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More Do's and Don'ts

By Chuck Chakrapani

Good graphs: their relevance and importance

When we write poorly, almost anyone will spot it. If we present numbers poorly and interpret them badly, fewer will be able to spot the problem. When we get to graphs almost no one seems to spot the problem of poorly presented information. While literacy is common, numeracy is less common and graphic literacy is even more uncommon.

Yet, a considerable amount of information is presented in the form of charts and graphs. There is no reason why we should tolerate badly drawn graphs and charts any more than we would a badly written report.

The purpose of this series of articles is to point out that there is a lot more to creating graphs and charts than simply putting the data into the computer and letting the computer generate pretty pictures. A picture may be worth a thousand words, but if care is not taken to draw the picture right, the thousand words that picture speaks could be highly misleading.

The basic criteria

The prerequisites for generating a good graph are these:

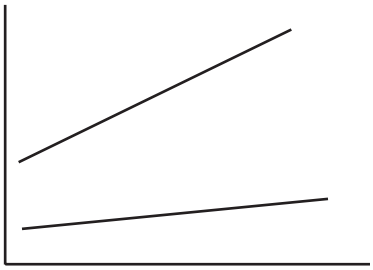
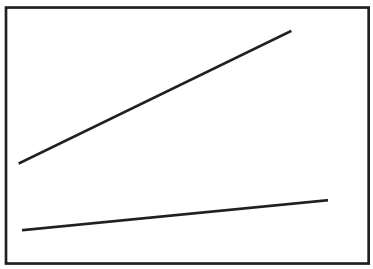
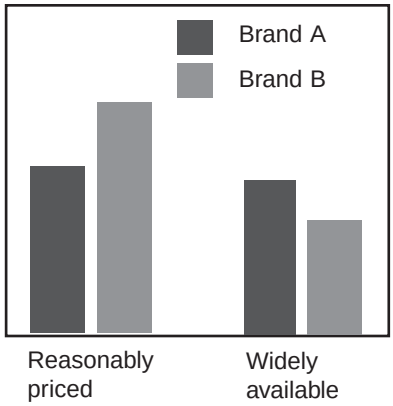
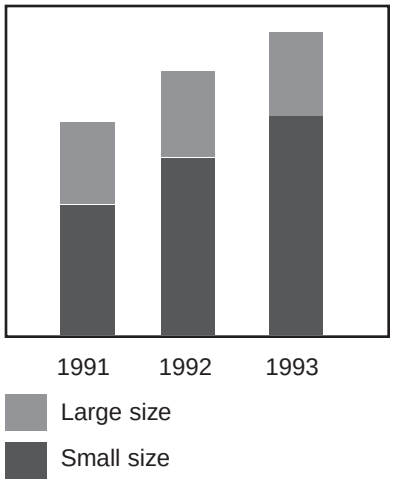
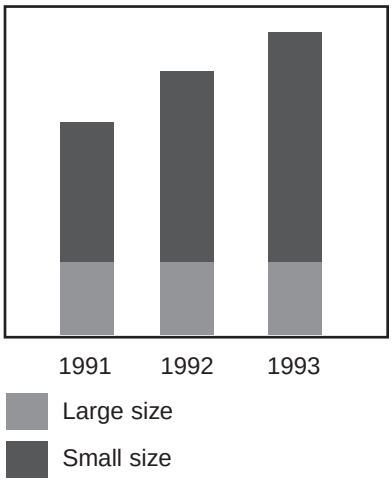
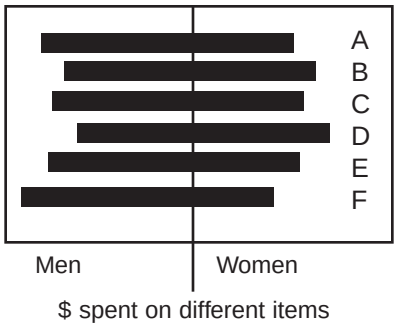
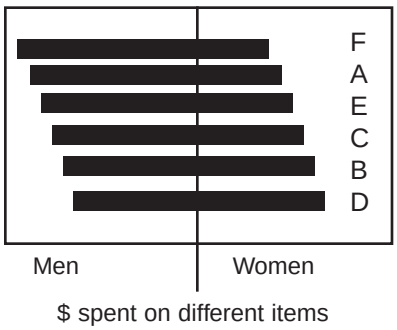
1. Having something to say.
2. Choosing a graph that makes your point effectively; and
3. Checking to see if the graph does really support your point.

