

# Annielytics Dashboard Course



**Annie Cushing**

[www.annielytics.com](http://www.annielytics.com)

[annie@annielytics.com](mailto:annie@annielytics.com)

@AnnieCushing

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***Internet Addresses.*** This book includes various Internet addresses, including URLs and e-mail addresses. These addresses are believed to be valid addresses at the time of writing. Due to the fluid nature of the Internet, it is possible that some addresses may become invalid at any time. All addresses are provided for the convenience of the reader, but no address is guaranteed to be valid or still useful to the reader at the time of reading.

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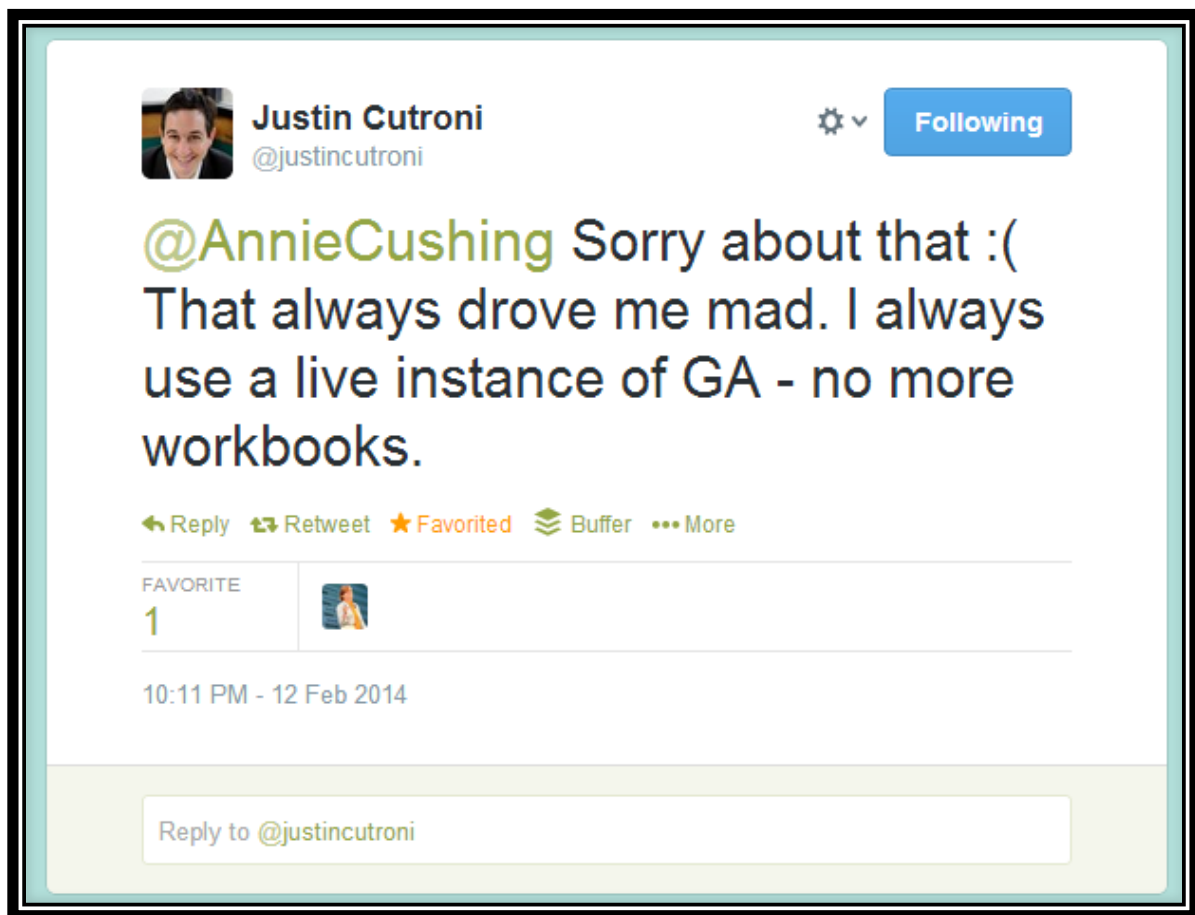
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## Personal Appeal to Not Distribute

I've made this workbook available to those who buy my online course, but I'm an individual running a small business. Please do not share or distribute this workbook in any way. I was going to lock this workbook down so that it couldn't be downloaded at all but decided against it in the 11<sup>th</sup> hour to better serve those who pay for the course. I trust you'll do the right thing and enjoy the benefits of your purchase.

## Purpose of This Workbook

I subscribe to the Justin Cutroni method of doing a Google Analytics course: Live is better than following a workbook!

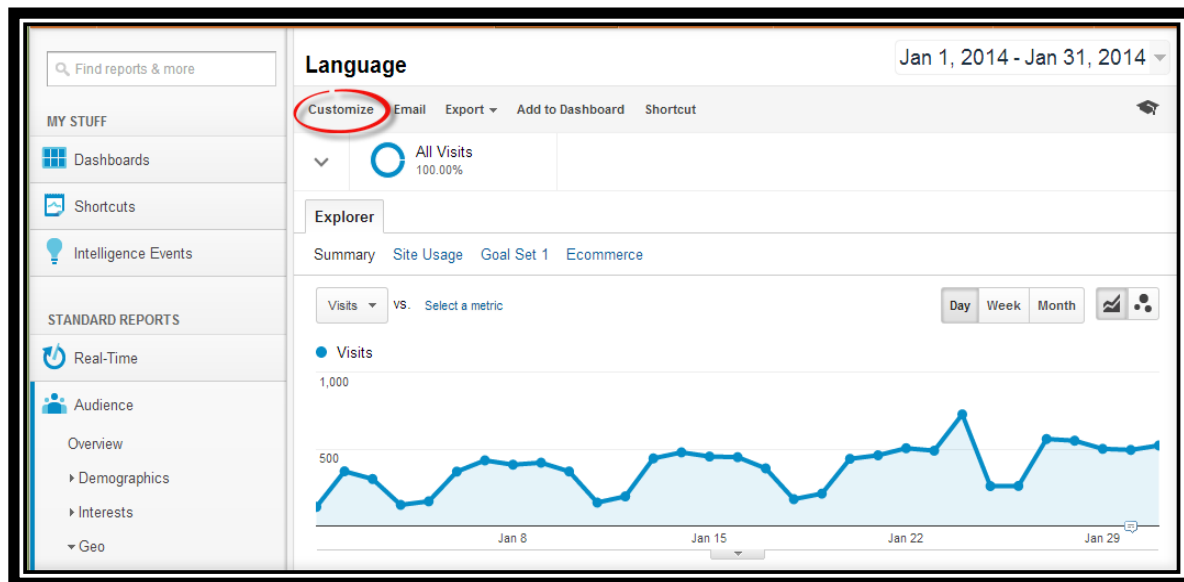


The only purpose of this workbook is to serve as a reference that you can use to look up tips and techniques covered in the seminar. I will try my best to keep it to just the essentials.

# Google Analytics Interface

## Deconstructing a Report

If you see a Customize option at the top of any standard report, you can select it to see how it is built. This is a great way to learn how to build your own.



## Create Your Own Custom Report

Custom reports provide you with much more flexibility than you get with standard reports. You can choose exactly which dimensions, metrics, filters, etc. you want to be in your report.

### Custom Reports as a Training Tool

Playing with custom reports is also a great way to learn which dimensions and metrics work together. For example, if you choose Visitors as a metric, the number of dimensions you can choose from will be reduced significantly.

### How to Create One

To create a custom report, choose Customization at the top of any report, then the New Custom Report button. You will be given a variety of options:

## General Information

**Title:** Give your report an intuitive title

## Report Content

**Report tab:** Break your reports into different tabs to satisfy different audiences

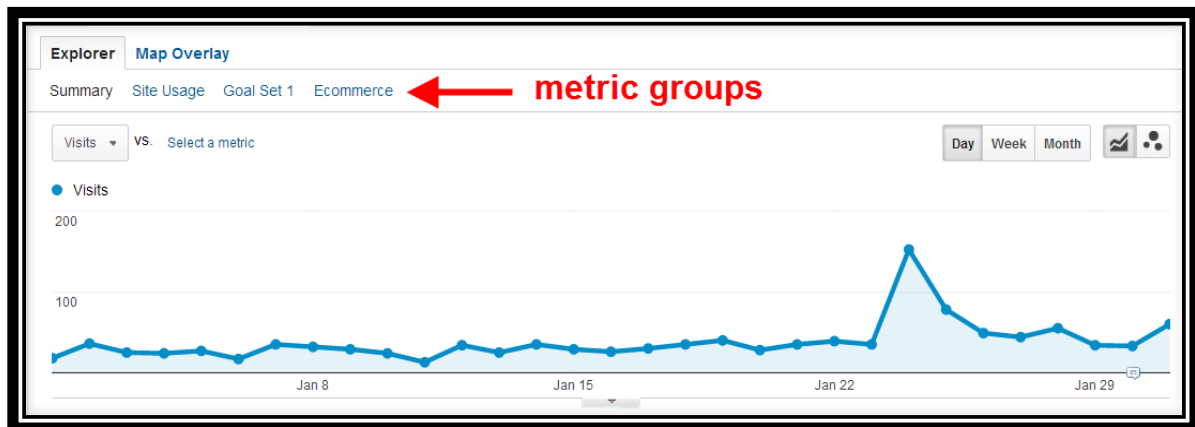
*Caveat:* Any filters you apply carry across all of the tabs. This nuance (more like nuisance) really limits the usefulness of report tabs. <kicks dirt>

### Type:

- Explorer: These are the model for the standard reports in Google Analytics. If dimension is a link, you can “drill down” to the next dimension, e.g., Medium > Source > Landing Page (screenshot: [bit.ly/drilldown](http://bit.ly/drilldown)).
- Flat Table: Great for generating pivot table-friendly reports. I wrote a blog post on how to do this here: [bit.ly/pt-reports](http://bit.ly/pt-reports).
- Map Overlay: Just like you see under Audience > Geo > Location.

## Metric Groups

This is where you add metrics (e.g., visits, bounce rate, etc.). You can also group your metrics like you see in standard reports.

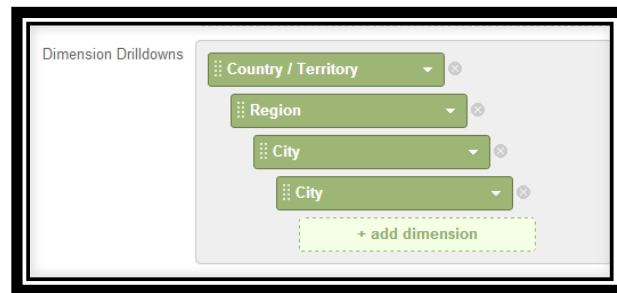


## Dimension Drilldowns

The heading for this section assumed you’re creating an explorer-style report. If you’re creating a flat table-style report, you won’t be able to drill down through your dimensions. In fact, you only get two. (Lame.) If you’re creating an explorer-style report, you get up to five.

If you’re creating an explorer-style report and you have another layer of dimensions below what you have selected, it will be clickable; if not, it will be static text.

*Pro Tip:* To be able to isolate a single dimension, choose it twice. For example, choosing Country/Territory > Region > City > City, you will be able to select a city to get just the metrics for that one city.



Look at the New vs Returning report (Audience > Behavior) to see an example of this inside the interface.

To get a full list of dimensions and metrics, go to [bit.ly/api-help](https://bit.ly/api-help).

## Filters

This is where you can create filters for your report. For example, if you want to just analyze organic traffic you would create a filter that includes traffic if the medium (or traffic type) matches organic. As you can see in the screenshot below, Google Analytics will offer suggestions.



You can also use regular expressions (more on regex in the next session). Just choose Regex from the drop-down that defaults to Exact. The example below will give me only visits that are tagged ppc or cpc and come from the United States or Canada.



The screenshot shows a reporting tool interface. At the top, under "Dimension Drilldowns", there are two green dropdown menus: "Country / Territory" and "Medium", each with a close button (X). Below them is a dashed green box with the text "+ add dimension". Below this section is a "Filters - optional" section. It contains two filter rows. The first row has a dropdown set to "Include", a green dropdown for "Country / Territory", a dropdown set to "Regex", and a text input field containing "united states|canada" with a close button. Below this is the word "and". The second row has a dropdown set to "Include", a green dropdown for "Medium", a dropdown set to "Regex", and a text input field containing "(clp)pc" with a close button. Below this is the word "and" and a dashed grey box with the text "+ add filter".

Notice how I have those same dimensions selected in the Dimension Drilldown section. You want to do that when you first set up a filter, to make sure you're getting what you want. I will also set my filter(s) to Exclude to make sure I'm not leaving anything behind that should be included.

But once you've tested your filter, you can delete them from the Dimension Drilldown section. No need to drill down needlessly in your report. So if I wanted to look at the performance of my paid search landing pages from this segment, I'd delete County/Territory and Medium and select Landing Page.

Here's another example of a filter that captures only referral traffic from Google sites:

The screenshot shows a reporting tool interface. At the top, under "Dimension Drilldowns", there is one green dropdown menu: "Source", with a close button (X). Below it is a dashed green box with the text "+ add dimension". Below this section is a "Filters - optional" section. It contains two filter rows. The first row has a dropdown set to "Include", a green dropdown for "Medium", a dropdown set to "Exact", and a text input field containing "referral" with a close button. Below this is the word "and". The second row has a dropdown set to "Include", a green dropdown for "Source", a dropdown set to "Regex", and a text input field containing "^google(.\*)" with a close button. Below this is the word "and" and a dashed grey box with the text "+ add filter".

*Note:* The caret ( ^ ) says the source name has to start with google. This would be filter out referrals like allaboutgoogle.com.

## **Views**

Google Analytics allows you to make your custom report available to as many views (fka profiles) as you have access to. This is very convenient if you manage multiple views.

## **Learn More with My Video Tutorial**

You can view a video tutorial I did on creating custom reports here: [bit.ly/custom-ga-reports](https://bit.ly/custom-ga-reports).

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# Understanding the Terminology

Learning what everything means in Google Analytics can be intimidating. There's a lot of geek speak.

Here are a few terms I will be using throughout the course that you should be familiar with. These definitions are simplified by design. You don't have to understand all of the nuances to get started in Google Analytics.

**Metric:** Anything that can be measured with a number

**Dimension:** How you want the report to drill down

Primary Dimension: Default Channel Grouping

Source / Medium

Source

Medium

Other

Dimension

Metrics

Plot Rows

Secondary dimension

Sort Type: Default

Q

advanced

Default Channel Grouping	Acquisition			Behavior			Conversions <div>eCommerce</div>		
	Visits	% New Visits	New Visits	Bounce Rate	Pages / Visit	Avg. Visit Duration	Transactions	Revenue	Ecommerce Conversion Rate
	17,649,856	17.79%	3,140,610	27.93%	7.65	00:10:51	4,509	\$157,482.09	0.03%
	% of Total: 100.00% (17,649,856)	Site Avg: 17.73% (0.37%)	% of Total: 100.37% (3,128,889)	Site Avg: 27.93% (0.00%)	Site Avg: 7.65 (0.00%)	Site Avg: 00:10:51 (0.00%)	% of Total: 100.00% (4,509)	% of Total: 100.00% (\$157,482.09)	Site Avg: 0.03% (0.00%)
1. Referral	6,182,603	2.80%	172,987	25.27%	6.46	00:10:21	1,665	\$58,172.98	0.03%
2. Direct	4,900,101	30.58%	1,498,455	21.14%	9.28	00:12:13	1,337	\$44,312.89	0.03%
3. Organic Search	4,054,892	25.80%	1,046,289	28.91%	8.82	00:11:28	1,309	\$46,755.11	0.03%

*Primary Dimension:* The main dimension in a particular view of the interface

*Secondary Dimension:* A way to slice and dice your first dimension

Primary Dimension: Default Channel Grouping

Source / Medium

Source

Medium

Other

Plot Rows

Secondary dimension: Source

Sort Type: Default

advanced

Default Channel Grouping	Source	Acquisition			Behavior		
		Visits	% New Visits	New Visits	Bounce Rate	Pages / Visit	Avg. Visit Duration
		17,649,856 % of Total: 100.00% (17,649,856)	17.79% Site Avg: 17.73% (0.37%)	3,140,610 % of Total: 100.37% (3,128,889)	27.93% Site Avg: 27.93% (0.00%)	7.65 Site Avg: 7.65 (0.00%)	00:10:51 Site Avg: 00:10:51 (0.00%)
1. Referral	live. .com	5,584,707	1.38%	77,029	25.70%	6.11	00:10:02
2. Direct	(direct)	4,900,005	30.58%	1,498,421	21.14%	9.28	00:12:13
3. Organic Search	google	3,619,335	26.04%	942,563	29.52%	8.68	00:11:26

**URI:** The part of a URL sans the domain, e.g., /blog/ (as opposed to www.annielytics.com/blog/)

**Path:** Another word for URI, e.g., entrance page path, referral path

**Hostname:** The subdomain of the site with your tracking code (for my site all would be www.annielytics.com because I only have one subdomain; for a site with multiple subdomains, they might be www.example.com, blog.example.com, store.example.com)

**Source:** The subdomain of the referring site

*Pro Tip:* If you want to know the full URL, concatenate source + referral path for visits from other sites or hostname + page (or pagePath in the API) for pages on your own site

**Bounce Rate:** Percentage of visitors who leave the site after viewing only one page

**View:** Google's new name for a profile

**Regex:** Short for *regular* expression, it's a sequence of characters that forms a search pattern, mainly for use in pattern matching with strings. (I wrote a post for newbies on how to use them in GA: [bit.ly/regex-for-newbies](http://bit.ly/regex-for-newbies).)

**(none):** You'll see this under the Acquisition report quite a bit. It just means direct traffic.

**(not set):** You'll see this most frequently with filtered views (previously called profiles). With a filtered profile, data gets lobbed off according to your profile's filters. So, for example, if you have a separate profile for each of your subdomains (boo) and a visitor visits the subdomain for the view you're looking at but then moves to another subdomain and returns to the original subdomain, the previous page will show up as (not set) because all of the data for the second subdomain is filtered out.

**(not provided):** If a search engine (like Google) has encrypted searches, the specific keywords a visitor searches for will not be passed on to the site's analytics account. The keyword shows up as (not provided). Do not even bother analyzing keyword data from organic search reports.

## Standard Reports

This section is mostly a live demo of the standard reports Google Analytics offers.

There are a couple notes I'll point though, for posterity's sake.

### Plot Rows

Google Analytics gives you the ability to choose specific rows to view on the timeline. To do this, select the check box to the left of each line item you want to display (up to six) and click the Plot Rows button.

## Get More Rows

Google Analytics will allow you to export up to 5,000 rows. But you can get more with a hack: Increase the number of rows to 25 > look for *explorer-table.rowCount%3D25/* at the end of the URL > change the 25 to the number of rows you need.

## Sampling

### Sampling Defined

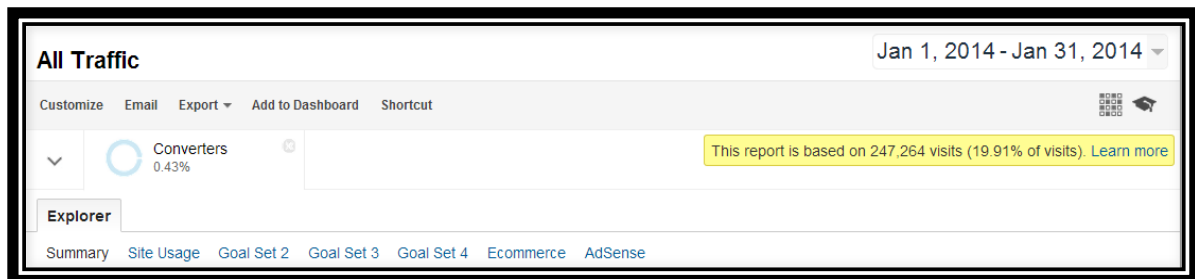
Sampling is the selection of a subset of from within a statistical population to estimate characteristics of the whole population.

### Causes

Google Analytics starts sampling at 250,000 visits in a property (not in a view/profile). This is one reason it's not a good idea to put more than one website in a single property.

### How to Detect It

Look for this yellow alert box:



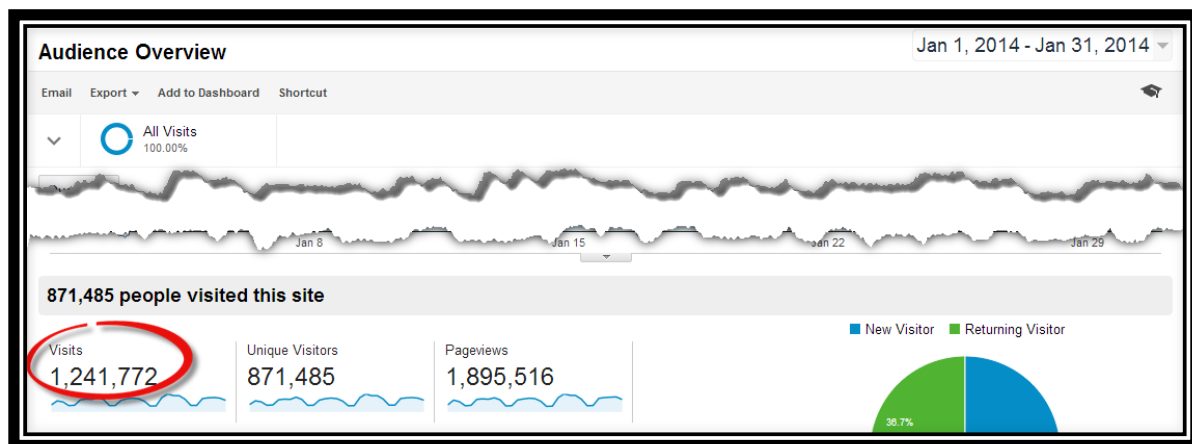
This pops up if there are more than 250,000 visits to the property. To find out how many visits your property has received for the selected time period, go to your dashboard by clicking the Home link at the top of any report.

For my site, the account is Pied Piper Interactive (my umbrella company), the property is <http://annielytics.com>, and the views (formerly known as profiles) are Annielytics and Annielytics – Raw. To get to this page, click the Home icon in the top navigation bar.

		Visits
★	📁 Pied Piper Interactive	
★	📁 <a href="http://annielytics.com">http://annielytics.com</a> (UA-15381183-3)	
★	🌐 Annielytics	11,710
☆	🌐 Annielytics - Raw	11,723

If you have multiple sites set up under one property, you will need to add up the visits from each of the sites to get the total number of visits. (Visits for different views of a single site don't count against that threshold.)

If you only have one website in a property (as you should), you can also see overall visits for a date range from the Overview report under Audience or Acquisition.



## How Much Is Too Much

Rule of thumb: data sampling = confidence in the data

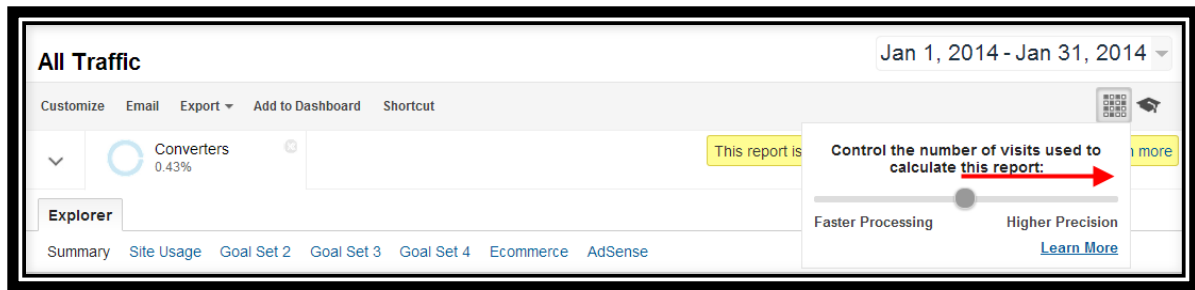
- 20% of visits sampled, 20% confidence in the data
- 80% of visits sampled, 80% confidence in the data
- 3% of visits sampled, throwing spaghetti against a wall might be more accurate

## How to Minimize Its Impact

### Double the Threshold

Google Analytics will allow you to bump the threshold up to 500,000 visits with a hidden slider, but it's not apparent how to do that. To access the slider, click the grid icon above the warning and move the dot all the way to the right. This will double the percentage that you originally saw, so if Google Analytics was previously only processing 20% of your traffic, it will recalculate using 40%.





Obviously, any sampling rates greater than 50% will result in the eradication of sampling for the time period you have chosen once you've moved the slider. So you need to train yourself, like Pavlov's dog, to move the slider any time you see that yellow warning box.

## Reduce Date Range

Reducing the date range will reduce the number of visits, getting you closer to 500,000.

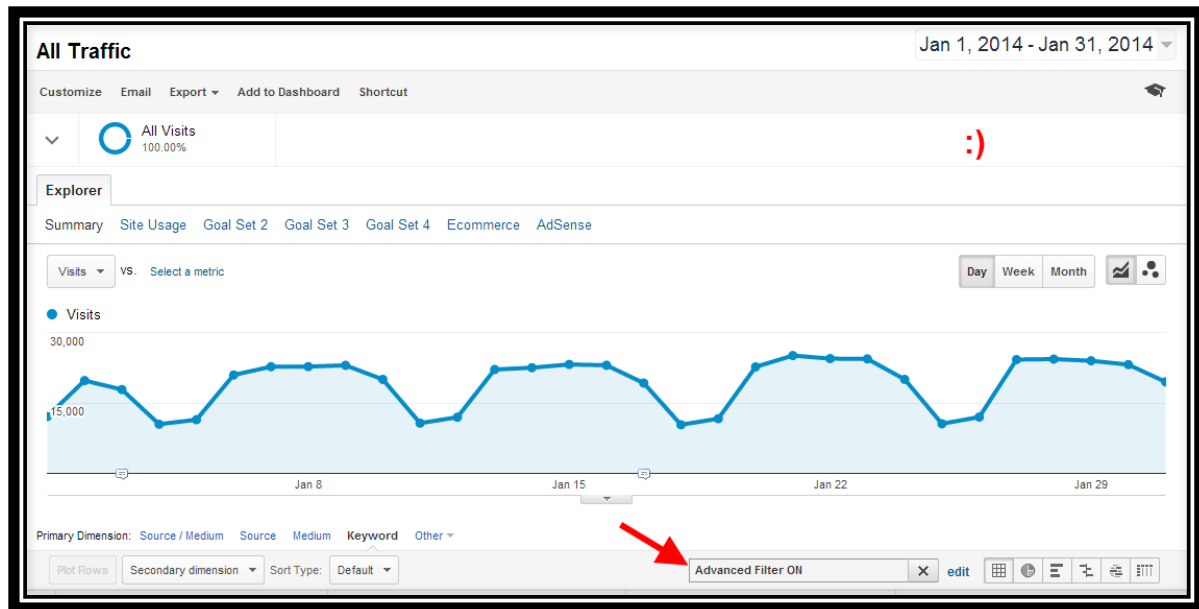
## Use Standard Reports

The standard reports in Google Analytics aren't subject to sampling. Custom reports are. However, if you apply an advanced segment to a standard report, you'll get sampling.

It's better to apply report filters over using advanced segments for this reason. For example, here is a report that isolates (*not provided*) traffic using an advanced segment:



And here's one that uses a report filter:



## Google Analytics Premium

Premium gives you up to 100 million visits before Google Analytics starts sampling.

## Google Analytics API

By using the API, you can import all of your Google Analytics data into a database to retrieve it from there. Using the API alone won't solve your sampling issue, but it does give you the opportunity to pull the data you need to use later in your own system.

## Analytics Canvas

Analytics Canvas (which we'll be learning more about on Day 3) has a functionality that reduces sampling significantly. You can't use this solution for visitor-level metrics since the data gets scrambled, but it works beautifully on session- and hit-level analysis.

