

# More Efficient Workflows: Converting from Tableau to PowerBI



CITY & COUNTY OF SAN FRANCISCO

Office of the Controller  
City Performance Unit

Alice Kassinger  
Performance Analyst

# THIS WAS A HUGE TEAM EFFORT!



Cody



Emily



Luke



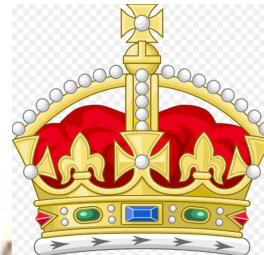
Alice



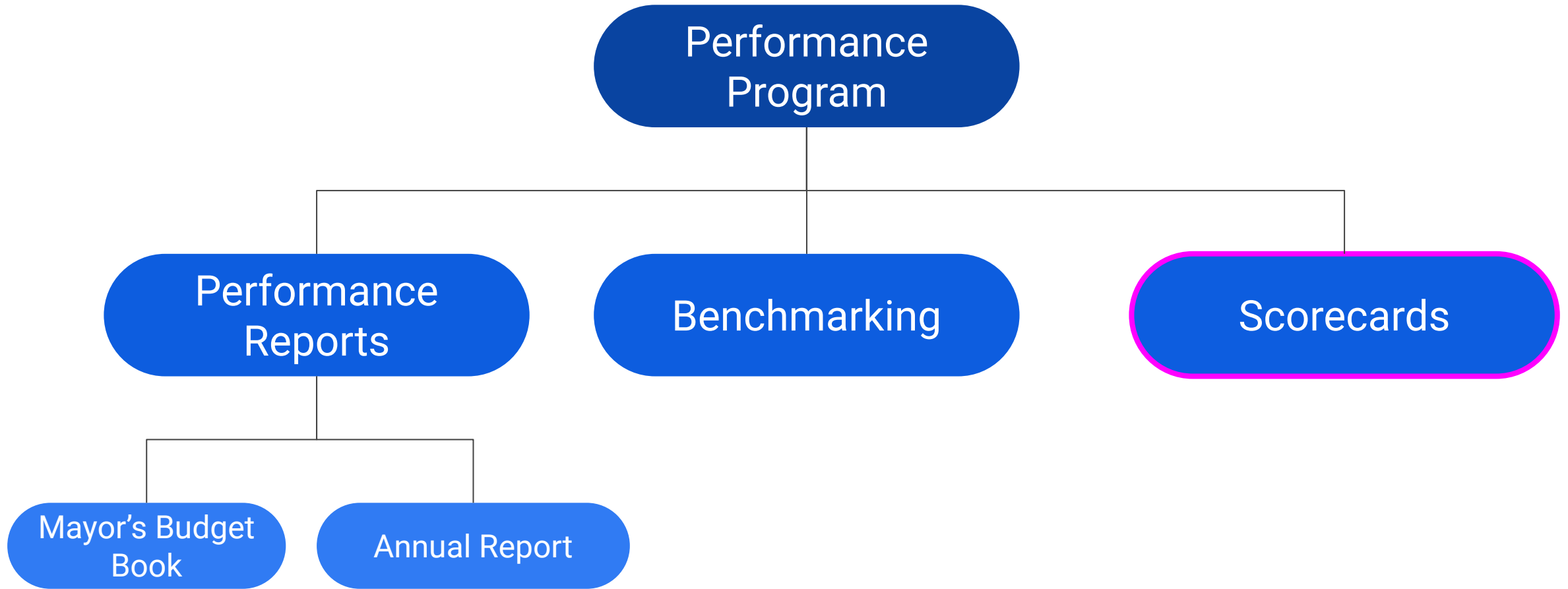
Sarah



Wendy



Queen Visionary  
Natasha Mihal



# Where do I have to go I find answers?

## Public Safety



## In 2015, CON created the Scorecards website: tableau charts and narrative on 8 issue areas



Livability



Public Health



Safety Net



Economy



Public Safety



Transportation



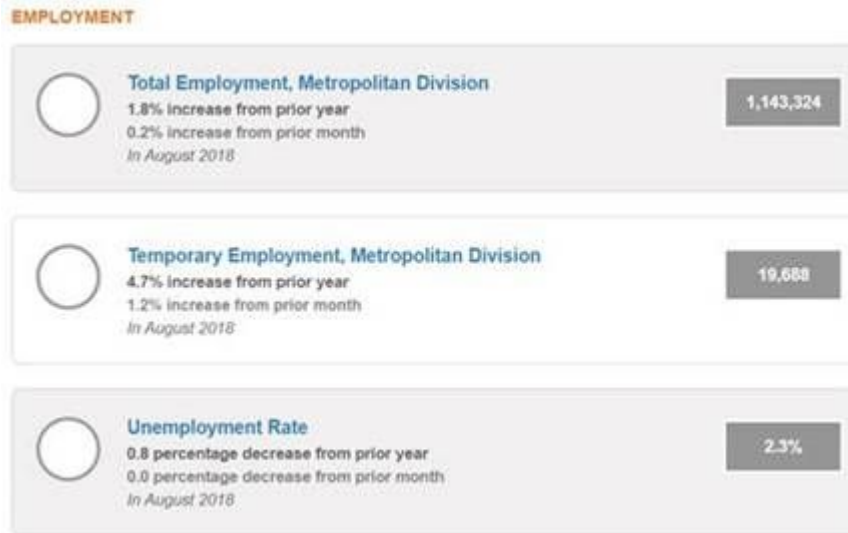
Environment



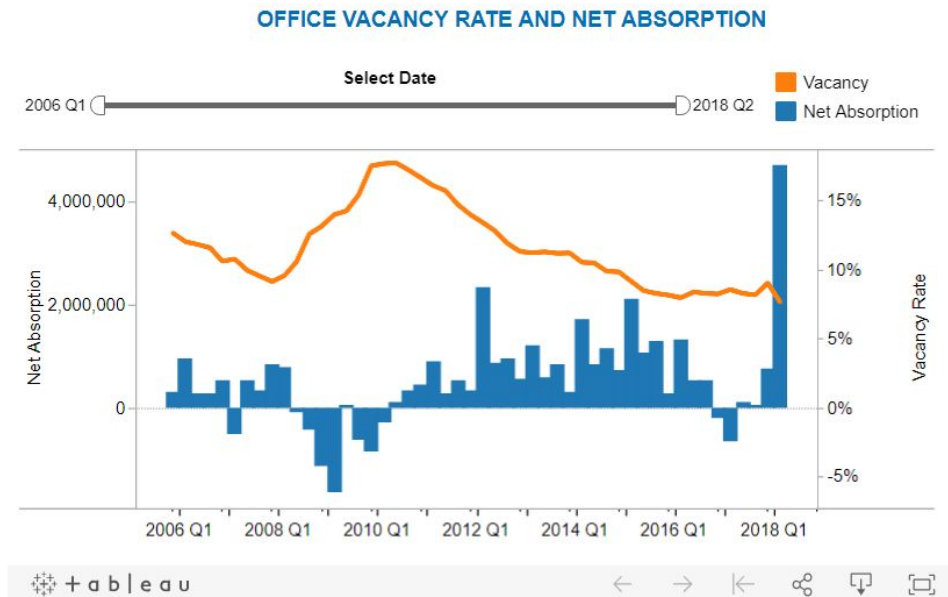
Finance

# Key metrics, accessible visualizations, and helpful narratives

## Scorecard Summaries



## Metric Visualizations



THE PROBLEM

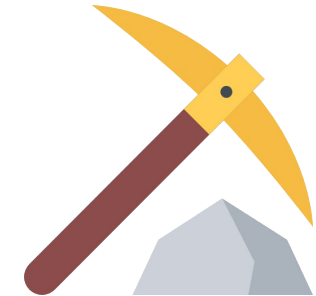
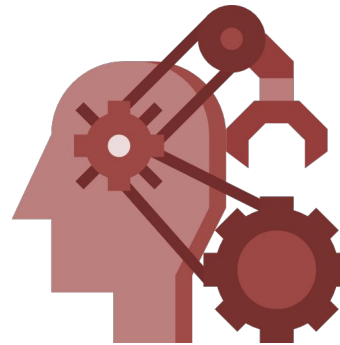
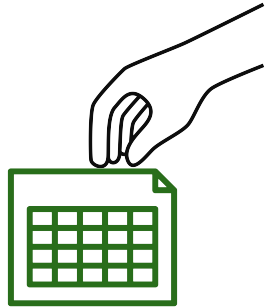


# Behind the scenes....

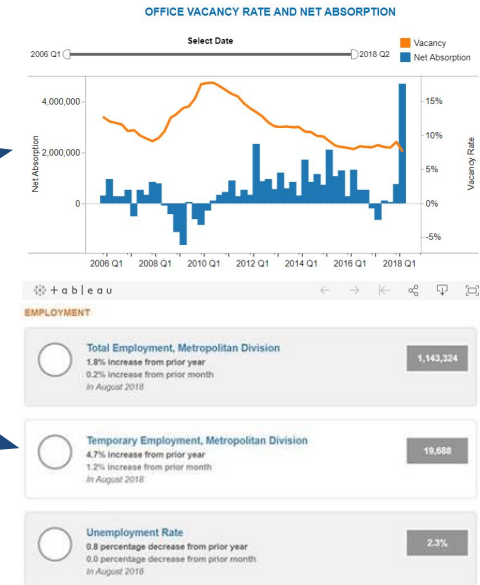




## MANUAL data wrangling & MANUAL updates



	A	B	C	D	E	F	G	H
1	Date	Total Employment MD	Temporary Employment MD	Unemployment Rate	Total Unemployed	Seasonal Adjustment		
35	10/01/17	1,128,500	19,400	2.6%	15,100	Not Seasonally Adjusted		
36	11/01/17	1,136,800	19,600	2.5%	14,300	Not Seasonally Adjusted		
37	12/01/17	1,139,800	19,600	2.4%	13,800	Not Seasonally Adjusted		
