Data Storytelling

5) Think like a designer

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SWD BOOK CHAPTER 5

FIRST, LET'S RECAP
THINK like a DESIGNER

FORM follows FUNCTION

1 FUNCTION

WHAT do you want to ENABLE your AUDIENCE to DO with your DATA?

2 FORM

HOW can you BEST VISUALIZE to allow for this with EASE?

AFFORDANCES

ASPECTS of the DESIGN that make it OBVIOUS HOW to USE

Highlight
the important stuff and eliminate distractions (at most 10% of the overall design)

GRAPHIC DESIGN AFFORDANCES

Bold italics underlining CASE typeface Size color inversing

Source: Nussbaumer Knaflic (2020)

ACCESSIBILITY

DESIGN that is USABLE by PEOPLE of WIDELY VARYING TECHNICAL SKILLS

1. Make it LEGIBLE
2. Keep it CLEAN
3. Use PLAIN LANGUAGE
4. Remove UNNECCESSARY COMPLEXITY

AESTHETICS

More VISUALLY APPEALING DESIGNS are PERCEIVED as EASIER to USE and are MORE READILY ACCEPTED

...YES!

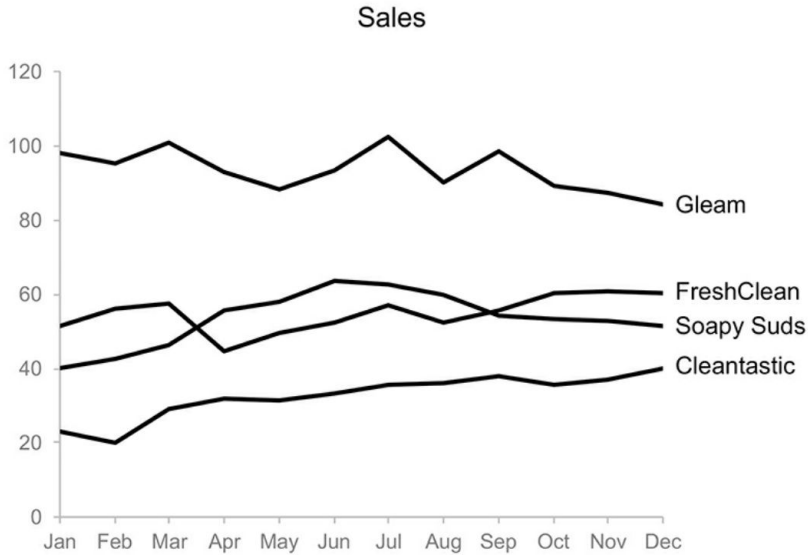
1. Be smart with color
2. Pay attention to alignment
3. Leverage white space

Source: Nussbaumer Knaflic (2020)

Source: Nussbaumer Knaflic (2020)

Example 5.1

Use words wisely



STEP 1:
What **questions** do you have about the data shown? List them! What **assumptions** would you have to make to interpret this data?

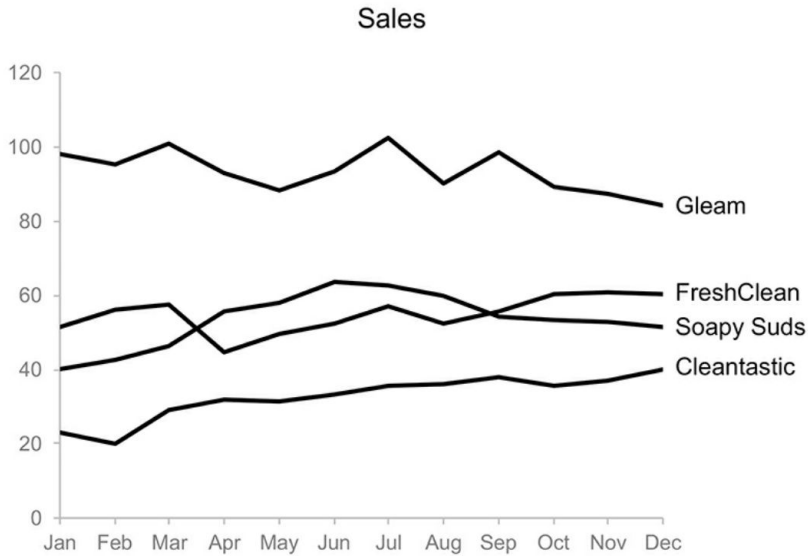
STEP 2:
What **words** could you add to this graph to answer the questions you raised in Step 1? Freely make additions and changes to **title** and **label** so that what is being shown is perfectly clear.