[illegible]

[illegible]

# Advanced Segments

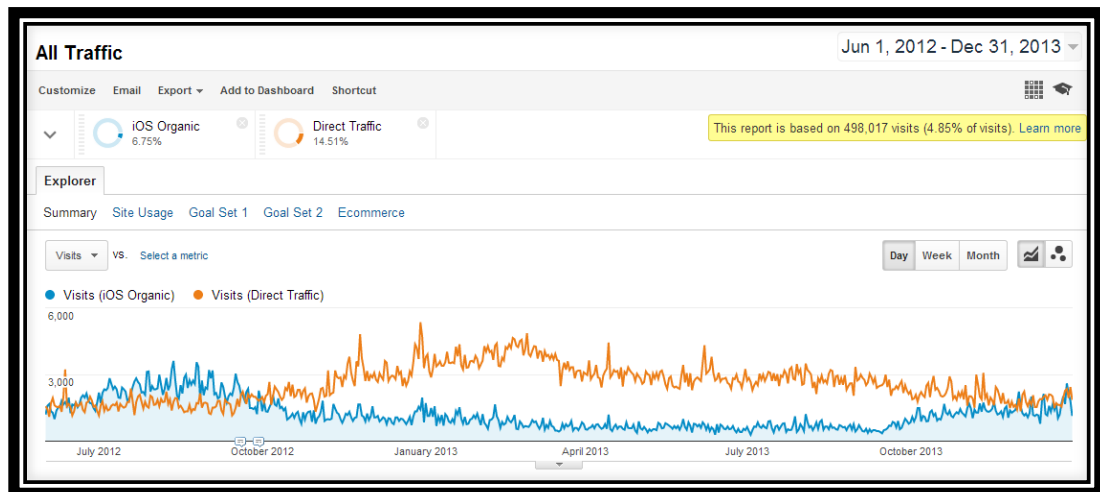
## Caveat

As mentioned in the section on Sampling, advanced segments cause sampling in larger sites, so I'm very cautious with them. As a general rule, I mostly use advanced segments for forensic analysis. I use filters for reporting.

## When to Use Advanced Segments

1. When your property receives well under the 500,000 visits allotted before sampling kicks in.
2. When you need to export a segment of visits or visitors you can't get from one report.

For example, when iOS 6 started reporting organic traffic as direct, I added a chart to clients' reporting dashboards that compared direct to organic for traffic coming from iOS devices to account for the sudden drop in organic traffic. I couldn't have gotten that data with report filters. With a report filter, I could look at just organic traffic from iOS devices or direct traffic; I can't compare their performance in a timeline like you see below. (Read more about how I did it here: [bit.ly/ios-mess](http://bit.ly/ios-mess).)



Other good examples:

- Analyze traffic landing on blog pages vs traffic landing on commercial pages.
- Combine social referrals and campaigns for each social network — e.g., create a Facebook segment that stitches together traffic from facebook.com and m.facebook.com with campaign traffic you've tagged (more on that in the Campaign Tagging section).

- Compare visitors who made at least one goal conversion vs those who generated revenue vs those who didn't convert at all.
  - Compare branded vs non-branded PPC keywords.
3. When you want to quickly apply qualifiers to a variety of reports. Report filters are tied to a particular report. Segments can be applied to all reports.
  4. When you want to segment by visitor behavior. Examples might be visitors who have spent at least \$100 on your site, visitors who have visited your site at least x times, date of a visitor's first visit, etc.

## Gallery

Take advantage of Google Analytics' impressive gallery of segments, custom reports, and dashboards!

## Report Filters

### What They Do

Report filters allow you to filter a particular report using whatever dimensions and metrics are present in the report. As mentioned in the Sampling section, report filters don't cause sampling like advanced segments do.

### What It Is Not

Report filters are not the same thing as view (profile) filters. View filters are applied to the entire view and are often misused. View profiles are outside the scope of this course.

## Regex Heaven

If you're not familiar with regex (short for regular expressions), I wrote a post that is newbie friendly ([bit.ly/regex-for-newbies](https://bit.ly/regex-for-newbies)). Report filters are sensitive to regex. You apply them clicking the advanced link to the right of the filter field, selecting the dimension or metric you want to filter by, choosing Matching RegExp from the drop-down menu, then entering your regular expression.

# Multi-Channel Funnels

## What Are They

Multi-channel funnels are the best thing to happen to Google Analytics in a long time. The reason is they show much truer values for how much a channel (or medium or source or whatever) is generating than what you get from Google Analytics' standard reports. The reason is Google Analytics' standard reporting awards conversions using last-click interactions. Multi-channel funnels look at last-click, first-click, and all other assists to a conversion.

## A Few Notes

- First-click interactions are a subset (or type) of assists.
- The lookback window is set by default to 30 days. I always dial it up to the full 90 days allowed. (The API doesn't allow you to change this as of the publishing date of this workbook.) When I asked Justin Cutroni (Google Analytics evangelist) about this, he said they're considering adding it. (Translation: "Oh crap! We forgot to add that to the API? Let me submit a work order to the engineers.")
- In standard reports, if a visitor visits the site via a campaign and then returns as a direct visit, the campaign inherits credit for the conversion. Not so with multi-channel funnels. Direct is awarded credit for the conversion. Because of this revenue numbers between regular reports and multi-channel funnel reports oftentimes won't match. As you might imagine, for most sites, direct is credited with more conversions in the Multi-Channel Funnels model.

## How Channels Are Defined

This is how Google has defined each of the default channels:

Channel	Description
Display	Interactions with a medium of "display", or "cpm". Also includes AdWords interactions with ad distribution network set to "content" but excluding ad format of "text".
Paid Search	Visits from the AdWords Search Network or other search engines, with a medium of "cpc" or "ppc".
Other Advertising	Visits that are tagged with a medium of "cpc", "ppc", "cpm", "cpv", "cpa", "cpp", "content-text", "affiliate" (excluding Paid Search).
Organic Search	Visits from unpaid search on any search engine (i.e. medium="organic").
Social Network	Visits from any of approximately 400 social networks (that are not tagged as ads).
Referral	Visits from websites that are not social networks.
Email	Visits that are tagged with a medium of "email".
Direct	Visits in which the visitor typed the name of your website URL into the browser or who came to your site via a bookmark (i.e., source="(direct)" and medium="(not set)" or "(none)").

Source: [bit.ly/channel-definitions](https://bit.ly/channel-definitions)

To see these in Google Analytics take these steps:

1. In the Assisted Conversions or Top Conversion Paths report (under Conversions > Multi-Channel Funnels), click Channel Groupings and then select Copy MCF Channel Grouping template. (You're not going to actually save the copy.)

Assisted Conversions	Assisted Conversion Value	Last Click or Direct Conversions	Last Click or Direct Conversion Value
625	\$62,336.07	1,171	\$75,815.06
% of Total: 100.00% (625)	% of Total: 100.00% (\$62,336.07)	% of Total: 100.00% (1,171)	% of Total: 100.00% (\$75,815.06)
Primary Dimension: MCF Channel Grouping   Source / Medium   Source   Medium   Other   Channel Groupings			
<input type="checkbox"/> MCF Channel Grouping <input type="button" value="Plot Rows"/> <input type="button" value="Secondary dimension"/>			
<input type="button" value="Create a custom Channel Grouping..."/> <input type="button" value="Copy MCF Channel Grouping template..."/>			
<input type="checkbox"/> MCF Channel Grouping   Assisted Conversions   Assisted Conversion Value   Last Click or Conversion			
1. Direct	337 (30.86%)	\$40,059.57 (33.21%)	474

2. Click the pencil icon for the channel you want to check out.



Create or edit channel grouping

Channel Grouping Settings

Channel grouping name

Copy of MCF Channel Grouping

CHANNEL DEFINITIONS

+ Define a new channel

1. Display | User defined

2. Paid Search | User defined

3. Other Advertising | User defined

4. Organic Search | User defined

5. Social Network | User defined

6. Referral | User defined

7. Email | User defined

Save

Cancel

3. Voilà.

Social Network

Define rules

Social Source Referral | exactly matches | Yes

OR

Medium | matches regex | ^(\social|social-network|social-media|s

OR AND

Display Color:

a a a a a a a a a a a a

a a a a a a a a a a a a

Preview:

Social Network

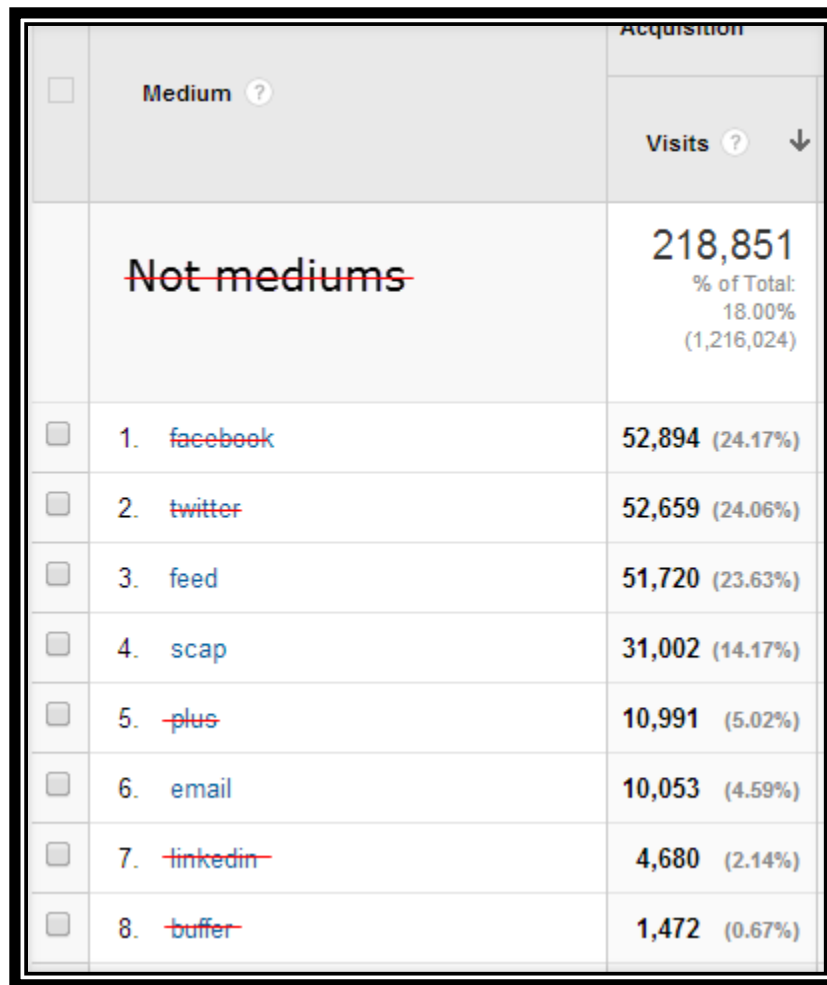
Done

Cancel

## How to Customize Default Channel Groupings

You will need to do this if you've been tagging social traffic as anything other than one of the acceptable tags you see in the above screenshot. I recommend using `utm_medium=social` for simplicity's sake.

Warning: There are social management tools like SocialFlow that mistag links. (Buffer used to be another offender.) So if you look at the mediums reporting in your Campaigns report (Acquisition > Campaigns > Primary Dimension: Medium) and see various sources, like the screenshot below, you will need to clean up your channel groupings (and fix your tagging strategy):



Medium ?		Visits ? ↓
<del>Not mediums</del>		218,851 % of Total: 18.00% (1,216,024)
<input type="checkbox"/>	1. <del>facebook</del>	52,894 (24.17%)
<input type="checkbox"/>	2. <del>twitter</del>	52,659 (24.06%)
<input type="checkbox"/>	3. feed	51,720 (23.63%)
<input type="checkbox"/>	4. scap	31,002 (14.17%)
<input type="checkbox"/>	5. <del>plus</del>	10,991 (5.02%)
<input type="checkbox"/>	6. email	10,053 (4.59%)
<input type="checkbox"/>	7. <del>linkedin</del>	4,680 (2.14%)
<input type="checkbox"/>	8. <del>buffer</del>	1,472 (0.67%)

More on why these aren't mediums in the next section.

To redefine how a channel grouping is defined, you'll need to take these steps:

1. Click Admin > Choose the Property and View.
2. Click the Actions button next to Default Channel Grouping and choose Edit.

3. Click AND/OR to add new rules.

## Create Your Own

You can create your own channel groupings (in the Assisted Conversions and Top Conversion Paths reports), but you can only access the default channel grouping via the API (at the time of publication). So if you want to use the API, you'll need to modify the default channel grouping as described above.

## Notes: Multi-Channel Funnels

[illegible]

[illegible]

# Campaign Tagging

If you're running marketing campaigns, campaign tagging is absolutely critical. What campaign tagging allows you to do is set the source, medium, and campaign name for a marketing campaign. Although terms and content are primarily for tagging your paid campaigns, you can use them for regular marketing campaigns to get more data. For example, I sometimes use content to capture banner sizes or the position of a link in an email (body, image, footer, etc.)

## Campaign Parameters

### Medium

#### What It Is

Think of medium as a bucket. You want these buckets to be pretty big. In Google Analytics you can view the mediums your site is getting traffic from by going to Acquisition > All Traffic and choosing Medium as your primary dimension. If you see more than 10 line items, you may be tagging mediums incorrectly.

#### How It's Collected

When Google Analytics drops a cookie in a visitor's browser, it will collect medium data automatically, as long as the user has cookies enabled. The standard mediums are:

- organic
- (none)
- referral
- cpc (if you're using AdWords and have enabled auto tagging)

If you don't tag links and no one else tags links that point to your site, these are the mediums you'll see. (And you'll only see cpc if you're running AdWords.)

However, Google gives you the ability to overwrite the cookie with what you want the medium (or source) to be. But with great power comes great responsibility, grasshoppah. I've seen site owners completely trash their analytics profile by misusing campaign tagging. You can read a cautionary tale here: [bit.ly/trash-your-data](http://bit.ly/trash-your-data).

#### Good Mediums to Use

If you're putting links to your site on social media channels, email, banner ads, etc. it's critical that you tag these links. Here are some good mediums to use:

- social
- email
- feed

- banner
- cpc (or ppc)
- display
- affiliate
- ebook
- tv
- print
- billboard
- partner
- radio
- qr code
- widget

### Tagging for Offsite Campaigns

But what if your link isn't on a website? What if it's on a billboard, for example? That's where vanity URLs come into play. Let's say you're running a sale on funky shoes. (Imagine that!) You could create a vanity URL (let's say [yousocray.com](http://yousocray.com)) and 301 redirect it to a landing page on your site that's tagged:

**[www.annielytics.com/?utm\\_medium=billboard&utm\\_source=main+st&utm\\_campaign=socray](http://www.annielytics.com/?utm_medium=billboard&utm_source=main+st&utm_campaign=socray)**

As always, test this before launching your campaign to make sure nothing gets mangled in the redirect.

### Don't Be a Statistic

The most common mistake I see with social tagging is tagging the network — e.g., Twitter and Facebook — as the medium. *They are not mediums; they are sources.* Getting this wrong will wreak havoc in your social reports AND the glorious Channels report (under Acquisition), as mentioned in the Multi-Channel Funnels section. Your precious social visits will show up as referrals.

Default Channel Grouping		Acquisition
		Visits ? ↓
		71,077 % of Total: 100.00% (71,077)
<input type="checkbox"/>	1. Organic Search	41,521
<input type="checkbox"/>	2. Referral	12,512
<input type="checkbox"/>	3. Direct	9,161
<input type="checkbox"/>	4. Social	6,677
<input type="checkbox"/>	5. (Other)	760
<input type="checkbox"/>	6. Email	444

*Pro Tip:* Google launched the Channels report July 25, 2013. If you run this report for a date range that predates this date, your data will show up as (not set). If you adjust your date range and you still see (not set), click on (not set) to drill down to see the sources driving this traffic and modify your Default Channel Groupings. (Learn how in the How to Customize Default Channels section of this workbook (under Google Analytics Interface > Multi-channel Funnels)).

## Source

Source is simply the site the link lives on. So if you put a link out on Twitter, the source should be twitter.com; if it's on Facebook, facebook.com; if it's a banner on a partner site, it should be the domain of the site it's on.

Look at how sources show up in your referral reports (Acquisition > All Referrals). Your tagged sources should match those.



<input type="checkbox"/>	Source ?	Acquisition
		Visits ? ↓
		<b>39,277</b> % of Total: 32.83% (119,620)
<input type="checkbox"/>	1. <a href="#">searchenginejournal.com</a>	9,547
<input type="checkbox"/>	2. <a href="#">t.co</a>	6,935
<input type="checkbox"/>	3. <a href="#">searchengineland.com</a>	3,607
<input type="checkbox"/>	4. <a href="#">moz.com</a>	3,314
<input type="checkbox"/>	5. <a href="#">facebook.com</a>	1,481
<input type="checkbox"/>	6. <a href="#">unbounce.com</a>	1,243
<input type="checkbox"/>	7. <a href="#">inbound.org</a>	1,172
<input type="checkbox"/>	8. <a href="#">plus.url.google.com</a>	1,137
<input type="checkbox"/>	9. <a href="#">m.facebook.com</a>	974
<input type="checkbox"/>	10. <a href="#">marketingland.com</a>	711

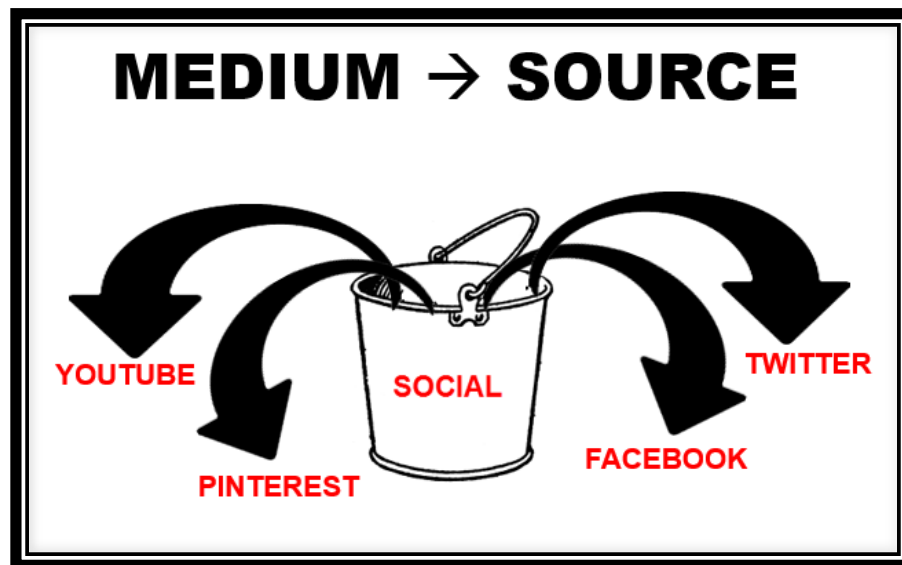
### Warning about Google+

If you want links you share on Google+ to show up properly, either use [plus.url.google.com](#) (Google's default) or [plus.google.com](#) as the source. Either of these will cause visits from tagged URLs to show up in other important reports, such as the Network Referrals report (Social > Network Referrals) and the Visitors Flow report (Social > Visitors Flow).

### Email Tagging Conundrum

Email is a little different. Because these links don't reside on a site per se, use your discretion. I've most commonly seen marketers tag them as internal or the name of the email service they use (such as [marketo](#)). I wouldn't use your site (e.g., [annielytics.com](#)) as the source though because it will look like you have self-referrals (which you can check for by looking for your own domain in the All Referrals report).

When links are tagged strategically, your ability to segment will be a thing of legends. Sources should fit neatly into medium “buckets” and look something like this:



## Campaign

The campaign name is simply whatever you name your campaign. Examples might be *bogo+sale*, *2014-02+newsletter*, and *new+member+email*.

A few things to keep in mind:

- Don't make them too specific. If you send out a daily email, don't make the campaign name specific to each day. It makes roll-up reporting more challenging.
- Ideally, you should use campaign names that span different mediums. For example, if you run a BOGO sale using the campaign name *bogo+sale* and promote it on Twitter, Facebook, Pinterest, email, CPC, and a banner for your affiliates, they should all use the same campaign name. This way you can compare how your promotion did across marketing channels (mediums) and across sites (sources).

## Tagging Strategies

There are a few tips I'll pass on from the trenches:

- Be consistent. Keep a record of the tags you use and use the naming conventions consistently.
- Use a tool to tag. You can use Google's URL builder ([bitly.com/url-builder](http://bitly.com/url-builder)) to create them one by one. Or you can use this Google Spreadsheet I created to auto tag your links: [bit.ly/utm-tagging](http://bit.ly/utm-tagging). I include a tab with tips and comments throughout the doc. Look for the orange dots in the upper-right corners of cells.

- Use lowercase. Google Analytics is case sensitive, so visits to `utm_campaign=BOGO+sale` will show up as a separate line item from `utm_campaign=bogo+sale`, wreaking havoc in your reports.
- Separate words with + signs. These will translate into spaces in your Google Analytics reports.

## Campaign Reports

You will find campaign traffic under Acquisition > Campaigns. The default primary dimension is Campaign, but feel free to choose Source and Medium and even use secondary dimensions. Slice and dice this data until the cows come home.



[illegible]

[illegible]

# Excellent Analytics

## Download

You can download Excellent Analytics here: [bit.ly/download-ea](http://bit.ly/download-ea) (PC swim only)

## Why Excellent Analytics

1. It's free. Hard to beat that.
2. It integrates right into Excel, which is perfect for dashboards.
3. It doesn't preformat the data, so you can brand the data according to your own branding. (That's why I didn't like Data Grabber or Next Analytics.)
4. It has an interface. You don't have to piecemeal the query together, like I used to have to when I used Google Spreadsheets.

query3	value3
type	core
ids	ga: [REDACTED]
start-date	1/1/2014
end-date	1/31/2014
last-n-days	
metrics	ga:visits,ga:pageviews,ga:timeOnPage
dimensions	ga:medium
sort	-ga:visits
filters	ga:medium==organic

5. The queries can be easily edited in the interface. With some API tools, if you want to modify the data later on, you have to edit the actual query.
6. It's a great way to learn about the dimensions and metrics offered in the API.
7. It doesn't use VBA, so you don't have to save workbooks as macro-enabled. One tool used VBA and wiped out all of my visualizations I had built when I refreshed the data, which wrecked my day. I'm not a big fan of tools that wreck my day.
8. Did I mention it's free?

## The Bad News

1. There's no technical support. If you run into issues, there's a Quora group with Excellent Analytics enthusiasts ([bit.ly/ea-quora](http://bit.ly/ea-quora)).

2. The company that so generously shared it with the world (Ampliofy) doesn't maintain it, so it hasn't been updated in years.
3. It's buggy. The Dimensions functionality has a bug that sometimes doesn't allow you to change the mediums you've selected when you try to update the query after running it. When you go to collapse that menu, it just won't collapse, which means you can't finish the query. Take my word for it: If this happens, just abort mission and start your query over. I've never been able to get it to collapse once it's gotten stuck. I haven't run into this bug since I started using Windows 8 (blech), but I also don't use it as frequently as I used to (because I keep nudging clients to upgrade to Analytics Canvas, which makes my heart sing).
4. You only get up to 10,000 rows of data. So that doesn't allow for a lot of segmentation in a single query. Unless you have a small site, are only reporting on high-level metrics, or focus on top X reports (e.g., top 10 landing pages), you're going to hit this limit pretty fast.

## Tutorial

I wrote a tutorial on the Search Engine Land site that walks you through how to use Excellent Analytics in case you get stuck: [bit.ly/ea-tutorial](http://bit.ly/ea-tutorial).

## Notes: Excellent Analytics

[illegible]



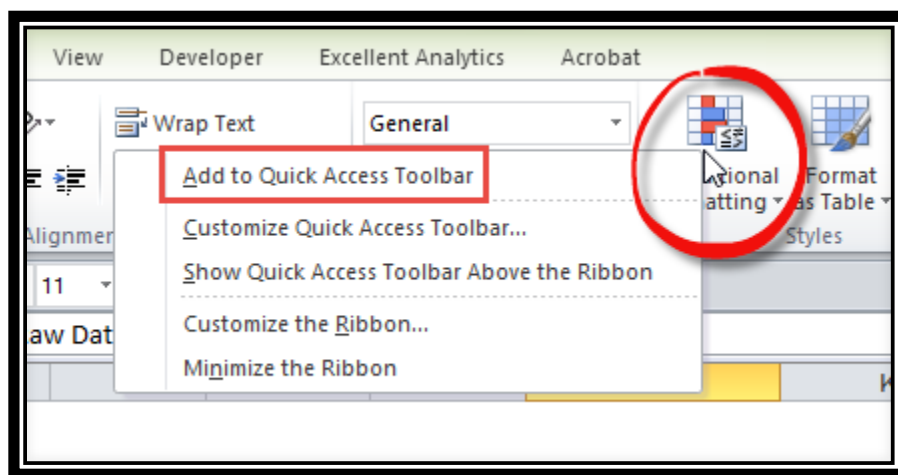
[illegible]

# Intermediate Excel

## Quick Access Toolbar

I can't live without the Quick Access Toolbar (QAT). Unfortunately, it's not offered on the Mac. On the PC, it shows up above the Ribbon by default. I move it below to make it more accessible. To move it, click the down-facing arrow to the far-right of the toolbar and choose Show Below the Ribbon.

You can add any element on the Ribbon to the QAT by right-clicking and choosing Add to Quick Access Toolbar.



To reorder items on the QAT, click the down-facing arrow again, and select More Commands. From the Excel Options dialog, you can add, remove, and sort items.

## Navigating the Interface

### Enable Developer Ribbon

To do some of the things we'll be doing in this seminar, you'll need the Developer ribbon. To enable it on a PC, go to File > Options > Customize Ribbon > Customize the Ribbons > Main Tabs: Developer. On a Mac, go to Excel > Preferences > Sharing and Privacy > Ribbon > Customize > Check Developer.

### Hide/Unhide Sheets

When I'm finished all of my mad computing, I hide the sheets with all the ugly, unformatted data. It's a preference thing. I like to display the data users will find most helpful but then add links to the ugly data. To hide a worksheet, right-click on any tab at the bottom of a

## Hide/Unhide Rows and Columns

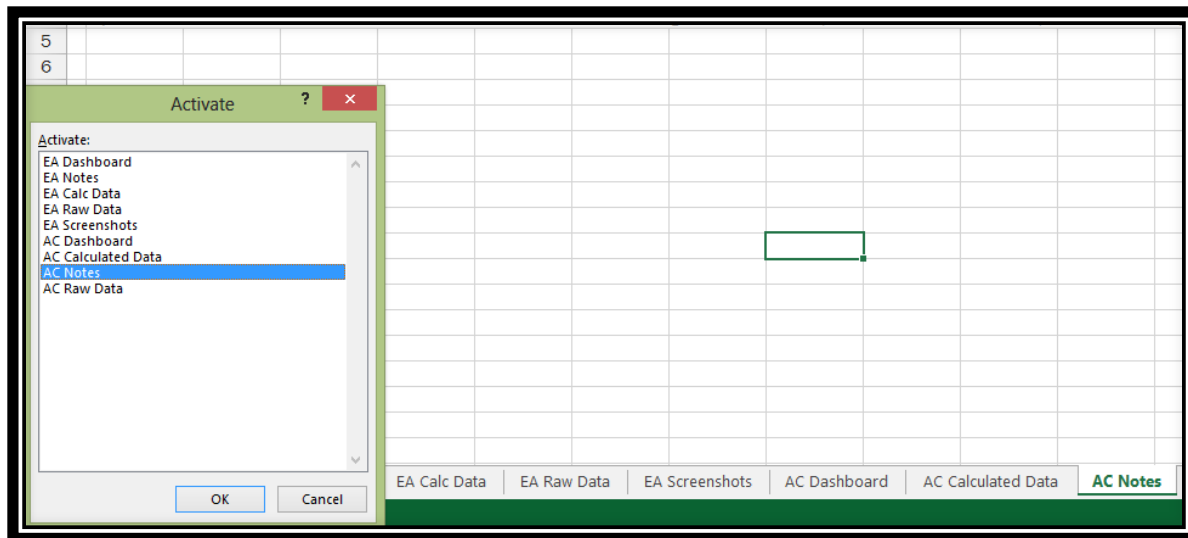
To unhide a row or column, click-and-drag the rows and columns that surround the hidden rows/columns, then right-click and choose Unhide.