38	01/01/18	1,120,100	18,400	2.7%	15,300	Not Seasonally Adjusted		
39	02/01/18	1,124,400	18,500	2.5%	14,600	Not Seasonally Adjusted		
40	03/01/18	1,128,200	18,600	2.4%	13,500	Not Seasonally Adjusted		
41	04/01/18	1,133,800	18,800	2.1%	12,000	Not Seasonally Adjusted		
42	05/01/18	1,134,800	19,200	2.1%	11,800	Not Seasonally Adjusted		
43	06/01/18	1,137,600	19,100	2.7%	15,100	Not Seasonally Adjusted		
44	07/01/18	1,139,600	19,400	2.5%	14,100	Not Seasonally Adjusted		
45	08/01/18	1,142,400	19,900	2.4%	13,600	Not Seasonally Adjusted		
46	07/01/18	874,204	14,631	4.1%	16,983	Seasonally Adjusted		
60	01/01/00	962,381	30,033	3.5%	16,076	Seasonally Adjusted		
61	02/01/00	971,462	30,925	3.4%	15,942	Seasonally Adjusted		
62	03/01/00	979,625	32,168	3.5%	16,433	Seasonally Adjusted		
63	04/01/00	977,650	31,351	3.3%	15,512	Seasonally Adjusted		
64	05/01/00	983,237	31,254	3.4%	16,058	Seasonally Adjusted		
65	06/01/00	989,600	31,652	3.5%	16,703	Seasonally Adjusted		
66	07/01/00	991,335	32,494	3.4%	16,239	Seasonally Adjusted		
67	08/01/00	996,205	32,153	3.5%	16,396	Seasonally Adjusted		
68	09/01/00	999,383	31,595	3.4%	15,849	Seasonally Adjusted		
69	10/01/00	996,750	30,915	3.4%	15,791	Seasonally Adjusted		
70	11/01/00	1,001,155	30,865	3.4%	16,352	Seasonally Adjusted		
71	12/01/00	1,003,075	31,364	3.3%	16,058	Seasonally Adjusted		
72	01/01/01	993,471	26,719	3.7%	17,905	Seasonally Adjusted		
73	02/01/01	993,025	26,359	3.9%	18,433	Seasonally Adjusted		



