SHOWING CHURN OR TURNOVER DASHBOARD.

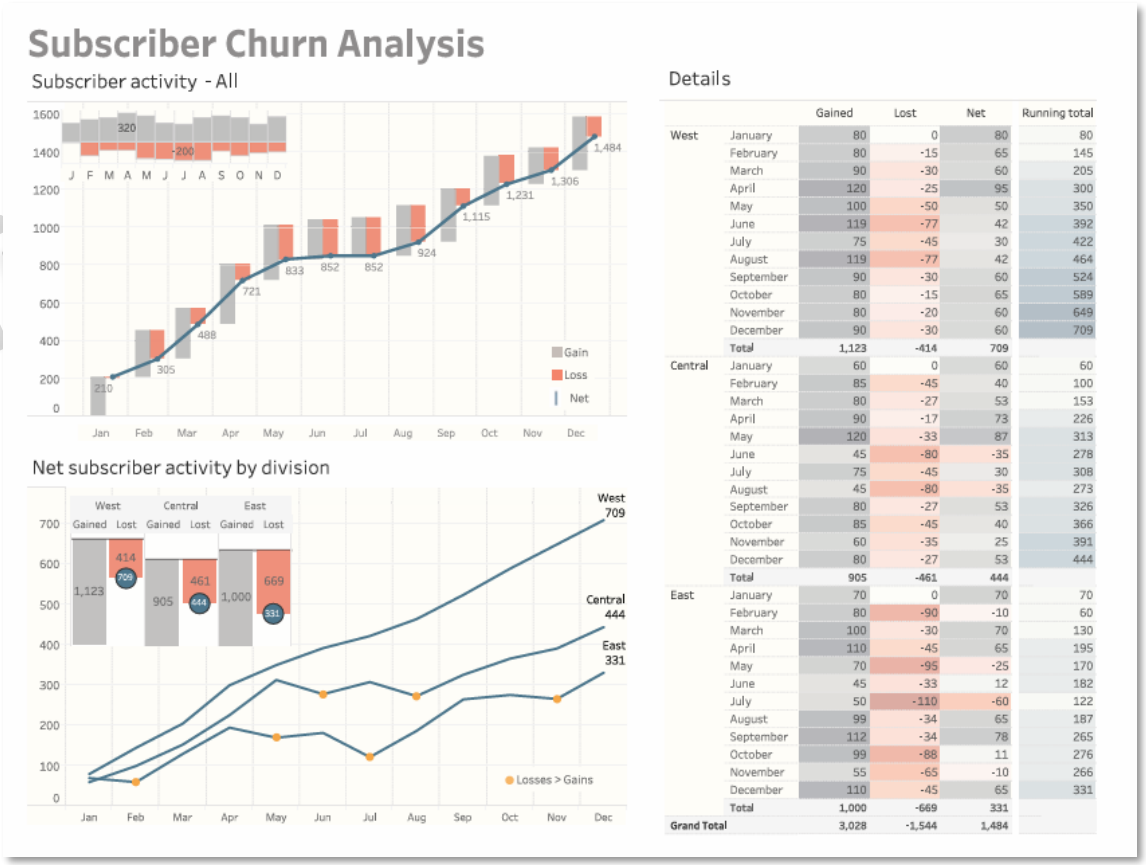
AGENDA.

- Accessing Tableau Public And The Example Churn Dashboard
- Big Picture – Scenario
- Specifics
- Questions On Waterfall Chart
- How People Use the Dashboard
- Why This Works
- Other Use Cases
- Commentary – Steve Wexler
- Commentary – Jeffrey Shaffer
- Commentary – Andy Cotgreave

ACCESSING TABLEAU PUBLIC AND THE EXAMPLE CHURN DASHBOARD.

- Click below to access the public dashboard:

Churn Dashboard



SCENARIO – BIG PICTURE STORY.

- Your company has just launched a new monthly subscriber service.
- You need to get a handle on how subscriptions are **growing over time**, both overall and in different divisions.
- Subscribers can **cancel** at anytime, so you need to see for every month how many **new** subscribers you have gained and how many you have **lost**.
- You expect there to be some attrition, but you need to know when and where **losses exceed gains** as well as where **gains occurred** and when **gains are particularly strong**.

