

Data Storytelling Assignment

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Instructions

Congratulations, you made it this far!

In this course, you have learned the techniques of how to craft a narrative with the insights generated from your data and present them in a visually compelling way for your audience.

Now, it is time to show us that you are ready to take the step forward!

This assignment is based on a scenario, and the questions are based on the data provided in the file: **Data Storytelling Assignment Data.xlsx**

Please answer the questions based on the given information and submit this whole powerpoint document to the Data School Course Content area.

Scenario

You work in the marketing department in Hello Bank, and Bank V is one of your bank's closest rival.

One day, your manager, Tom, sent you an excel spreadsheet with a set of data asking you to generate some insights from it.

DATA											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Bank A	268	169	160	199	257	112	104	245	279	213	115
Bank B	118	205	229	222	197	206	164	273	223	199	193
Bank C	106	187	103	229	163	134	174	102	136	133	141
Bank D	114	256	196	181	119	138	207	115	117	138	256
Bank E	183	184	136	177	153	259	274	213	235	267	235
Bank F	149	217	253	199	141	103	208	244	130	145	246
Bank G	258	231	144	180	234	221	268	104	180	155	202
Bank H	190	278	273	188	197	152	114	133	235	219	261
Bank I	153	251	191	111	202	194	277	265	190	139	133
Bank J	200	137	205	206	182	248	115	204	241	268	103
Bank K	151	248	219	105	258	126	231	120	241	140	173
Bank L	234	139	135	161	100	133	200	204	241	223	268
Bank M	195	165	233	273	202	161	244	202	235	252	142
Bank N	199	271	264	231	108	139	120	172	237	128	115
Bank O	249	236	121	101	254	235	132	148	250	221	139
Bank P	148	256	233	223	134	210	271	209	148	280	219
Bank Q	217	220	263	239	174	161	252	108	141	243	166
Bank R	235	134	216	118	212	114	216	221	263	108	223
Bank S	101	130	127	148	276	177	243	184	234	159	205
Bank T	220	254	271	236	256	176	146	270	167	213	125
Bank U	182	262	172	240	271	261	184	142	171	152	193
Bank V	165	170	198	200	203	188	206	225	175	210	285
Average	187	210	198	192	197	176	199	188	203	193	187
Hello Bank	260	240	205	260	240	205	232	216	205	225	160

Question 1

Propose three questions that you would ask Tom to gain a better understanding of the context.

Answer:

What does the given numbers talk about?

Why latest/last year (2020) data are missing in the given excel sheet?

Who are the targeted audience?

Question 2

Tom wants to find out how your bank is faring against Bank V and recommends the use of a bubble chart. Explain if the bubble chart is suitable. If not, suggest and justify the use of another chart type.

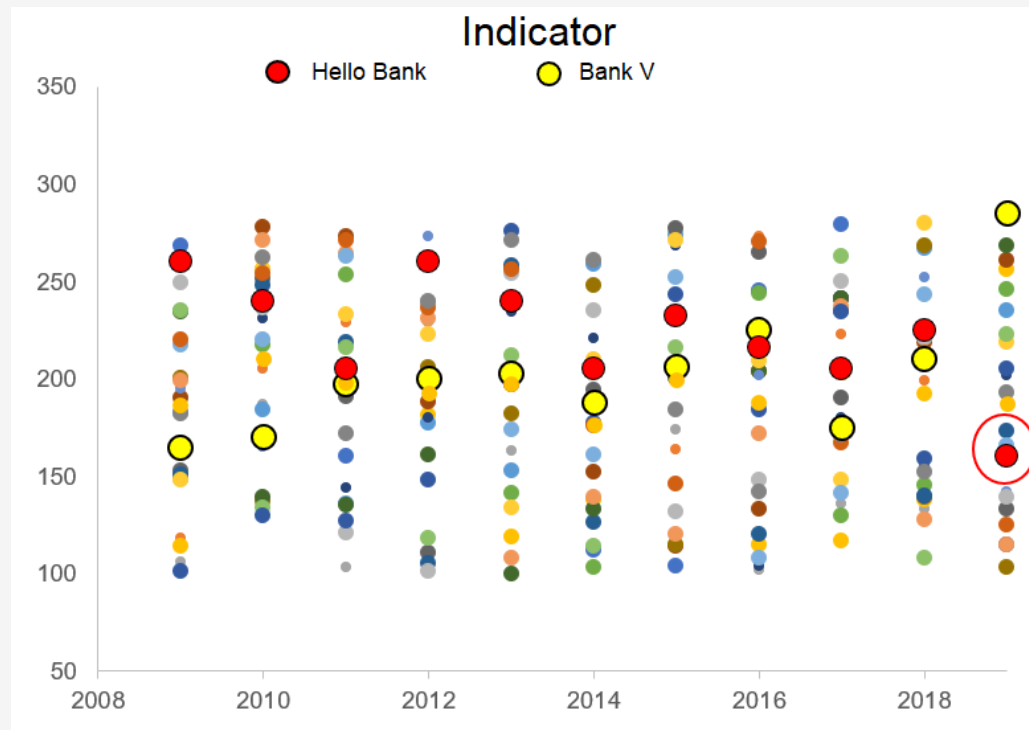
Answer:

Bubble chart is used to display three dimensions data. E.g. social, economic and other relationships. So, Bubble chart is NOT suitable.