## Insert/Delete Rows and Columns

So in the example below, columns BE to BH will become blank columns, and everything to the right of column BE will be pushed to the right four columns.

## Viewing All Sheets

43 | Page



## Navigating Data Sets

**Ctrl-Arrow (Mac: Command-Arrow):** Move to the perimeter

**Ctrl-Shift-Arrow (Mac: Command-Shift-Arrow):** Select from current cell to the perimeter of a data set

**Ctrl-A (Mac: Command-A):** When any cell in a data set is selected, this selects the entire data set. If you're in a formatted table, the first time will select the data; pressing it again will include headings.

## Decluttering Worksheets

### Gridlines

Gridlines are fine in raw data and calculated worksheets, but they should never be selected for dashboard worksheets (or any presentation worksheets). Learn to hate them! If you need visual guides for tabular data (data in tables), formatted tables come with lines.

To turn these off, go to View > Show (Mac: Layout > View) and deselect the check box.

### Headings

Headings are the kissing cousin of gridlines — fine for data worksheets but should be left out of dashboards. They add visual noise. The one exception is if people using your dashboard need to adjust the width of columns and rows. You can't do this without headings being visible. Again, that's why I don't mind them being visible in data worksheets, but a dashboard is going to look a cleaner without them.

	A	B	C	D	E	F	G	H	I
1		<b>CALCULATED DATA</b>							
2									
3		Executive Overview							
4									
5			Last Month	Last Year	% Δ				
6		Visitors	32,150	27,682	16.1%				
7		Visits	42,696	39,800	9.5%				
8		Pageviews	358,868	321,826	11.5%				
9		Goal Completions	7,813	9,876	-20.9%				
10		Transactions	5,051	4,045	24.9%				
11		Revenue	214,375	200,440	7.0%				
12									
13		Last 12 Months							
14									
15		Month	Visitors	Visits	Pageviews	Goal Completions	Transactions	Revenue	
16		Jan 13	16,250	21,001	1,851	123,090	659	\$ 26,722	
17		Feb 13	15,648	20,052	2,106	115,747	760	\$ 24,598	

## Margin

I don't like that Excel doesn't have any margin built into spreadsheets. Whitespace is an import design element in dashboards, as with anything. So I'm in the habit of using Column A for a makeshift margin. I never put anything in that column. I set the width to 1 by pressing Alt-O-C-W on a PC or pulling the borders between rows/columns until the desired height/width.

## Auto Adjust Widths

If you want to adjust a column or row to fit whatever is in the cell, just select the columns or rows you want to adjust and double-click on one of the borders. They will all adjust.

E	F	G	H	I	J	K
Overview						
Δ						Marketing Cha Visits
16.1%						Organic
9.5%						Referral
11.5%						Direct

# Planning Your Dashboard

## Requirement Gathering

It's very important to find out what KPIs are important to decision makers. I like to ask clients what keeps them up at night. Those are really the most important KPIs. Once I have a general idea, I'll send out a Google Form to ask more questions from all of the involved parties. To learn more about Google Forms, visit [bit.ly/google-form-tutorial](http://bit.ly/google-form-tutorial).

## Mockup

You can create the mockup using a wireframing tool like Balsamiq or use plain old pencil and paper. I usually end up creating at least three of these before I am ready to move to the next step.

## Organizing Data

Everyone has their own system for organizing data, and there's no right or wrong way. However, I've found that my method helps keep everything organized and scalable. Essentially, I divide my dashboard into five main elements:

## Dashboard

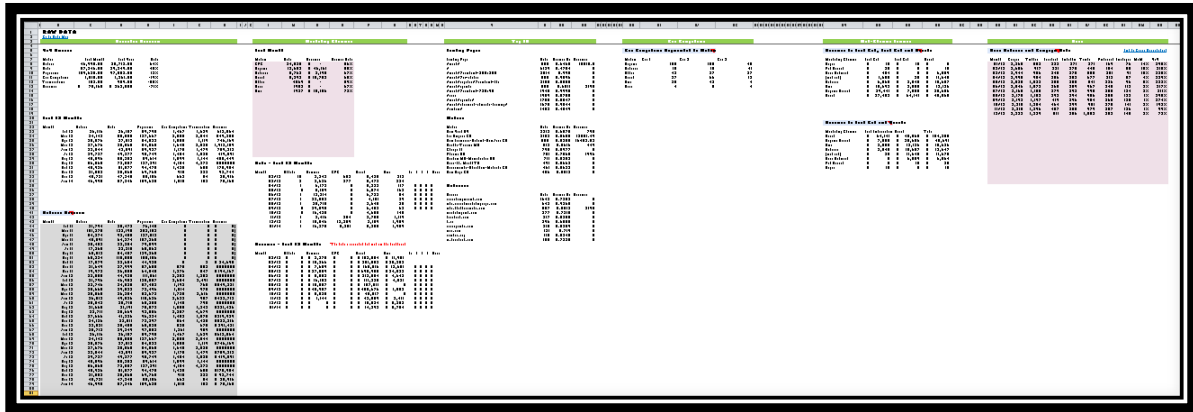
This is one sheet and contains only your sexy data: charts, branded tables, buttons, scorecards, etc. Here's an example of one of the dashboards from this course:



Oh. Hey, sexy data ... Umm you come around here often?

## Raw Data

You know those heavily Photoshopped before and after images in chicks' magazines? Yeah, your Raw Data sheet is the before pic. No pretty data is allowed in here — only ugly, unformatted, unloved (for now!) raw data.

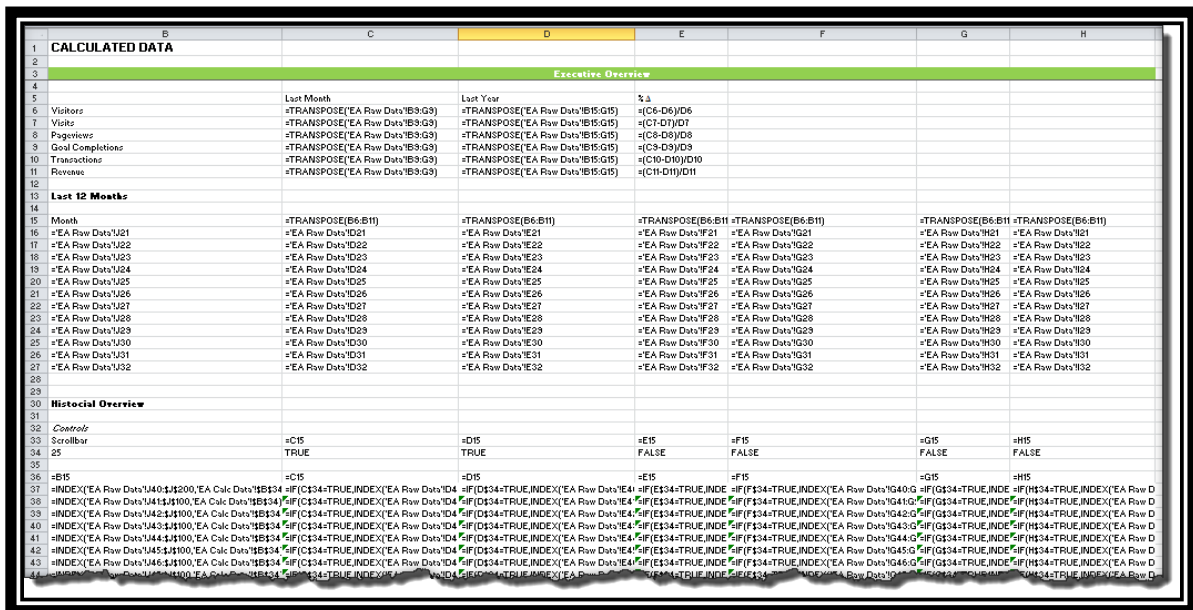


The Raw Data sheet is a large table with multiple columns and rows. The columns are organized into several sections: Customer Information (Name, Address, Phone, Email), Visit Information (Visit Date, Visit Time, Visit Duration), and various other data points. The data is presented in a raw, unformatted state, with many cells containing long strings of text and numbers.

## Calculated Data

This sheet is the salon. This is where all the data au naturale goes to get pretty. We nip, tuck, make sure outfits match shoes, and send it on its way to its ultimate destination: The Dashboard (oooo ahhh).

Seriously, what you'll see on this sheet, if you just show formulas (PC: Ctrl-` / Mac: Command-`) are formulas everywhere a la ...



The Calculated Data sheet is a table with columns for Customer Name, Address, Phone, Email, and various calculated dates and times. The data is presented in a clean, formatted state, with many cells containing long strings of text and numbers. The table is organized into sections: Executive Overview, Last 12 Months, and Historical Overview. The data is presented in a clean, formatted state, with many cells containing long strings of text and numbers.

## Data Map

It's important to give recipients who are using your dashboard or ~~suckers~~ employees who inherit it to be able to follow the logic. A data map — or index — helps toward that end. Data maps employee internal links to connect everything.

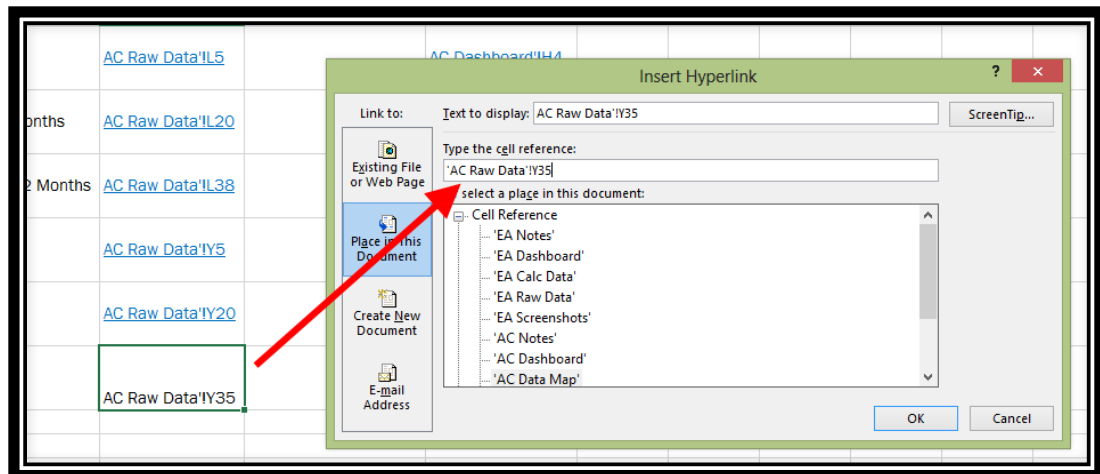


Section	Data Set	Raw Data	Calculated Data	Dashboard
Executive Overview	YoY Analysis	<a href="#">AC Raw Data!B5</a>		<a href="#">AC Dashboard!B4</a>
	Last 12 Months	<a href="#">AC Raw Data!B20</a>		<a href="#">AC Dashboard!B4</a>
	Historical Overview	<a href="#">AC Raw Data!B41</a>	<a href="#">AC Calculated Data!B5</a>	<a href="#">AC Dashboard!B14</a>
Marketing Channels	Last Month	<a href="#">AC Raw Data!L5</a>		<a href="#">AC Dashboard!H4</a>
	Visits - Last 12 Months	<a href="#">AC Raw Data!L20</a>		<a href="#">AC Dashboard!H33</a>
	Revenue - Last 12 Months	<a href="#">AC Raw Data!L38</a>		Not Displayed
	Link Pages	<a href="#">AC Raw Data!L5</a>		<a href="#">AC Dashboard!B5</a>

Here are the steps I take to create internal links:

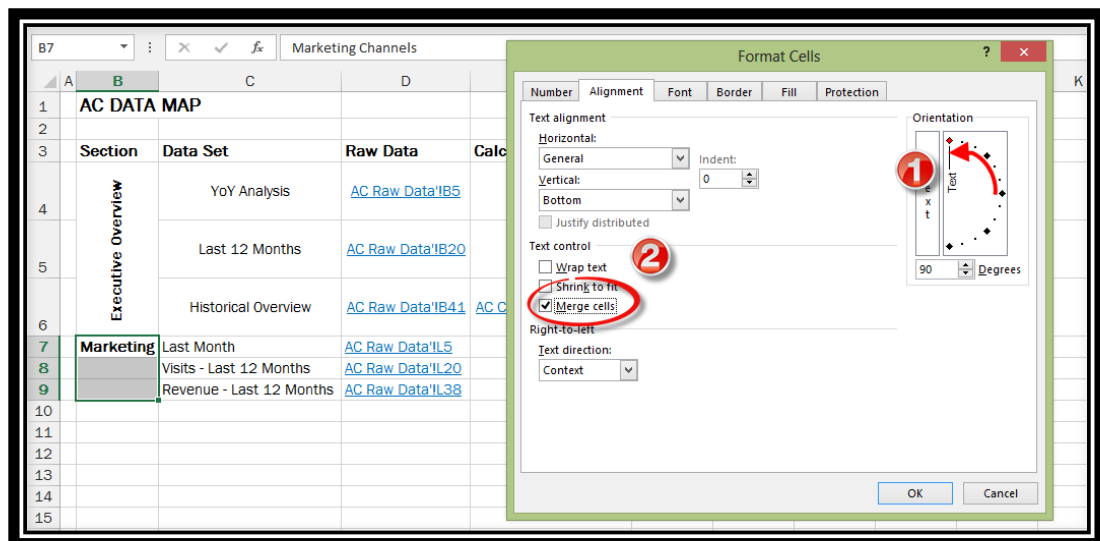
1. Reference the cell you're going to link to by entering an = sign in the, then find the item you want to link to in your workbook. Click the cell that contains the title (or a cell just above a chart, if the title is in the chart. Press Enter (Mac: Return) to commit.
2. Remove the = sign to break the formula. Then copy what's left. You'll use this reference to create the link. Press Ctrl-Enter (Mac: Command-Enter) to commit the change and keep the current cell selected.
3. To create an internal link in Excel, select the cell and press Ctrl-K (Mac: Command-K), then choose Place in This Document from the Insert Hyperlink dialog.
4. Where it says "Type the cell reference" paste your cell reference in. (It's a total oversight that Excel doesn't provide a cell selector here.) Then click OK.



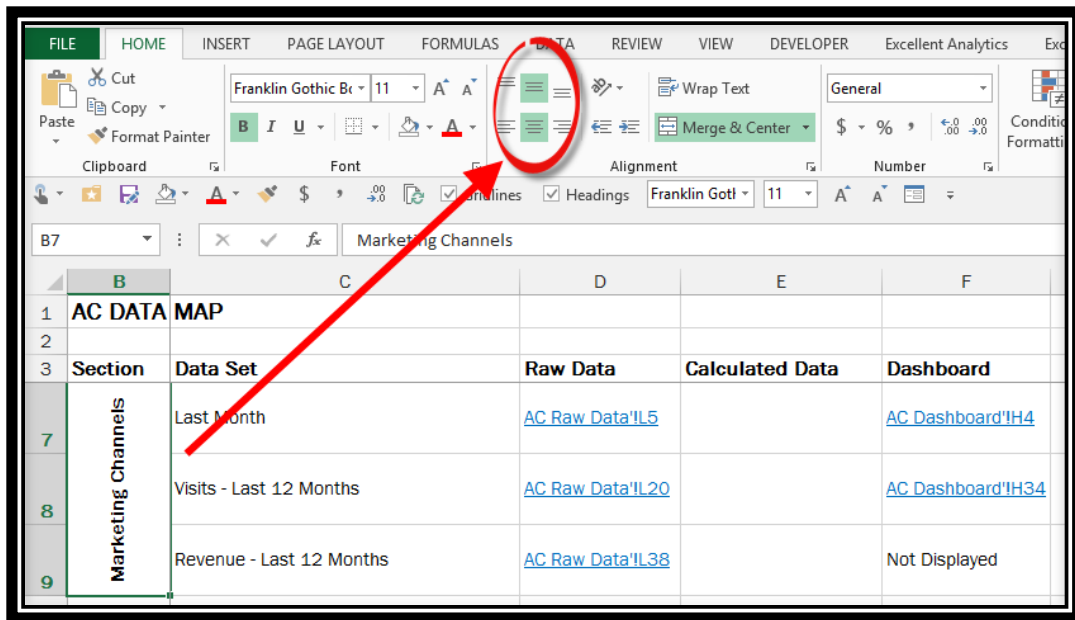


To turn the Section titles on their axes, take these steps:

1. Enter your text in the top cell.
2. Select all the cells you want the text to be centered across and press Ctrl-1 (Mac: Command-1) to open the Format Cells dialog.
3. Adjust the orientation to 90° (1) and choose Merge cells under Text control (2).



4. Select the rows and adjust them to match the height of the other rows (right-click > Row Height). I usually wait until I'm finished, figure out the row with the greatest height and adjust the others to match. (If you click-and-hold on any of the separators between row headings, you'll see the height.)
5. To center the text vertically and horizontally, I selected the merged cell and chose the options below:



## Updates/Notes Sheet

If your dashboard has elements that need to be updated manually, you should add those into a sheet that will become a checklist for future reporting periods. Basically, the less thinking you have to do at reporting time, the better. When you're finished with it, I recommend hiding it, so your recipients aren't distracted by it.

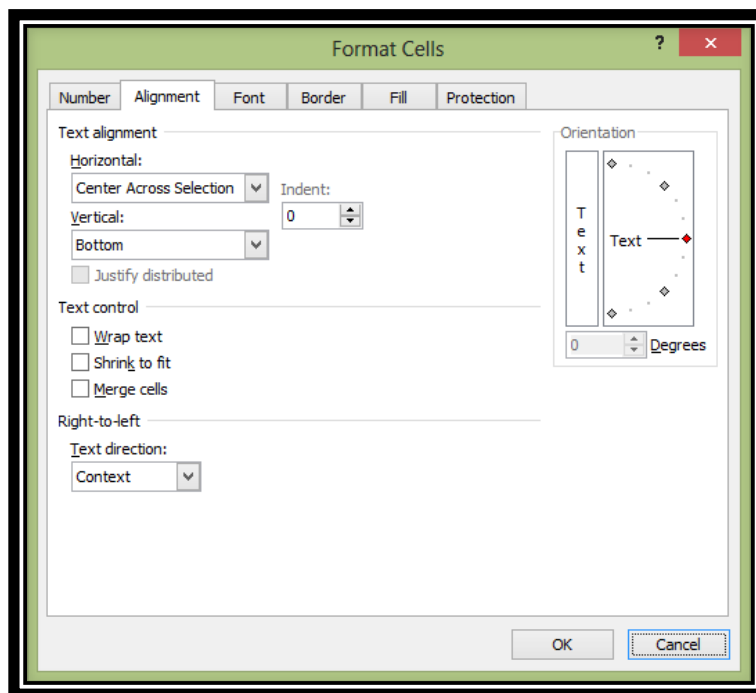
## Format Bars

I like to keep my data organized by using fills. They look like this:

CALCULATED DATA			
Executive Overview			
Instructions	Last Month	Last Year	% Δ

*Warning:* Don't use merge cells for these. If you need to add columns later, you won't be able to. Instead, there's a little-known formatting option called Center Across Selection. Use that. Your text will be centered, but you'll still be able to insert and delete columns. To create these "bars" take the following steps:

1. Select the cells you want to format and choose your fill and text colors.
2. Enter your text into the active cell (which will be the first cell in the selection).
3. With the cells still selected, press Ctrl-1 (Mac: Command-1) to pull up the Format Cells dialog.



4. Choose Alignment > Text Alignment > Horizontal: Center Across Selection and Enter (Mac: Return).

[illegible]

# Tables

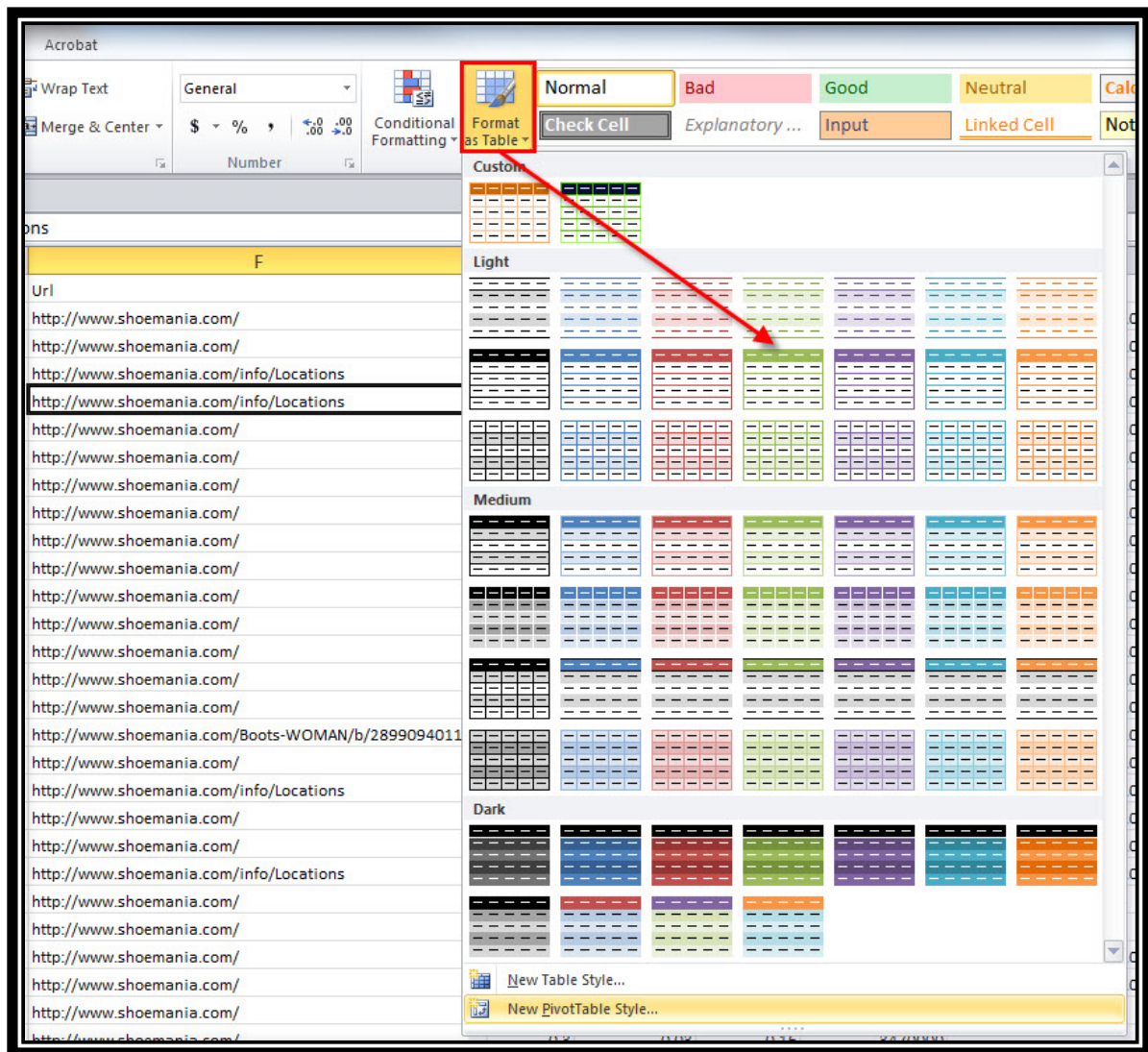
If there's one task most marketers share it's collecting and interpreting data. Being able to slice and dice the data to find actionable insights is key to effective analysis.

Yet, one of the biggest mistakes marketers make is trying to wrangle static data instead of taking advantage of Excel's table formatting, which basically turns your data range into an interactive database. I hope to rectify that injustice against innocent data.

## Get Started

To get started, select any cell inside your data set, then choose Home > Styles > Format as Table (Mac: Tables > Table Styles).

A 'Format as Table' menu will pop up. This will give you a drop-down of table formatting options.

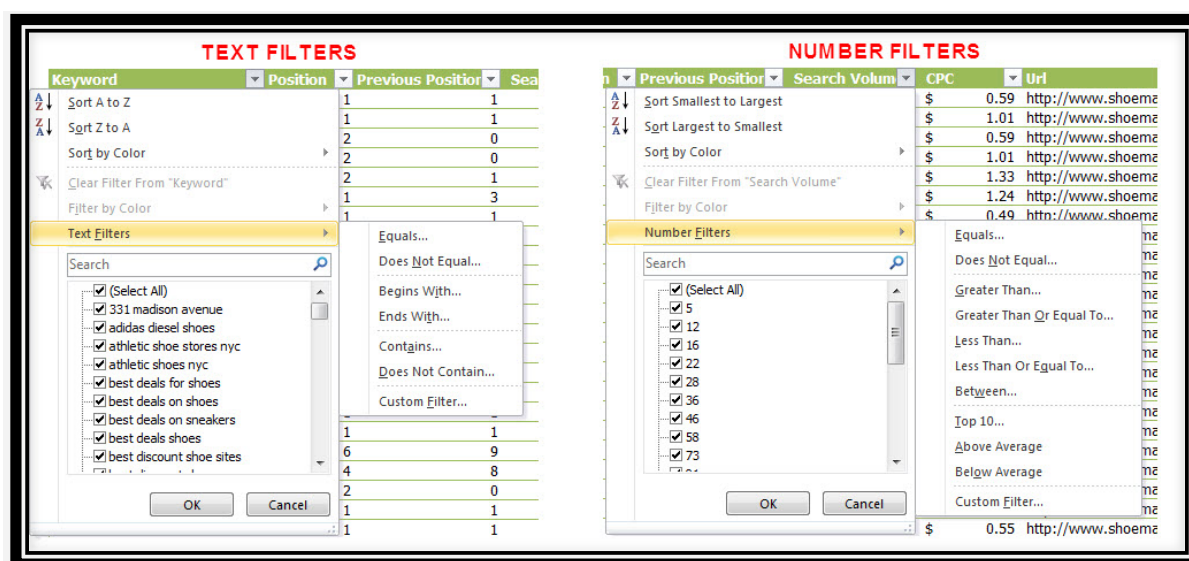


Excel will auto-detect the perimeter of your table and populate the range.

## Sort & Filter

The best benefit to formatting your data as a table, in my opinion, is the multiplicity of sort and filter options it affords. You can access these by clicking on any of the down-facing triangles in the header row.