SPECIFICS.

- You need to be able to see **fluctuations** in subscriptions **over time**.
- You need to **compare overall gains** and **losses** for each division.
- You need to **easily see** for each division when **losses exceed gains**.
- You need to be able to see the **details** for each month.
- You need to see which months were **worst** and which were **best**, **both overall** and for a particular division.

QUESTIONS ON THE WATERFALL CHART.

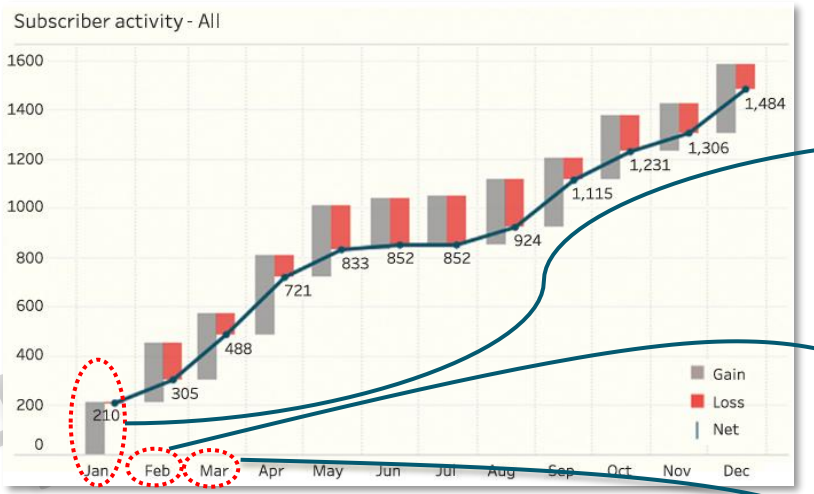
- In January, when the company opened its doors, it welcomed **how many** subscribers ?
  - 210
- What was the **net gain** of subscribers in February ?
  - (Gained 245 – Lost 150) – Net 95
- At the end of February what is the **running total** of active subscribers ?
  - 305
- What is the **overall gain \ loss of subscribers** for the year ?
  - (Gains 3028 – Losses 1544) - 1484

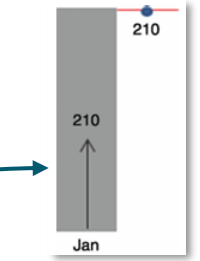
WATERFALL CHART INTERPRETATION.

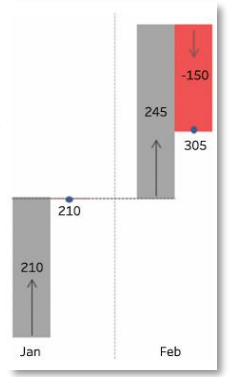
- January portion of the **waterfall chart**.
  - In January we see that **gained 210** subscribers and didn't lose anything – leaving us with a total of **210** at the end of the month.

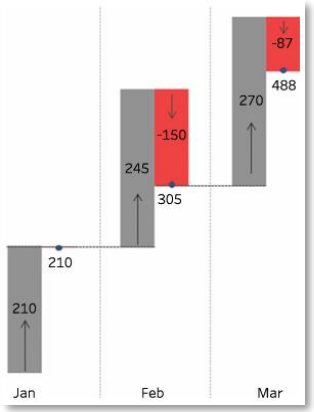
- February picks up where January left off.
  - We start at 210 (where we left off at the end of January) and **gain 245** subscribers but **lose 150**, leaving us with a total of **305** at the end of February.
  - (210 from January and 95 from February).

- March picks up where February left off.
  - We start at 305, **gain 270**, **but lose 87**, leaving us with a total of **488** at the end of the month.
  - (305 + 270 – 87 = 488).