STEP 3:
How could putting different words on this graph change the **interpretation** of the data? How can you change **axis** titles and other text to cause an alternate understanding of what this visual shows? What **implications** does this have for what words should be present on every graph? Write a paragraph or two summarizing your learnings from this exercise.

STEP 4:
Download the data or graph. Either add text to the existing graph or create a new one in the tool of your choice, practicing using words wisely to make the information accessible.

Source: Nussbaumer Knaflic (2020)

Step 1



What is graphed on the y-axis?
We know from the titles that it represents sales, but that's not nearly descriptive enough. Are these actual number of units sold? Or hundreds of units sold? Or perhaps this represents monetary sales: for example, thousands of dollars, or millions of pounds.

What is graphed on the x-axis?
The month labels clearly indicate time, but this doesn't tell us enough. What time period is this? Are we looking back at historical data, projecting into the future, or possibly some combination of the two?

What broader context do the four brands fit into?
Do they represent all four brands carried on a particular website or at a specific store? Are they the four main brands of a given manufacturer? Or are they the top or bottom four brands of some greater population?

What realm does this data represent?
Without any frame of reference, I could assume this is a robust representation (e.g. worldwide sales or US Sales). But it could be for some subsegment: a certain city, state, or region; a specific product line; a particular manufacturer; or a given chain of stores

Source: Nussbaumer Knaflic (2020)

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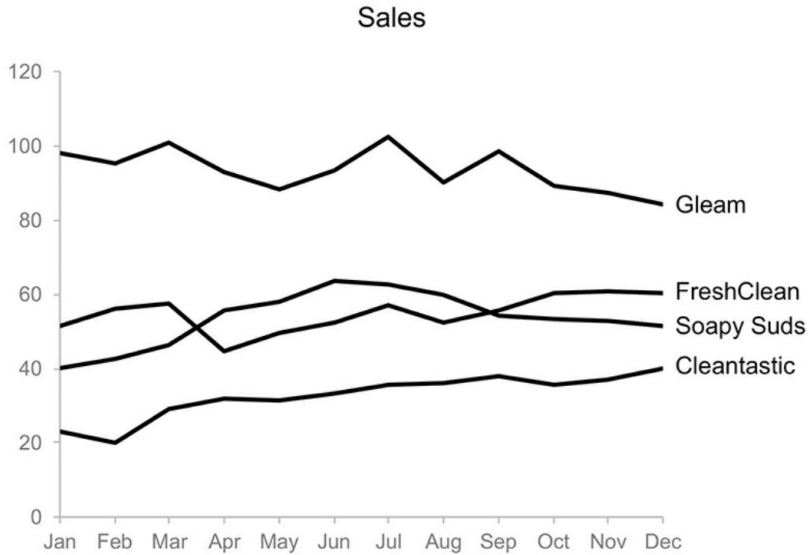

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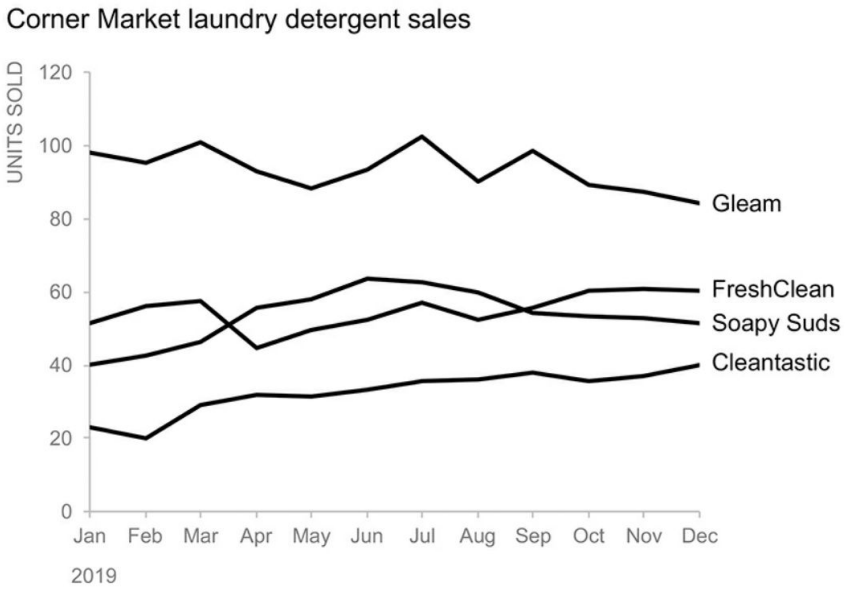