If your column contains text you'll see filter options specific to text, and if your data contains numbers, they will be tailored to numbers, as you can see in this comparison:

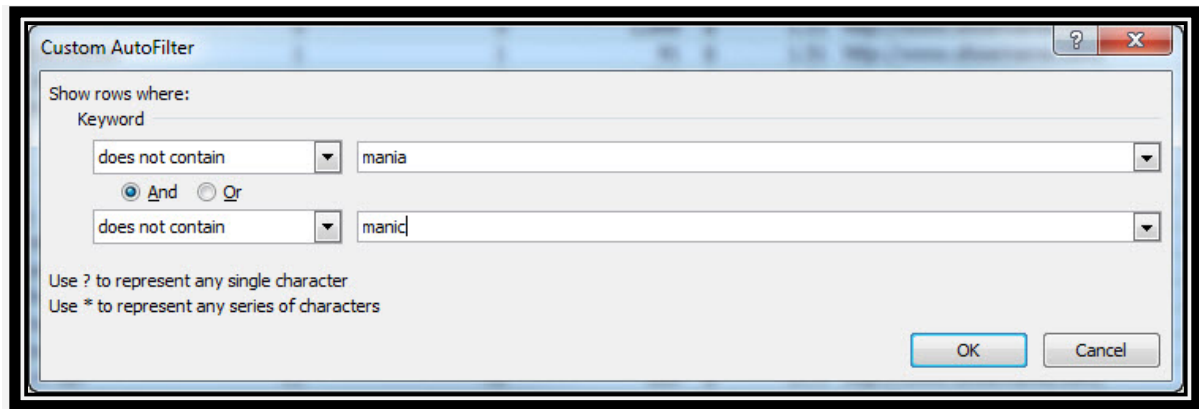


## Filter Options

As the name suggests, the filter options hide rows based on the criteria you choose. No data is lost in this process. It's just temporarily hidden to help you hone in on the data you're trying to interpret.

At any time, you can release these filters by choosing *Clear Filter from [Heading]* from the drop-down menu on a PC and the *Clear Filter* button on a Mac.

With this example, I was able to filter out all of the branded keywords for Shoe Mania by using a combination filter, as you can see in the screenshot below.



One time I was trying to filter by all keywords that contained *halloween*, and it was no small task. People have no idea how to spell the word, and I had about 20 different variations and only two filters to work with.

I was eventually able to capture all but a few with a “Contains” filter that employed both the ? and \* wildcards. The result was *h?l\*en*.

That translates to, “I know it starts with an *h* and then could have any one letter after that (to capture the variations that use an *o* instead of an *a*). Then there’s an *l*, followed by a total free for all, finally wrapping up with an *en* at the end.”

Then, I used another “Contains” filter that tacked an *e* at the end of all that, lassoing the few stragglers that were left.

If you need to do more sophisticated filtering, I highly recommend using Excel’s advanced filters. I wrote a tutorial on how to use them, which includes a downloadable workbook. You can check it out here: [bit.ly/adv-filters](http://bit.ly/adv-filters).

## Adding Rows and Columns

You might say to yourself, “Hey, I can get all the same functionality by adding filters to the header row.” (Just select the cells that make up the header row and go to Data > Filter to do this.) I’ve seen examples where marketers will boldface the headers and add these filters. It’s pretty bourgeois when you can get fully formatted tables with the same number of clicks.

However, one option you get with a formatted table that you won’t get by just adding filters is the flexibility in adding new columns or rows to your table. If you click just to the right or below the table and enter a value, the table will automatically expand to include the new row/column. This is a huge boon to charting because any chart built off a formatted table will automatically update when you add new rows or columns.

Otherwise, you have to update them manually or create dynamic named ranges. (You’ll learn about that in the Dynamic Ranges section.)

## Learn More

To learn more about how to rock formatted tables in Excel, check out: [bit.ly/table-formatting](https://bit.ly/table-formatting).



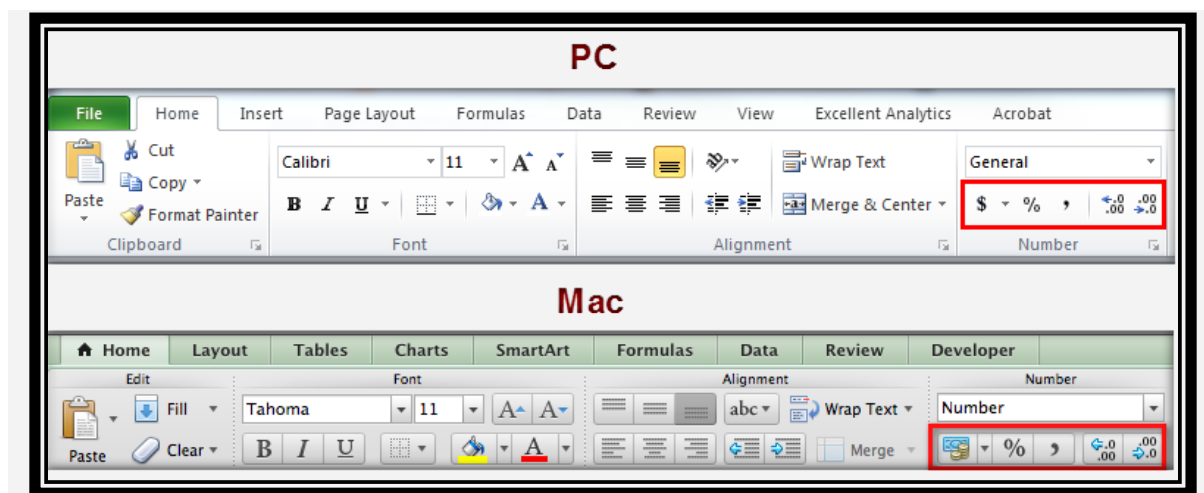
[illegible]

# Cell Formatting

## Standard Number Formatting

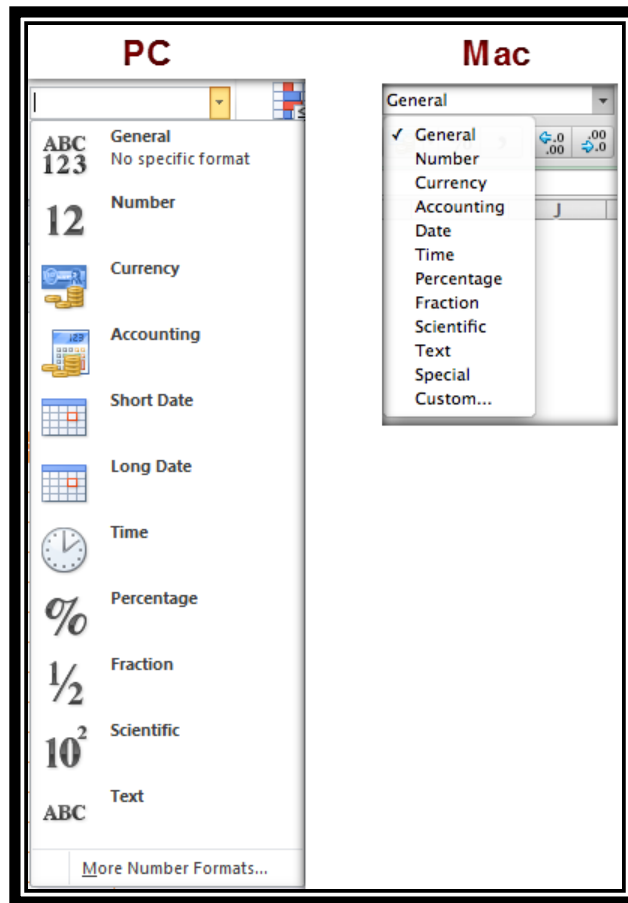
You would think everyone would use number formatting; it's so rudimentary. But I can't tell you how many times I see decimals in charts that should be formatted as percentages or no thousandths separators (a pet peeve of mine) or two decimal places filled with 0's because the number didn't need decimals.

These newbie mistakes are uncalled for because Excel placed several number formatting options front and center in the Number section of the Home tab:



## More Ribbon Options

Both PC and Mac offer more number formatting options from the ribbon. All you have to do is click the drop-down menu above the icons we just looked at.



## Date Formatting

Excel gives you quite a few options to choose from under Number > Date in the Format Cells dialog (which, again, you get to by pressing Ctrl-1 or Command-1 on the Mac). But I'm fond of the format that looks like Jan 14, which Excel doesn't offer.

No worries. Following a few simple principles, you can construct your own formatting options.

We'll use January 1, 2014 in our examples below:

m: 1

mm: 01

mmm: Jan

mmmm: January

d: 1

dd: 01

ddd: Wed (because it fell on a Wednesday)

dddd: Wednesday

yy: 14

yyyy: 2014

So here are some examples of how you can show Jan 1, 2014:

Jan 1, 2014: mmm d, yyy (or yyyy)

Wednesday, January 1, 2014: dddd, mmmm d, yyy

Wed. 01.01.14: ddd. mm.dd.yy

## Number Formatting

### Using Colors

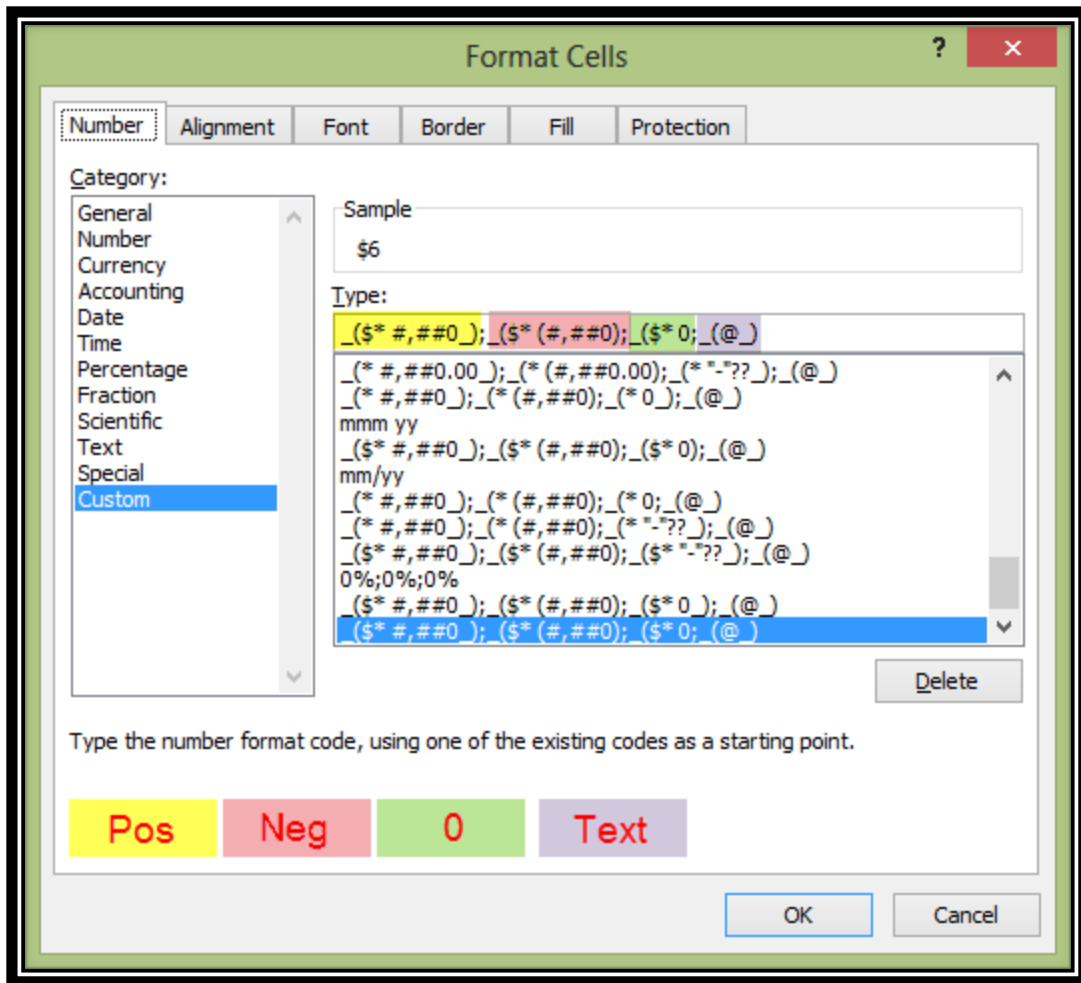
Excel gives you a plethora of number formatting options. I wrote a post on how to rock them, which you can find here: [bit.ly/number-formatting](http://bit.ly/number-formatting).

One of those options is to change the color of numbers based on their value. So, instead of using parentheses or a negative sign to indicate negative numbers, you could make it red. Sometimes I'll make positive numbers green to match.

If you want to change your standard number formatting, you need to understand how Excel formats these numbers:

**positive number; negative number; 0; text**

So, as you can see in the screenshot below, here's how that translates in the Format Cells dialog.



Excel offers a handful of preformatted colors you can use:

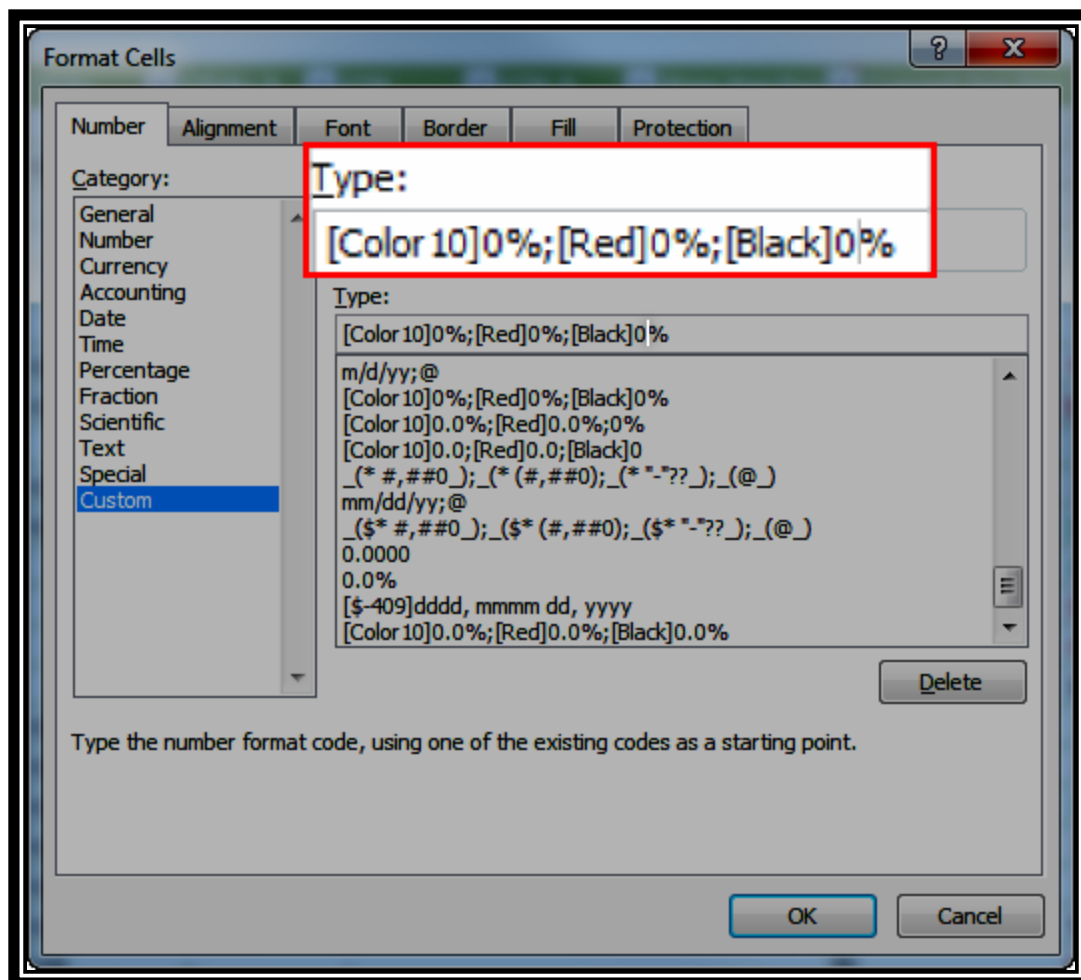
- [BLACK]
- [GREEN]
- [RED]
- [BLUE]
- [CYAN]
- [MAGENTA]
- [WHITE]
- [YELLOW]

*Note:* These aren't case sensitive.

If you're a diva and those options are too constricting, Excel offers 56 colors in the form of [color X]. I actually find the [green] option too light, so I use [color 10] instead. You can find the full spectrum of colors in the helpful chart on this site: [bit.ly/all-the-colors](http://bit.ly/all-the-colors).

The steps to applying number formatting are fairly straightforward. Let's say, for example, you have a list of values you want to convert to percentages. And you want positive numbers to be green [color 10] and negative values to be red. Here are the steps you would take:

1. Select the column you want to format.
2. Pull up the Format Cells dialog (Ctrl/Command-1) and navigate to Number > Custom.
3. In the Type field enter the following formula:



This just tells Excel, in addition to the colors, make the numbers percentages with no decimals. If you want one decimal place, just add it to the number, e.g., 0.0%. Two decimals, make it two, e.g., 0.00%.

If you didn't want percent, drop the % sign, e.g., 0.0 would translate to something like 4.7. You can also add things like currency symbols.

## Adding Text to Number Formatting

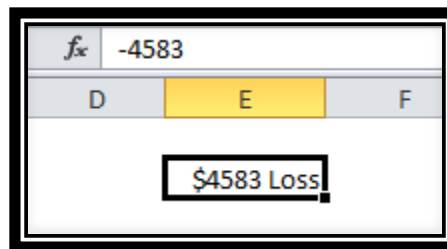
Let's say you don't want negative signs, parentheses, or colors. Instead, you want positive numbers to append "Profit" to a currency value, "Loss" to a negative currency value, and "Break Even" (with no number) if it's 0.

Your formula would look like this:

**\$0" Profit";\$0" Loss";"Break Even"**

*Note:* You have to include a space inside the quotes, or it'll look like \$4583Loss. No grinding on the dance floor please!

If you look at the formula bar, you can see Excel sees it as a number value, not text. Another clue that it's a number is it's right-aligned. Text is always left-aligned in Excel.



[illegible]



# Conditional Formatting

This will be a live demo, but first, a little background ...

Anyone who knows me knows I'm not a fan of tabular data (data in tables). If you want your data to be persuasive, it needs to be visual. However, when you're dealing with large data sets that's not always feasible. For example, when I'm dealing with data from webmaster tools or Screaming Frog, there's just too much data to analyze with charts.

That's where conditional formatting comes in handy. Unlike custom cell formatting, which is static, conditional formatting is based on — you guessed it — conditions that you set.

## Where to Find It

You can find the Conditional Formatting options on the Home Tab under the Styles group (Mac: Home > Format). I can't possibly cover all the great uses of conditional formatting, but I hope to at least whet your appetite and make you aware of what they can do. Then you can take these tips and run with them.

[illegible]

[illegible]

# Templates

## Workbook Templates

One issue I see a lot in companies and agencies is there's little (sometimes no) template that everyone uses to create dashboards and other Excel documents. The result is everyone creates their own charts and graphs using Excel's [hideous] defaults.

The solution to this is to use templates. The key to creating a template is to get everything in an Excel file you want to be included, including themes, fonts, colors, custom table formatting, custom pivot table formatting, custom text box, your preferred style for title, footer, top row, margin column, chart templates, number of sheets, default sheet names ... basically the kitchen sink. One of mine looked like this:

The screenshot displays an Excel dashboard template. On the left, a table lists visit data with columns for Landing Page, Visits, Category, and Subcategory. On the right, a pivot table titled 'Sum of Visits' shows the same data summarized by agencysearch, with columns for home, Grand Total, and Grand Total. Below the tables are two empty rectangular boxes, one outlined in red and one in black.

Landing Page	Visits	Category	Subcategory
	958	home	n/a
	584	home	byregion
	309	home	bytown
	212	home	bytown
	171	home	bytown
	155	agencysearch	bytown
	137	agencysearch	bytown
	128	agencysearch	bytown
	123	agencysearch	bytown
	121	agencysearch	bytown

Sum of Visits	Column Labels	home	Grand Total
Row Labels	agencysearch	584	584
		128	128
		123	123
		309	309
		155	155
		171	171
		121	121
	htm	212	212
		137	137
		958	958
Grand Total		664	2234
		2898	

When you've stuffed everything you can get into the suitcase (can you tell I travel a lot?), then delete everything you don't want to show up in every future file from the Excel file. Also, make sure none of your columns and rows are weird widths/heights, or they'll show up this way in every Excel file you create from this day forth.

You can even paste these items into the workbook from other workbooks. You can delete them as soon as you drop them in there. Their DNA just has to be left behind.

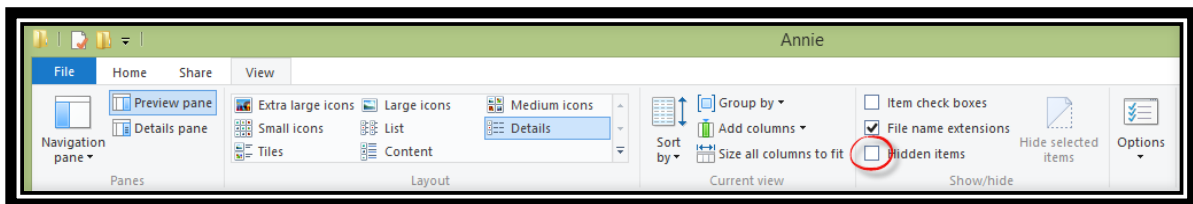
Because the processes from here are so different on the PC and Mac, I'll cover them separately.

## PC

You'll want to save your file as an Excel Template (.xltx) from the Save As dialog and set the filename as Book.xltx. You'll need to save it in the XLSTART folder. To get to it, navigate to:

C:\Users\[Your User Name]\AppData\Roaming\Microsoft\Excel\XLSTART

*Pro Tip:* If you don't see the AppData folder, it's because this folder is hidden by default. You have to first enable Windows Explorer to view hidden items. You can see in the screenshot below where to find that option. Just check it, and your AppData folder will magically appear.



## Mac

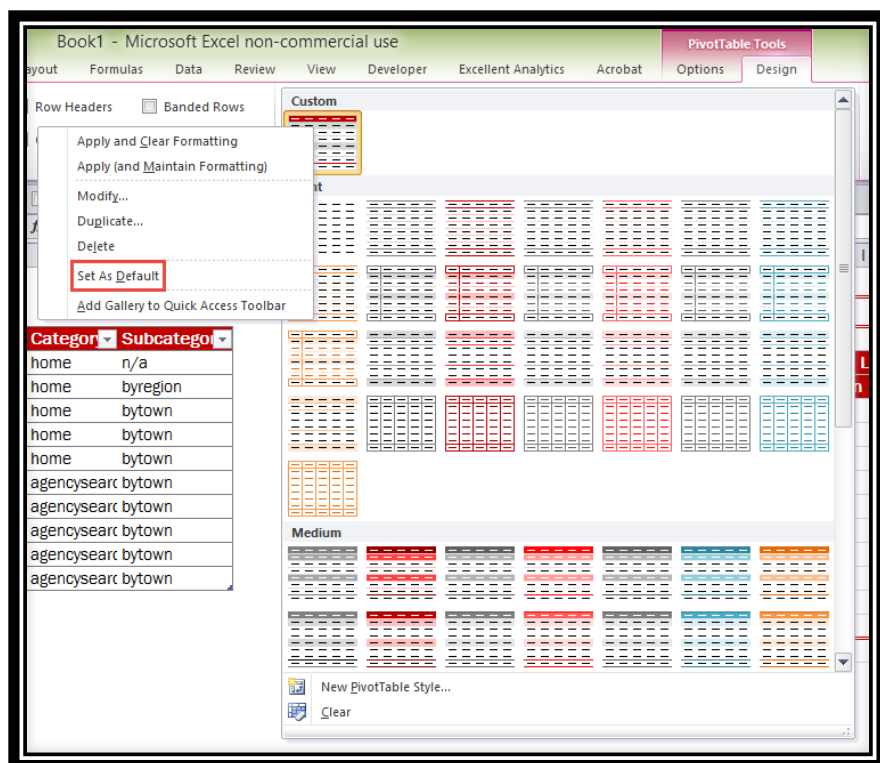
You'll want to save your file as an Excel Template (.xltx) from the Save As dialog and set the filename as Workbook.xltx. Then navigate to the folder below and save it there:

Applications/Microsoft Office 2011/Office/Startup/Excel

Finally, navigate to the Workbook.xltx file in the Finder, select it and press Command-I to open the Get Info window. Under Name & Extension, remove the .xltx from the filename and press Return. (Alternatively, you can just remove it in the Finder.) You'll get a prompt asking if you really want to do that. Just click Remove. Then you can close out of the Get Info window. Restart Excel, and your new template will be applied to all new workbooks you create.

## Tip for PC Users

If you want to really dial up the awesome on your workflow, you can save your custom table, pivot table, chart, etc. as the default options so that when someone creates, for example, a pivot table, your custom pivot table will be applied to the pivot table. Just look for the Set As Default option in each of their windows. To set a default pivot table, just right-click on your style and chose Set As Default. Here's what it looks like for the pivot table dialog on a PC:



As with so many of Excel's features, this doesn't seem to be an option on the Mac.

## Chart Templates

Any chart you create can be saved off as a template. This can save a lot of time because the next time you have a data set that would be conducive to that chart, you can just choose your template.

To save a chart as a template on a PC, you would choose Chart Tools > Design > Save As Template. On a Mac, the easiest way is to right-click on the chart and choose Save as Template. But if you prefer using the Ribbon, go to Charts > Change Chart Type > Other > Save as Template. (Like I said, use the contextual menu.)

This saves your chart in a folder on your hard drive in the following folders:

PC: C:/Users/[Your User Name]/AppData/Roaming/Microsoft/Templates/Charts

Mac: Users/[Your User Name]/Library/Application Support/Microsoft/Office/Chart Templates

[illegible]

# Formulas

## Functions

To see a full list of Excel's built-in functions, check out [bit.ly/excel-function-reference](http://bit.ly/excel-function-reference).

## Math

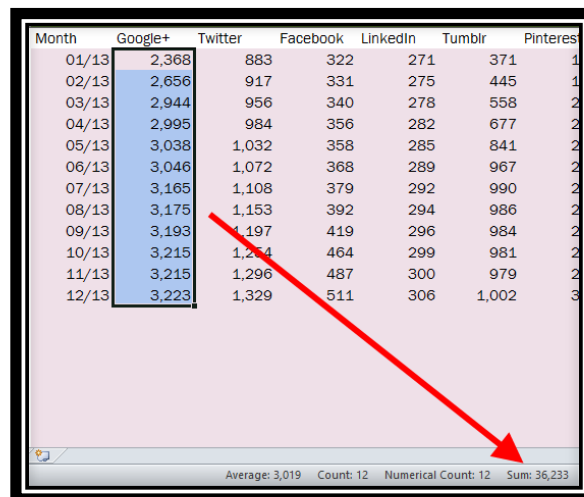
### SUM

#### Syntax

`SUM(number1,number2, ...)`

#### Notables

- It would be extremely rare to list cells individually. You almost always reference ranges.
- If you want to include more than one range, hold down the Ctrl/Command key.
- If you want a sum of a range, you can just enter Alt+= (Mac: Command-Shift-T) below or to the right of the range surrounded by white space.
- If you just need to check your math, no need to run a SUM function. Just select your range and look at the sum in the status bar at the bottom of the Excel interface.



The screenshot shows an Excel spreadsheet with a table of social media data. The columns are labeled 'Month', 'Google+', 'Twitter', 'Facebook', 'LinkedIn', 'Tumblr', and 'Pinterest'. The rows represent months from 01/13 to 12/13. The 'Google+' column is highlighted in blue. A red arrow points from the 'Google+' column to the status bar at the bottom of the Excel interface, which displays the following information: Average: 3,019 Count: 12 Numerical Count: 12 Sum: 36,233.

Month	Google+	Twitter	Facebook	LinkedIn	Tumblr	Pinterest
01/13	2,368	883	322	271	371	1
02/13	2,656	917	331	275	445	1
03/13	2,944	956	340	278	558	2
04/13	2,995	984	356	282	677	2
05/13	3,038	1,032	358	285	841	2
06/13	3,046	1,072	368	289	967	2
07/13	3,165	1,108	379	292	990	2
08/13	3,175	1,153	392	294	986	2
09/13	3,193	1,197	419	296	984	2
10/13	3,215	1,214	464	299	981	2
11/13	3,215	1,296	487	300	979	2
12/13	3,223	1,329	511	306	1,002	3



## SUMIF

### *Syntax*

`SUMIF(range, criteria, [sum_range])`

### *Notables*

You use the SUMIF function to sum the values in a range that meet criteria that you specify.