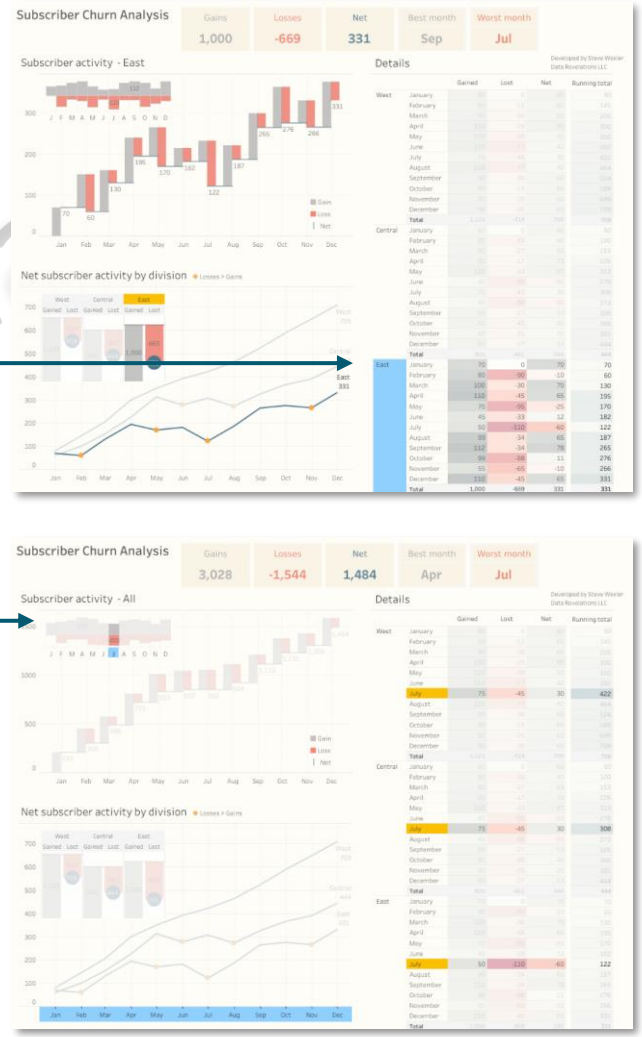


	Gained	Lost	Net	Running Total
January	210	0	210	210
February	245	-150	95	305
March	270	-87	183	488
April	320	-87	233	721
May	290	-178	112	833
June	209	-190	19	852
July	200	-200	0	852
August	263	-191	72	924
September	282	-91	191	1,115
October	264	-148	116	1,231
November	195	-120	75	1,306
December	280	-102	178	1,484
Grand Total	**3,028**	**-1,544**	**1,484**	

HOW PEOPLE USE THE DASHBOARD.

- Although there **are neither controls** to select **nor sliders** to move, clicking elements in one visualisation on the dashboard will highlight and/or filter items in other portions of the dashboard.
  - For example, we see that selecting **East** from the summary bar chart **filters** and/**or highlights** the other charts on the dashboard to only show results from the East.

- Likewise, selecting a month highlights that month throughout the dashboard.



WHY THIS WORKS.

- **The Big Picture**
  - **Three main chart areas** present different levels of detail about the data.
    - The **top left** area shows subscriber activity by month.
- We can see that -
  1) We had an over all **net gain** of 1,484 subscribers.
  2) Our best month for **gains** was April.
  3) Our worst month for **losses** was July.
  4) Net growth was **flat between** June and July.

The chart upper left of the dashboard shows big-picture trends

WHY THIS WORKS.

- **Easy comparison of the three divisions**.
  - The **Net Subscriber** area in the bottom left allows for **easy comparison** among the three divisions.
  - It is easy to see that the **East Division**, despite gaining 1,000 subscribers for the year, also had by far the **biggest loss** (1).
  - We can also see from the **smooth trend line** that the West division never had a month where **losses exceeded gains** (2).

The chart on the lower left of the dashboard compares performance for the three divisions – also note how the orange dots make it easier to see where losses were greater than gains.

WHY THIS WORKS.

- **Heat Map Shows Details**.
  - The **heat map** on the right of the dashboard (also called a "highlight table") makes it **easy to see gains**, **losses**, **net**, and **running totals** for each division and for every month.
  - The **colour-coded** heat map makes it **easy** to see details and performance **outliers**.
    - Note that the colours are based on the main colour legend where gray represents gains, red represents losses, and the blue shows the running net.