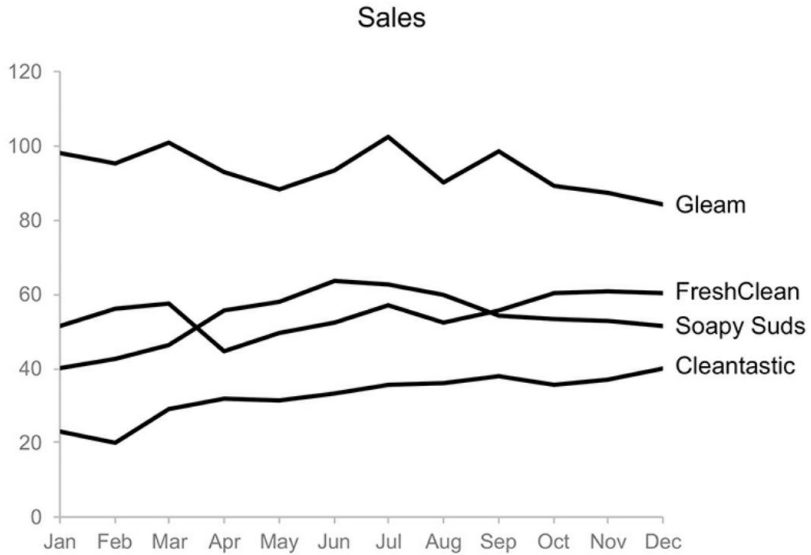
Source: Nussbaumer Knaflic (2020); Clear title text aids understanding

*In the figure, I assumed these represent **unit sales** for the four brands of laundry detergent sold at a specific store.*

Let's review some specific design choices:

- Substituting a more descriptive graph title and adding axis titles to both the y- and x-axes.
- Left-aligned the graph title.
    - As a reminder, without other visual cues, your audience will start at the top left of your graph and do zigzagging "z's" to take in the information.By orienting our graph title at the top left, our audience hits what they are looking at before they see the actual data.
- Orienting axis titles at the top (y-axis) and left (x-axis).
- Orienting the y-axis title to align with the top of the highest y-axis label
- The x-axis title is aligned at the left with the left-most axis label.
- I chose all caps for my y-axis titles (and will often do this for axis titles in general).
    - Because capitalized letters are all the same height, this creates a neat rectangular shape (compared to what you'd get with mixed case: a jagged edge).
- Axis titles in grey text, so they are there to make it clear what we are looking at, but aren't drawing undue attention or distracting from the data.

Use words wisely



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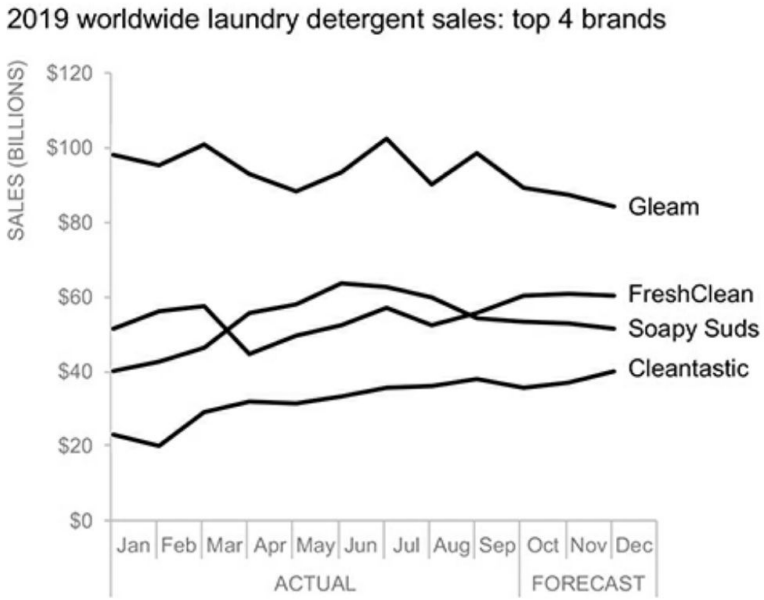