- The criteria can be hardcoded into the function by putting them in quotation marks (e.g., ">=50", "organic", etc.) or can reference a cell. My preference is to reference cells. The formulas are easier to interpret and update. You can even get all crazy organized and name the cell as a named range and reference the named range.
- If the sum\_range argument is omitted, Excel adds the cells that are specified in the range argument (the same cells to which the criteria is applied).
- You can use Excel's wildcard characters in the criteria argument for partial matches, e.g., `=SUMIF(A1:A200, "*shoes*", F1:F200)`.
- The ? wildcard character is good for any one character; the \* allows you to replace any number of characters (including 0). If you want to actually search for either of these characters (or the tilde), put a tilde character (~) in front.

## SUMIFS

### *Syntax*

`SUMIFS(sum_range, criteria_range1, criteria1, [criteria_range2, criteria2], ...)`

### *Notables*

- The SUMIFS function is just the SUMIF function but for multiple criteria.
- Where the sum\_range is the last argument with the SUMIF function, it's the first with the SUMIFS function.
- You can use wildcard characters in the criteria argument for partial matches, e.g., `=SUMIF(F1:F200, A1:A200, "*shoes*", B1:B200, ">5000")`.

## % Δ

This is custom formula you will need to use a lot as a marketer.

`=(NEW – OLD)/OLD OR`

- or -

(NEW/OLD) – 1

## Logic

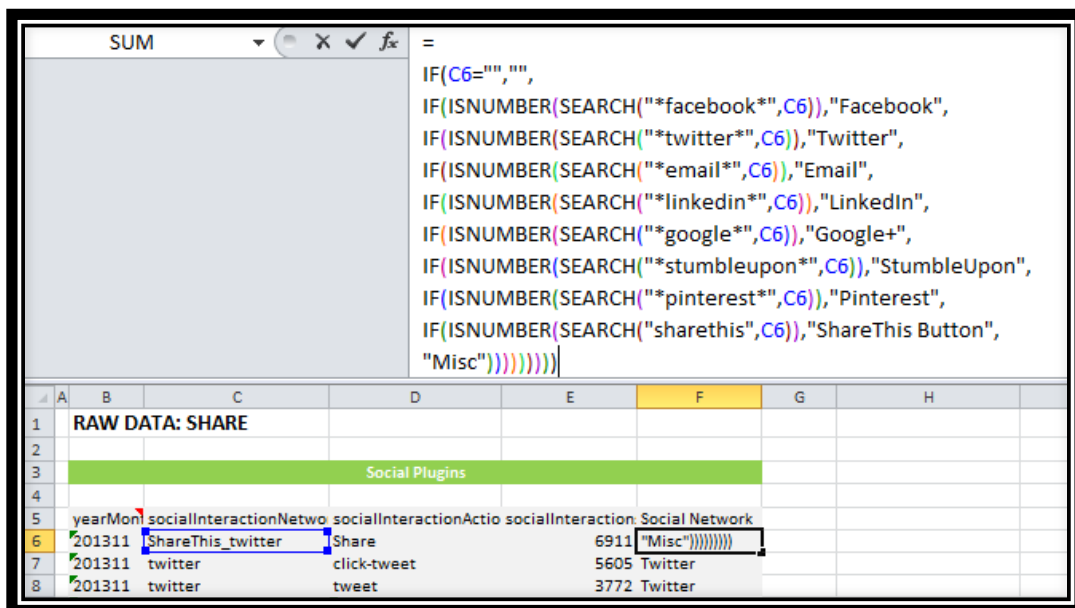
### IF

#### Syntax

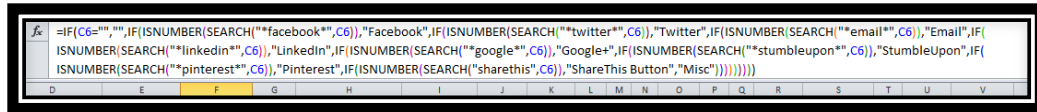
`IF(logical_test, [value_if_true], [value_if_false])`

#### Notables

- This is Swiss army knife for marketers. Very important to get this one down.
- On the PC, you get colored parentheses to help you. And the last parenthesis in the formula will be bolded when for a moment as another visual cue that you've reached the end of your journey. (You're on your own with the Mac.)
- If you're building a complex IF formula, I highly recommend breaking it into several lines. This makes writing and interpreting an IF formula easier. Use more than one line to get everything to line up. To create the line break in the cell, drag the formula bar down (so you can see what you're doing) and press Alt-Enter (Mac: Control-Option-Return). Example from a client's dashboard:



Compare it to how it would look without line breaks:



## IFERROR

### Syntax

IFERROR(value, value\_if\_error)

### Notables

- For the value\_if\_error argument, you could use a string like "N/A" or leave it blank by entering two quotation marks with no space in between: "".
- With the exception of a strategic use of #N/A errors in creating dynamic charts, I avoid error references in my data. Because (wait for it ...) they're ugly.
- This is typically used as a wrapper for other functions. I use it most with VLOOKUP formulas.

## Text

### PROPER

### Syntax

PROPER(text)

### Notables

- I often use this to fix raw data that is exported as all lowercase — to make it look a little more polished.
- You can use it as a wrapper embedded in other formulas.

=IF('EA Raw Data'!N9="", "", IF('EA Raw Data'!N9="(none)", "Direct", PROPER('EA Raw Data'!N9)))							
J	K	L	M	N	O	P	Q
	Marketing Channels						
	Visits and Revenue Segmented by Medium						
	Marketing Channel	Visits	Bounce Rat	Revenue			
	Direct	6,756	40%	\$ 35,690			
	Email	3,505	30%	\$ 32,593			
	Organic	28,569	30%	\$ 136,475			
	Referral	3,866	34%	\$ 9,617			

## LOWER

### Syntax

LOWER (text)

Converts text to lowercase.

## CONCATENATE

### Syntax

CONCATENATE (text1, [text2], ...)

### Notables

- I wrote a post on 18 marketing uses for CONCATENATE: [bit.ly/concateration](http://bit.ly/concateration).
- I rarely use CONCATENATE. Instead I use the ampersand character ( & ) to concatenate. It does the same thing but is less clunky.
- Excel really needs a JOIN function that allows you to pick a range of cells and choose a delimiter like Google Spreadsheets offers. It can be a huge pain to choose each cell, enter a comma, rinse and repeat. To dial back the pain level a bit, if you're using the CONCATENATE function, you can choose multiple cells by holding down the Ctrl/Command key while you're choosing the cells you want to concatenate. This will automatically enter commas in between arguments.

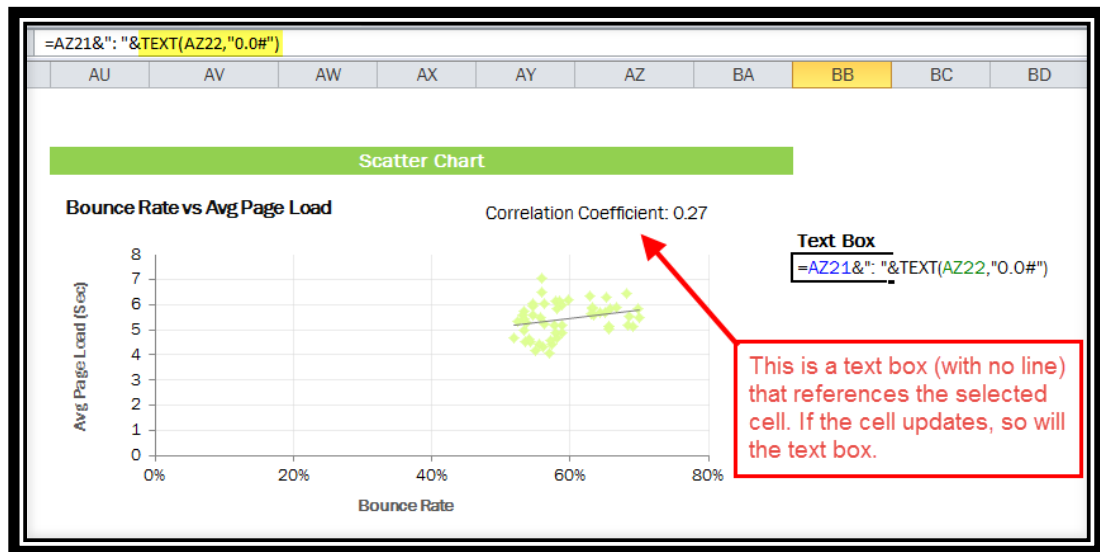
## TEXT

### Syntax

TEXT(value, format\_text)

### Notables

- The TEXT function converts a numeric value to text and lets you specify the display formatting by using special format strings.
- Ex: TEXT(B3,"#,###") or TEXT(B3,"mm/yy") or TEXT(B3,"\$#,##0.00")
- You will use what you learned from the Number Formatting section to build out this function. To see more examples, check out Microsoft's guide: [bit.ly/ms-formatting-guide](https://bit.ly/ms-formatting-guide). Very thorough.
- Example from the practice Excel doc:



*Note:* I don't typically use text extraction formulas in dashboards, but it's really important, as marketers to learn how to extract text you want using functions like LEFT, RIGHT, MID, LEN, and SEARCH (or FIND). To watch a tutorial on how I used some of these to pull domains out of a list of URLs, check out [bit.ly/text-extraction](https://bit.ly/text-extraction). You can also check out any videos on the topic by Bill Jelen or Mike Girvin on YouTube. (They're my faves and have tons of helpful video tutorials.)

## Date and Time

### DATE

#### *Syntax*

`DATE (year, month, day)`

#### *Notables*

- You will need to use this function when working with Google Analytics data a lot. This is because both the interface and API spit out dates in this format: yearmonthday (20140131). Really useful, huh? I've brought this to the team's attention. But until they fix it, you'll need to use the DATE function to prep the date before you can do anything useful with it.
- If you just need month and year for a chart axis or tabular data, just enter "01" for the day. You can get rid of it with custom cell formatting by formatting your values as something like mm/yy (covered in the Cell Formatting section).

## Lookup

### VLOOKUP

#### *Syntax*

`VLOOKUP (lookup_value, table_array, col_index_num, [range_lookup])`

#### *Notables*

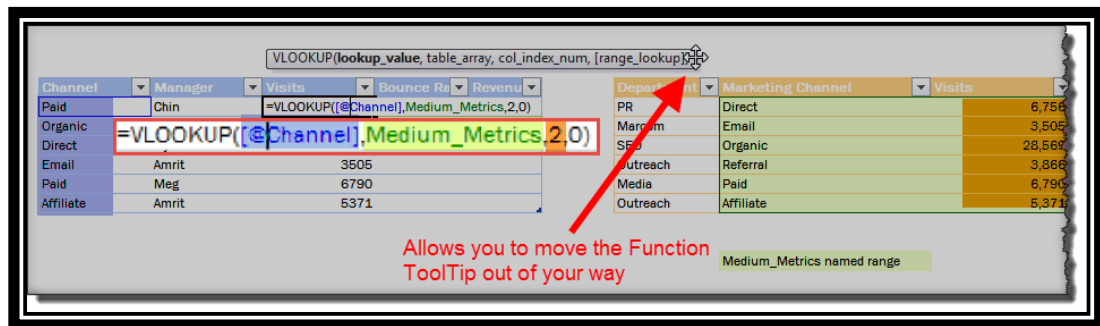
- For the table\_array argument, I always name the range rather than enter a range. It makes VLOOKUP formulas easier to interpret. To name a range, select the range and enter your name in the Name Box (which is due west of the Formula Bar).
- The VLOOKUP lookup isn't case sensitive.
- If you use a VLOOKUP formula in a formatted table, Excel will use structured references instead of cell ranges. These will look like [[@Column\\_Heading](#)], e.g., [[@Visits](#)].
- For marketing purposes, the last argument, [range\_lookup], will be set to FALSE, which means use exact match.
- You can use 0 instead of FALSE, if you're ~~lazy~~ efficient like I am.
- You can use Excel's wildcard characters in the lookup value. A question mark matches any single character; an asterisk matches any sequence of characters. If you want to find an

actual question mark or asterisk, type a tilde (~) before the character. Learn more about wildcards: [bit.ly/excel-wildcards](https://bit.ly/excel-wildcards).

- If you have extra spaces in your raw data, they will give you unexpected results in your VLOOKUP. So ensure this doesn't happen, wrap the lookup\_value in a TRIM function. It would look like this:

```
VLOOKUP(TRIM(lookup_value), table_array, col_index_num, [range_lookup])
```

- The lookup\_value's match in the table\_array must be in the far-left column for the formula to work. If the column you need to perform the lookup against is in a table and isn't the far-left column but is at least to the left of the column with the values you want to return, you can create a named range inside the table or just reference the range in your lookup formula.



## INDEX

### Syntax

```
INDEX(array, row_num, [column_num])
```

### Notables

- We will be combining the INDEX function with the COUNT and COUNTA functions to create dynamic named ranges, which will result in dynamic charts.
- Why not just use a formatted table? Because tables can expand but not contract. (Lame.) We need our data series and categories in charts to expand *and* contract.
- Think of the INDEX function as scooping out a subset of data from a larger data set.
- It's much more stable than the OFFSET function to create dynamic ranges. Although more people are comfortable with OFFSETs, in a dashboard that's already a gurgling

volcano of data, they can be disastrous. Think of OFFSET as the kid your mom warned you to stay away from.

- You can see examples of how INDEX (as well OFFSET) can be used to create dynamic named ranges in the Dynamic Ranges section of the workbook.

## OFFSET

### *Syntax*

OFFSET(reference, rows, cols, [height], [width])

### *Notables*

- See notes for INDEX.

## Statistical

### COUNT

### *Syntax*

COUNT(value1, [value2], ...)

### *Notables*

- Empty cells, logical values (e.g., TRUE/FALSE), text, or error values in the array or reference are not counted.
- If you want to count logical values, text, or error values, use the COUNTA function.
- If you want to count only numbers that meet certain criteria, use the COUNTIF or COUNTIFS function. You'll see an example of this in the Dynamic Ranges section.



## COUNTA

### Syntax

COUNTA(value1, [value2], ...)

### Notables

- The COUNTA function counts cells containing any type of information, including error values and empty text that was hardcoded in using a formula ("").
- If you want to count only cells that meet certain criteria, use the COUNTIF or COUNTIFS function. You'll see an example of this in the Dynamic Ranges section.

## Arrays

### TRANSPOSE


### Syntax

TRANSPOSE(array)

### Notables

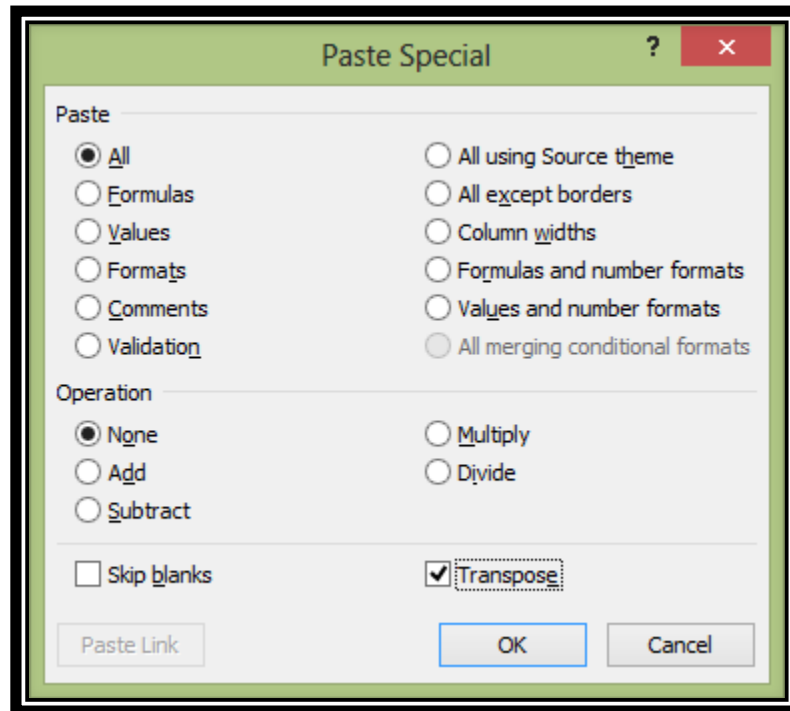
- When data comes out of an API tool, it's in columns. You can use the TRANSPOSE function to flip it on its axis.

Last Month						
[ 12/1/2013 -> 12/31/2013 ]						
visitors	visits	pageviews	goal completions	all transactions	transaction revenue	
32150	42696	358866	7813	5051	214374.97	



Executive Overview			
	Last Month	Last Year	% Δ
Visitors	=TRANSPOSE('Raw Data'!B9:G9)		16.1%
Visits	42,696	39,000	9.5%
Pageviews	358,866	321,826	11.5%
Goal Completions	7,813	9,876	-20.9%
Transactions	5,051	4,045	24.9%
Revenue	214,375	200,440	7.0%

- Because this is an array function, you need to enter Ctrl-Shift-Enter (Mac: Control-Shift-Return) after you enter it.
- The TRANSPOSE function is different from the Paste Special option. You can copy any range, move to another area of the workbook (that doesn't intersect with the original data set) and transpose it from the Paste Special dialog.



But for a dashboard you need a solution that will transpose your data dynamically. That's what the TRANSPOSE function does.

[illegible]

[illegible]

## Relative vs Absolute References

### Theory

By default, a cell reference is relative. Ergo, when you refer to cell D2 from cell A2, you're actually referring to a cell that is three columns to the right and in the same row (2). A formula that contains a relative cell reference updates as you copy it from one cell to another.

If you want to lock down the original cell reference when you copy it, make the cell reference absolute by putting a \$ sign in front of both the row and the column.

If you only want to lock down the column, put the \$ in front of the column; if you want to lock down the row, put the \$ in front of the row. Just ask yourself, *When I copy this formula down and over, do I want any part of it to be locked in place?* If the answer is yes, you need the \$.

### How to Toggle Through Options

Press F4 (Mac: Command-T) to switch between the reference types. Just keep toggling until you have the one you want. Much easier than entering dollar signs by hand.

The table in this resource by Microsoft summarizes how a reference type updates if a formula containing the reference is copied two cells down and two cells to the right: [bit.ly/data-lockdown](https://bit.ly/data-lockdown).

*Pro Tip:* Even if you have an absolute reference, if the cell you're referencing is moved to another cell, the formula will update. The one exception to this is named ranges. Those have to be updated manually. I may or may not have learned that the hard way!

# Charts

## Tutorial

I did a comprehensive video tutorial on how to create charts. To view it, navigate to [bit.ly/chart-tutorial](https://bit.ly/chart-tutorial).

## Deconstruct a Chart

### Glossary

Let's investigate under the hood of a chart. But first let's cover some of the terms and what they mean:

*Series:* Related data points that are plotted in a chart and originate from a larger datasheet. Each series in a chart has a unique color. You can plot multiple series in a chart, except for pie charts; they only have one series.

*Category:* Groupings for data, e.g., months, mediums, quarters, search engines, etc.

*Legend:* A group of keys that identifies the patterns and colors that are assigned to each data series in a chart.

*Axis:* A line bordering the chart plot area used as a frame of reference for measurement. The y axis is usually the vertical axis and contains data. The x-axis is usually the horizontal axis and contains categories.

*Primary Axis:* This is the main axis and should be on the left side of the chart.

*Secondary Axis:* This is a supplementary axis that should be on the right side of a chart. It should have smaller values, preferably much smaller. For example, bounce rate or conversion rate.

### Add New Data

There are several ways to add new data to a chart.

1. Right-click chart area and choose Select Data.
2. Copy/paste it in.
3. Expand the borders.

### Tips from the Trenches

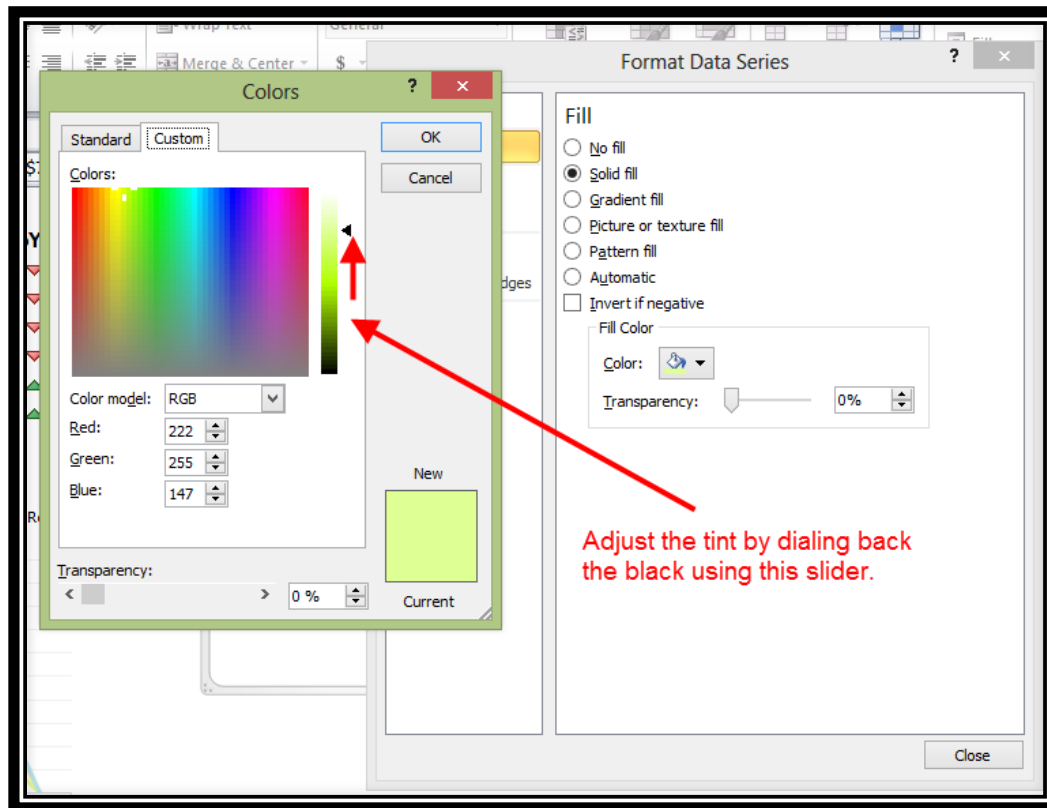
- Metrics from Google Analytics (which are anything that can be measured with a number) translate into series in charts, and dimensions translate into categories.

- How do you know if you need to pivot your data with a pivot table first? Use this as your guide: If you just have one dimension you don't need a pivot table. If you have more than one dimension (such as month AND medium or search engine AND mobile device category), you need to decide which will become the categories (which will typically go along the horizontal axis, unless you're using a bar chart) and which will become the segments for the metrics.
- If you have multiple dimensions to display in a column chart (for example), you will need to decide if you want the columns side by side or stacked. Sometimes it makes more sense to place them vis-à-vis. And other times it makes more sense to consolidate them into a stacked column.



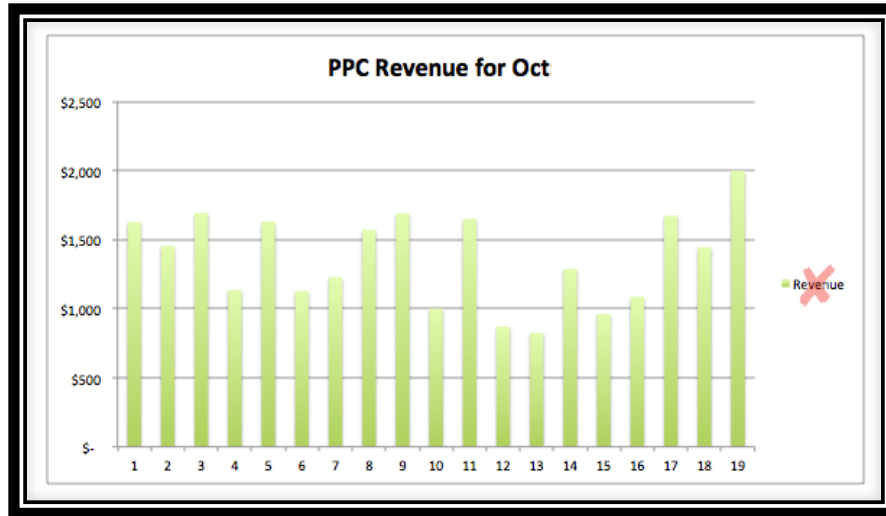
## Formatting Tips

- Consider using muted colors. Having a bunch of bold and/or bright colors in a dashboard can add unnecessary noise and look like your data is screaming at the viewer. So, when creating branded dashboards, figure out your company's branded colors and dial back the black. In the design world this is called adjusting the tint.

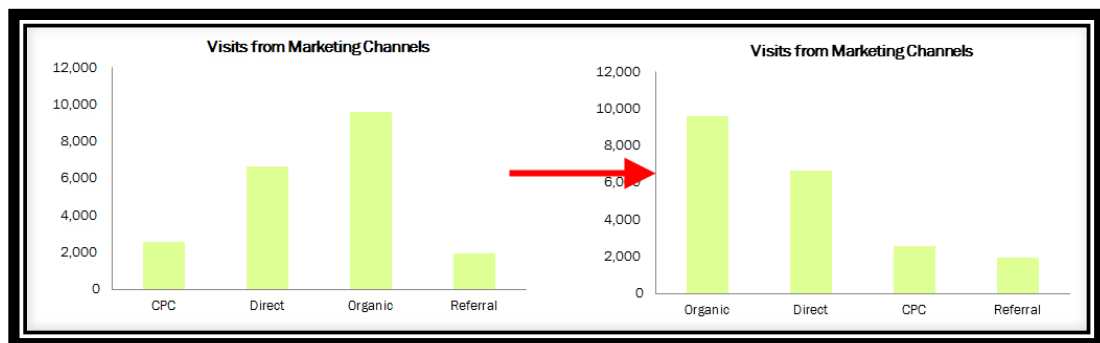


- Excel places the legend on the right side of most charts, which is the most awkward place for it. Don't be afraid to move it around. You can see in the dashboards I share that I align all of mine to the top and right of each chart.
- Get rid of items you don't need, such as gridlines. If you need them for visual clarity (I often leave them in line charts), make them a light gray.
- Get rid of the legend if you only have one data series. It's a statement of the obvious.