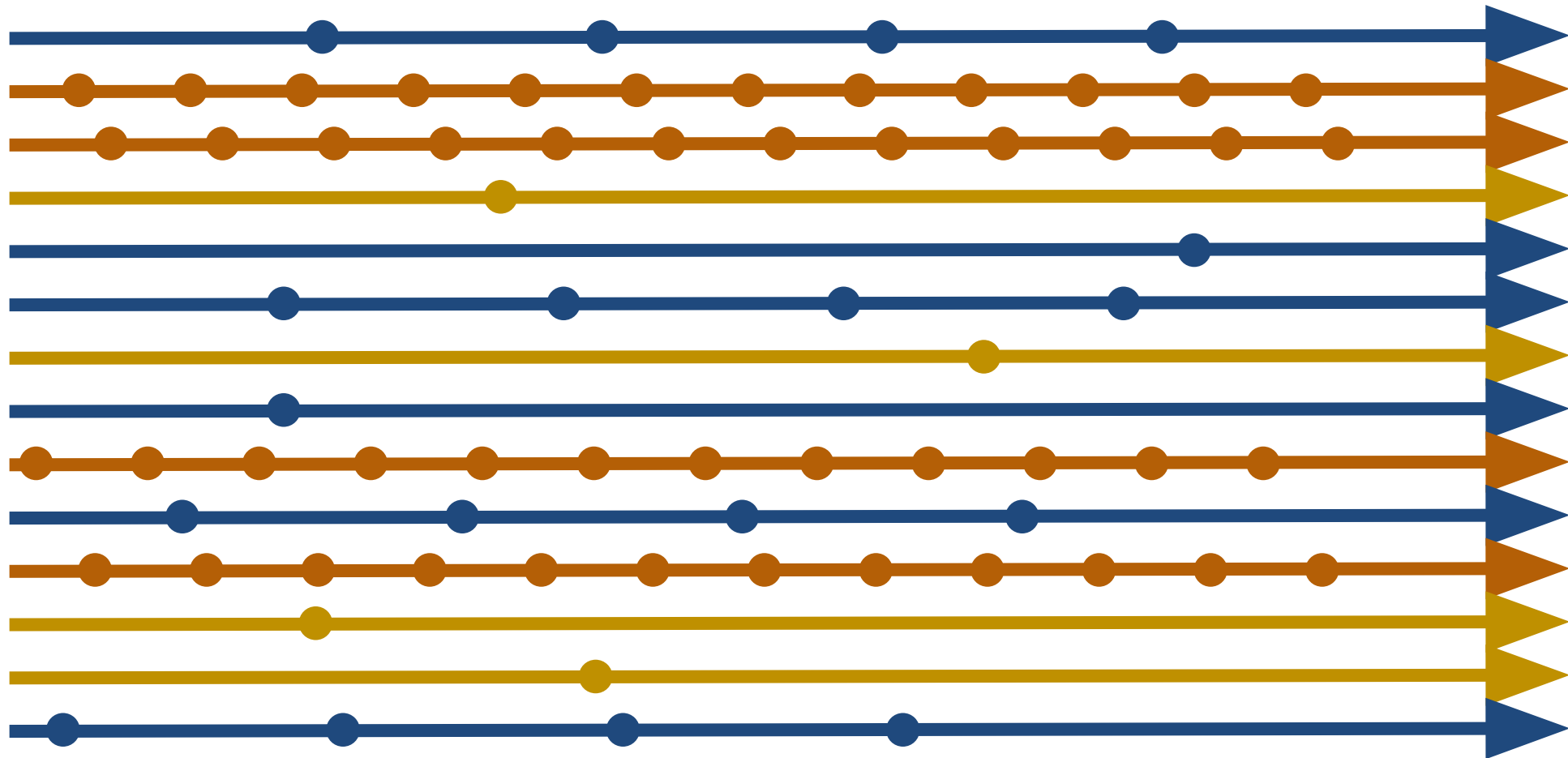
## MANUAL data wrangling & MANUAL updates

The graphic illustrates the manual nature of data wrangling and updates. It features a large orange '70+' symbol, a hand pointing to a document, a person's head with gears, a pickaxe, a Microsoft Access database icon, a large orange 'Charts' text, a screenshot of an Excel spreadsheet, and a screenshot of a dashboard with charts and KPIs.

	B	C	D	E	F	G	H
35	1,128,200	30,033	2.7%	15,100	Not Seasonally Adjusted		
36	1,133,800	30,925	2.7%	14,300	Not Seasonally Adjusted		
37	1,134,800	30,925	2.7%	13,800	Not Seasonally Adjusted		
38	1,137,600	31,254	2.7%	15,300	Not Seasonally Adjusted		
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45	1,142,400	31,364	2.7%	14,100	Not Seasonally Adjusted		
46	1,142,400	26,359	2.3%	13,600	Not Seasonally Adjusted		
47	1,142,400	30,033	2.6%	16,076	Seasonally Adjusted		
48	1,142,400	30,925	2.7%	15,942	Seasonally Adjusted		
49	1,142,400	32,168	2.8%	16,433	Seasonally Adjusted		
50	1,142,400	31,351	2.7%	15,512	Seasonally Adjusted		
51	1,142,400	31,254	2.7%	16,058	Seasonally Adjusted		
52	1,142,400	31,652	2.8%	16,703	Seasonally Adjusted		
53	1,142,400	32,494	2.8%	16,239	Seasonally Adjusted		
54	1,142,400	32,153	2.8%	16,396	Seasonally Adjusted		
55	1,142,400	31,595	2.8%	15,849	Seasonally Adjusted		
56	1,142,400	30,915	2.7%	15,791	Seasonally Adjusted		
57	1,142,400	30,865	2.7%	16,352	Seasonally Adjusted		
58	1,142,400	31,364	2.8%	16,058	Seasonally Adjusted		
59	1,142,400	26,719	2.3%	17,905	Seasonally Adjusted		
60	1,142,400	26,359	2.3%	18,433	Seasonally Adjusted		

