creating a graphic for the purposes of making a decision, bear in mind the legal maxim: Tell the truth, the whole truth and nothing but the truth. Providing information but excluding the context is not telling the whole truth. Excluding context can be deliberate because the whole truth does not support the position being taken by the presenter, or it can be accidental because the person or persons preparing the graphic fails to understand that the context is important.

When presenting data, be clear about what linkages need to be shown.

Keeping It Clean

It takes self-discipline to not use the multitude of images, patterns and effects that are available in every spreadsheet and presentation program. Remember, the graphing tools are made by skilled computer people, who may have few skills or experience in actually presenting data using graphs.

A close analogy to using all the options is when people get desktop publishing software and discover that they have over 500 fonts – and feel compelled to see how many different fonts they can get in a single document. If this is a problem for you, take training on how to create more effective documents.

You wouldn't think of the chart background or the grid as a problem needing attention and it is therefore often ignored as a design element. Figure 1 is an example of the grid obscuring data variation. The grid is usually needed when initially setting up a chart. Once the chart is complete, the grid is redundant and should be eliminated or reduced in intensity when the data is presented.

Last Words

Most graphs, like many other enterprises, follow the 80-20 Rule: You can get it 80% done with 20% of the effort, but the remaining 20% is hard work, and takes the remaining 80% of the effort.

Tufte's rules for graphics are:

- Tell the truth
- Show the data in its full complexity
- Reveal what is hidden
- Especially, respect the viewer.

Follow these rules with your presentation graphs and you will never go far wrong.