Details

		Gained	Lost	Net	Running total
West	January	80	0	80	80
	February	80	-15	65	145
	March	90	-30	60	205
	April	120	-25	95	300
	May	100	-50	50	350
	June	119	-77	42	392
	July	75	-45	30	422
	August	119	-77	42	464
	September	90	-30	60	524
	October	80	-15	65	589
	November	80	-20	60	649
	December	90	-30	60	709
	Total	1,123	-414	709	
Central	January	60	0	60	60
	February	85	-45	40	100
	March	80	-27	53	153
	April	90	-17	73	226
	May	120	-33	87	313
	June	45	-80	-35	278
	July	75	-45	30	308
	August	45	-80	-35	273
	September	80	-27	53	326
	October	85	-45	40	366
	November	60	-35	25	391
	December	80	-27	53	444
	Total	905	-461	444	
East	January	70	0	70	70
	February	80	-90	-10	60
	March	100	-30	70	130
	April	110	-45	65	195
	May	70	-95	-25	170
	June	45	-33	12	182
	July	50	-110	-60	122
	August	99	-34	65	187
	September	112	-34	78	265
	October	99	-88	11	276
	November	55	-65	-10	266
	December	110	-45	65	331
	Total	1,000	-669	331	
Grand Total		3,028	-1,544	1,484	

WHY THIS WORKS.

- **The Heat Maps provide richer insights than Text Tables**.
  - Many people with a finance background often ask for a text table so they can "**see the numbers**."
  - The heat map goes one better in that it provides the **numeric details** and **accentuates** the **outliers**, something that you can't see easily with a text table.

- The text table presents a sea of numbers, and the reader has to work **hard** to make **comparisons**.

- The heat map uses colour coding to make that **comparison** much **easier**.

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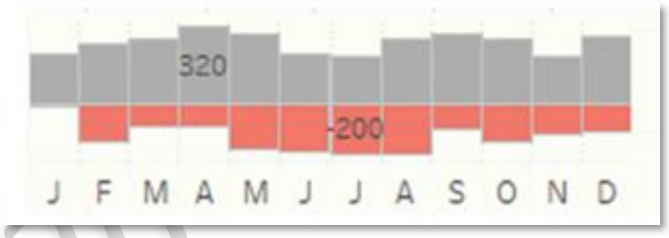
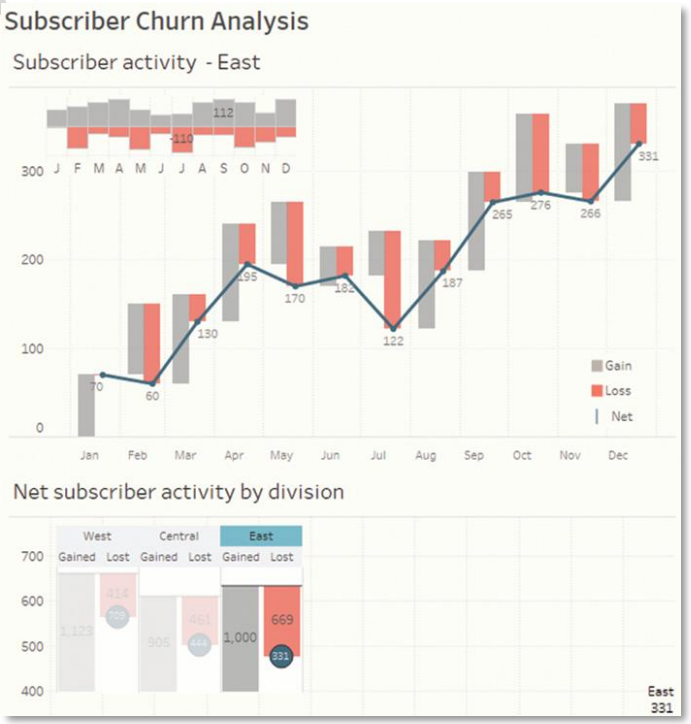
WHY THIS WORKS.

- **Sparkbars** allow easy **comparison** of **gains** and **losses** across months.
  - The Sparkbar chart in the upper left corner of the dashboard makes it easy to **compare gains** and **losses** for each month and **highlights** the month with the **greatest gain** and the month with the **greatest loss**.
  - Even without a value axis, it's easy to see which months had **big** and **small gains** and which had **big** and **small losses**.

- **Action Filters** make it **easy** to **focus** on one division.
  - Selecting a region in the Division chart or Details chart filters the waterfall and sparkbar so you can **better understand** churn within a particular division.
  - The waterfall chart shows us just how **volatile** subscriber activity was in the East Division.