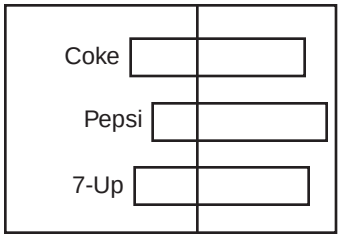
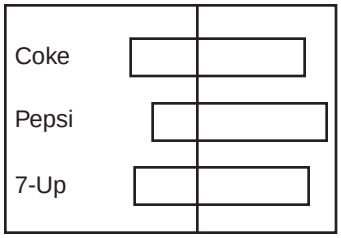
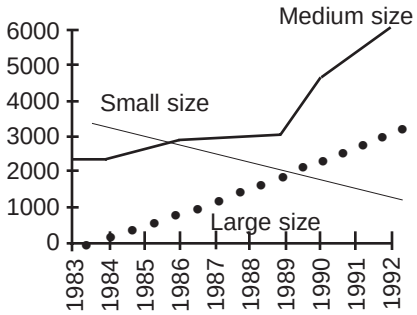
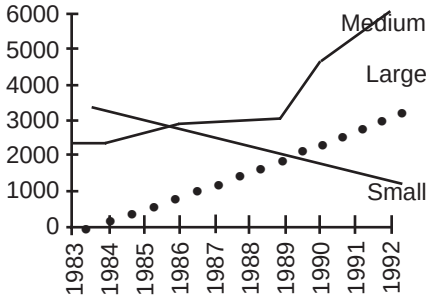
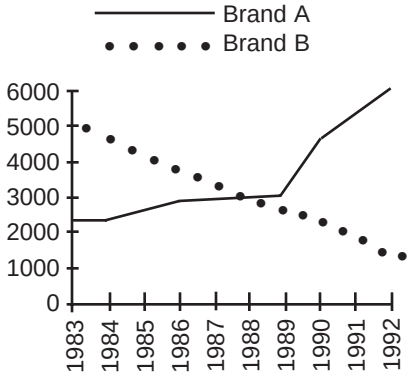
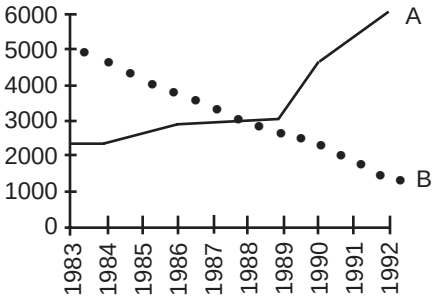
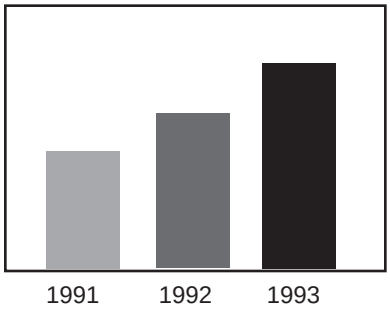
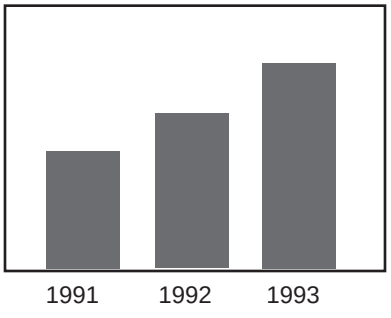
Most graphs fail because many analysts seem to expect the chart to convey whatever embedded meaning there may be in the data, without any conscious thought on the part of the analyst. Because of this implicit assumption, points (2) and (3) above are not followed. As a result, the analyst simply makes the chart as attractive looking as possible, quite often distorting the graph even further in the process.

The graphs (good and bad) presented in this series should convince the reader that there is a lot more to drawing even a simple graph than simply handing over the data to a graphics program.

Space limitations have prevented me from presenting the graphs in a larger format which would have made the points I wanted to make much more effectively. But even in the small format, it is easy to see why certain graphs work while others don't, why certain graphs mislead while others effectively make the point and why decorative features should be avoided unless they can be added without distorting our message.