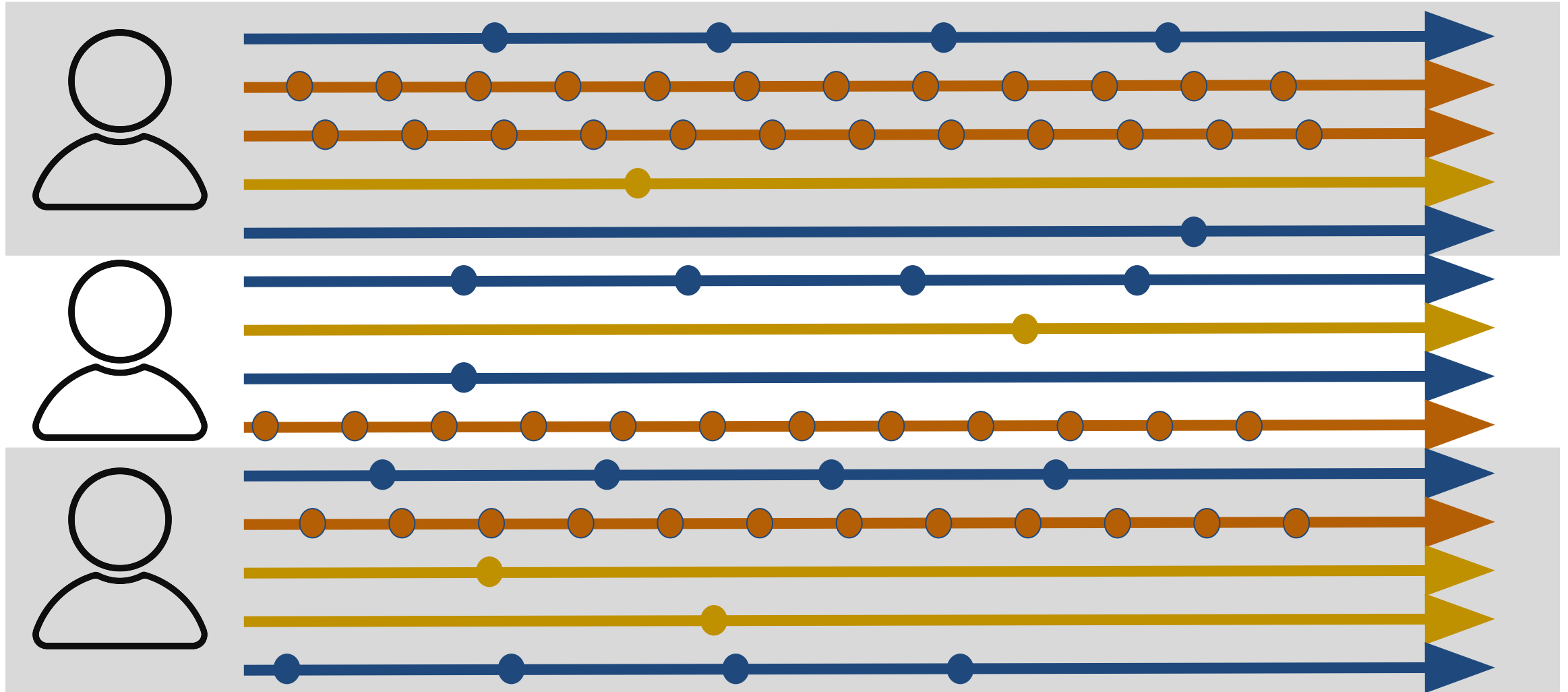
# SCATTERED TIMELINES:

Monthly, quarterly, biennial, and annual updates



## KNOWLEDGE SILOS:

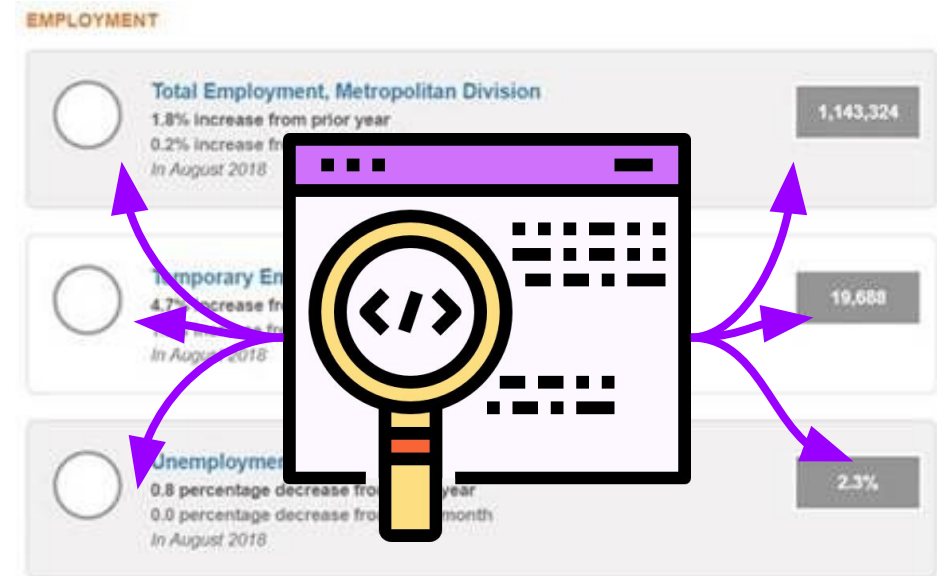
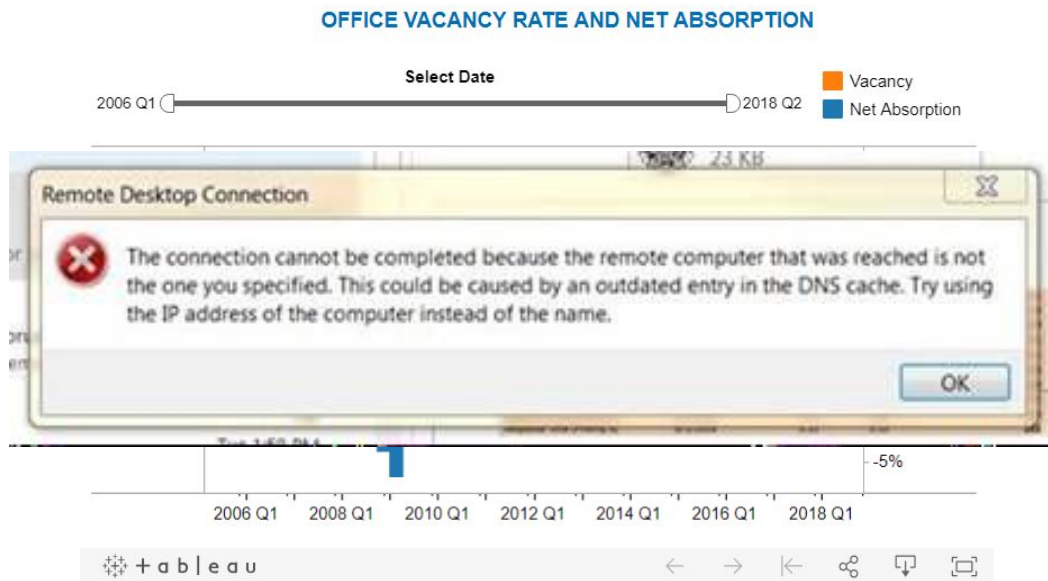
Each analyst memorized “quirks” of their metrics