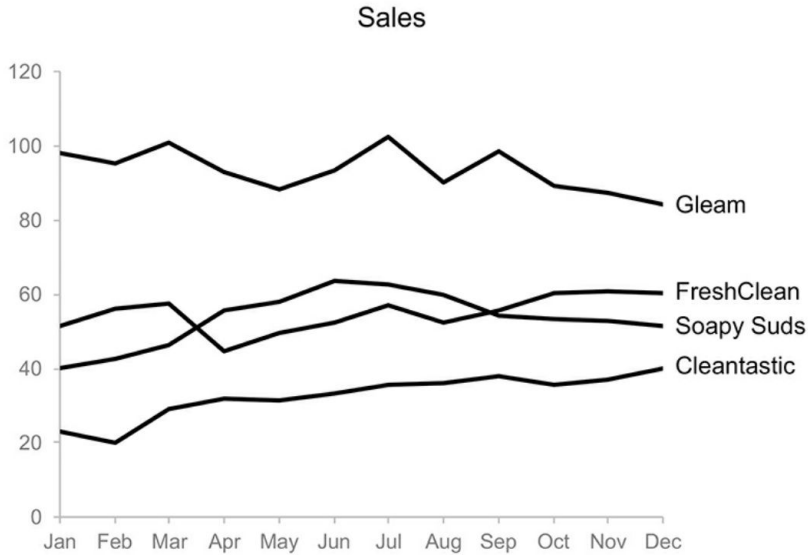
Alternate words could lead to a totally different interpretation about what this data is and represents.

This has implications for the words that should be present on every graph. I can generalize into a couple of guidelines.

- Every graph should have a title.
    - When communicating with a slide deck, I use descriptive titles for my graphs and takeaway titles for my slides
- Be consistent in how you title with a given report or presentation.
- Every axis should also have a title. Exceptions to this guideline are rare.

Source: Nussbaumer Knaflic (2020); Clear title text aids understanding

Use words wisely



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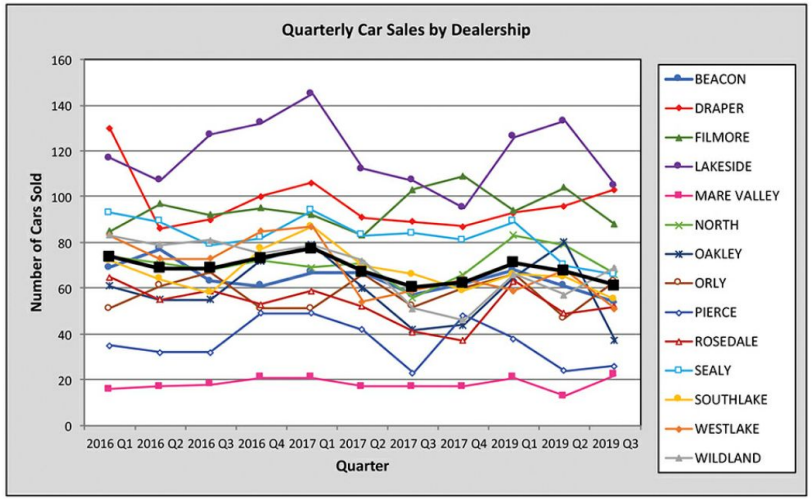
Source: Nussbaumer Knaflic (2020)

Example 5.2

Default output from tool



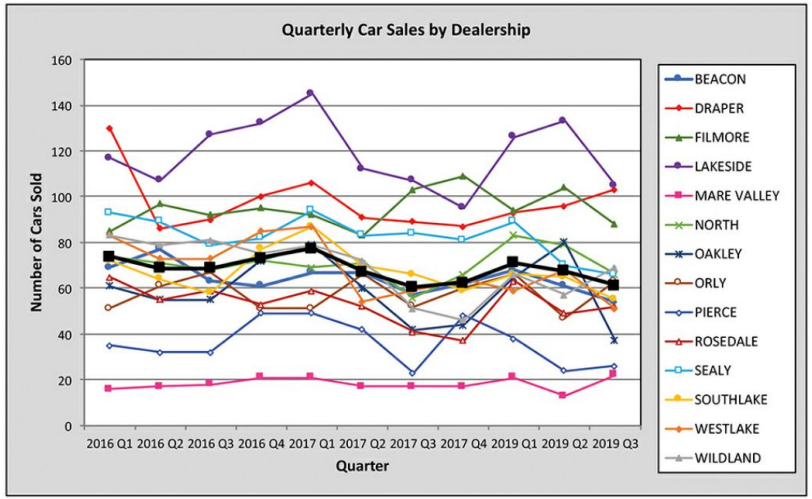
STEP 1:
Make a short list of the feelings this graph evokes.

