Data Analytics with Excel
Week 4: Dashboards

USC Annenberg Digital Lounge

Grab the guide at: digital-lounge-excel.carrd.co

After today’s session

- Design a data dashboard to answer questions about the data
- Build the dashboard you designed by using your knowledge of formatting, formulas, charts, and tables

Today’s topics

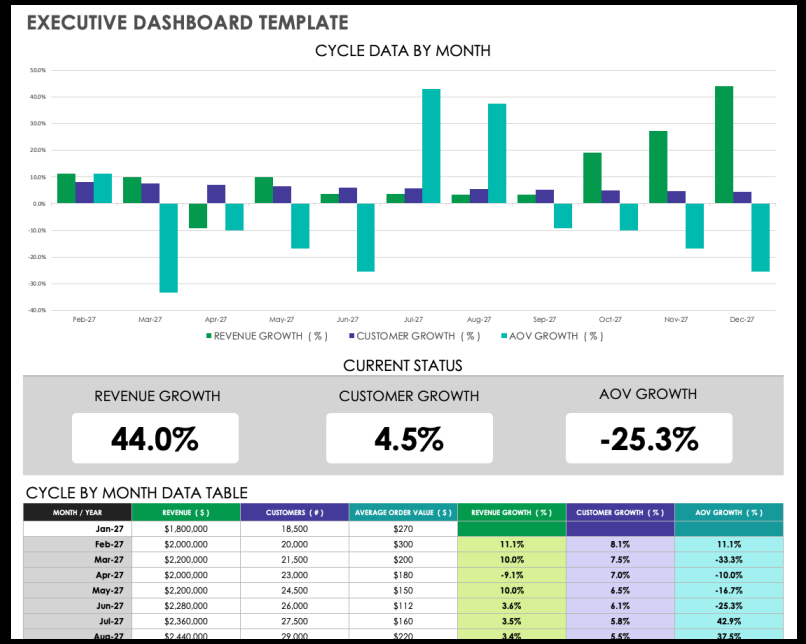
- Designing your dashboard to meet client requirements
- Building the elements of your dashboard
- Dashboard layout
- Interactive features
- Collaboration and iteration

Covered so far

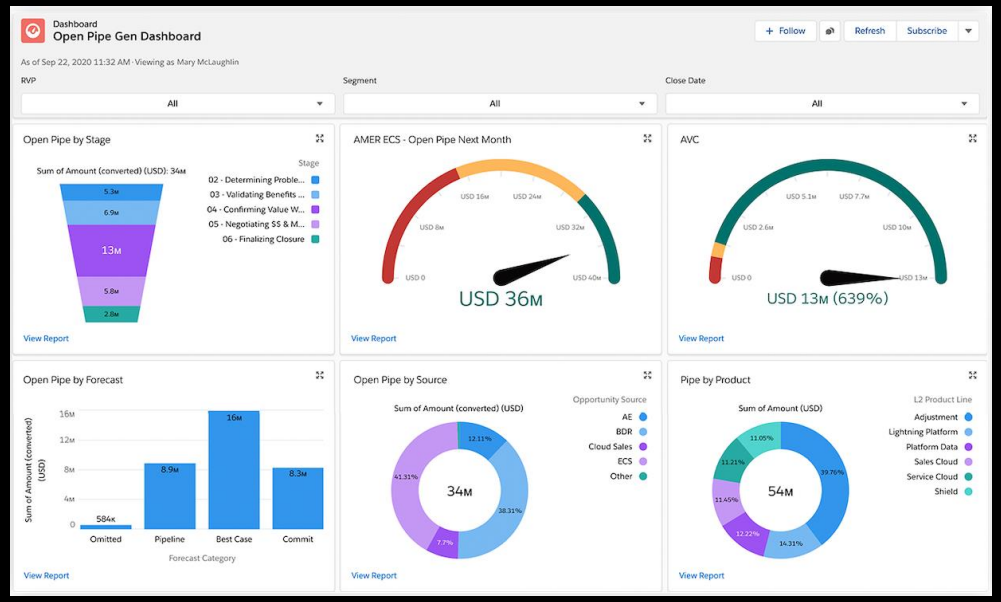
- Data formatting basics
- Conditional formatting
- Data validation
- Basic formulas
- Combining formulas
- VLOOKUP and XLOOKUP
- Static tables
- Pivot tables
- Pivot charts

What is a dashboard?