## TECHNICAL LIMITATIONS:

Tableau's cost had everyone sharing a license

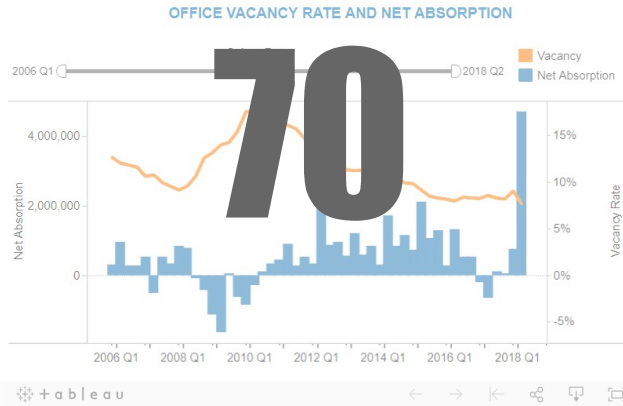
HTML had to be manually updated separately from Tableau





# THE PROBLEM

10



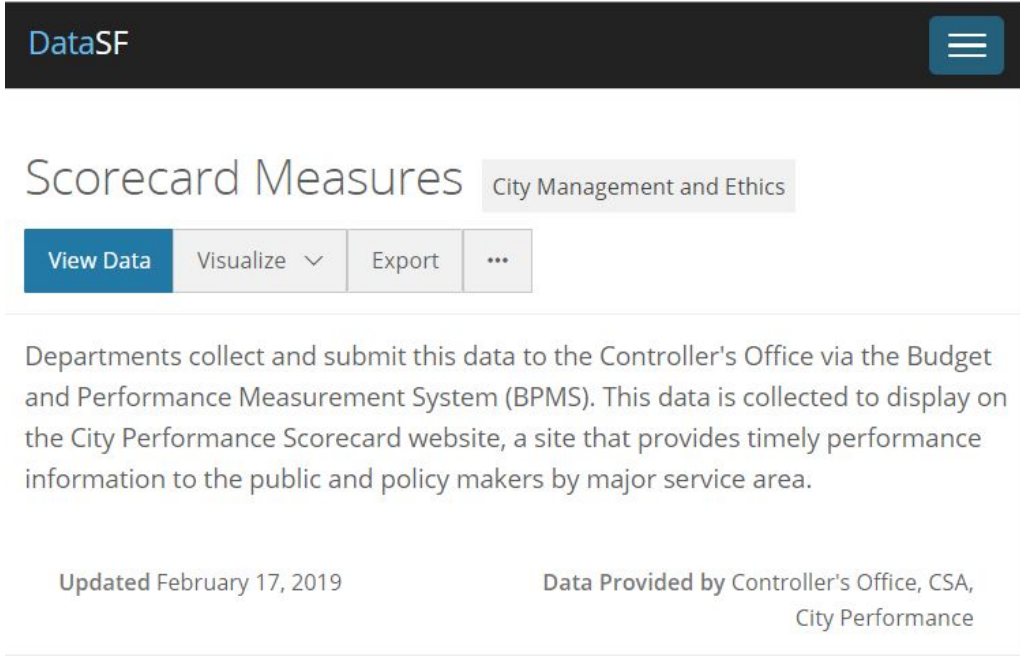
=

**75 FTE hrs/  
month**

**(at least!)**

THE SOLUTION

## Open Data



The screenshot shows the DataSF interface for 'Scorecard Measures' under the category 'City Management and Ethics'. It features a navigation bar with 'View Data', 'Visualize', 'Export', and a menu icon. Below the navigation bar is a paragraph of text explaining that departments collect and submit data to the Controller's Office via the Budget and Performance Measurement System (BPMS). At the bottom, it is dated 'Updated February 17, 2019' and notes that data is provided by the Controller's Office, CSA, and City Performance.

DataSF

### Scorecard Measures

City Management and Ethics

View Data Visualize Export ...