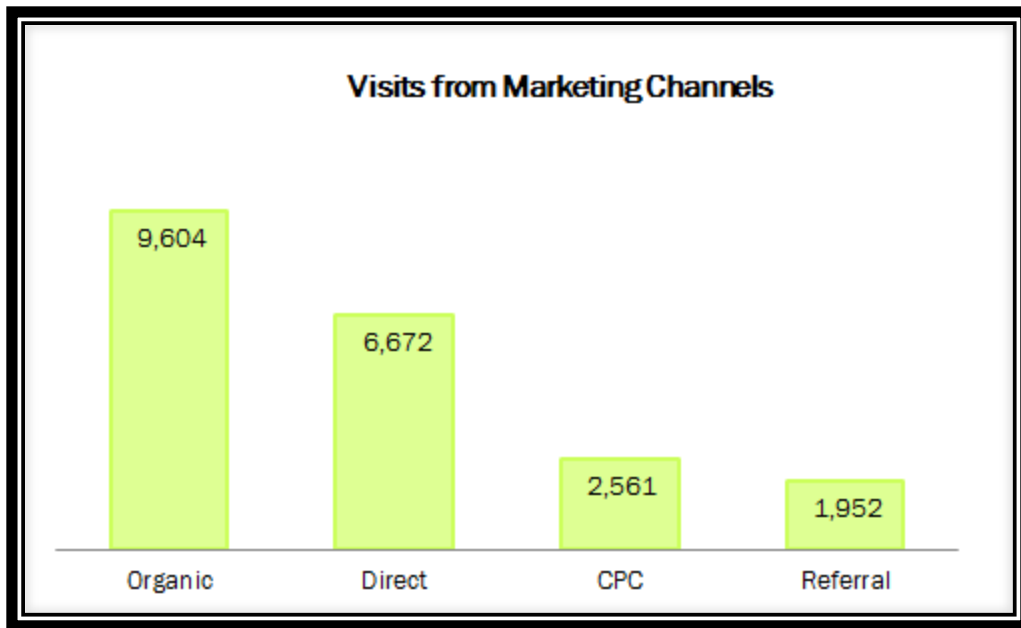




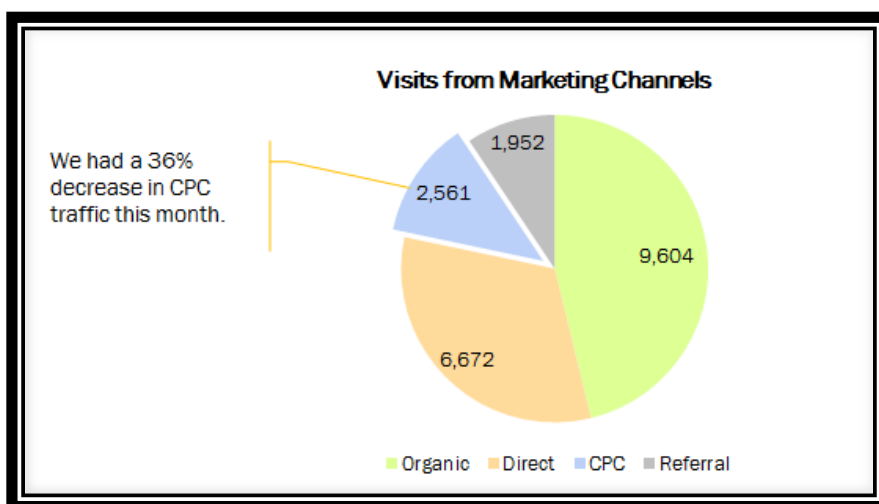
- Use descriptive titles. Don't use the default title.
- Sort your data before charting.



- Avoid 3D charts. Like the plague.
- If you just have one data series, consider removing all chart junk and using data labels to show values.



- Excel's default axes are thick and chewy. I typically thin them out to about half. To do this, select the axis you want to thin out, and press Ctrl/Command-1 to pull up the formatting options. Then change the Major Unit. However, if you're using a dynamic chart, where these values can change depending on which option a user selects, keep the defaults. Customizing the major units will muck up your chart. (Based on a true story.)
- If you're putting a chart on a dashboard, consider removing the border on the chart area to dial back unnecessary noise.
- Add annotations to point out notable discoveries. I like to go simplistic, like this one from the from the Pie Chart section of the workbook:



- Use a thousands separator in values greater than 999.

- Get decimals out of your axes. You're a marketer, not a chemist.
- If you're demonstrating percentages, format them as such. Don't leave them as decimals.
- This is my personal preference, but I hate seeing hyphens in lieu of zeroes. I use the following number formatting to convert numbers:

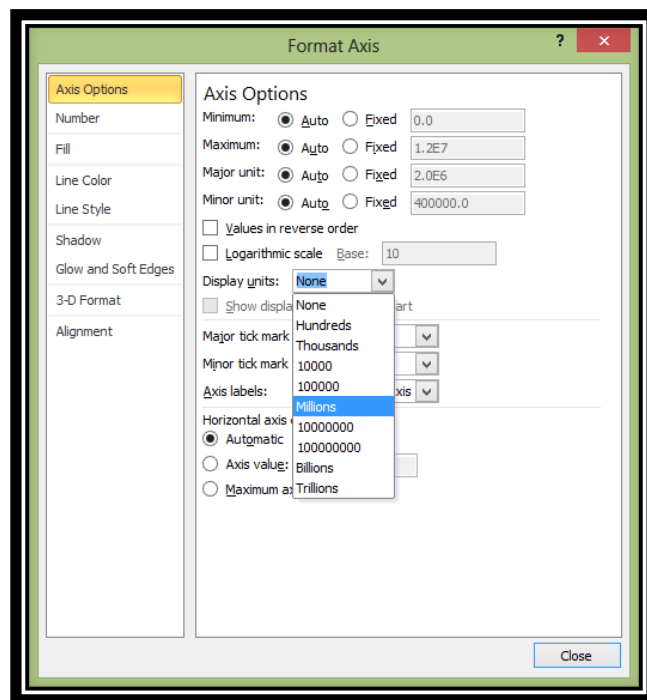
Non-Revenue: `_( * #,##0_ );_( * ( #,##0 );_( * 0;_( @_ )`

Revenue: `_( $* #,##0_ );_( $* ( #,##0 );_( $* 0;_( @_ )`

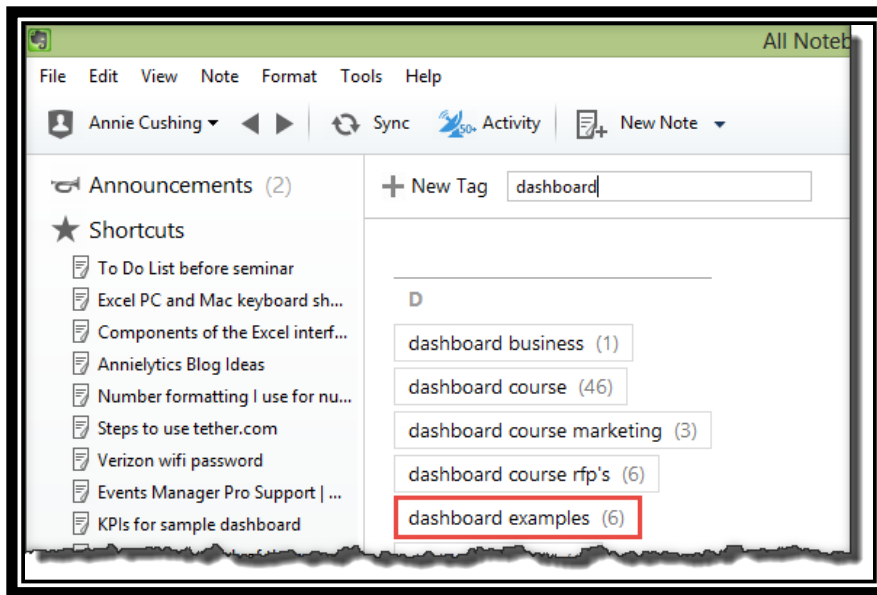
If the zeroes don't line up with other numbers in a table, you may need to add `_)` after the 0 and before the semicolon.

I keep these saved in my Evernote for quick reference. To learn how to modify the standard formatting, check out this post I wrote: [bit.ly/zero-formatting](http://bit.ly/zero-formatting).

- Use text boxes to add annotations.
- Consider making your chart title dynamic.
- Simplify large numbers by either using a custom number format (e.g., `$#, , " M";`) or axis formatting:



- Search for dashboards online. Keep a treasure trove of the ones you like, noting what elements you like. I use Evernote to store all of mine and refer back to them for inspiration.



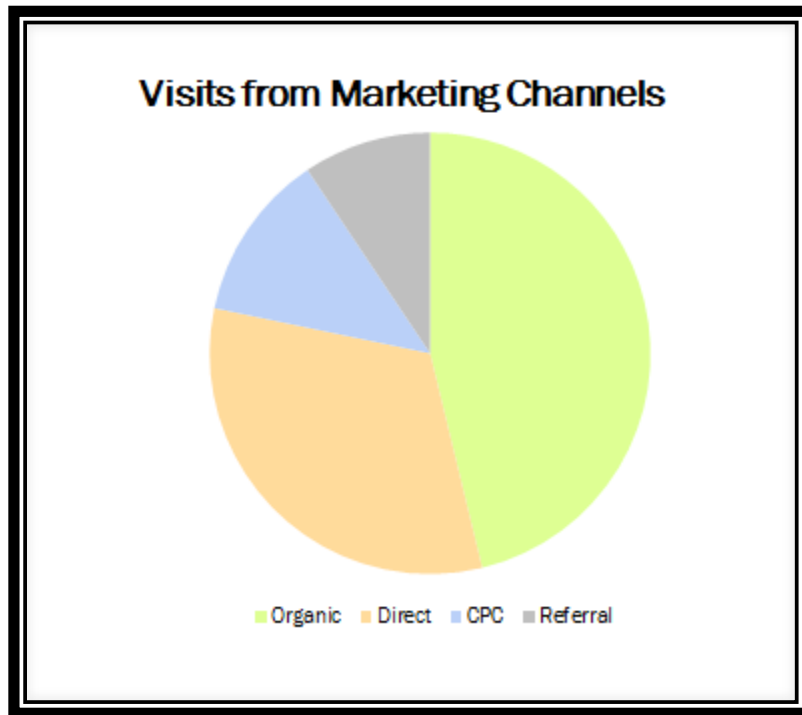
## Notes: Charts

[illegible]

[illegible]

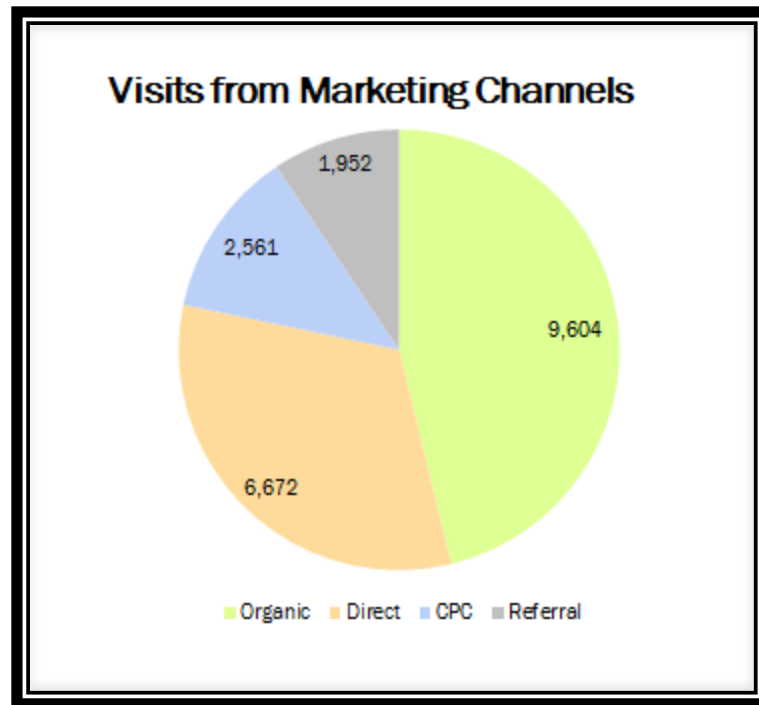
## Different Charts for Different Purposes

### Pie Chart

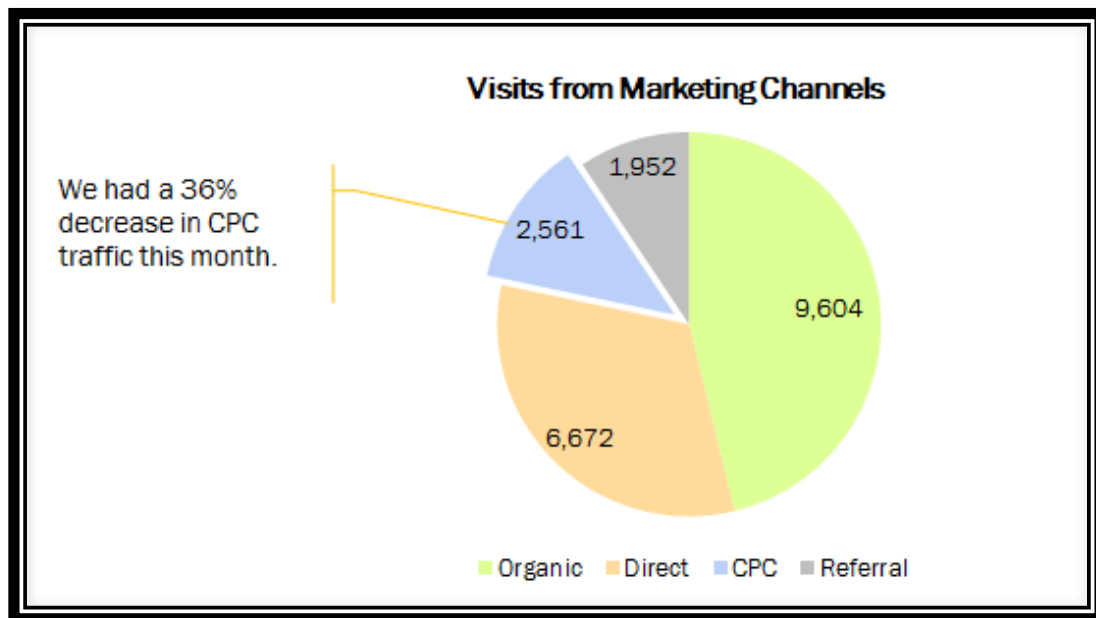


I have to admit I'm not a big fan of pie charts. They make data hard to analyze. But if you're wed to using them, here are a few tips:

- They can only have one data series, e.g., visits, revenue, goal completions.
- Make sure each part contributes to the whole.
- Sort in descending order to make them easier to interpret.
- Consider adding data labels to them to make them easier to analyze.



- "Break apart" one element from the chart to make it stand out more.



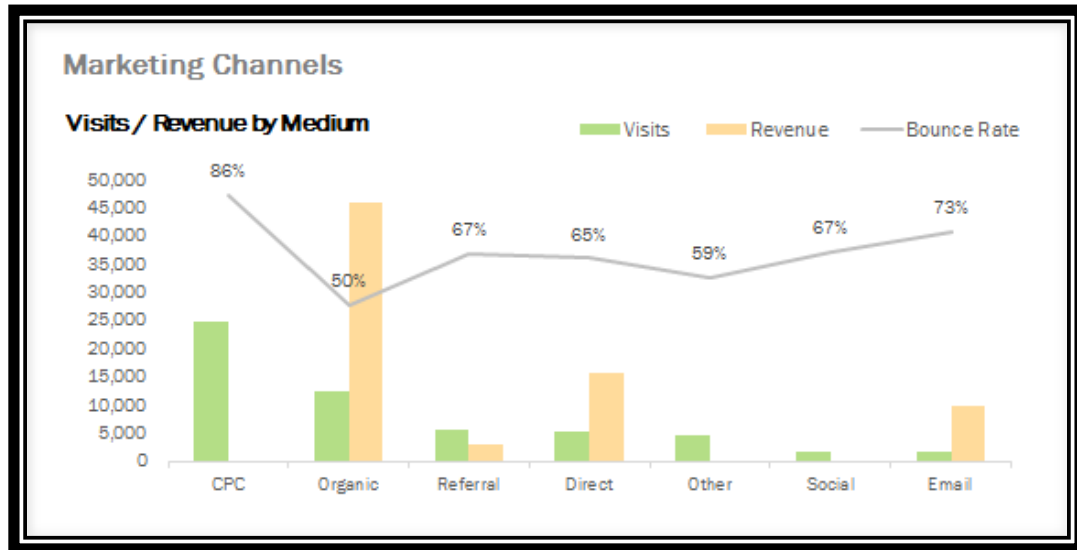
- You could also use percentages as the data label.
- I prefer column or bar charts over pie charts.



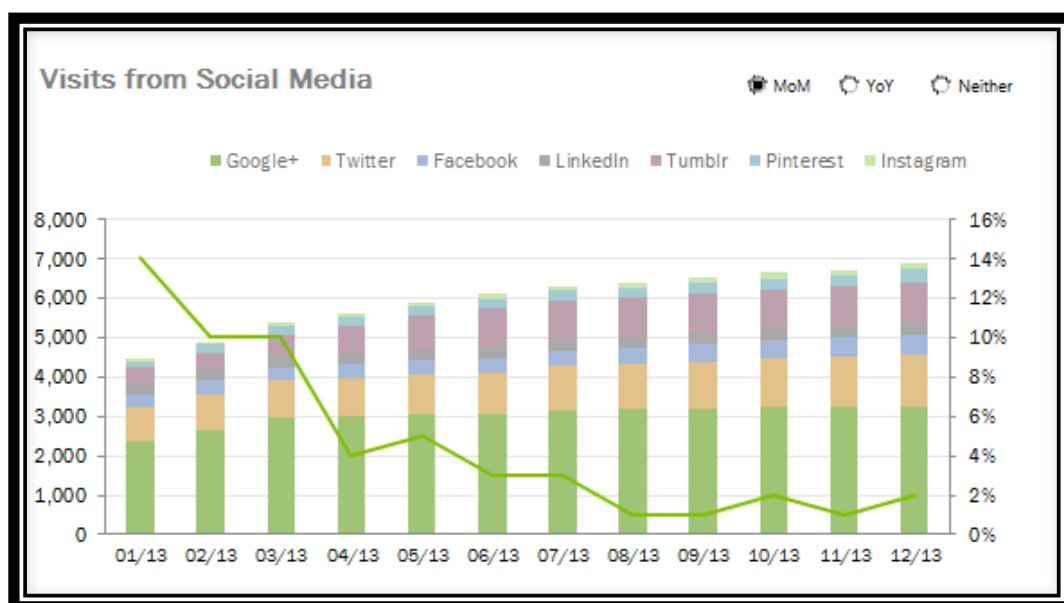
## Column Chart

This is the chart type I use most. Here are a few tips/notes:

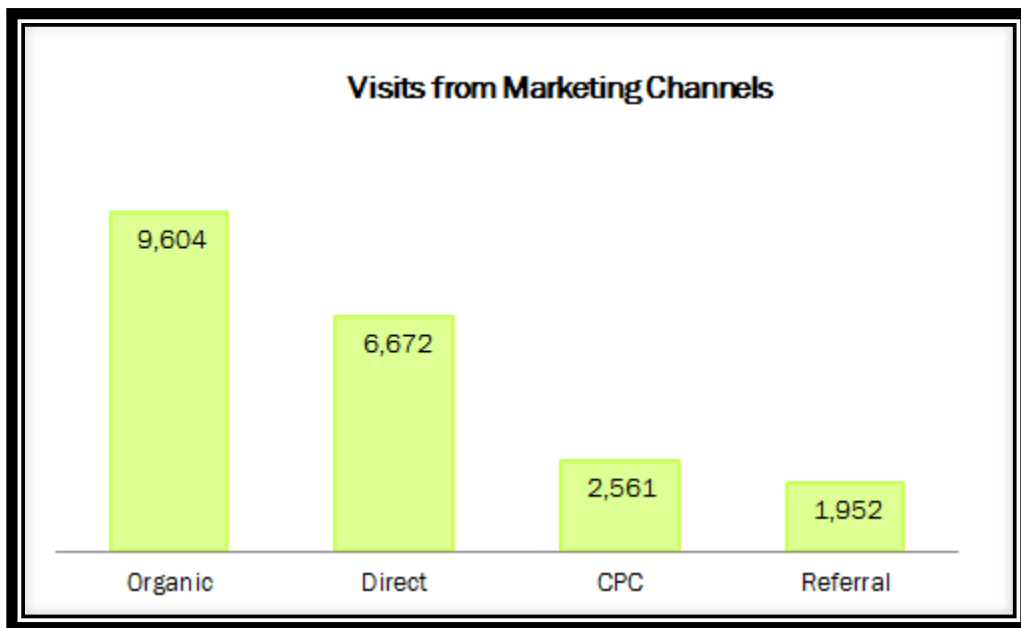
- Not a good candidate for data with long labels. (Use bar charts instead, where the labels can be displayed horizontally.)
- Don't display axis labels at an angle or (worse) vertically.
- Great for combination charts.



- If you're going to use them for a data set with a time element, simplify the format of the time using cell formatting. (Whatever formatting you apply to the data set will carry over to the chart.)



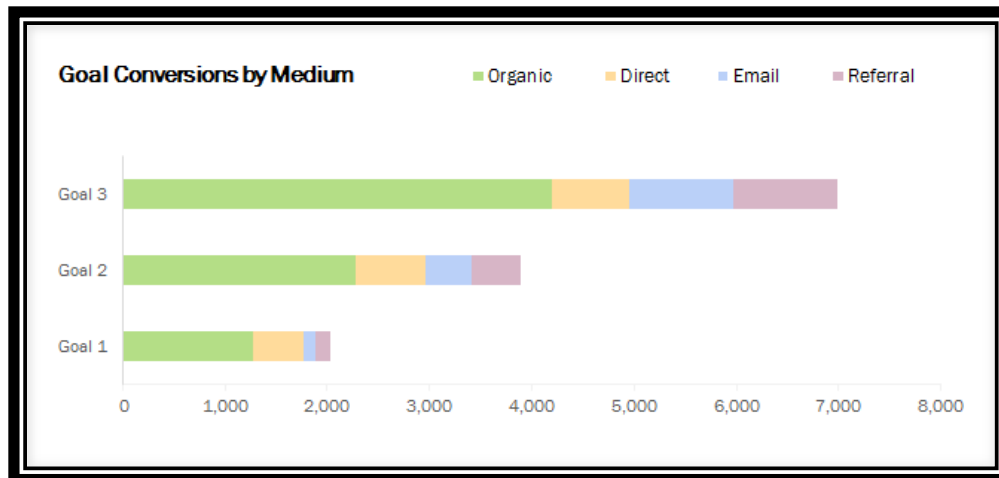
- I usually get rid of gridlines altogether with clustered column charts but sometimes leave them in with clustered column charts. If I leave them in, I make them really light, like you see in the chart above.
- If you have more than one dimension, such as months and social network in the previous chart, you will need to choose between a clustered chart or stacked. Personally, I find that the more segments there are, the busier a chart becomes with a clustered approach. I lean toward stacked.
- As mentioned in the Formatting Tips section, if you only have one data series, consider getting rid of all distractions (including the vertical axis) and include data labels with the columns. I added a subtle border to the columns and made the columns a little wider by reducing the gap width.



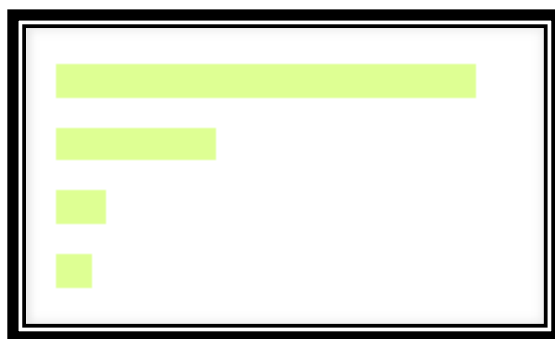
## Bar Chart

I am quite partial to the column chart over the bar chart because of the ability to have data on a secondary axis (e.g., visits and revenue on the primary axis and conversion rate on the secondary). But they still have their place. Here are some examples of when they come in handy:

- If you're trying to keep your dashboard from getting too tall, bar charts are a good option because of their horizontal orientation.



- If you include a scorecard (like we have in the upper-left corner of the dashboard), you can strip a bar chart down to just the series and align it with the rest of the data (provided you have the accompanying values next to it).



- With most charts in Excel, to sort your series, you need to sort the underlying data in descending order. It's the opposite with bar charts. You need to sort them in ascending order.

## Line Chart

The line chart is my chart du jour for time-based categories. Here are a few things to keep in mind:

- Make sure that the line width is adequate. Thin lines can be hard on the eyes and don't print well.
- I almost always keep horizontal gridlines but make them a light gray.
- Markers add noise and cause the viewer's eyes to trip. Be careful to make sure you actually need them.
- Stacked line charts are a usability disaster. They don't look connected. If you have a chart with two dimensions and one of them is time based, consider using the stacked area chart.

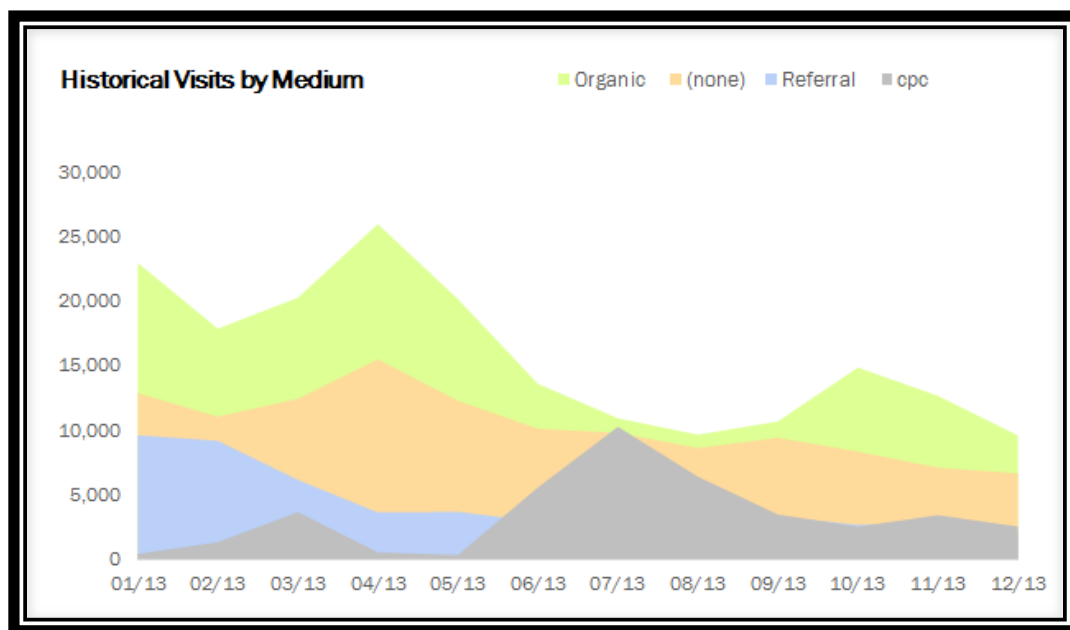
- If your data doesn't have a time element and uses categories instead, don't use a line chart. Line and area charts communicate that the data is sequential, with some data points preceding a particular data point and other data points following it in a continuum.

## Area Chart

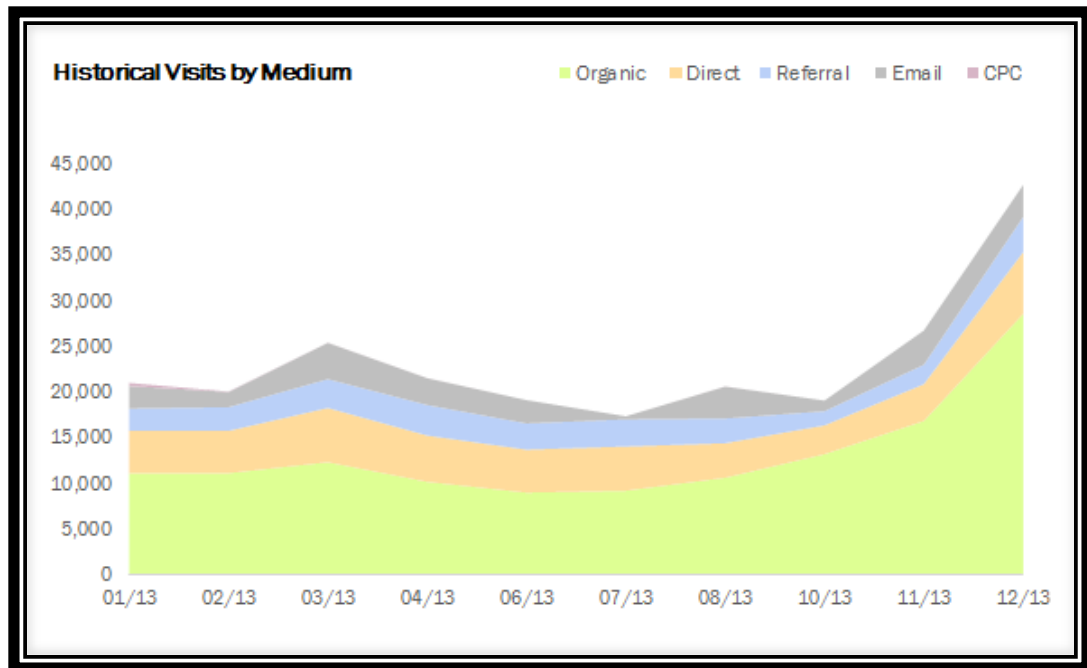
Basically, I only use the area chart if I have data with a time element and need it to be stacked. So for the line chart, I never use the stacked option, and for the area chart, I never use the clustered option.