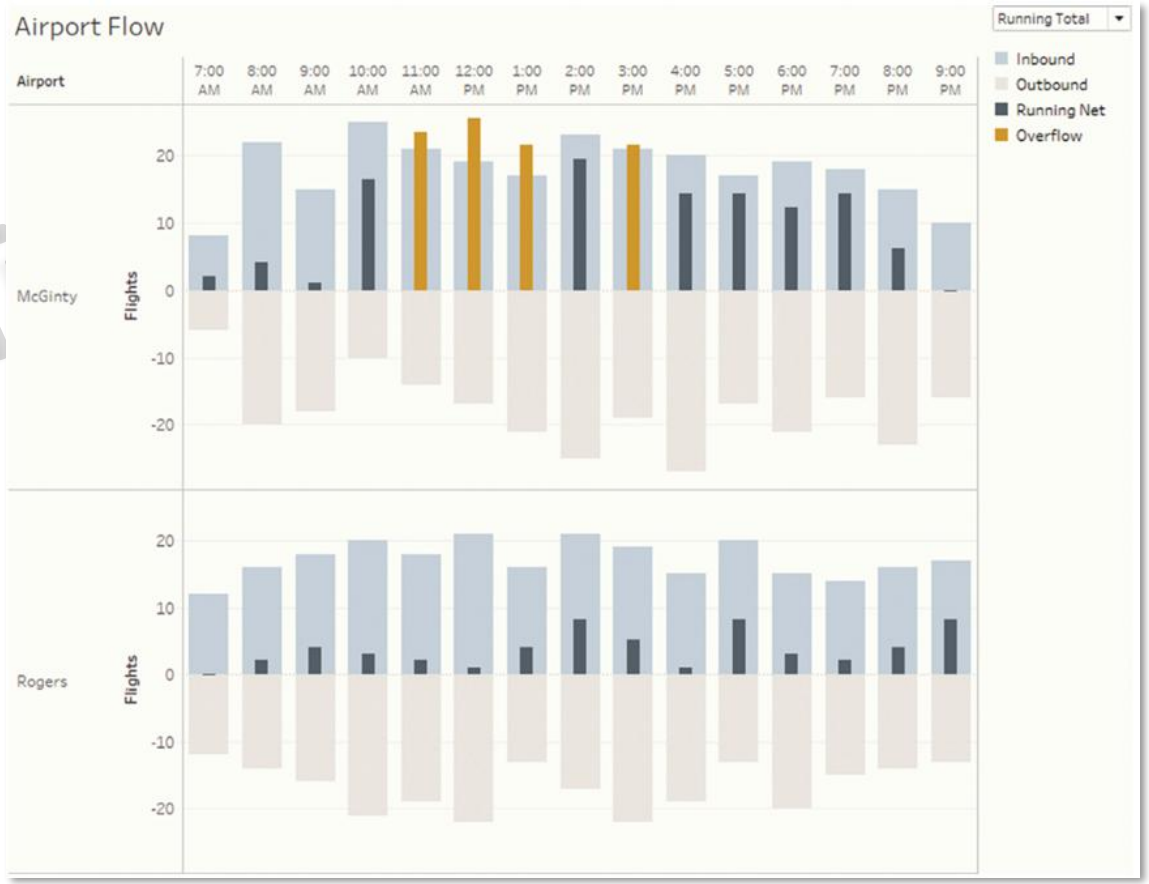
OTHER USE CASES AND APPROACHES.

- With service subscribers, the goal is to **gain** and **keep** subscribers.
- Airport flow is another scenario that can be shown using similar techniques, but the goal is very different.
- You want the number of planes leaving the airport to equal the number of planes coming into the airport.
  - Indeed, at any given hour, the **goal is net zero**.
- Given that this goal is very different from the goal for subscriber growth, the **waterfall chart** we presented earlier **won't work well**.
- Here is one possible solution.

OTHER USE CASES AND APPROACHES.