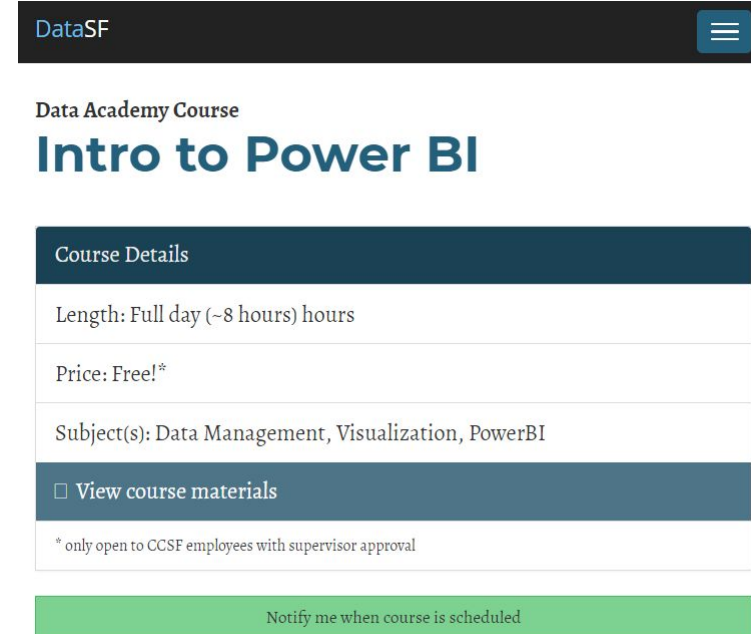
Departments collect and submit this data to the Controller's Office via the Budget and Performance Measurement System (BPMS). This data is collected to display on the City Performance Scorecard website, a site that provides timely performance information to the public and policy makers by major service area.

Updated February 17, 2019

Data Provided by Controller's Office, CSA, City Performance



## PowerBI



The screenshot shows the DataSF interface for a 'Data Academy Course' titled 'Intro to Power BI'. It includes a 'Course Details' section with information on length, price, and subject matter. There is a 'View course materials' link and a note that the course is only open to CCSF employees with supervisor approval. A green button at the bottom offers to notify the user when the course is scheduled.

DataSF

### Data Academy Course

## Intro to Power BI

#### Course Details

Length: Full day (~8 hours) hours

Price: Free!\*

Subject(s): Data Management, Visualization, PowerBI

View course materials

\* only open to CCSF employees with supervisor approval

Notify me when course is scheduled

# THE SOLUTION

12

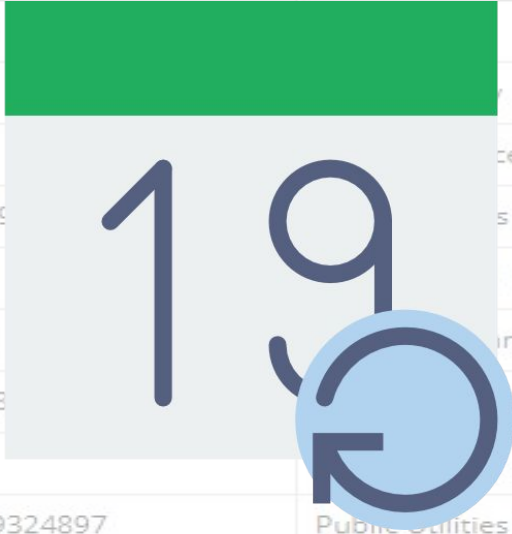
## Scorecard Measures

Departments collect and submit this data to the Controller's Office via the Budget and Performance Measurement System (BPMS). This data is

Find in this Dataset

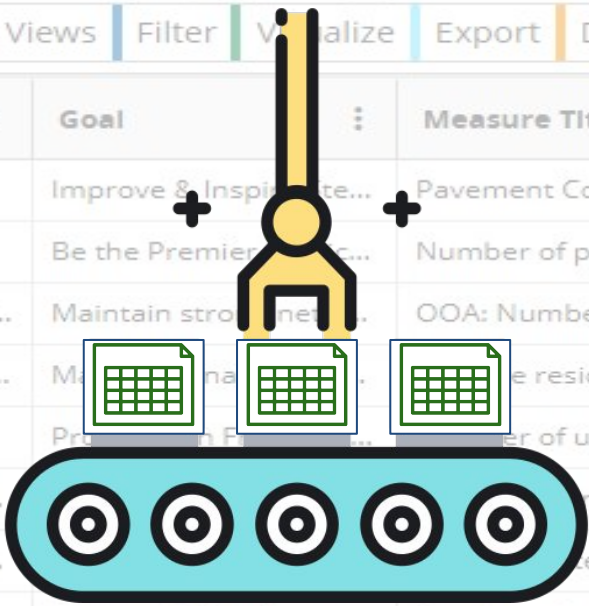
More Views | Filter | Visualize | Export | Discuss | Embed | About

Measure Code	Department	Program	Goal	Measure Title
DPW.BA2.01.1469		Public Works - Program	Improve & Inspire Ste...	Pavement Condition Index (PCI)
LIB.EEG.02.749		Public Library - Program	Be the Premier Lib...	Number of persons entering branch lib...
DSS.CAM.02.455		Aging & Adult Services (Daas...	Maintain stro...	OOA: Number of home-delivered meal...
PUC.SC1644652509		Public Utilities Commission - ...	M...	... residential water and wastewa...
DPH.DMS.01.371		Public Health - Program	Pr...	... of unique substance abuse cli...
MTA.BEN.01.1523		Municipal Transportation Ag...		... annual ridership - Cable Car
MTA.KPI106250258		Municipal Transportation Ag...		... ed Muni-related crimes pe...
LIB.EGF.05.1501		Public Library - Program	Support & Celebrate ...	Number of programs provided (adult)
PUC.KPI164551279324897		Public Utilities Commission - ...	Act as Environmental ...	EN6.1b Total amount of water sold to S...
FIR.AEC.01.143		Fire Department - Program	Provide the high st...	Percentage of ambulances that arrive o...
DPW.BA2.01.1469		Public Works - Program	Improve & Inspire Ste...	Number of pothole service orders recei...
LIB.EGF.05.1501		Public Library - Program	Support & Celebrate ...	Number of programs provided (adult)
ECD.BIR.02.503		Emergency Management	Invest in the 911 Center	Percentage of emergency calls answer...
ENV.CIP.01.1484		Environment - Program	Leading in Greenhouse	Greenhouse gas emissions percentage ...