- Tells a story to provide details, prompt action, or answer questions



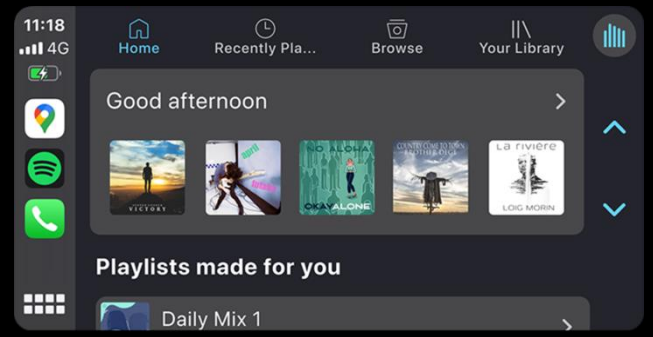
MONTH / YEAR	REVENUE ($)	CUSTOMERS (#)	AVERAGE ORDER VALUE ($)	REVENUE GROWTH (%)	CUSTOMER GROWTH (%)	AOV GROWTH (%)
Jan-27	$1,800,000	18,500	$270			
Feb-27	$2,000,000	20,000	$300	11.1%	8.1%	11.1%
Mar-27	$2,200,000	21,500	$200	10.0%	7.5%	-33.3%
Apr-27	$2,000,000	23,000	$180	-9.1%	7.0%	-10.0%
May-27	$2,200,000	24,500	$150	10.0%	6.5%	-16.7%
Jun-27	$2,280,000	26,000	$112	3.6%	6.1%	-25.3%
Jul-27	$2,360,000	27,500	$160	3.5%	5.8%	42.9%
Aug-27	$2,440,000	29,000	$220	3.4%	5.5%	37.5%



Dashboard styles

1. **Display** Dashboards: Summarize required info in a single view
2. **Action** Dashboards: Act as a ”to-do” list
3. **Toolbox** Dashboards: Give a set of filters and options for the user to explore

Toolbox Dashboard

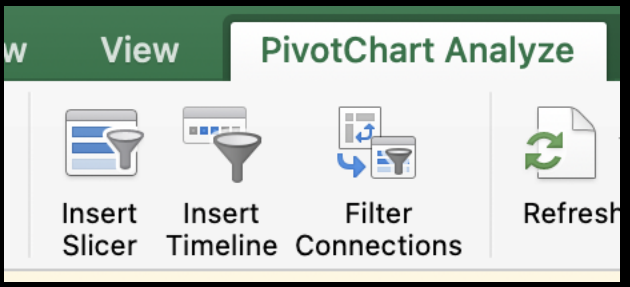


Develop your dashboard POV

- What question should this dashboard answer?
- What action should be taken by a viewer of this dashboard?
- What decisions should this dashboard inform?

Adding interactive features

Especially for toolbox dashboards, add easy filtering tools



To add a slicer (visual filter, more user friendly):

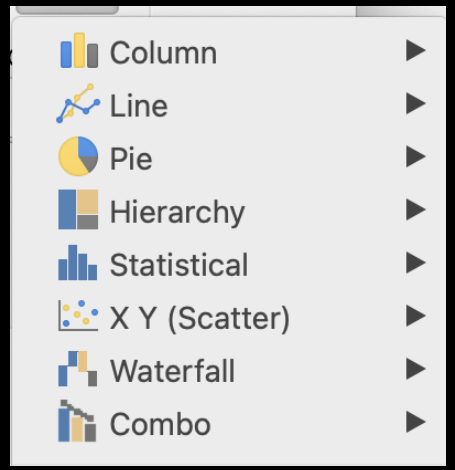
- Click into your chart → ribbon under PivotChart Analyze → Insert Slicer → choose your attribute(s)
- For date fields, Insert Timeline works similarly

To add a filter to a PivotTable:

- Click into your table → field list on the right → drag a field into the Filter section

Sketching out your dashboard

- Get clear on the requirements
- Brainstorm what types of charts or tables might make sense to display the required information
  - Over time?
  - Parts of a whole?
  - Comparison?
  - Single number?
- Set up a draft pivot table to see if you can accomplish the summaries you need