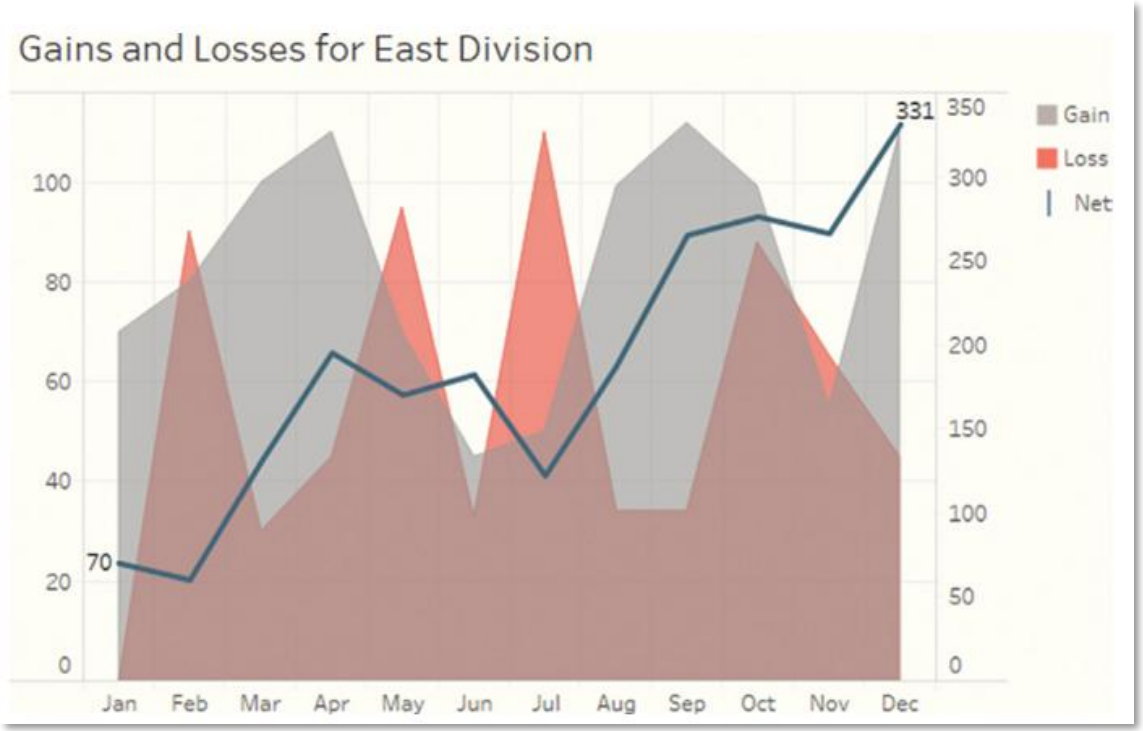
- Here we see the inbound and outbound flights presented in very **muted colours**, as it is the **running net** (the number of planes sitting on the tarmac), which is **most important**.
- The goal is to make it so that as one plane lands, another takes off.
- We want the inner bars to be as **close to zero** as possible.

- If the number of planes on the ground meets or exceeds 20, the **bar colour changes** to orange.
- We can see that McGinty Airport was in an overflow state at 11 a.m., noon, 1 p.m., and 3 p.m.



COMMENTARY – STEVE WEXLER.

- I had no idea that visualising turnover/churn would be so involved.
  - The combination of different use cases and observers' preferences for different visualisations really surprised me.
  - I went through at least 10 different approaches to the core waterfall chart and at least 30 different iterations of the dashboard as a whole.
  - One thing that surprised me was the popularity of a radical alternative to the waterfall chart, which I called the "**mountain chart**."

