Book Review: Good Charts: A Harvard Guide to Data Visualization

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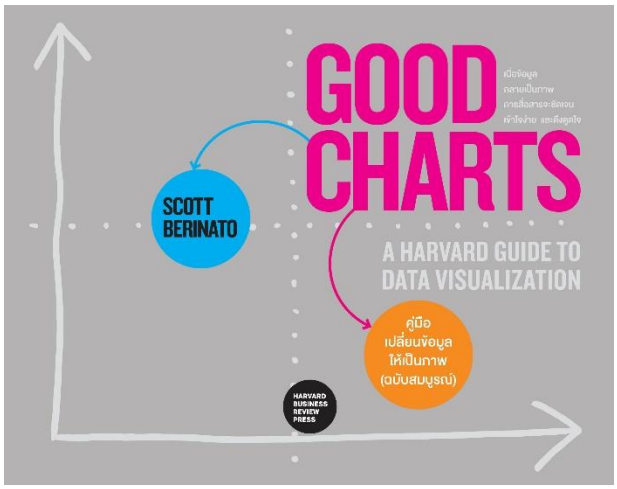

Book Title: Good Charts: A Harvard Guide to Data Visualization
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A large amount of data is generated every day, and it is certainly that the number is only going to increase steeply and continuously. As the number of data is getting higher and higher, and it is the fact that the human brain usually processes visual content much faster than text, it is unquestionable that the picture language and data visualization is becoming more and more important in our lives. In the book titled “Good Charts: A Harvard Guide to Data Visualization”, Scott Berinato, a senior editor at Harvard Business Review, provides a fundamental guide to make understanding of how data visualization works and how to create a proper chart for any specific situations that can impress and persuade other people.

This book is composed of 9 chapters starting with a brief history of data visualization in chapter 1, the science of seeing in chapter 2, a simple topology for chart making in chapter 3, a recommended process for creating a good chart in chapter 4, following with how to refine picture to impress or motivate others in chapter 5 and 6, the caution about chart or image manipulation in chapter 7, and ending with how to present and practice efficiently in chapter 8 and 9, respectively. In chapter 1, the author points out that communicating with pictures or visual communication has been one of the incredible skills that we were born with. Line chart, Bar chart, Pie chart and Sequence chart were developed in the end of 18th century. In 1858, Cockscomb diagram was created by Florence Nightingale. In 1967, Jacques Bertin, a mapper, identified 7 visual variables, which are important for visualizing data, consisting of Position, Size, Shape, Color, Value (Brightness), Orientation and Texture. Around 1970s, John W. Tukey, a statistician and scientist, issued an important paper titled “The Future of Data Analysis”, and invented a wide variety of effective diagrams including a 3D scatter plot. Nowadays, the invention of graphic displays is ongoing, and it is obvious that data visualization is going to help us work much

faster and achieve better results. In chapter 2, the author focuses on the 5 concepts that we should know when we are looking at any charts. First, we do not do anything in sequential order. Second, we see the most noticeable thing first. Third, we cannot see everything at the same time. Fourth, to find the real explanation or cause of something, we always look for meaning and correlation in the pictures, and fifth, we follow pattern, and we usually compare what we see now to our experience in the past. In chapter 3, before creating a good chart, it is important to understand nature and purpose of data visualization. Are we focusing on data or concept? Are we aiming to declare information or explore something? These are the two main questions that we must answer. Generally, when classified by nature (data or concept) and purpose (declarative or exploratory), visualization can be divided into 4 types: Idea illustration (concept/declarative), Idea generation (concept/exploratory), Visual discovery (data/exploration), and Everyday data visualization (date/declarative), and it can be predicted that different types of visualization will lead to differences in presentation format, time to use, resource allocation and necessary skills. After choosing an appropriate type of visualization, now, we are moving to data visualization design process in chapter 4. We will start with preparation stage (to create both thinking and working space), following with discussion stage (to debate and gain some new ideas), draft stage (to match keywords with the right chart), and prototype stage (to design and to add some more details to our charts), respectively. In draft stage, we learn how to match keywords with many types of charts by using Andrew Abela's chart chooser which categorizes charts (from what we want to display) into 4 groups: comparison, distribution, composition, and relationship. Particularly, if we want to compare similarities or differences, we might choose Bar chart, Bump chart, Line chart or Slope chart. If we want to show the distribution of our data, we might choose scatter diagram, Alluvial diagram, Bubble chart, Histogram or Sankey diagram. If we want to present the composition of data, we might choose Pie chart, Stacked area charts, Stack bar graphs, Treemap chart or Unit chart. Nonetheless, if we want to demonstrate map, network, or causation among data, we might choose Flow chart, Hierarchy diagram, 2x2 contingency table or Network diagram. Next, in chapter 5 and 6, either to impress or to persuasive someone, we will start to refine our pictures by trying to make them simple, neat, clear, distinct, attractive, persuasive, and understandable as much as possible. However, the thin line between persuasion and deception, stated in chapter 7, is what we must carefully contemplate and should be aware of whenever we try to make our pictures look better. Finally, we are going to the presentation stage and the practice stage in chapter 8 and 9. In the presentation stage, the author recommends some presentation techniques such as letting the picture explain itself, keeping away from stating the obvious elements or explanations shown in the picture, using simple pictures for presentation while using the complex ones for self-study, and using a few pictures to tell the story (based on functions of our brains, stories are memorable than facts or data). Moreover, in chapter 9, if we want to be a specialist in data visualization, we must acquire more knowledge and inspiration from other works. Looking for various kinds of charts and diagrams, recording what we like, dislike, and what we expect to see from those pictures, and in the end, trying to draft our own pictures and criticizing ourselves, are important for improving our skills in the practice stage.

Overall, with the sharp increase in global data and with many data visualization tools such as Google Charts, Plotly, Tableau Public, Qlik View, Raw, Datawrapper, Infogram, Chartbuilder, D3, and Highcharts that are available, free, and easier to use than ever before for most unsophisticated users, it is unarguable that data visualization skills will be sooner rather than later one of the core skills that are key to learning and working in today's world. This book provides us at least a basic concept about data visualization. We know its brief history.

We learn the reasons why it is so important for our work. We know how to create a good chart, and how to improve it for the better. We also learn how to present it efficiently and effectively, and finally, we learn how to build up our data visualization skills bit by bit by carefully studying other graphical representations. Although we have already known that it is up to the circumstances and we must decide by ourselves which chart is the most appropriate for our data or information, we still wish this book could provide some more details about how to choose the best chart for different situations; for example, if I want to compare something, should I pick a bar chart or a line chart? Anyway, with easy and clear explanations, lots of examples from the real world, and plenty of color pictures that make this book more appealing, we think this book is fun to read, and it is surely not too hard to understand for any beginners. Thus, it is time to open your mind, take a break, and spend your free time reading it. Have fun!

References

Berinato, S. (2016). *Good Charts: The HBR Guide to Making Smarter, More Persuasive Data Visualizations*. Boston, the United States: Harvard Business Review Press.

Berinato, S. (2022). *Good Charts: The Harvard Guide to Data Visualization.* Bangkok, WELearn Co., Ltd.