Your project

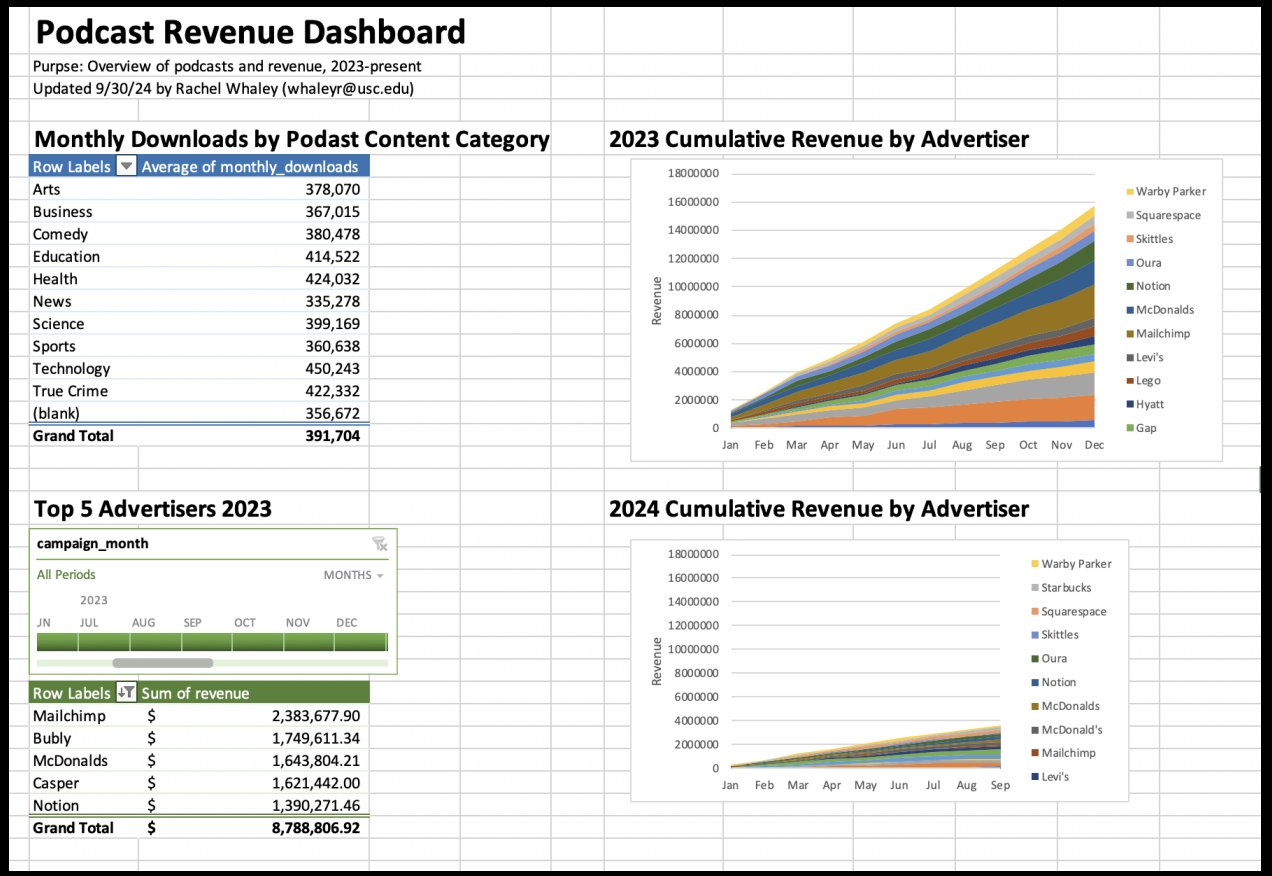
You are a Marketing Analyst for a large network of 500 podcasts

The COO of the network has asked you to create a dashboard to track the company's top key metrics related to revenue

1. Monthly downloads by podcast content category
2. The top 5 advertisers in 2024 by revenue
3. Cumulative revenue so far this year, compared to last year
4. One more stat or chart you think the COO might like to see

Is this a display, action, or toolbox dashboard?

By the end of this session, you'll have something like this!