We must use Line or Bar chart(s) to display the banks data.

Question 3

Tom was growing impatient for your insights and did a dot plot. After some time, he revealed that although he finds that it is important for your bank to be better than Bank V, being above the industry average is of a higher priority to the Marketing Director, Lucy. Tom needs to give a presentation to Lucy in a weeks' time, sharing any insights about the bank's satisfaction scores.



Question 3 (cont.)

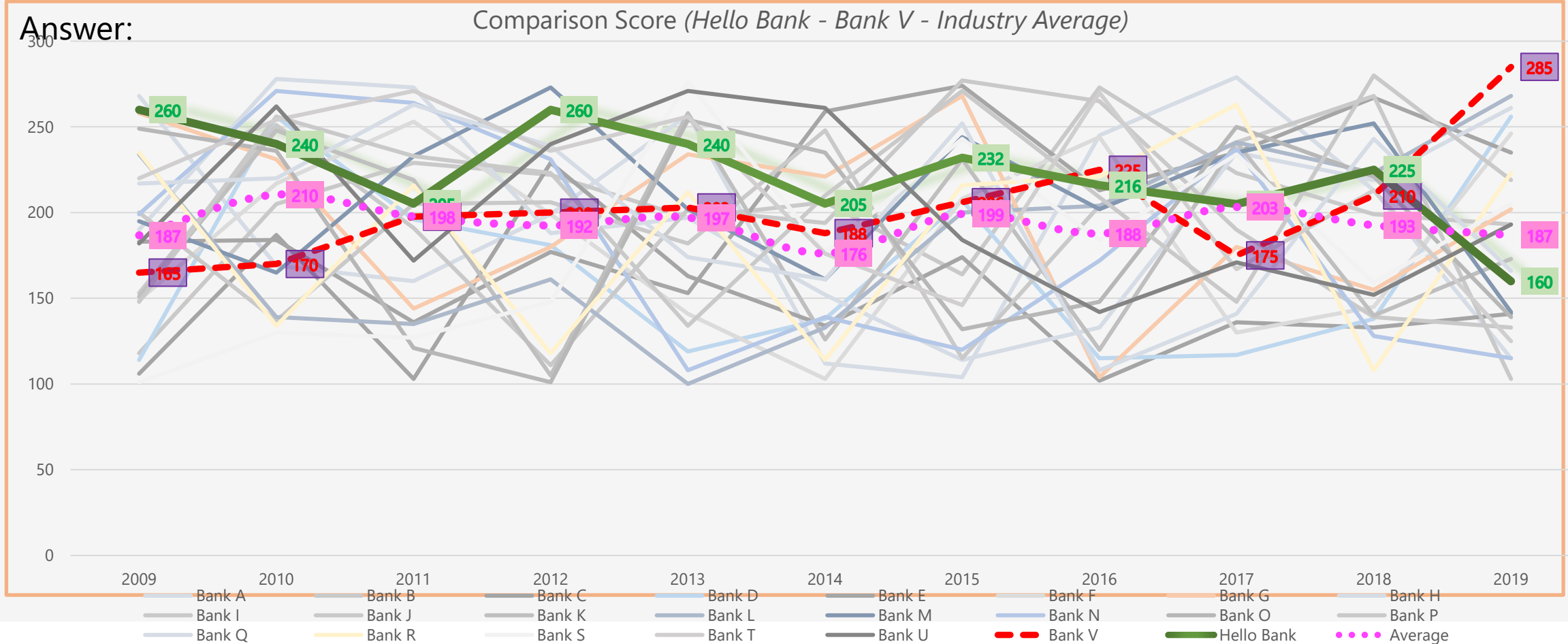
Tom further shared that the figures represent branch satisfaction. Provide two reasons why the chart Tom created does not effectively highlight the insight that Lucy is looking for.

Answer:

- 1. One main requirement is industry average which is not indicated in the chart.**
- 2. Chart is confusing the audience and other bank names are not listed in the chart (except Hello Bank and Bank V).**

Question 3 (cont.)

Design and create a revamped graph for Tom's presentation (Hint: Declutter and Focus; Identify the right chart to use.)



Question 4

A few days after you have completed your revamped graph, over lunch, Tom casually commented that your bank's 2019 figures is calculated based on the average of the first 3 quarters satisfaction scores for the year. He is still waiting for the 4th quarter numbers from another colleague, but Tom believes that the scores will not differ much.

