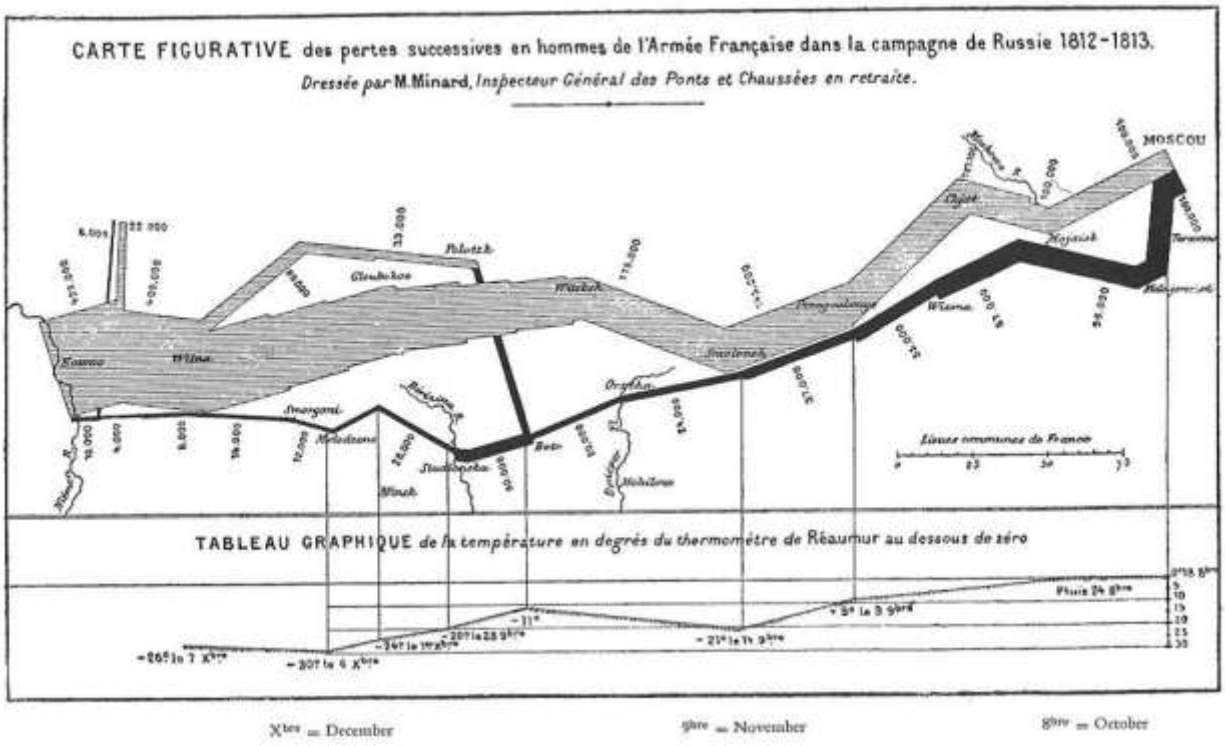
Southern New Hampshire University

Module Three: Visualization: The Medium, Part 1

Analysis and Exploration

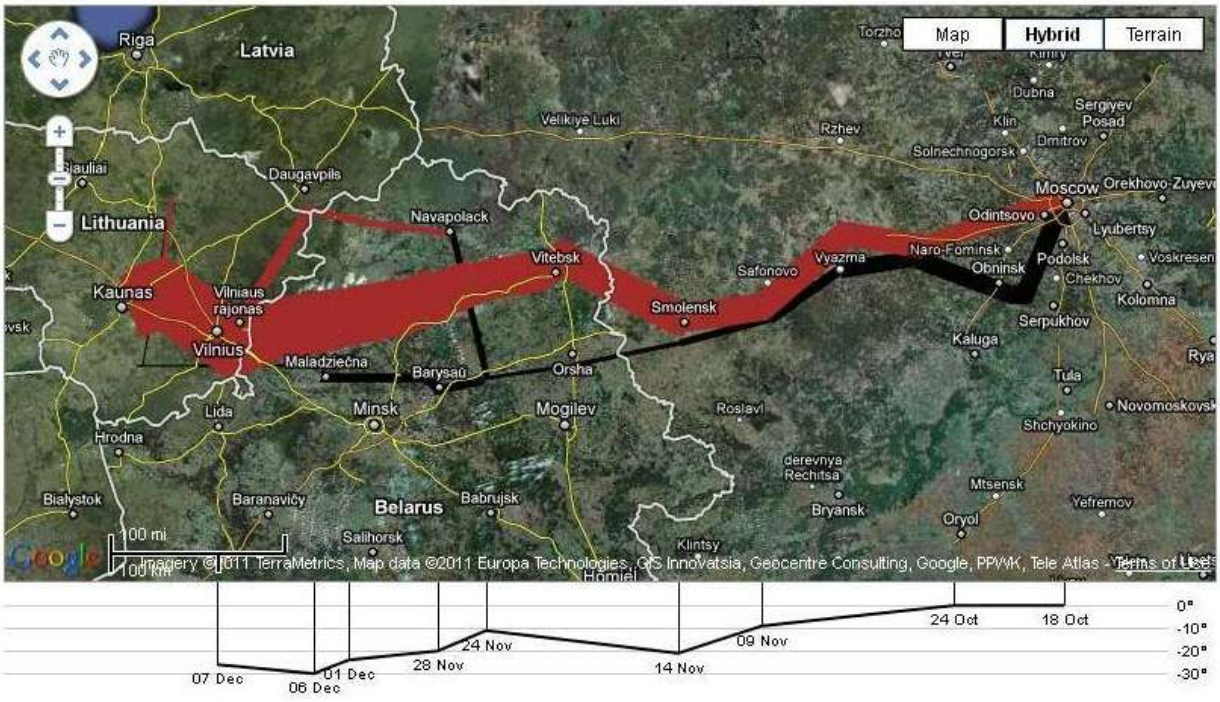
With the explosion of the availability and correlation of data, new tools have emerged in an attempt to keep pace. Pen and paper used for manual calculation were the visualization tools of the late '70s, which seems woefully inadequate for the assimilation and presentation of today's proliferation of data.