Podcast Revenue Dashboard

Purpse: Overview of podcasts and revenue, 2023-present
Updated 9/30/24 by Rachel Whaley (whaleyr@usc.edu)

Monthly Downloads by Podast Content Category

Row Labels	Average of monthly_downloads
Arts	378,070
Business	367,015
Comedy	380,478
Education	414,522
Health	424,032
News	335,278
Science	399,169
Sports	360,638
Technology	450,243
True Crime	422,332
(blank)	356,672
Grand Total	**391,704**

2023 Cumulative Revenue by Advertiser

Top 5 Advertisers 2023

Row Labels	Sum of revenue
Mailchimp	$ 2,383,677.90
Bubly	$ 1,749,611.34
McDonalds	$ 1,643,804.21
Casper	$ 1,621,442.00
Notion	$ 1,390,271.46
Grand Total	**$ 8,788,806.92**

2024 Cumulative Revenue by Advertiser

Grab the guide at: digital-lounge-excel.carrd.co

Get started building

- Each item in your dashboard is called a **component**
- Work on one component at a time
  - Sometimes easiest to work on each in its own sheet
- To create a chart, create a pivot table first, to make sure data is grouped correctly
- To create a single stat (e.g. overall total, average, etc.) you can type a formula directly into a cell
- Add enough labels/titles that you know what each component is
  - Don’t worry about colors or specific formatting yet

Dashboard components -- hints!

1. Monthly downloads by podcast content category
   - Pivot Table
   - Optional: Pivot Chart

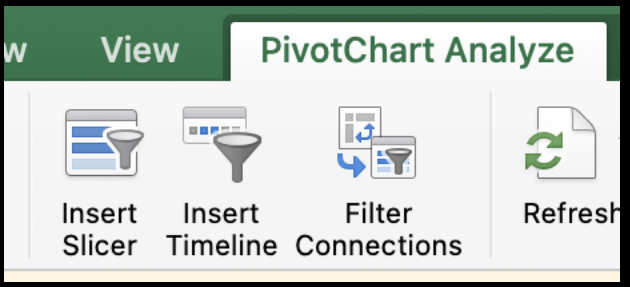
2. The top 5 advertisers in 2024 by revenue
   - Xlookup to get show downloads
   - Formula to get spend (Revenue = CPM*(downloads/1000)
   - Pivot Table (optional chart!)

3. Cumulative revenue so far this year, compared to last year
   - In 2025 sheet, use DATE formula to convert months to dates
   - Add revenue formula
   - Sort both by date
   - Create 2 charts, or a chart with 2 series

4. One more stat or chart you think the COO might like to see
   - What questions do you have about these podcasts or their revenue?
   - By show? By month? By advertiser? By campaign?

Adding interactive features

Especially for toolbox dashboards, add easy filtering tools



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Considerations for layout

- What question should this dashboard answer?
- What action should be taken by a viewer of this dashboard?
- What decisions should this dashboard inform?

How do these answers inform your design?

- Priority order
- Chart vs. table
- Colors

Formatting each component

- Consistent overall styling
  - Doesn’t have to be all same colors, but choose a consistent palette
- Every component should have:
  1. A title
  2. Labeled axes (if a chart)
  3. Units (on numbers)
  4. A legend or data point labels or both
  5. If it’s a more complicated chart or table, a short bit of explanatory text alongside it (typed in a cell or in a text box)
- Make sure components are sized appropriately relative to each other

Formatting your dashboard

- Size components to fit to your screen if possible
  - If scrolling is a must, scrolling down is more user-friendly than scrolling right
- Key elements to include (in text boxes or typed in cells):
  1. A title (something memorable is always good!)
  2. A purpose statement (1-2 sentences related to your dashboard POV)
  3. Your name and contact info
  4. The data source (even if it's "internal company database")
  5. The Last Updated Date
- Consistent style and fonts
- If desired, hide gridlines from the ribbon under View → Gridlines

Organizing your sheets

- In the final workbook, your first sheet should be labeled “Dashboard” or similar
- All sheets should be labeled, things like:
  - Raw
  - Pivot
  - Analysis
  - Draft
- If you want a pivot chart without a table, keep the table off the main dashboard tab

Maintaining Excel dashboards

- Remember that when you update source data for a pivot table, you have to click Refresh in the Analyze ribbon to reflect the updates
- Always update the Last Updated Date, and add date at end of filename
- If you're doing really frequent updates or sharing the same spreadsheet with a lot of people, you might need to upgrade to a more official database/dashboard tool…

Learn more about data!

SQL and Python for Data Analysis – starts Monday, October 27!

- Week 1: Intro to SQL
- Week 2: Data Modeling with SQL
- Week 3: Intro to Python
- Week 4: Analyzing Data with Python
- Week 5: Analytics & Visualization with SQL and Python

Feel free to keep in touch!

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Good Excel learning tools:

- Miss Excel (IG/TikTok)
- PolicyViz (email/website)
- Exceljet (reference site)

All linked on the guide under **More Learning Resources**!