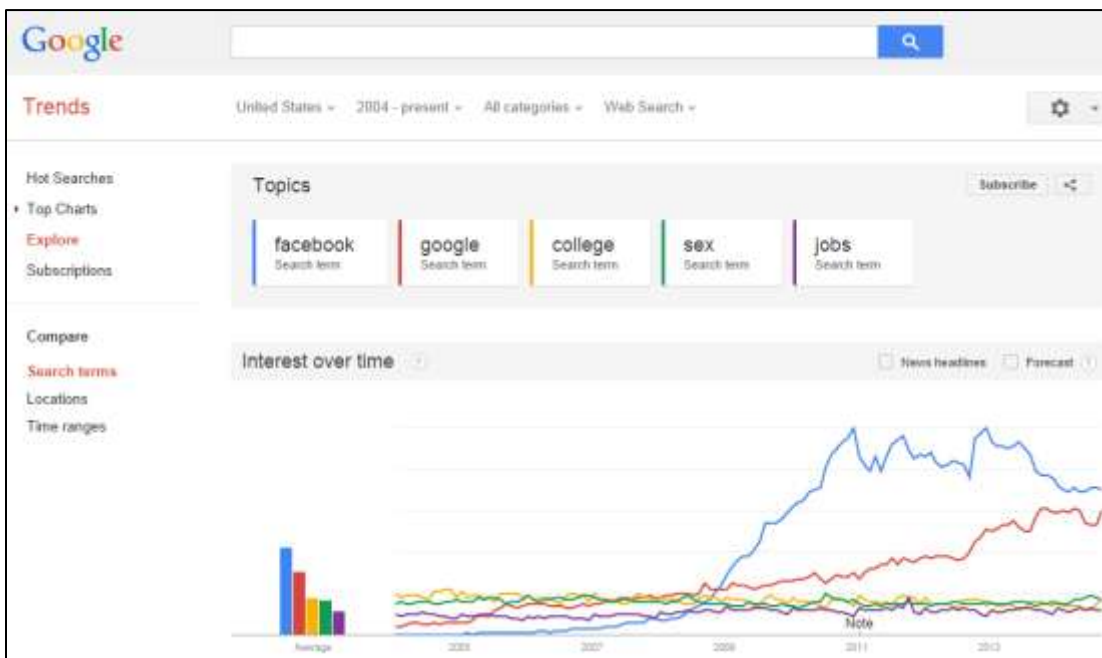**What Americans Think: Facebook, Google, College, Sex, Jobs – In That Order**

When we sought to understand how people think about flash drives we used lots of statistical tools and Google Trends to understand our customers. Let's see how this works by observing what Americans consistently search for online by using Google Trends. What we discover tells us a lot about the American psyche. Ordered by level of interest, we find: Facebook, Google, College, Sex and Jobs. Since 2014, college, sex and jobs have topped the charts. Then Google broke out in late 2007 and Facebook later distanced itself from the pack in 2009:

Source: http://www.google.com/trends/explore#q=facebook%2C%20google%2C%20college%2C%20sex%2C%20jobs&geo=US&cmpt=q

Over a ten year period, dating back to 2004, we find that the average Google Interest Index to be:
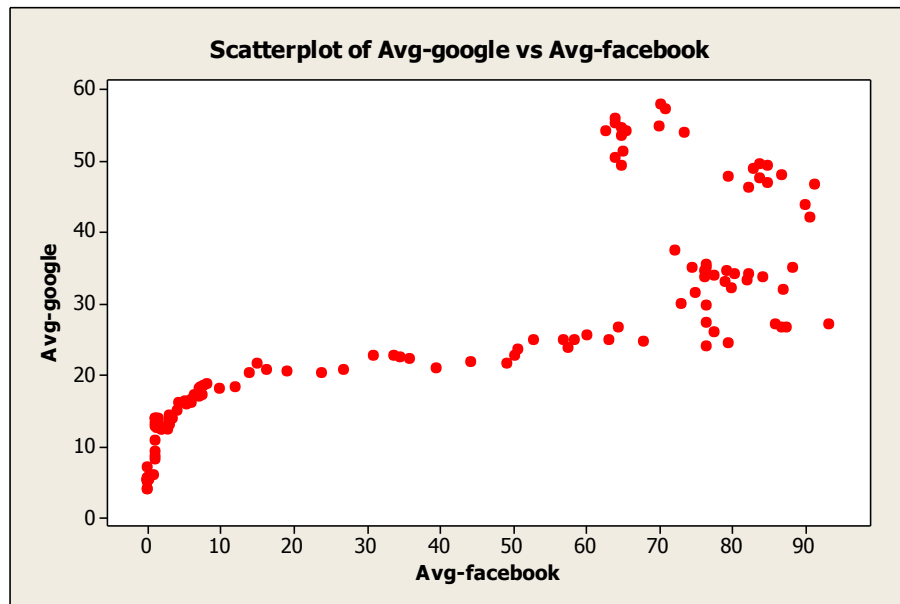
- Facebook: 39
- Google: 25
- College: 15
- Sex: 15
- Jobs: 10