Updated Daily

Standardized Report Format



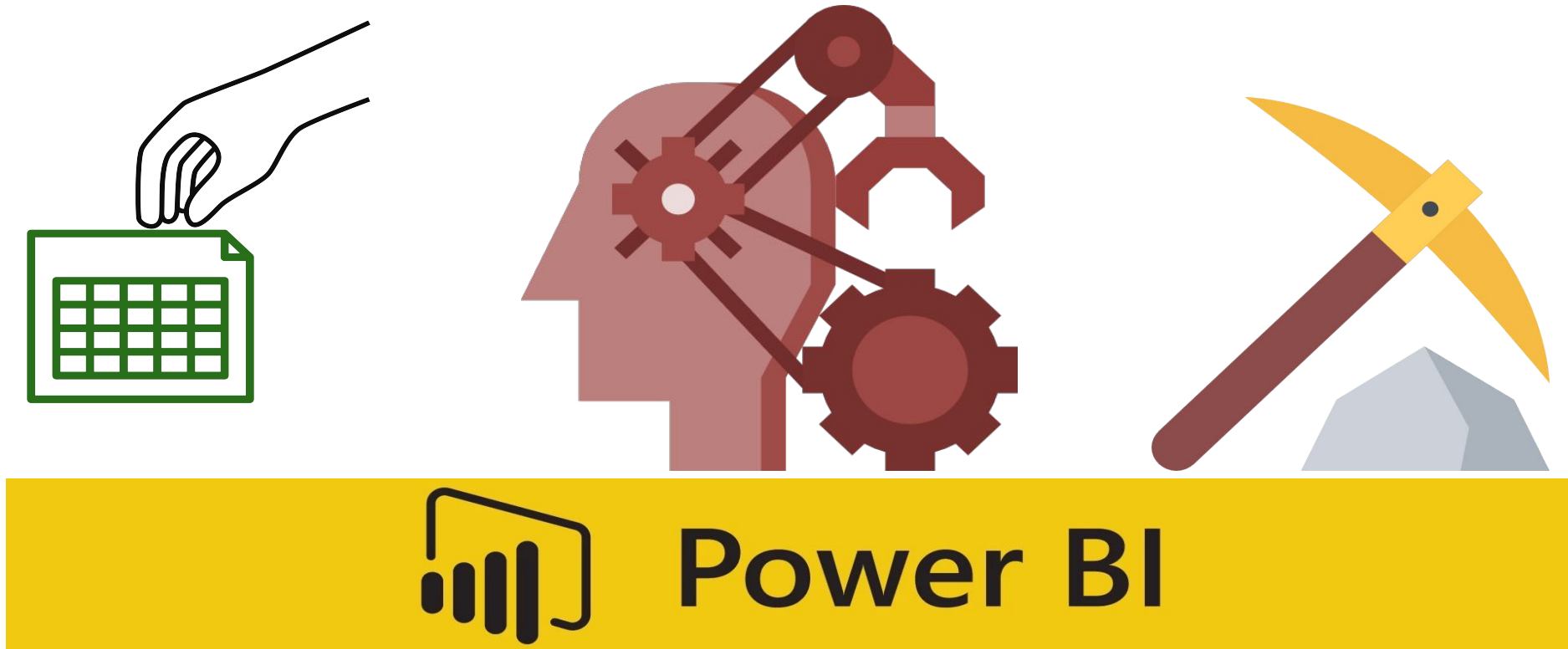


# Used PowerBI to Automate Data Wrangling





# Data wrangling & Viz pipeline in **ONE TOOL**



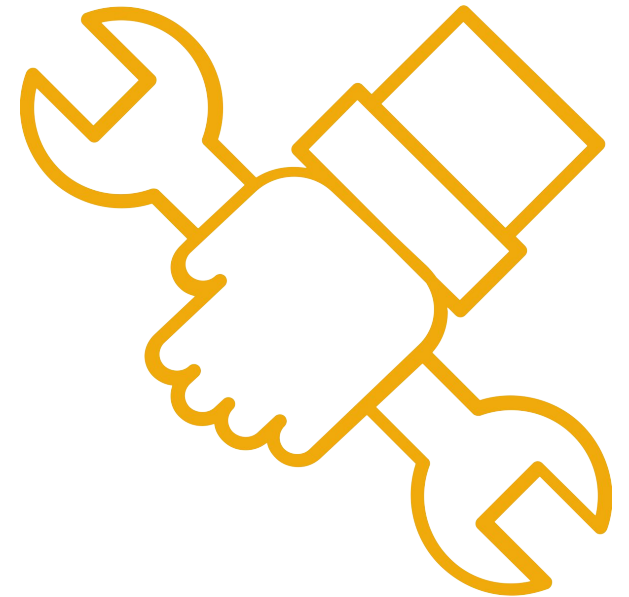
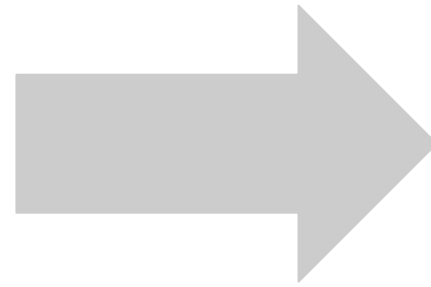
# RESULTS