An amazing number of charts and graphs that appear in newspapers, magazines and journals are badly done. Lack of graphic literacy even among sophisticated people makes such charts acceptable. When we consider the advent of multimedia and graphic interfaces on computers, it becomes clear to us that we will be faced with more and more charts and graphs. Unless we become visually literate, we may have a serious problem deciphering the world around us. The next two pages present a few more Do's and Don'ts for graphs with my comments.

Don't	Do	Comments
		When trend lines are compared, a boxed format (right hand chart) provides a better visual format for comparison.
		The main point in graphs like these is how two brands compare on any given attribute. The graph on the left compares attributes within each brand, which is seldom of any interest. The x-axis should contain the attributes we are interested in. We should t hen compare the brands within these attributes.
		Sales of large size packs of this product have remained constant over the years. Sales of small size packs, on the other hand, have been increasing. This pattern is more clearly seen when the relatively constant variable is put at the bottom rather than at the top of the stacked column chart.
		The intent of the chart is to show the different purchase patterns based on a person's gender. The pattern is much more clearly seen in a chart ordered in a way which emphasizes the underlying patterns.

Don't	Do	Comments
		Putting titles close to the bars distorts our perceptions of the bar lengths. Comparisons are much easier when the titles are separated from the bars. This is especially true of charts which don't have a common origin (like the one presented here).
		The chart on the left is more difficult to read because the reader has to hunt for the titles. The chart on the right has aligned the titles. This makes the chart easier to understand.
		Wherever possible, use labels rather than legends provided they do not (1) clutter the chart and (2) distort the information. Separate legends make work for the reader and should be avoided, if it can be done without distorting the chart.
		Growth is indicated by the height of the graph. Adding different shades is distracting. Sometimes this makes comparisons more difficult. It is best to keep the chart simple, as shown on the right.

BOOK REVIEWS

Strategic Database Marketing

This new book by Arthur M. Hughes goes a step beyond his earlier book, *The Complete Database Marketer. Strategic Database Marketing* is aimed at marketers who use databases-marketing executives, those in the direct response industries, advertising executives, those in service industries, and statistical modellers.

One of the main contentions of the book is that it is easy to build a database, but it is not so easy to make money from it. One of the purposes of the book is to show how to do the latter. Hughes uses the lifetime value of a customer as the criterion for developing strategy. Subsequently he shows how to build profits through recency, frequency, and monetary analysis; how to use customer profiles effectively in developing a marketing strategy; how to build relationships with surveys; how to develop modelling to generate profits.

The book has separate chapters aimed at retailers, packaged goods companies, business-to-business data base marketers, and financial services industries. An interesting chapter discusses why databases fail.

If you are involved in database marketing at any level, this book is a worthwhile addition to your bookshelf.

Strategic Database Marketing by Arthur Hughes. Published by Probus Publishing 352 Pages. $49.50 Hbk. (1-800-567-4767)

The Book of Risks

What would you rather do?

- Drink two glasses of milk a day or be exposed to secondary smoke throughout your life?
- Keep a pet bird at home or be exposed to secondary smoke throughout your life?
- Eat a smoked pork chop once a week or be exposed to secondary smoke throughout your life?

If you chose the first answer to each of the above questions because of a fear of lung cancer think again. The first alternative in each case is associated with a higher incidence of lung cancer.

Did you ever suspect that driving a small car, rather than a large one, is much more likely to kill you than a lifetime of exposure to secondary smoke?

That is not all. Eating two tablespoons of peanut butter every day poses the same risk to life as living near a nuclear plant.

And how about this - Chances are greater that you will die from the vaccine for small pox than from small pox itself.

If all this sounds incredible, it is because most of our information in these areas is provided to us by vested interests. If we want to be informed about the world, we need another point of view. The probability of risk may be exactly as claimed by those who want to limit our freedom of choice. Yet the risk may be far lower than what is engendered by behaviours that appear very innocuous. Lack of comparison standards make us act in panic.

The Book of Risks by Larry Laudan discusses the relative risks of many everyday things - use of airbags to eating organically grown food. Things are not what they seem and you will be

surprised at some of the conclusions. As the author himself admits this is not a serious work of science. Rather it is a common sense way of looking at the risks we encounter.

The Book of Risks by Larry Laudan. Published by John Wiley. 222 Pages. $16.95 paper. (1-800-567-4767)

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