

About charts and graphs, for Impress Magazine, July 2000

Making good charts and graphs is not rocket science. Actually it's quite easy, if you remember some basic stuff:

- Charts and graphs make statistics visible. They show trends—what happened in the past and what might happen in the future.
- The best charts are simple. When they are simple, they attract attention and deliver information quickly and clearly. They explain numbers. They help readers to understand data.
- There are only four basic types of chart: fever, bar, pie and table. One of these types will be the appropriate graphic form for almost any numbers you want to display.
 - Fever charts are best used to track the progress (say the price, or the quantity) of an item over a period of time.
 - Bar charts show the relationships between a number of items at one time.
 - Pie charts divide an item into its component parts, or percentages.
 - Tables show the actual numbers, arranged into an orderly form that clarifies their relationships.

What not to do

There has always been a tendency to overdo charts, showing off, dazzling the reader or viewer with the latest devices and effects available. Computer software offers an array of three dimensional effects, backgrounds, tpestyles and icons that often clutter the result and make charts hard to decipher. So ...

- **Don't** use the third dimension. Why do you want your chart to jump off the page or screen? I'd rather it stayed there and let me read it!
- **Don't** use a busy background to indicate what the subject of the chart is. A photo of nuts and bolts to show the reader that the chart is about industry? NO! Plain backgrounds allow the information to be seen, and read.
- **Don't** use lots of colors to dress up a chart in an effort to make it look bright. What is this, the tie-dyed sixties? Too many colors distract the eye, and confuse the meaning.
- **Don't** use type that's too small, or too big for the final size of the chart you are preparing. And ornate, decorative fonts have no place in charts.

So, Instead of using 3-d effects ...

Consider the information first, and the "look" of it later. When starting a chart, ask questions such as: What is the most important point to be made? Do I need to show all the intermediate plot points between the first number and the last? (For instance, it may be more direct to pare the data down to two points: the price was THAT, and now it is THIS.) Once you have decided the real intention of the chart, the visual answer will often take care of itself, without all the bells and whistles that you could add on. In other words, the line between the price THEN and the price NOW is the interesting thing. Does it rise sharply

between the two points? Is it flat? Does it drop sharply? These are the trends that make people want to look at the chart, rather than the fact that it has three-dimensional “depth”, or casts a shadow on the page.

Instead of using a busy background ...

Use white, or a pale color. But you might also consider setting the whole thing against a black background. The impact of your chart is important, it's just a matter of how you achieve it without getting in the way of comprehension. Most photographic backgrounds do interfere with visibility. And bright colored backgrounds, used purely to brighten up a dull chart, often conflict with the information on the chart.

Instead of using a rainbow of color ...

Start with black and white. Add color only when you need it, to make something clear. (For instance, when you need to differentiate between two lines in a fever chart.) Save a copy of what you've done, then use the computer to remove unnecessary colors and elements instead of adding irrelevant effects. You can always go back to your copy if you go too far. By using less color, you will focus on the data. Think of color as information itself, never as decoration to be applied to the chart when you have finished.

Instead of using many different typefaces ...

Use one font, in a variety of weights and sizes. Never use an ornate, flowery type. The best fonts for charts are simple sans serifs. Dates along the bottom of a chart (that's where they usually go; the quantities go up the side, as a general rule) can be small. But don't forget the size that your chart is going to be when it is seen. Might it be enlarged to go into a store window? Or made into a banner for a fundraising appeal? Perhaps it's going to appear smaller than the size you are working, for instance in a printed report, where size is at a premium? The final result is what matters, not what you see on the screen.

Reviewing these basic dos and don'ts, it might be hard to imagine that there is any fun to be had making charts. But there is. Because when you know the rules, you know when you can break them, too. In the 1920s there was a trend to use little piles of symbolic drawings in place of plain bars in charts. Tiny oil barrels, cars, people, dollar signs and telephones brought otherwise boring-looking data to life. It was very simple, and fun, too. It's worth repeating.