Consider the image below, which is a relatively famous visualization created by Charles Minard in 1861 of Napoleon's 1812 march on Russia. It is considered an excellent representation of several data elements to illustrate the failure of the campaign. Consider the painstaking effort of gathering the associated data, interpreting the data, compiling into a meaningful visualization, and creating the chart below by hand.



Consider the presentation of the aforementioned data to a modern military advisory council and the desire for clarification regarding the nature of the terrain, including elevations, waterways, and proximity to cities. Imagine the time and energy required to rework the

visualization to incorporate the additional data elements. With today's tools and technologies, we might simply overlay atop Google Maps and be done in minutes, as illustrated below:

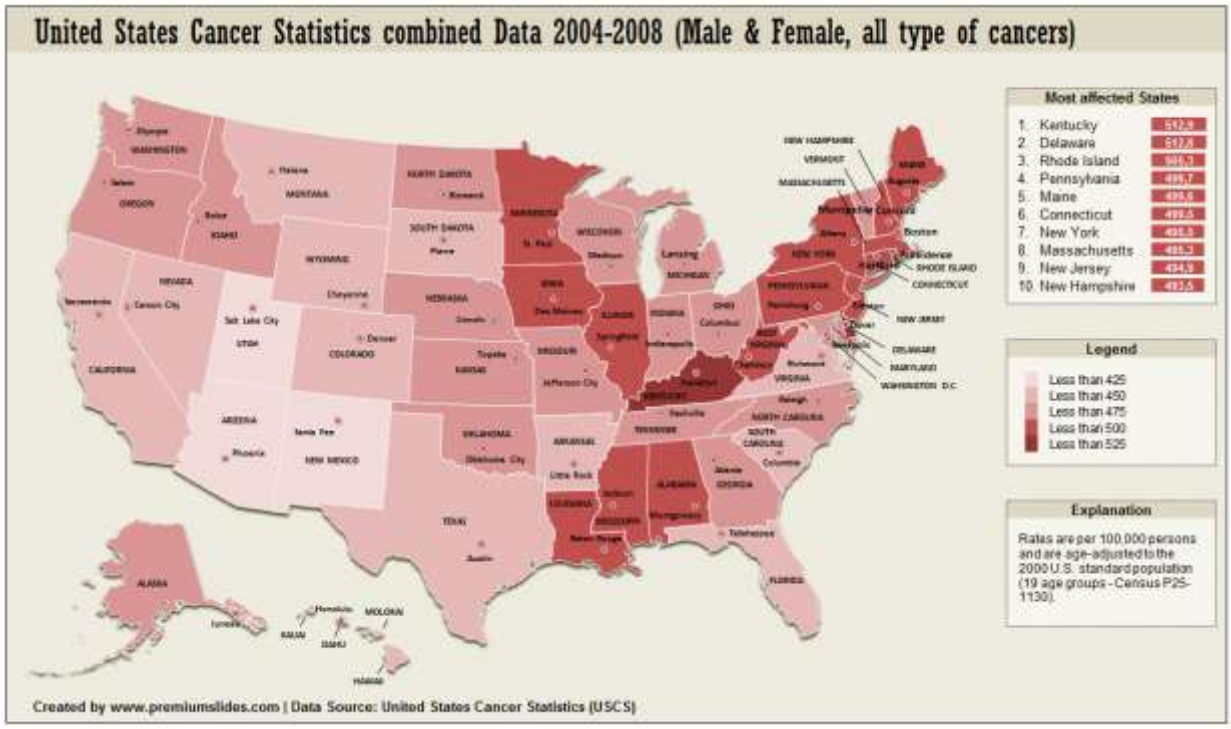


Information Graphics and Presentation

The presenter's job is somewhat akin to a data detective. Your task is analyze a given data set or sets and to look for clues, indicators, consistencies, inconsistencies, and trends and to extrapolate for your audience. If everyone in your audience was willing and capable of doing so for themselves, visualizations might be unnecessary.

What story does the data tell? There are likely many stories, and the presenter's job is to refine and encapsulate raw data in such a way that the message becomes clear, concise, and accessible to your audience.

Consider the image below, representing U.S. cancer statistics. What are the first things you notice? Without even looking at the legend or color codes, you likely note immediately that Kentucky is the darkest red. You might also quickly search for your state of residence, hoping it is near white! Consider the volume of raw data represented by this graphic and having to comb through the numbers to draw the same conclusions you drew instinctively in a matter of seconds from the graphic presentation:


United States Cancer Statistics combined Data 2004-2008 (Male & Female, all type of cancers)
Most affected States
1. Kentucky
2. Delaware
3. Rhode Island
4. Pennsylvania
5. Maine
6. Connecticut
7. New York
8. Massachusetts
9. New Jersey
10. New Hampshire
Legend
Less than 425
Less than 450
Less than 475
Less than 500
Less than 525
Explanation
Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. standard population (19 age groups - Census P25-1130).
Created by www.premiumslides.com | Data Source: United States Cancer Statistics (USCS)