STEP 2:
What changes would you make if you needed to communicate the data from this graph:

- **Use of words:**
  - How and why would you make changes to the titles or placement of titles in this visual?
  - Are there other ways you can improve upon the way words are used in this example?
- **Visual hierarchy:**
  - Which pieces of information or aspects of the design would you focus on and which would you de-emphasize or eliminate?
- **Overall design:**
  - How could you more effectively use alignment and white space?
  - What changes would you recommend making to the overall design of this information?

Source: Nussbaumer Knaflic (2020

Default output from tool



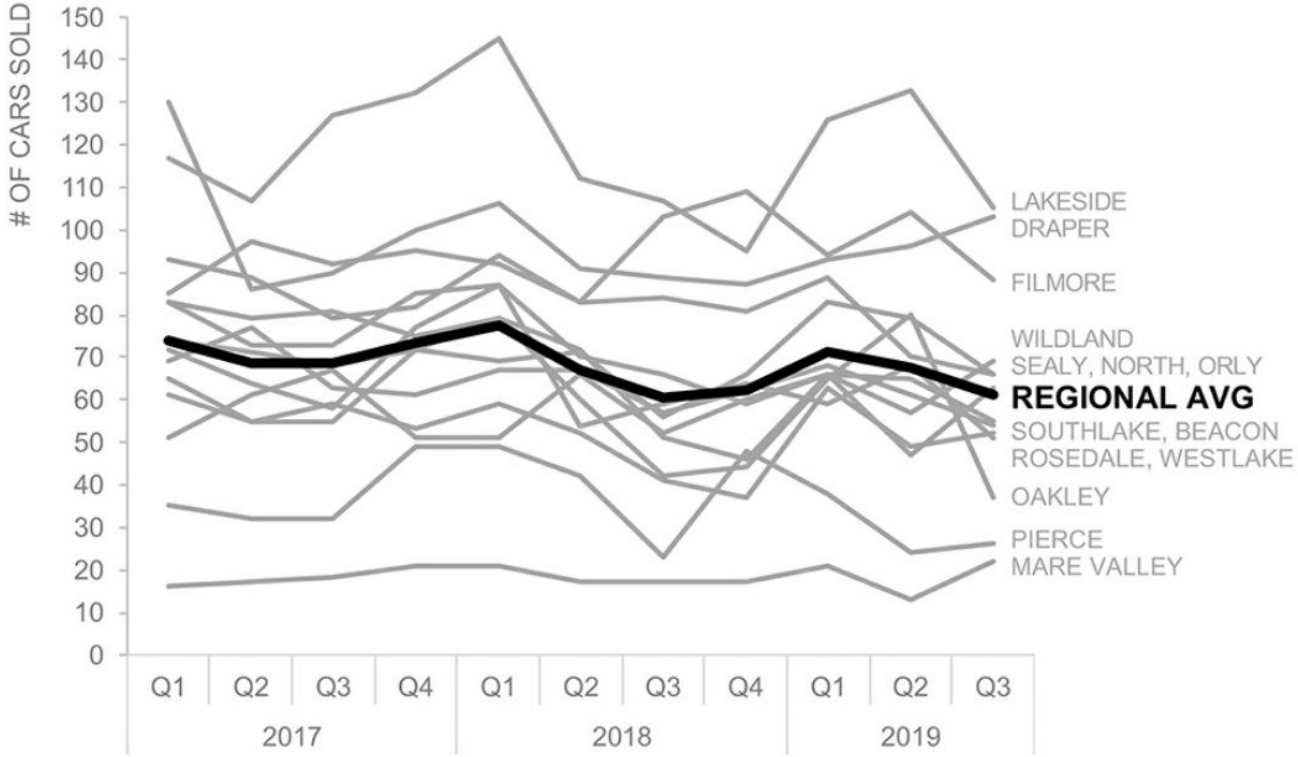
STEP 3:
Download the data and graph. Remake the visual applying the changes you've outlined in the tool of your choice.

STEP 4:
Imagine you have been asked to create a single slide focusing on this data that will fit into a broader deck to be shared with the management team who oversees these dealerships.

- How would that affect what you show or how you choose to show it?
- What additional words can you put around it to help it make sense?
- What other design considerations would you make?
- Create this slide in the tool of your choice.