But of course Interest levels vary over time, so as of July 2014, the Google Interest Index stood at these levels:

- Facebook: 17
- Google: 53
- Sex: 19
- Jobs: 13
- College: 12

Understanding Correlations: People Who Like Sex Searched Less for Jobs

A good way to understand correlations is to look at a scatterplot of data. Here we see the relationship between Google searches for Facebook vs Google over a 10 year period in the USA, representing billions of searches:


The chart below is a correlation matrix; the higher the number, the higher the correlation. For example, **82.4 percent of Facebook searches are correlated to Google searches**. Directly below the 0.824 figure is a P-value of 0.00, suggesting the likelihood of this correlation being due to chance occurrence is about 0% chance. Understand that correlation is an indicator of **association, not causation**. In other words, **just because there are more storks around the time that birth rates increase, does not mean that storks deliver babies**.

```
Correlations: Avg-facebook, Avg-google, Avg-college, Avg-sex, Avg-jobs

              Avg-facebook    Avg-google    Avg-college        Avg-sex
Avg-google           0.824
                     0.000

Avg-college         -0.606        -0.681
                     0.000         0.000

Avg-sex             -0.417        -0.290        -0.031
                     0.000         0.001         0.724

Avg-jobs             0.663         0.569        -0.404        -0.468
                     0.000         0.000         0.000         0.000


Cell Contents: Pearson correlation
               P-Value
```

An interesting observation is the relationship between **College** search interest vs. **Jobs** search interest. This negative 40.4% correlation suggests that while students go to college to get better paying jobs, they are not obsessively focused on getting jobs when they are studying for college. Indeed, we have seen this impact on the unemployment rate. Younger people are spending more time in college, delaying careers and increasing the youth unemployment rate. Of course, other factors beyond college attendance impact youth unemployment as well.

Finally, we present a Matrix Plot which is a scatter plot that looks at more than two variables at a time. If I was in the jobs market industry (recruiting, job search board, etc). I would note the strong associations with Facebook and Google, 66% and 57%, respectively. If I wanted to increase my brand awareness or sales in this industry, I would focus on Facebook Social Media marketing and Google Search Engine Optimization (SEO) methods (e.g., high quality content that my prospective customers would find of value). This would serve the dual purpose of increasing the sharing of that content via Facebook newsfeeds and high Google page ranks that will send free, organic traffic to your website or landing pages.

Matrix Plot of Avg-facebook, Avg-google, Avg-college, Avg-sex, ...
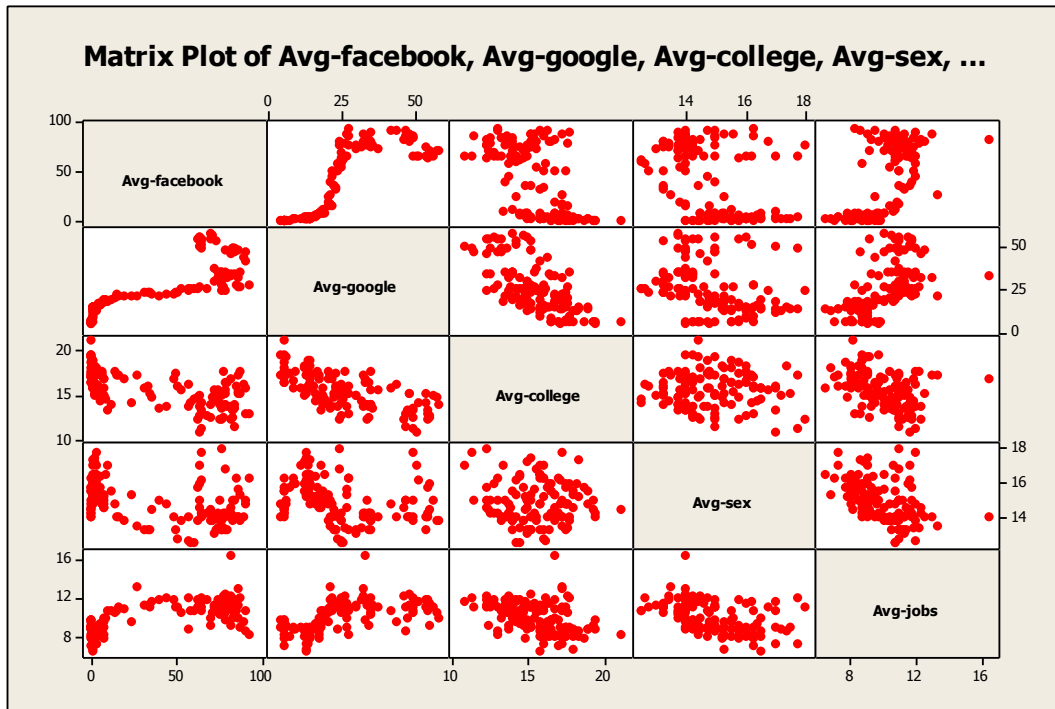
What patterns do you see? What do they mean?
How can you use the information to better understand your customers?