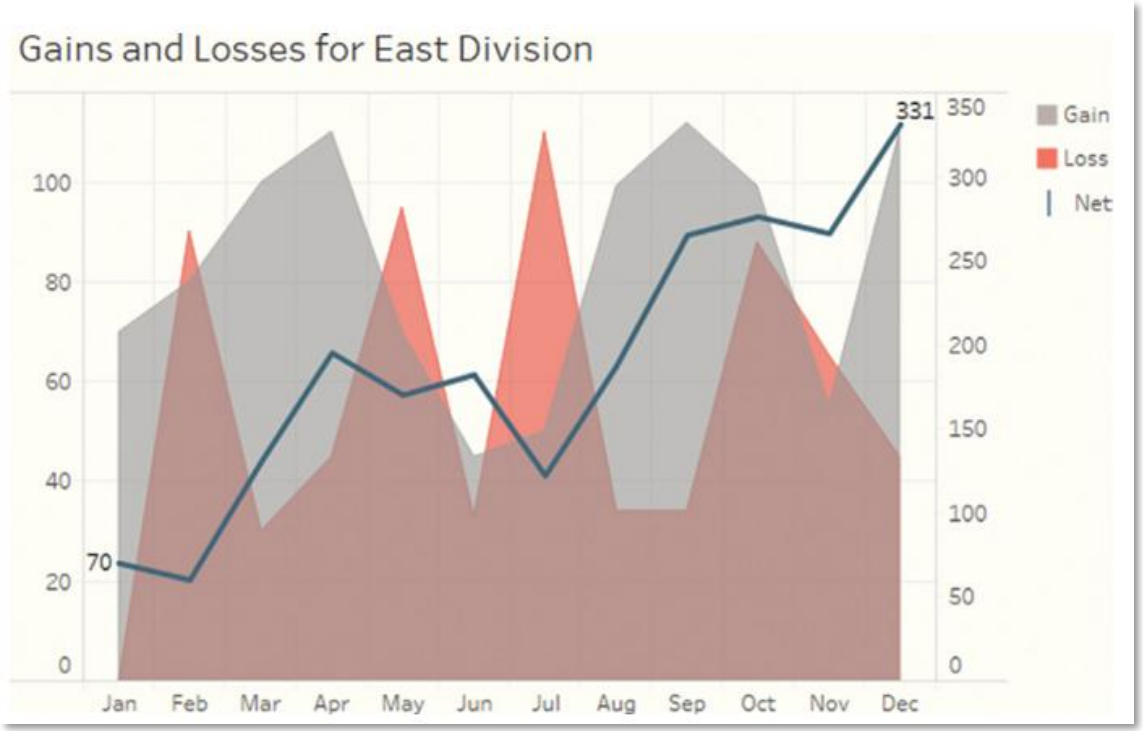


- Mountain charts take a completely different approach to showing churn.

COMMENTARY – STEVE WEXLER.

- A number of people took a shine to this chart, stating that it was particularly **easy** to see where both the **bad** things (red) and the **good** things (gray) peaked and where red exceeded gray.

  - Yes, there was a little bit of a **disconnect** with the **loss values showing as positive**, but those who liked this chart were able to **adjust** to this **quickly**.
  - The biggest problem was that the area chart portion (the mountains) uses the axis values on the left and the line chart showing net subscribers uses the axis values on the right.
  - Since a lot of people found using a **dual axis confusing**—and because a lot of people just didn't like the chart at all—I elected to **go with the waterfall chart**.



COMMENTARY – JEFFREY SHAFFER.

- I much prefer the **waterfall chart** over other variations of this dashboard.
  - It might be that people in banking and finance are **more used to reading waterfall charts**, but everyone I asked to review this chart also liked the waterfall chart the best.
  - The alternative makes it difficult to see the area charts on top of each other, so it's really just the peaks that stand out.

- The waterfall fall chart **better visualises** the ongoing **increase** and **decrease** over time.
  - The dots on the end of the division bars are also a little **big** to me.

- Steve wanted to keep the labels in the circles, so it would be **hard** to make them **too small**.
  - I would have made the dots **smaller** and moved the labels **underneath** the circles.

- I really love the use of colour throughout this dashboard.
  - The colour added to the text table really helps to **highlight the data** and provides additional context **at-a-glance** to the numbers.

COMMENTARY - ANDY COTGREAVE.

- **First appearances matter** - they leave **lasting impressions** when you reflect on your experience of using things.
  - In The Design of Everyday Things, Don Norman calls these the visceral responses.

- This applies to dashboards too.
  - My first response when looking at this dashboard was **very positive**.
  - The colour, layout, and use of font make looking at this dashboard a **pleasing experience**.
  - I don't feel like I am fighting to interpret any part of the dashboard.

- It took me some time to get my head around this style of waterfall chart.
  - However, the effort of understanding unfamiliar or complex charts is often **time well spent**.
  - This chart contains **a lot of detail**, some of which is only apparent with familiarity.