Source: Nussbaumer Knaflic (2020)

Car sales over time



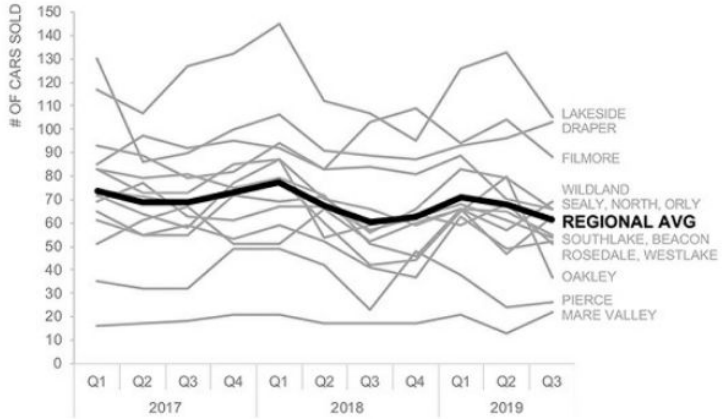
Source: Nussbaumer Knaflic (2020); visual remake

Regional car sales: **mixed results**

OVERALL DECLINE IN REGIONAL AVERAGE

The total number of cars sold across all dealerships (not shown) has decreased over time from more than 1,000 in Q1 2017 to 857 in Q3 2019 (a 17% reduction). The average number of cars sold by dealership has also decreased over time.

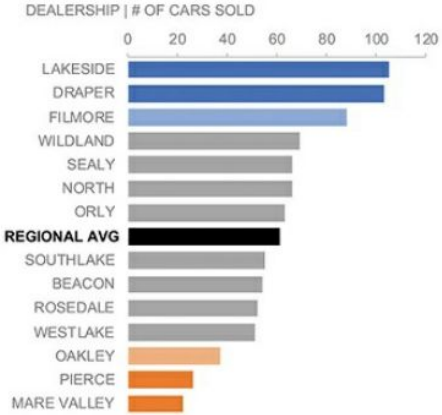
Car sales over time



MARKED VARIANCE BY DEALERSHIP

In the latest quarter, **Lakeside, Draper, and Filmore had the most cars sold** (105, 103 and 88, respectively), while **Oakley, Pierce, and Mare Valley had the fewest** (less than 40 cars sold each).

Car sales by dealership: Q3 2019



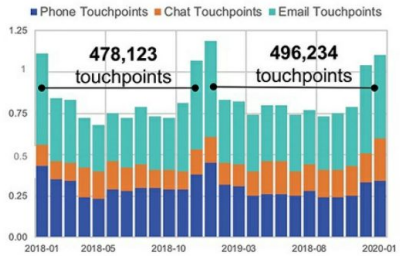
Data source: Sales Database, includes cars sold onsite at regional dealerships through 9/30/19.

Example 5.3

Optimize this graph

Total touchpoints and touchpoint per customer remains flat

Total touchpoints have increased slightly to ~500K (+3.8% y/y)

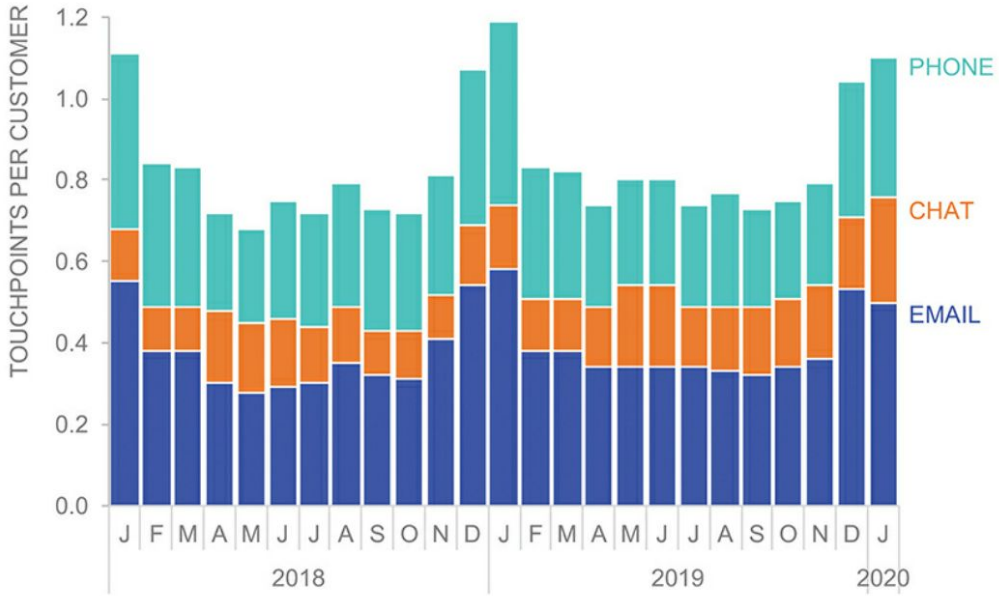


Touchpoints per customer remain flat over the past 3 years

	Phone	Chat	Email	Total
January '18	0.43	0.13	0.55	1.11
January '19	0.45	0.16	0.58	1.19
January-20	0.29	0.26	0.5	1.10