A few other notes:

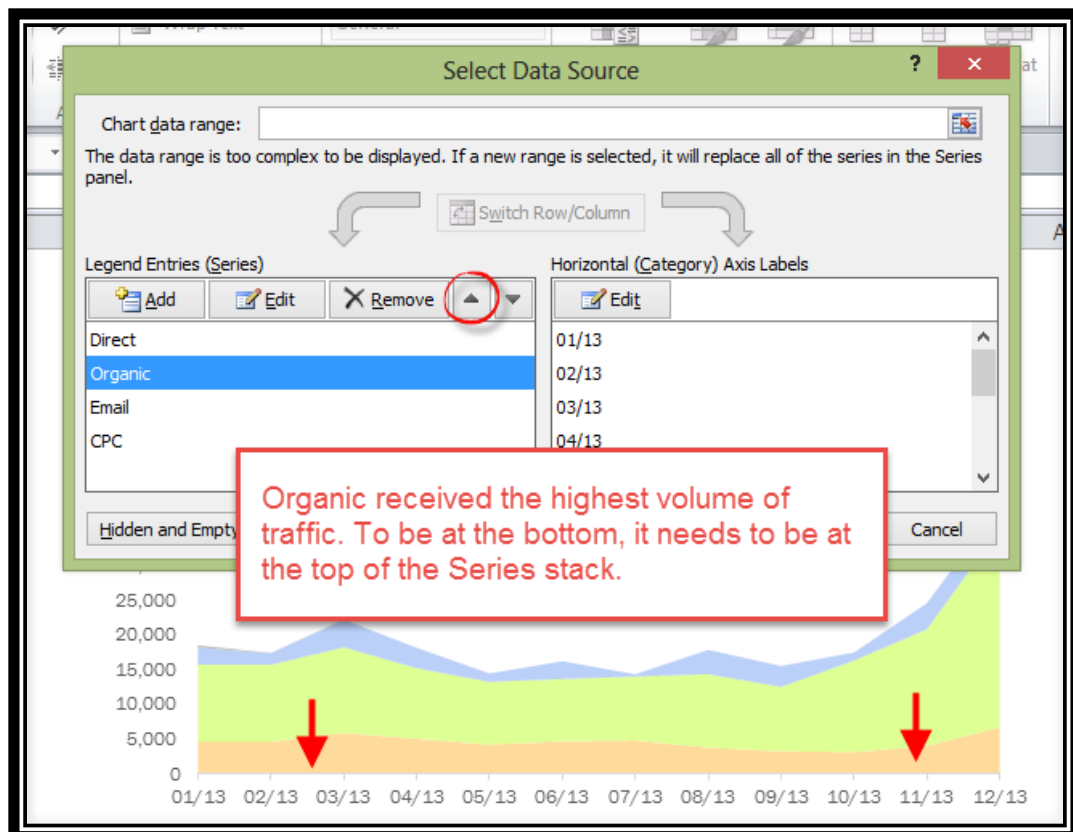
- A clustered area chart works if one series is a subset of another. For example, if you're plotting email delivery vs. opens. Opened emails is a subset of those delivered. If one isn't a subset of another, data gets obscured, as you can see below.



- The stacked area chart is a great way to show how each series (e.g., marketing channels, device category for mobile, social network, etc.) contributed over time.



- Try wherever possible to stack in order of size. To do this, select the data and move the series up and down in the stacking order.



- Consider thinning out the horizontal axis.

The screenshot shows the 'Format Axis' dialog box with the 'Axis Options' tab selected. The 'Major unit' is set to 'Fixed' with a value of '2' and a unit of 'Months'. The 'Minor unit' is set to 'Auto' with a value of '1' and a unit of 'Months'. The 'Base Unit' is set to 'Fixed' with a unit of 'Months'. The 'Axis Type' is set to 'Automatically select based on data'. The 'Major tick mark type' is 'Outside', 'Minor tick mark type' is 'None', and 'Axis labels' are 'Next to Axis'. The 'Vertical axis crosses' is set to 'Between dates'. The 'Position Axis' is set to 'On tick marks'.

**Format Axis** ? x

**Axis Options**

Minimum: ☒ Auto ☐ Fixed 1/1/2013

Maximum: ☒ Auto ☐ Fixed 12/1/2013

Major unit: ☐ Auto ☒ Fixed 2 Months

Minor unit: ☒ Auto ☐ Fixed 1 Months

Base Unit: ☐ Auto ☒ Fixed Months

☐ Dates in reverse order

Axis Type:

☒ Automatically select based on data

☐ Text axis

☐ Date axis

Major tick mark type: Outside

Minor tick mark type: None

Axis labels: Next to Axis

Vertical axis crosses:

☒ Between dates

☐ At date: 1/1/2013

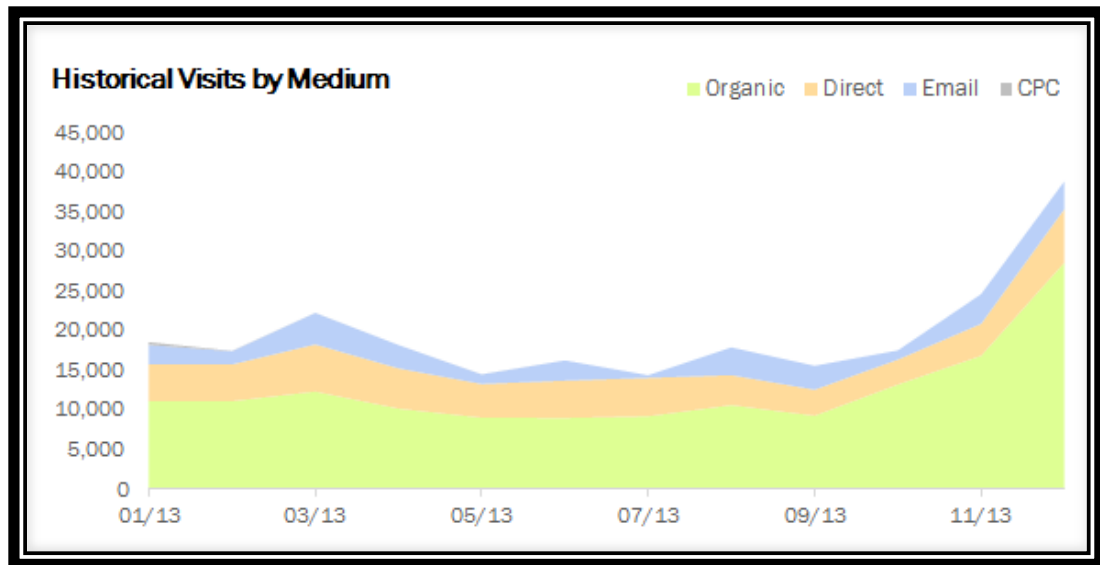
☐ At maximum date

Position Axis:

☒ On tick marks

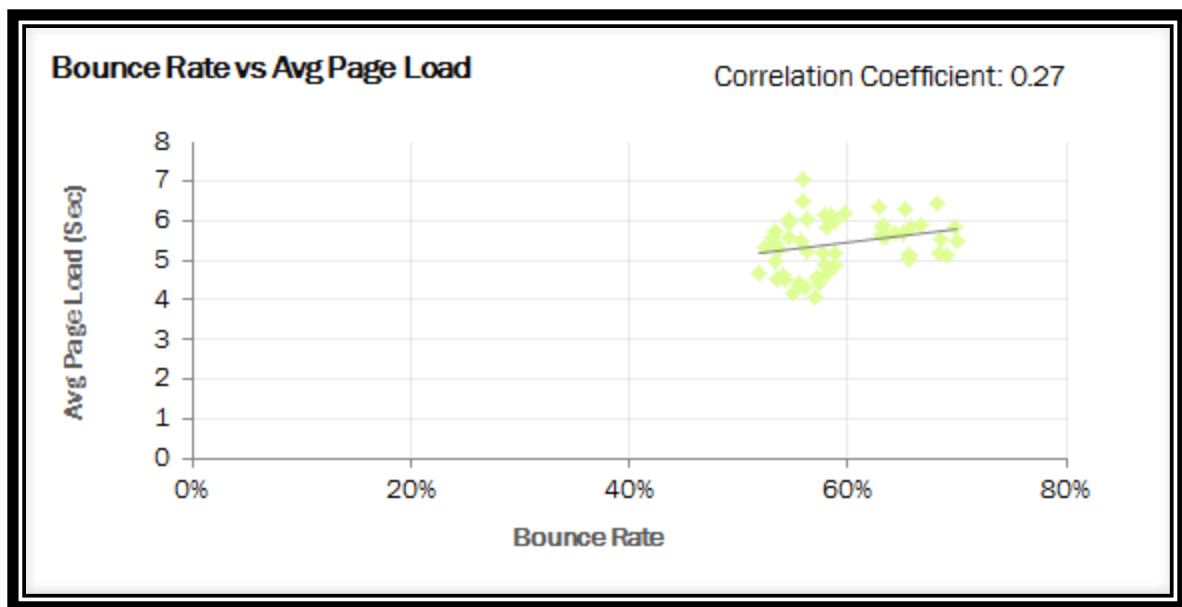
☐ Between tick marks

Close



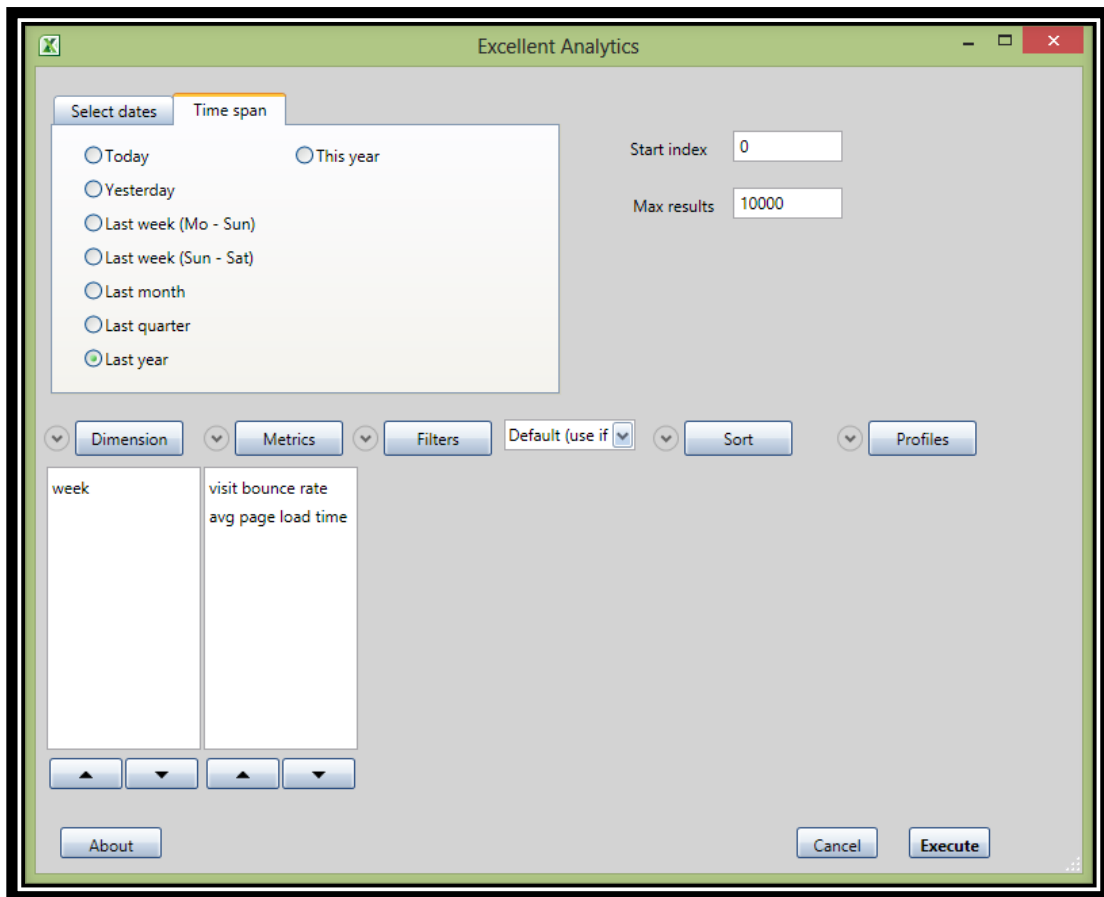
## Scatter Chart

Scatter charts are used to test correlations by plotting two groups of numbers as one series of xy coordinates. For example, you may want to see if there is a positive correlation between ad placement and revenue. Or between bounce rate and conversion rate.



A few notes:

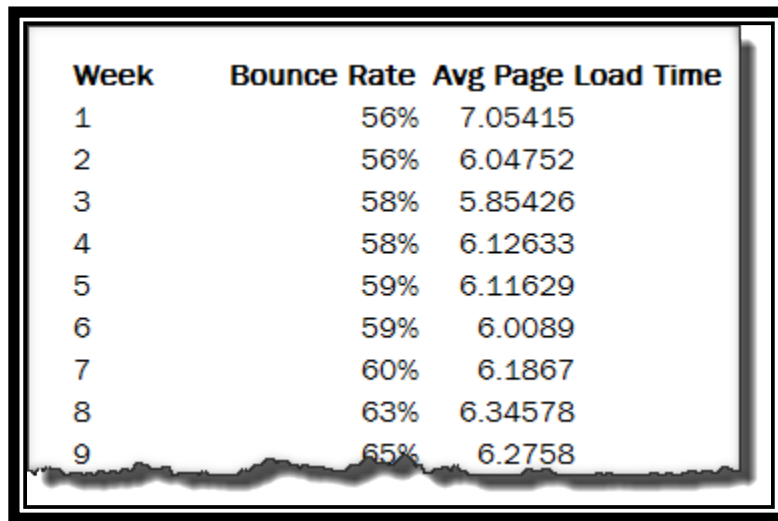
- When using the API, you will typically pick two metrics and a time-based dimension over a fairly long period of time (to get a good sample). No need to apply a sort. Your query (in Excellent Analytics) might look something like this:



- When creating the chart, you only need to select the two columns with the metrics. You don't select the dimension (category) column. Just select both headings and press Ctrl/Command-Shift-Down Arrow to slide down to the bottom of the data set.
- When choosing the time-based metric, I am a bit partial toward the week dimension. In most cases, the month dimension tends to not be granular enough, and the date dimension tends to make the chart too dense. I'm even worse with porridge. It's ridiculous.
- You can add a trendline to your scatter chart to aid in seeing the trend of your data.
- If the data points huddle around a trendline that moves up and to the right, there is a positive correlation between the two metrics. If they are concentrated around a trendline that moves down and to the right, there is a negative correlation between the two, meaning if one goes up, the other goes down.
- Calculate the correlation coefficient to see how strong the correlation is. The function syntax looks like this: `CORREL(array1, array2 ...)`. The closer the number is to 1 the stronger the positive correlation is; the closer it is to -1, the stronger the negative correlation is.
- Put the metric you want to analyze in the left column. I think of it this way: "What happens to [left column metric] when [right column metric] [increases or



decreases]?” So in this example, the question I’m trying to answer is: What happens to bounce rate when page load time increases?



Week	Bounce Rate	Avg Page Load Time
1	56%	7.05415
2	56%	6.04752
3	58%	5.85426
4	58%	6.12633
5	59%	6.11629
6	59%	6.0089
7	60%	6.1867
8	63%	6.34578
9	65%	6.2758

- In our example, there is a slight positive correlation, meaning more visits bounce when they take longer to load. But a .27 correlation coefficient may not be compelling enough to invest the resources into optimizing page load times.
- Always add axis titles. When you add titles, everything tends to look really cramped. Don’t be afraid to adjust the chart area. The easiest way to select the whole area (and not just one gridline) is to select the top horizontal gridline.
- I will typically add vertical gridlines in addition to the horizontal gridlines but make them light and dashed.

## This image shows a full page of blank, lined paper. It features approximately 20 evenly spaced horizontal grey lines across the entire width of the page, providing a guide for writing. The background is a clean, solid white color. There are no margins, text, or other markings present.

[illegible]

# Pivot Tables

Being able to manipulate data with a pivot table is a critical skill for marketers. The reason is we're inundated with large data sets at every turn, and pivot tables give you the flexibility to easily move data around to investigate relationships between data and make actionable conclusions.

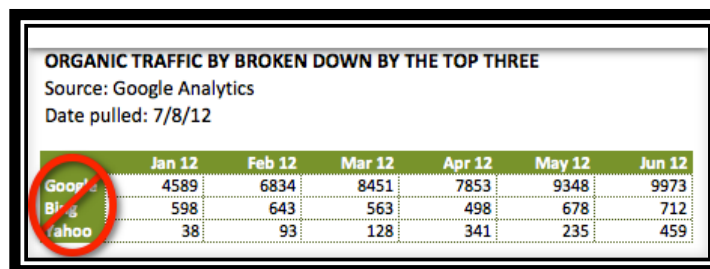
When you're trying to find correlations and causal relationships anything short of a pivot table is going to fall short. And trust me ... They look scary at first, but they're so easy to use once you learn the underpinning logic that powers them.

## Prepare the Data

Before you can create the pivot table, there are a few things you need to do to ensure your pivot table doesn't stroke out on you later.

1. Set your table up in tabular format.

Formatting your data as a table is a good first step, although it doesn't always work well for dashboards. But basically you need to follow the structure of a database, where your data only includes column headings. You can't have row headings, like this table:



	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12
Google	4589	6834	8451	7853	9348	9973
Bing	598	643	563	498	678	712
Yahoo	38	93	128	341	235	459

2. Organize your columns by buckets, not individual values.

This is probably the hardest concept to grasp when you're first starting with pivot tables. So, for example, if you wanted to see visits to a site broken down by month and medium, you might be tempted to create a column for each medium (organic, PPC, social, email, etc.) and each month. This would be incorrect and will cause you all manner of aggravation when you go to pivot the data.

Your column headings would need to be the broader buckets: Visits, Medium, and Month.

Here's where it gets a bit tricky ...

Let's say you have visit data for two years, and you want to compare year-over-year data — in other words, visits for 2013 compared to the same months in 2012. Then, you would need to have a column for each year. If you think about what we learned in the section on

deconstructing a chart it makes sense. You need each year to be its own data series, whereas if you just had a year column, both years would be a part of the same series.

### 3. Avoid blank columns, rows, and cells.

To ensure you don't have any blank rows and columns, make sure the bottom-right corner of your table is flushed up against the data. Also, blank cells can wreak havoc in your data and even cause Excel to think your whole column of numbers is text, which will limit your filtering options down the road.

To hunt down these blanks in your data, click inside your table, press Ctrl-A (Mac: Command-A) to select just the data inside your table, then Ctrl-G (Mac: Control-G) to pull up the Go To dialog. Click the Special button, choose Blanks, and click OK. This will select all the blank cells in your data. Then enter a 0 and, without clicking anything, enter the number 0 and Ctrl-Enter (Mac: Command-Return). This will enter the 0 inside all of the blank cells, though they may show up as hyphens if you're using the default number formatting with thousandths separators.

## Pivot Table Tutorials

This is going to be a live demo. But if you want to refresh your understanding later on, check out these resources I've created:

- My video walkthrough [bit.ly/pt-video](http://bit.ly/pt-video)
- My comprehensive tutorial on the Search Engine Land site: [bit.ly/sel-pt-tutorial](http://bit.ly/sel-pt-tutorial)
- My tutorial on how to keep column widths when you refresh your pivot table: [bit.ly/pt-annoyance](http://bit.ly/pt-annoyance)
- My tutorial on how to create pivot table-friendly reports in the Google Analytics interface: [bit.ly/pt-reports](http://bit.ly/pt-reports)

[illegible]

[illegible]

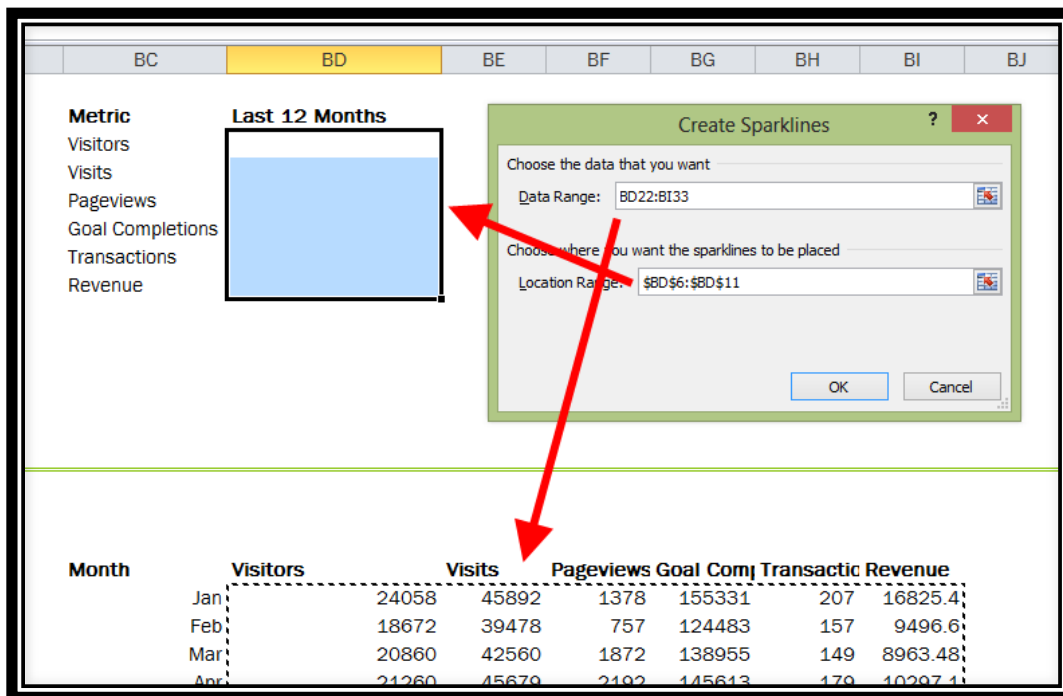
# Sparklines

Unlike charts on an Excel worksheet, sparklines are not objects. A sparkline is actually a tiny chart in the background of a cell. Because of this, you can actually enter text in a cell and use a sparkline as its background, although in most cases I wouldn't recommend doing this.

The benefit of sparklines is the ability to spot trends in your data at a glance without taking up a lot of real estate.

## Create Sparklines

1. Select an empty cell or range you want to insert your sparkline(s).
2. Go to Insert > Sparklines (Mac: Charts > Insert Sparklines) and choose the type of sparkline that you want to create. You can choose a line, column, or win/loss.
3. In the Create Sparklines dialog, choose your data range.



4. Customize your sparklines.



[illegible]

# Analytics Canvas

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## Intro

This will be a live demo because there's just too much to put in this manual, and the tool updates pretty frequently. So screenshots could prove to be more frustrating than helpful.

That said, it will help you significantly to understand the underpinning logic behind Analytics Canvas. It is, hands down, my favorite Google Analytics API tool (at the time of writing).

Here are a few reasons it's a superior tool to Excellent Analytics:

- It stays up to date with changes Google Analytics, which is no small task.
- It allows you to access the Multi-Channel Funnel (MCF) Reporting API. This is, in my opinion, the most important update to Google Analytics since Google took over the tool. As I mentioned in the section on the Multi-Channel Funnels report, reporting on last-click conversions alone is a travesty and causes marketing departments to make decisions on fatally flawed data. Think of it this way: How fair would it be to have a football team and only pay players who run the ball into the end zone? Pretty ridiculous, right? That's what we're doing with reporting on last-click conversions only. So if you're tracking revenue at all (in goal conversions or ecommerce), you should be including MCF reports.
- It has social metrics and dimensions. Excellent Analytics doesn't.
- It allows you to pull in data from Google Spreadsheets, databases, Excel (or text) files on your network, or Bing Ads. You can take this data and marry it to your analytics data. It's also the only tool to date to allow you to import data from Google Spreadsheets without having to make the data public.
- It has an amazing ability to get around sampling for large sites.
- Imagine Analytics Canvas as a conveyer belt, where you start with raw data (just as you do with Excellent Analytics) but then clean it up using data blocks that are connected. Ultimately, your final block will be an export block.

## Basic Workflow

There are a few basic steps you take with Analytics Canvas:

1. Create an Excel doc to use as your template. I create a Raw Data sheet and export all of my raw data there.
2. Run your first query, giving it a name.
3. Set your master date range. (This will be the default, but you can choose custom date ranges for individual queries.)
4. Use data blocks to clean up the data and manipulate it.

5. Add an export block.
6. Set up the workbook you'll use for the template and report folder. I also add year and month to the report file since I do monthly reporting. This gives each month's report a unique title. You only have to set this up for the first query. All others will use that same template and reports folder.
7. Tell Analytics Canvas where you want to export that data to using the picker. I leave extra columns between exports to give myself extra room.
8. Write the data to the template.
9. Rinse and repeat (except for step 6).
10. After you've written all the data you need to the template, build out your visualizations in the template file.
11. Run a test with another date range (or another site if you're creating one template for multiple sites).
12. If all passes muster, delete all of the data from the template. (Under the Outputs tab, right-click the workbook and choose Remove All Data from Template.) This will remove the data but keep the framework. It's important, once you've build the template, to keep data out of it. Otherwise, data from the template could end up in the reports. If you need to change something in the template and need data back in there, right-click on the export file again under Outputs and choose Write All Data to Template. Just remember to delete it when you're finished tinkering.
13. Run a report by clicking the green play button in the upper-left corner of the interface.

## Help Files

To get to Analytics Canvas' help files go to: [bit.ly/ac-help](https://bit.ly/ac-help).

They also have a Quick Start Guide: [bit.ly/ac-quick-start](https://bit.ly/ac-quick-start).

But the best way to gain mastery of Analytics Canvas is to through the canvas I provide in the template I provide. I've included as many annotations as I could shoehorn into the space allowed. Just check out the blocks to see how I used them to clean up the data and labels, filter, sort, pivot, join, etc. my data.

## Important Formulas

In the Marketing Channel canvas I used a number of formulas to use in segmentation blocks for all mediums in Analytics Canvas. Check these to see if they work for your site. If they don't, you'll need to modify them for your canvas. They're in the blocks called Define Medium for both block groups on that canvas.