**75** FTE hrs/  
month

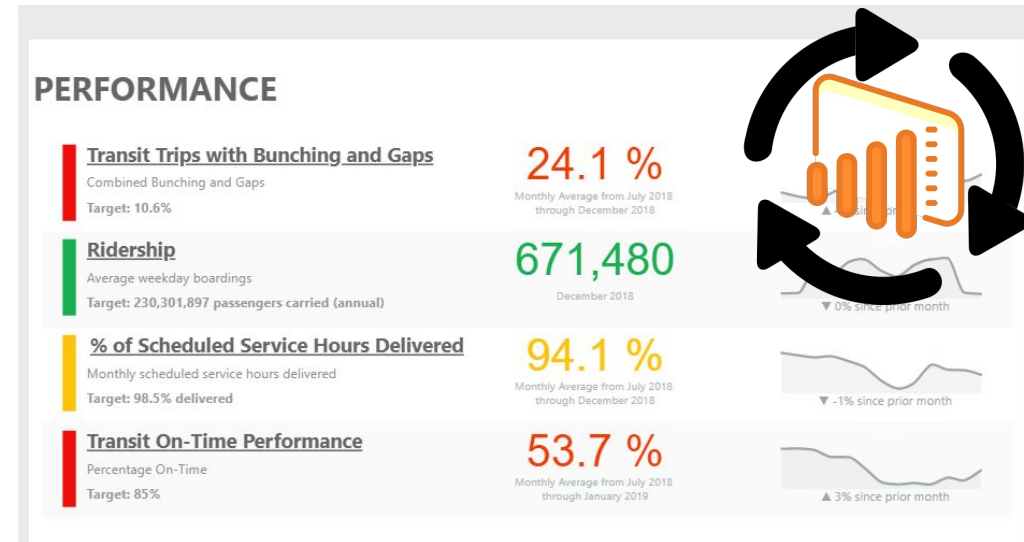
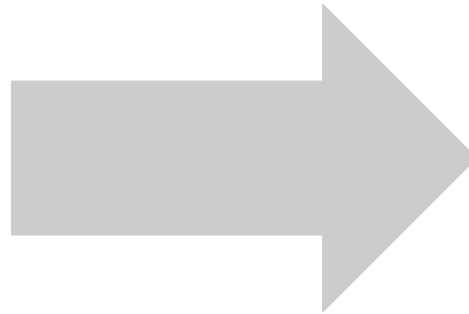
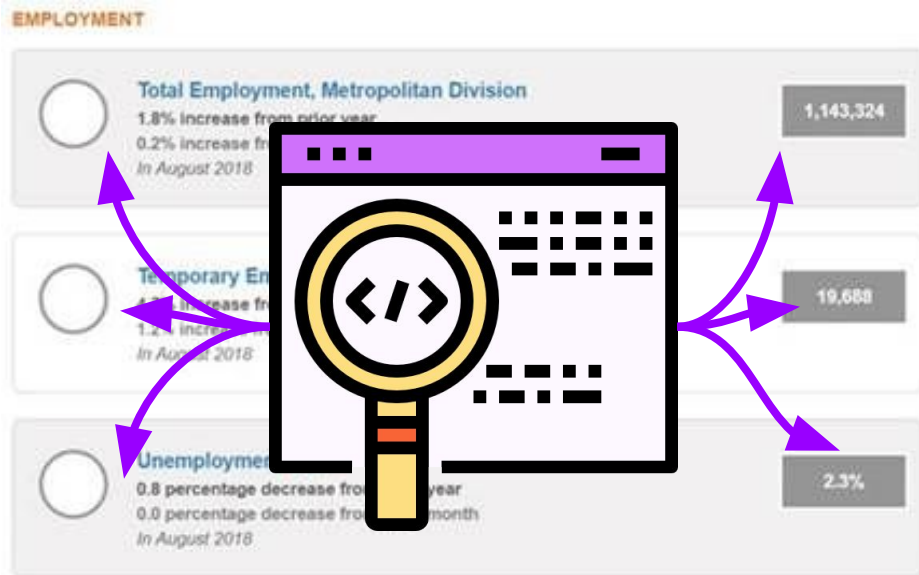
*80% decrease*

**15** FTE hrs/  
month

## All teammates can problem solve together!



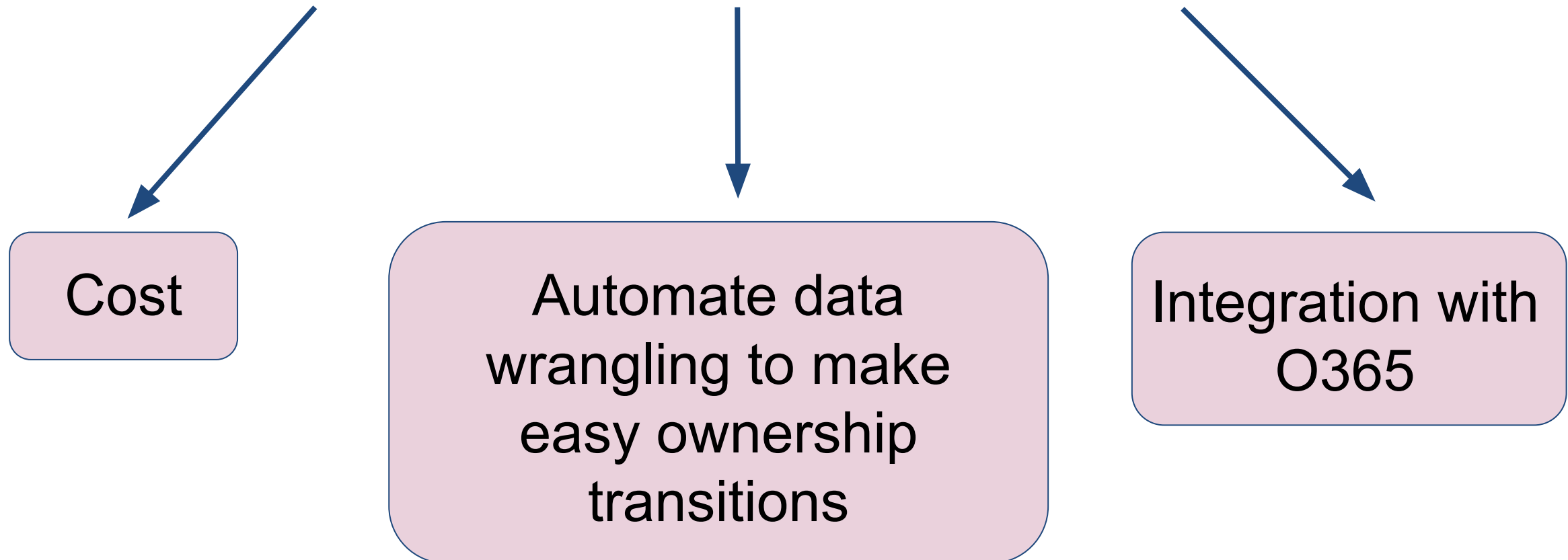
# End-to-End Automation!





NOTES

# PowerBI is now our default dashboarding tool when working with external partners



# Upfront learning investment