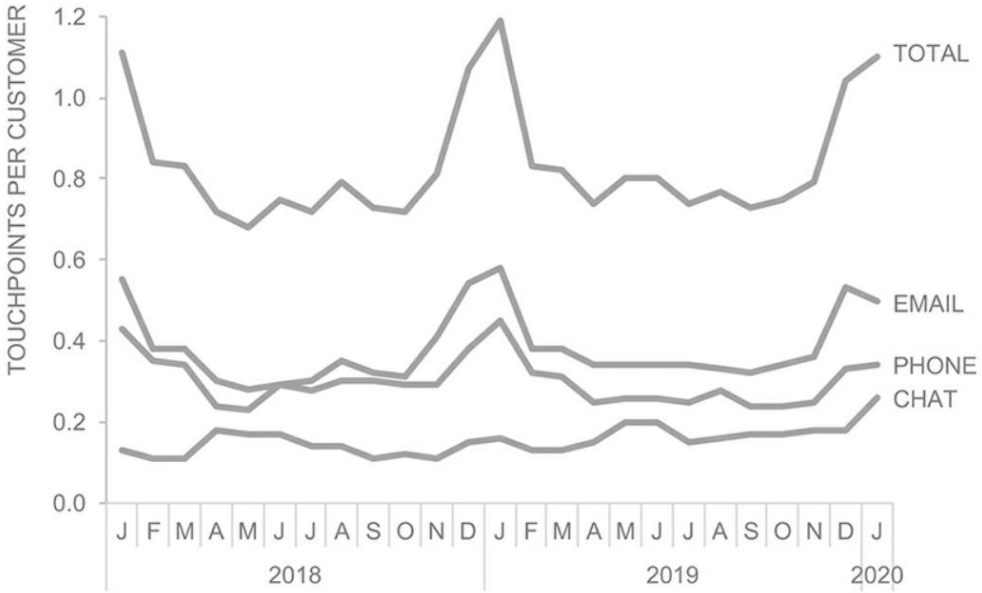
- You work for an **on-demand print company** that targets small businesses.
- One of the metrics you track is **customer touchpoints**—how many times someone at your organization interacts directly with a customer—both in aggregate and on a per-customer basis.
- There are three primary modes of connection:
  - phone
  - chat
  - email

Touchpoints per customer over time

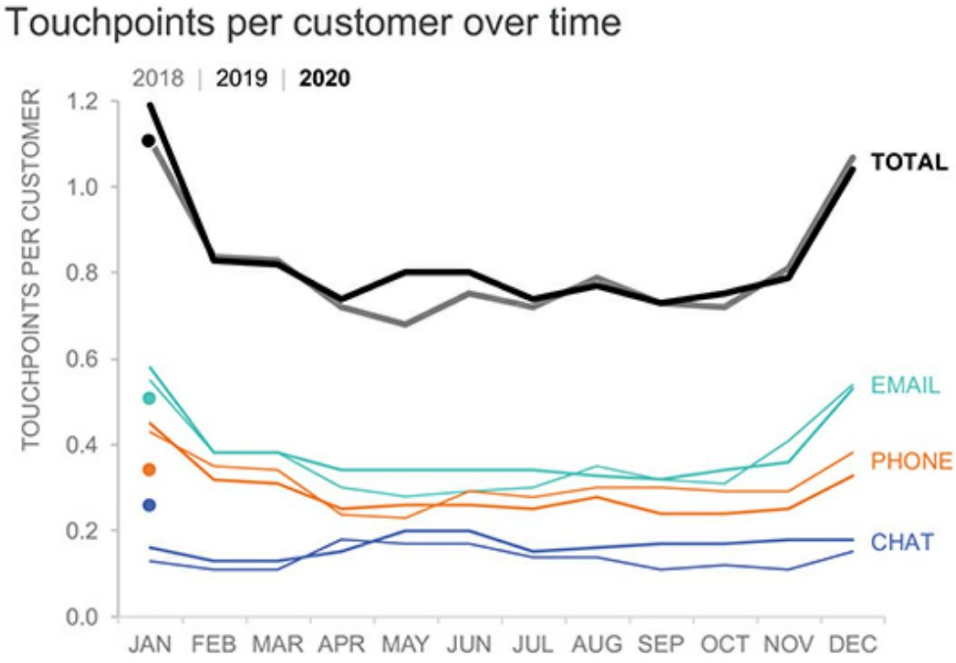


Source: Nussbaumer Knaflic (2020); Redesigned graph with greater attention to detail