Organic: `CONTAINS([Original.Medium],"email","internal","marketo")`

Direct: CONTAINS([Original.Medium],"(none)")

Referral (excludes social): AND([Original.Medium]="referral",[Original.socialNetwork]="(not set)")

Social: OR(CONTAINS([Original.Medium],"social","social-media","sm","twitter","twitter.com","facebook","facebook.com","fb","youtube","youtube.com","buffer","socialflow"),AND([Original.Medium]="referral",[Original.socialNetwork]<>"(not set)"))

Email: CONTAINS([Original.Medium],"email","internal","marketo")

CPC: CONTAINS([Original.Medium],"cpc","retargeting","ppc","paid")

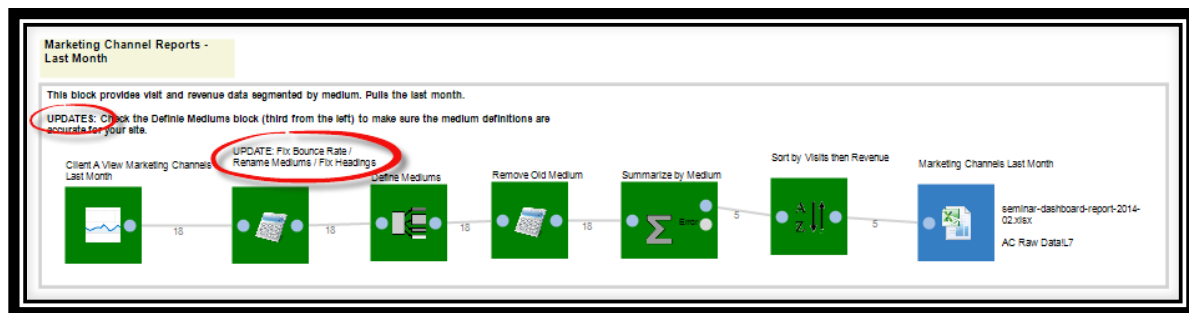
Affiliate: CONTAINS([Original.Medium],"affiliate","partner","cpa")

Feed: CONTAINS([Original.Medium],"feed")

Banner: CONTAINS([Original.Medium],"banner","display")

## Necessary Data Updates

Any block that needs to be updated by you the first time you apply it to your site will be prepended with UPDATE. Example:



[illegible]

[illegible]

[illegible]

[illegible]



# Advanced Excel

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## Creating a Navigation Bar

Although most dashboards should be kept to one page, there are instances where you might want to have a dashboard span multiple sheets. For example, you might control different websites and want to consolidate them into one workbook but have separate worksheets for each. Or you might want to have different dashboards for different divisions in your company: IT, Marketing, Finance, Etc.

Just keep in mind that if you separate your dashboard into different worksheets, your workbook can become large very quickly. If you start getting too much lag in your workbook, you might need to separate them into different workbooks.

This will be a live demo.

[illegible]

[illegible]

## Pivot Charts

This will be a live demo, but you can watch this video I did on the topic, if you want to brush up later: [bit.ly/pivot-chart-tutorial](https://bit.ly/pivot-chart-tutorial).

*Caveat:* Pivot charts are, sadly, PC swim only. It's utterly baffling but true. However, you can create static charts from pivot tables on a Mac. You just have to avoid total columns and rows. Either turn them off in your pivot table or don't include them when you select your data.

[illegible]

# Dynamic Charts

This will be a live demo. But I'm including links to resources for you to freshen up on if you need to review later. There are also directions in the practice workbook, as well as plenty of resources online.

## Combo Box

Here's my video tutorial on how to use a combo box: [bit.ly/combo-box-chart](https://bit.ly/combo-box-chart).

## Option Buttons

Here's my video tutorial on how to use option buttons: [bit.ly/option-button-chart](https://bit.ly/option-button-chart).

## Scrollbar

Here's my video tutorial on how to use a scrollbar: [bit.ly/scrollbar-chart](https://bit.ly/scrollbar-chart).

## Check Boxes

I haven't done a tutorial on this, but it's a variation on a theme from the others. And there's one in the sample dashboards.

## Combination

Here's my tutorial on how to create my beloved combination charts: [bit.ly/combination-chart](https://bit.ly/combination-chart).

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# Dynamic Ranges

## When You Need Them

As I talked about in the section on building formatted tables, when you format your raw data set as a table, if you add new rows below the data or columns to the right, the table's borders will dynamically expand to include the data. A huge benefit is that if you've built a chart off of data in a table, when the table expands, the chart will also update with the new data. It's magical and makes me a little weepy.

However ... (You had to know that was coming.)

What Microsoft overlooked (imo) was what if the data doesn't expand? What if it shrinks? Wouldn't it be great if tables shrunk too? Yeah!

But they don't.

<stab stab stab>

This is a huge liability in dashboards because the number of rows in your data set could vary (sometimes wildly) from month to month. And because tables don't shrink, you're left pretty high and dry.

That's why you need to learn how to create dynamic named ranges and build charts off of them.

## Tutorial

### 100-Foot View

Before we get into the weeds, let's pull back a bit and get the big picture. So Excel lets you name any range of data, even if it's a single cell. You just select it and enter the name into the Name Box to the left of the Formula Bar in any tab.

There are a few naming rules (because it's Microsoft, after all): The first character must be a letter, underscore (\_), or backslash (\). Remaining characters in the name can be letters, numbers, periods, and underscore characters.

So it's pretty painless to create a simple, static named range. But with a dashboard you need to create named ranges for each individual data series and your category column that will dynamically update if the underlying data set expands *or* contracts.

### Important First Step

Go ahead and create your chart from the static range. After you build out a named range for each of the series and the categories, you'll lift the hood of the chart (via Select Data)

and replace the static ranges with named range references (not the formulas, just the names you gave each of them).

## Formula Options

To do this, we'll need to use one of two functions: INDEX or OFFSET. Most resources promote the use of the OFFSET function. However, the OFFSET function is volatile because it recalculates any time there is a change in your workbook, which can eat up critical resources when you're building (or using) a reporting dashboard.

Let's look at what these functions actually do, and you can decide for yourself:

### OFFSET

As we covered in the Functions section of the manual, here is the syntax:

`OFFSET(reference, rows, cols, [height], [width])`

All this says is, "Excel, I want you to start in cell A and go down X number of rows. To figure out how many rows to go down, count only the cells in the single-column (or row) range I give that contains data."

	BD	BE	BF	BG	BH	BI	BJ	BK
4								
5								
6								
7		Month	Google+	Twitter	Facebook	LinkedIn	Tumblr	Pinter
8		01/13	2,368	883	322	271	371	
9		02/13	2,656	917	331	275	445	
10		03/13	2,944	956	340	278	558	
11		04/13	2,995	984	356	282	677	
12		05/13	3,038	1,032	358	285	841	
13		06/13	3,046	1,072	368	289	967	
14		07/13	3,165	1,108	379	292	990	
15		08/13	3,175	1,153	392	294	986	
16		09/13	3,193	1,197	419	296	984	
17		10/13	3,215	1,254	464	299	981	
18		11/13	3,215	1,296	487	300	979	
19		12/13	3,223	1,329	511	306	1,002	
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23								
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25								
26								
27								
28								
29								
30								

OFFSET(reference, rows, cols, [height], [width])

=OFFSET('AC Raw Data'!\$BF\$8,,COUNT('AC Raw Data'!\$BF\$8:\$BF\$29))

Let's break this down (in super simple terms):

*reference:* The first cell of your dynamic range. All ranges referenced in a named range need to be absolute, including single-cell ranges.

*rows:* How many rows to move down before you start counting the cells in your range. Since we're going to start counting at BF8, and therefore, don't need to move down any rows, we can skip this by entering a comma (even though it's technically not an optional argument).

*columns:* How many columns to move over before you start counting the cells in your range. Again, since we're going to start counting at BF8, we can skip this by entering a comma.

*height:* How many cells we want to count. Since this number is going to vary depending on the data pull for each time period, we're going to use the COUNT function to count cells with numbers in them. (If these were non-numerical values, such as mediums, we'd use COUNTA, but COUNTA will work for numerical values also.) In the range for the COUNT function, just make sure you give yourself enough room to expand. But I don't recommend using an entire column as this is computationally intensive.

*Pro Tip:* Because I don't like surprises and hate troubleshooting formulas that break, I add a light fill to cells covered by a formula. This way I can easily see if my data has overextended its borders and adjust the formula.

## INDEX

The INDEX function is much more stable than the OFFSET function. Like I said earlier, because dashboards can already be large files, I try to be as sparing as possible with Excel's resources. With the INDEX approach, we're going to build a range by referencing the first cell in the range and then using the INDEX function with COUNT/COUNTA to figure out the last cell in the array that has a value in it. Because it's the INDEX function, it will return a reference to the cell.

We can see this if we select the entire INDEX formula and press F9 (Mac: Command=) to convert the formula to an array. It returns 3223, which is the value in the last cell in the non-blank range of cells. Perfect.



So let's see what that looks like under the hood:

	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN
4											
5		<b>Social Referral and Campaign Visits</b>								<a href="#">Link to Google Spreadsheet</a>	
6											
7		Month	Google+	Twitter	Facebook	LinkedIn	Tumblr	Pinterest	Instagram	MoM	YoY
8		01/13	2,368	883	322	271	371	169	76	14%	298%
9		02/13	2,656	917	331	275	445	184	88	10%	310%
10		03/13	2,944	956	340	278	558	201	91	10%	330%
11		04/13	2,995	984	356	282	677	212	87	4%	329%
12		05/13	3,038	1,032	358	285	841	226	96	5%	322%
13		06/13	3,046	1,072	368	289	967	240	112	3%	317%
14		07/13	3,165	1,108	379	292	990	250	124	3%	311%
15		08/13	3,175	1,153	392	294	986	258	133	1%	298%
16		09/13	3,193	1,197	419	296	984	268	138	1%	274%
17		10/13	3,215	1,254	464	299	981	278	141	2%	192%
18		11/13	3,215	1,296	487	300	979	287	136	1%	99%
19		12/13	3,223	1,329	511	306	1,002	383	145	2%	72%
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											

**=**\$BF\$8:INDEX(\$BF\$8:\$BF\$29,COUNT(\$BF\$8:\$BF\$29))

INDEX(array, row\_num, [column\_num])  
INDEX(reference, row\_num, [column\_num], [area\_num])

Let's break this down (in super simple terms):

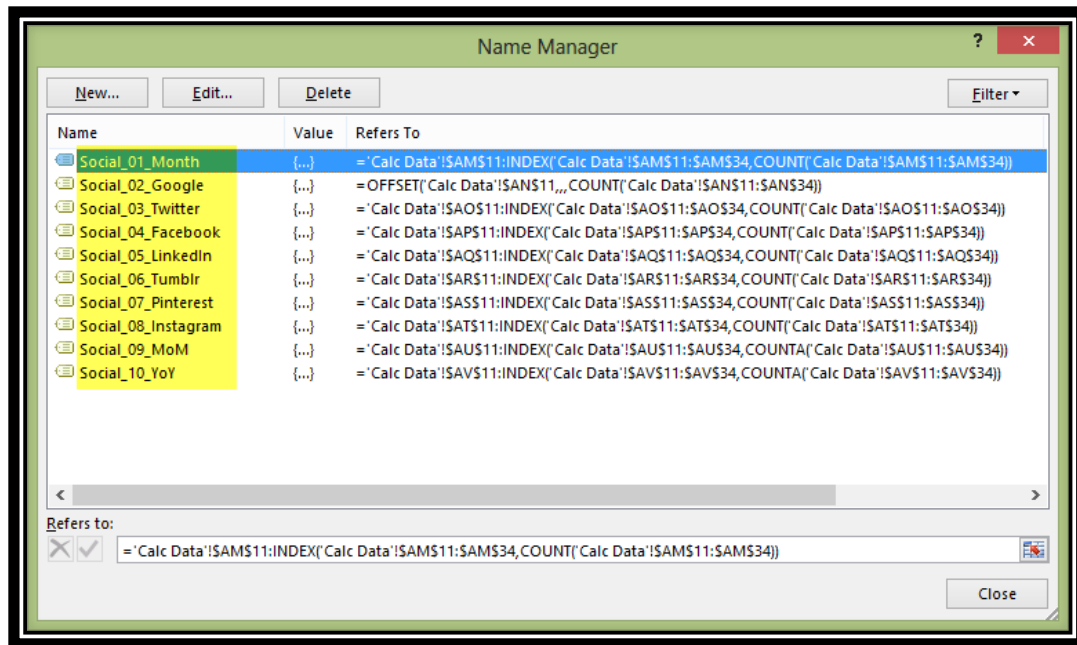
*array*: A range of cells. Just as we did with the OFFSET approach, give yourself room for your data to expand without going crazy.

*row\_num*: The number of rows we need to go down to get the range we want

*column\_num*: Irrelevant since we only have one column.

## Tips

- Write your formula in a cell, so you get the ToolTip to guide you. If you write it in the Name Manager, you don't get any tips.
- Be strategic in naming your ranges to keep named ranges together. If you have a bunch of named ranges in a dashboard, you don't want to have to search for each one. If I want to keep them in a particular order, I'll even include numbers in the name.



- If you have formulas in a range, you can't use COUNTA. You can use COUNT because COUNT ignores formulas, but COUNTA includes them. The COUNTA function counts cells containing any type of information, including error values and empty text (""). For example, if the range contains a formula that returns an empty string(""), the COUNTA function counts that value.

Visits and Revenue Segmented by Medium				
Marketing Channel	Visits	Bounce Rat	Revenue	
Direct	6,756	40%	\$	35,690
Email	3,505	30%	\$	32,593
Organic	28,569	30%	\$	136,475
Referral	3,866	34%	\$	9,617
=IF("EA Raw Data"!N13="", "", IF("EA Raw Data"!N13="(none)", "Direct", PROPER("EA Raw Data"!N13)))				

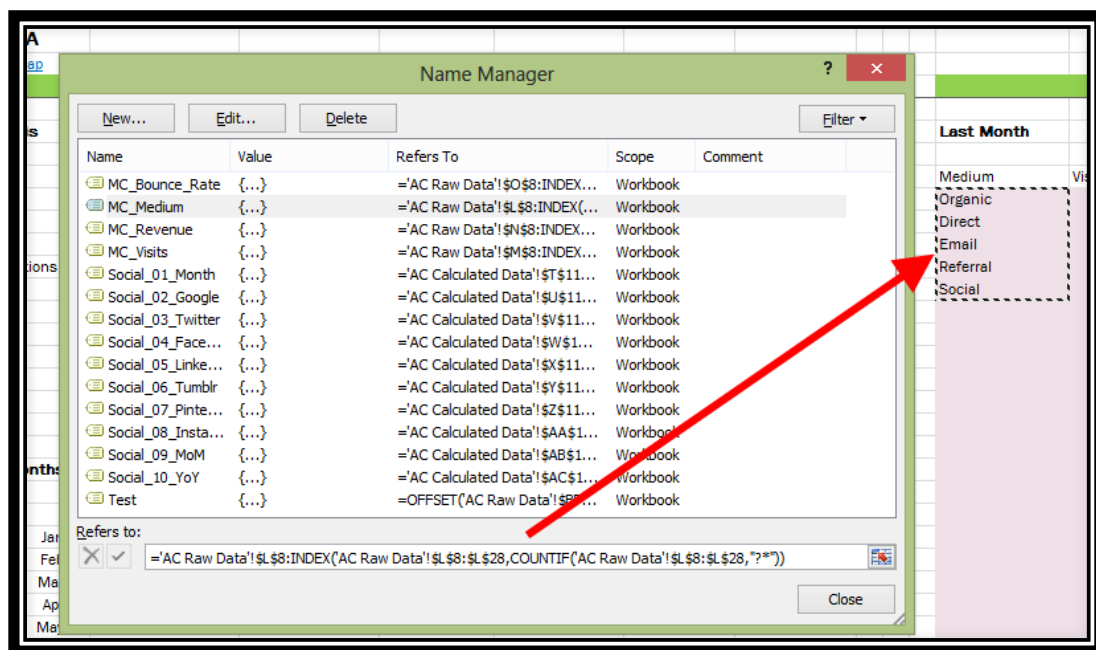
Can't use COUNT() or COUNTA()! Boo, hiss!

- If you have cells with formulas and you want to only count the cells that have actual values, you'll need to use COUNTIF. In the example above, this formula returns just the cells that have text in them:

= $\$L\$8$ :INDEX( $\$L\$8$ : $\$L\$28$ ,COUNTIF( $\$L\$8$ : $\$L\$28$ ,"?\*""))

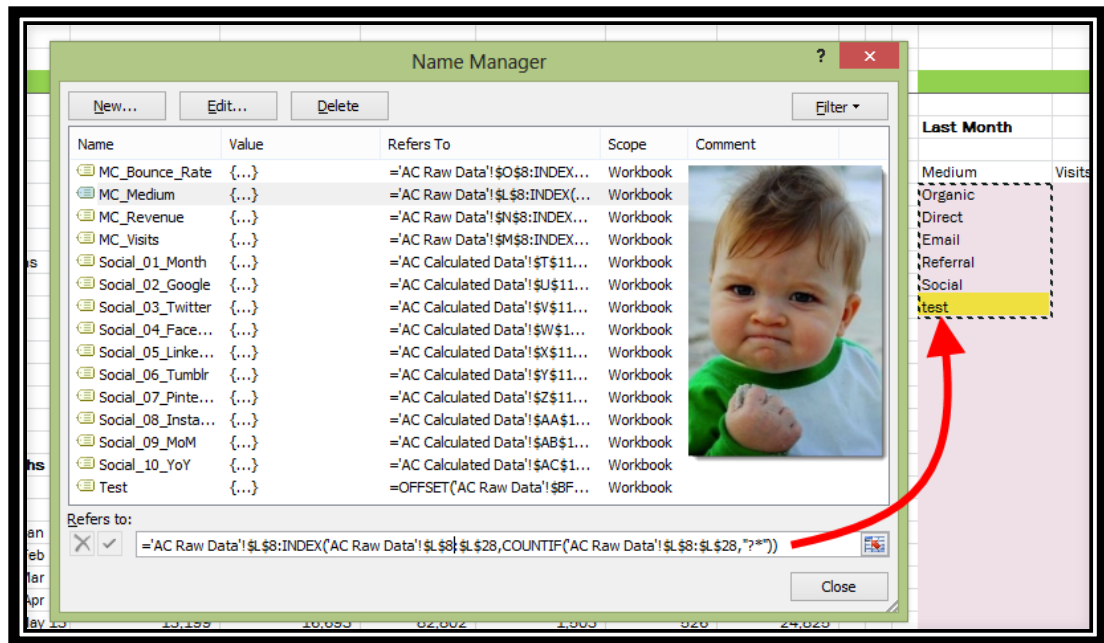
The ?\* are wildcard characters. Together they say, "Excel, count the cell if there's at least one character in the cell."

- To test a dynamic range, open up the Name Manager by pressing Ctrl-F (Mac: fn-Command-F3) and select anywhere in the Refers to field. If your formula is working properly, you'll see marching ants around your selection.

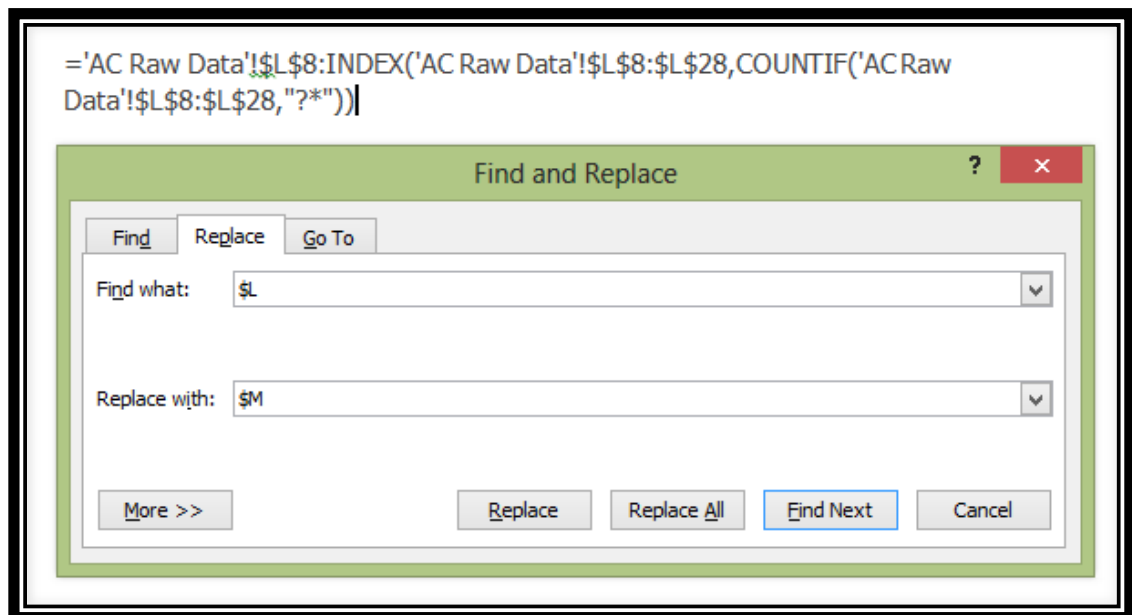


- If my formula returns the marching ants around the data I want to pull into my chart, then I close out of the Name Manager and add a new row to that data range. If it's working properly, it will pull in the new value/row.



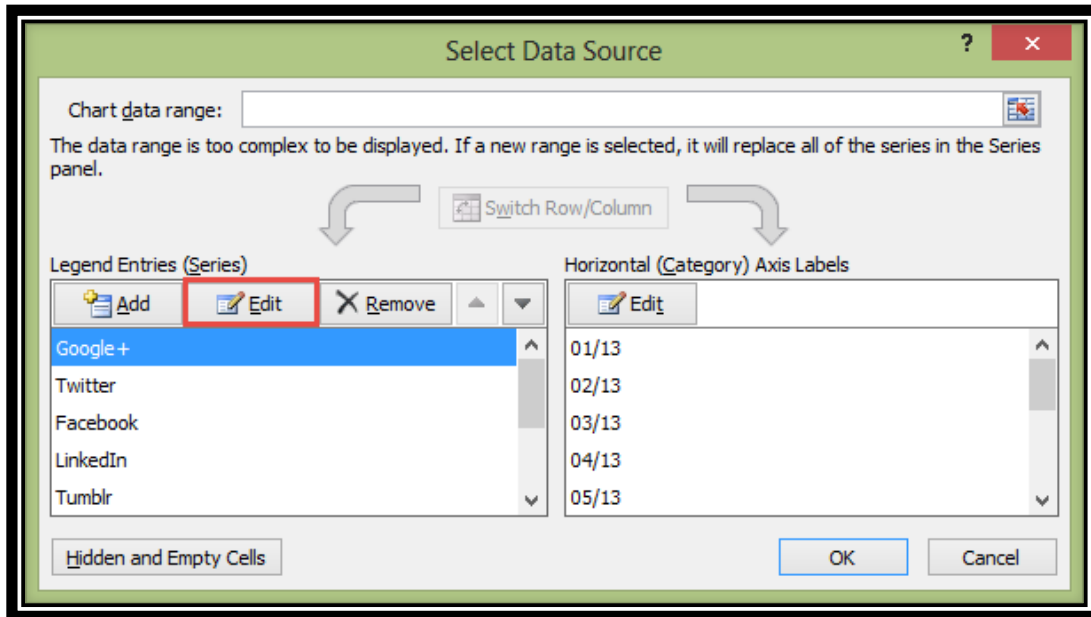


- You could build out each of the formulas individually, but who has time for that? I'm always looking for the most efficient solution. So what I do is copy my first formula into Word and use Find/Replace to update formula. Although it seems like you'd have to, you don't have to close out of any menus.

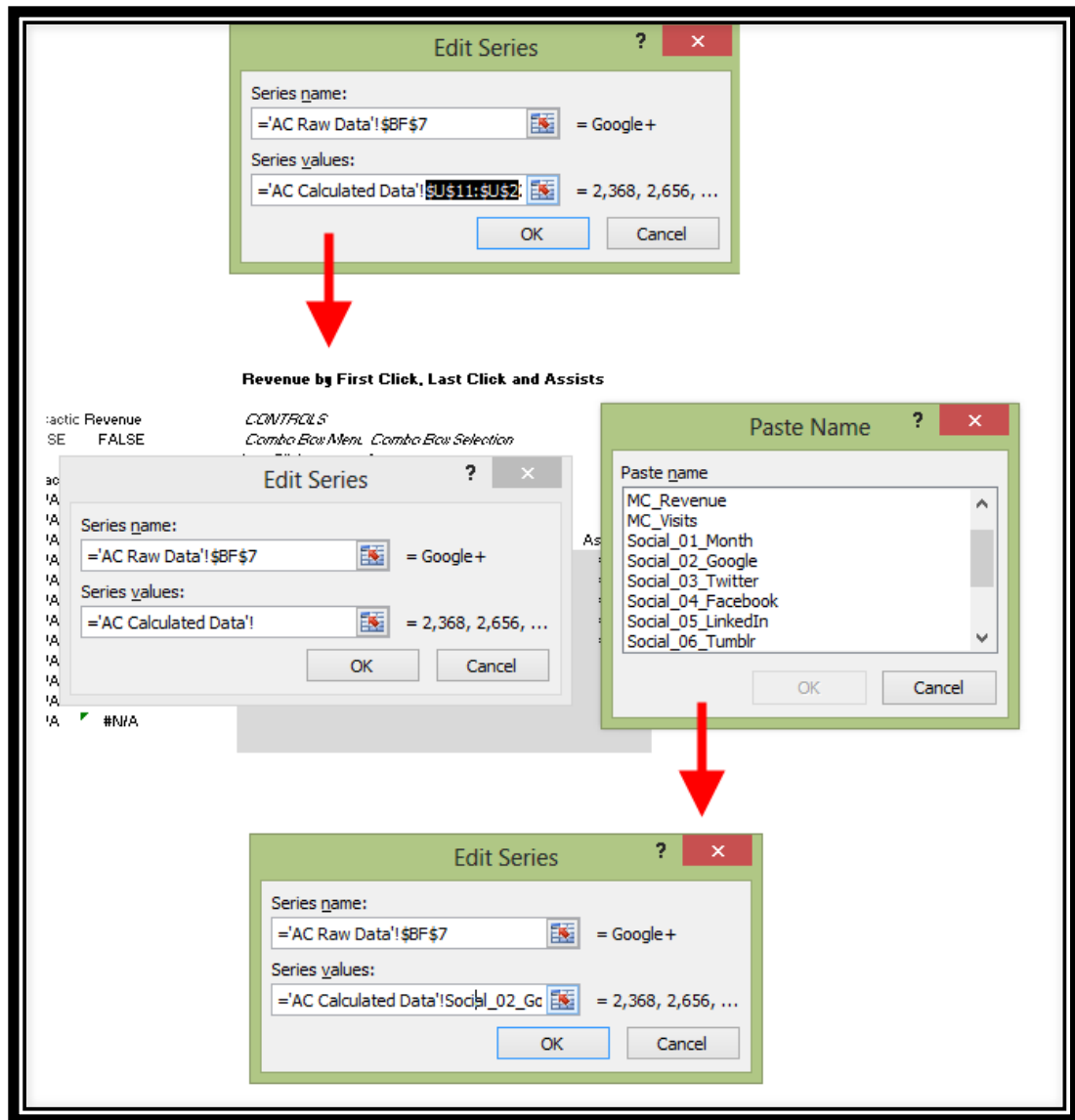


## Update Chart

1. Right-click inside the chart area and choose Select Data.
2. Select the series item you want to update and click the Edit button.



3. In the Series values field, carefully select just the cell reference (start after the exclamation mark), press Ctrl-F3 (Mac: Control-L) to pull up the Paste Name dialog, and double-click the name you want to insert it.



4. You don't need to update the series name. If you select it, you'll see it just points to the column heading, which is exactly what you want.
5. After updating all of your series, do the same thing for the categories.

## Notes: Dynamic Named Ranges

[illegible]

This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

# Learn Even More Dashboard Skills

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The best course I've taken on how to create dashboards is the one done by My Online Training Hub. It's not specific to marketing, but you can apply the techniques to your new dashboards. Her skills are spot on, and her Australian accent makes listening a pleasure. She also provides Excel workbooks for you to poke around in. (That's the best way to learn.)

They've offered attendees a 20% discount until March 11 (11pm EST). Just get the discount, go to [bitly.com/more-sexy-dashboards](https://bitly.com/more-sexy-dashboards). I still refer back to it when I'm stuck on something.