Touchpoints per customer over time

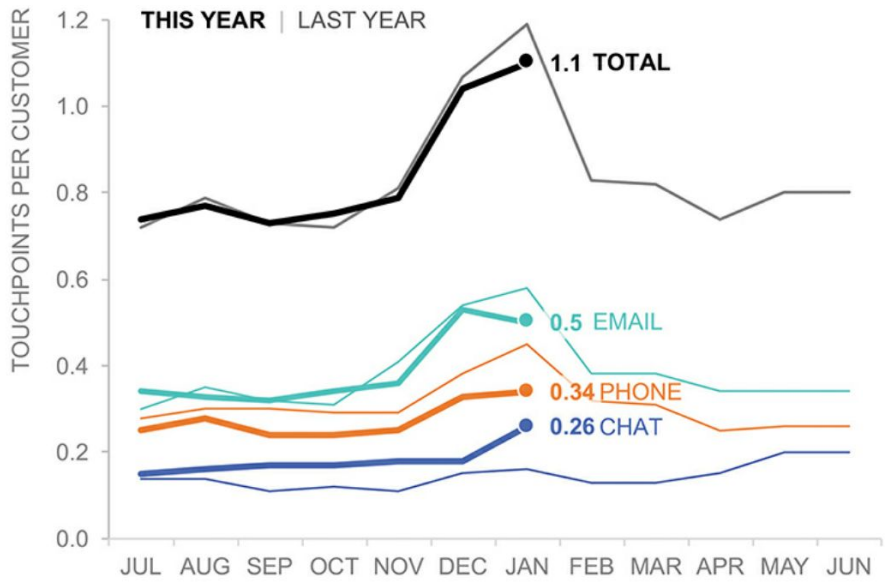


Source: Nussbaumer Knaflic (2020); Graph the data as lines



Source: Nussbaumer Knaflic (2020); Change x-axis to monthly calendar year to better see seasonality

Touchpoints per customer over time



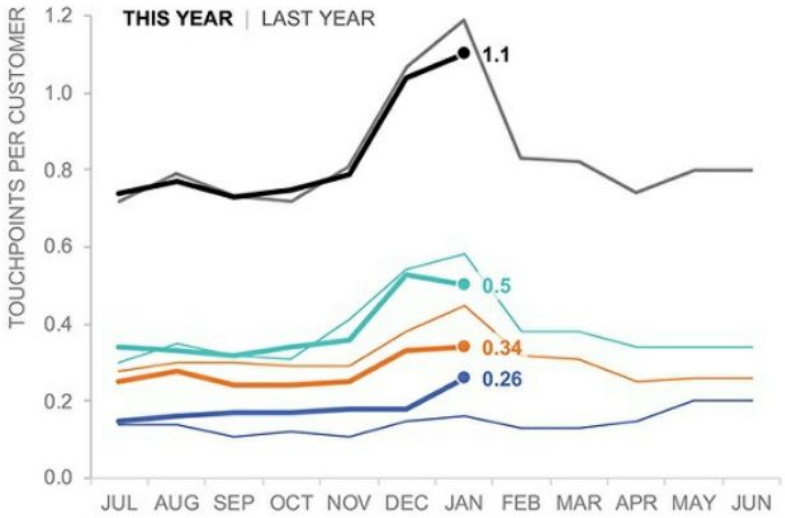
Source: Nussbaumer Knaflic (2020); Change x-axis to run from July to June

Total touchpoints flat, shift toward **chat**

There is clear seasonality to customer touchpoints, which **peak in January**.
While email and phone are down year-over-year, **chat touchpoints have increased**.

LET'S DISCUSS: **How should this inform go-forward strategy and goals?**

Touchpoints per customer over time



OVERALL recent months have followed last year's trend closely, with slightly lower touchpoints per customer as of Jan.

EMAIL continues to make up the highest volume of touchpoints, though as of Jan is slightly lower than last year (0.50 vs. 0.58).

PHONE at 0.34 touchpoints per customer also decreased year-over-year (0.45 at same time last year).

CHAT touchpoints have increased steadily in recent months. While only 0.26, this accounts for an increasing proportion of total and reflects nearly doubling year-over-year. Add more context here: whether this is desired, expected to continue, etc.

Source: Nussbaumer Knaflic (2020); Redesigned slide

All resources (exercises & solutions)

Data and solutions for all exercises

Download