Explain how this might affect the interpretations of findings.

Question 4 (cont.)

Answer:

Though the 4th quarter data is missing, it will not affect the result (mostly) unless the fourth quarter result deviate too far from the previous score.

So there are three possible cases:

- (i) If the fourth quarter score is **close** to the previous score, new graph will look **same as** the previous one.
- (ii) If the fourth quarter score is **below** the previous score, new graph will show the **poor** performance.
- (iii) Otherwise, fourth quarter score is **above** the previous score and new graph will show the **better** performance.

Question 4 (cont.)

Make modifications to your graph to reflect the limitations of data.

Answer:

We can calculate the standard deviation (sample) for the Hello Bank's to adjust the score as the fourth quarter data is not available.

Below steps are followed:

(i) Calculate the Standard Deviation for Sample for Hello Bank.

(Calculate Sample Standard Deviation : 28.93684509 , Excel Formula : =STDEV.S(<Start Cell>:End Cell))

(ii) Add 28 with Hello Bank's existing score for the year 2019 ($160 + 28 = 188$)

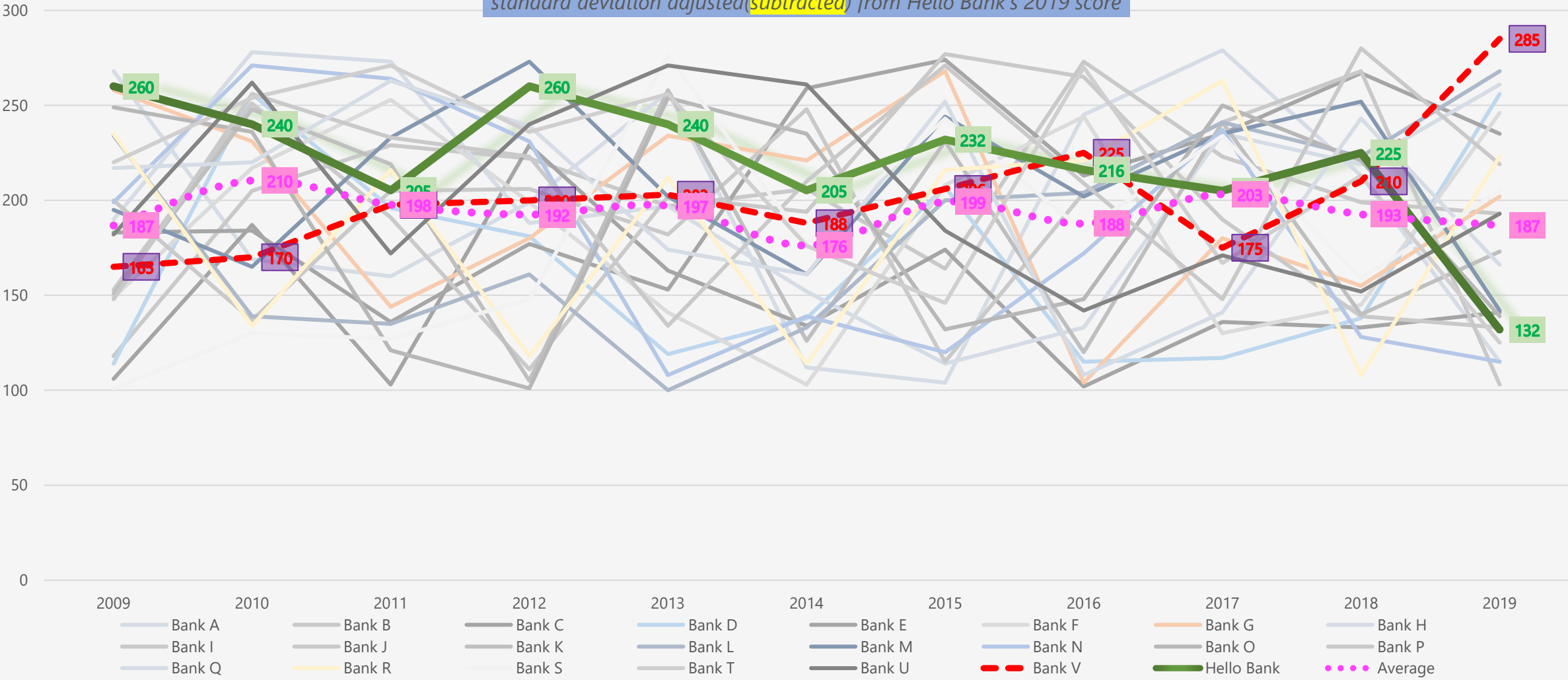
(iii) Subtract 28 from Hello Bank's existing score for the year 2019 ($160 - 28 = 132$)

(iv) Draw line chart for (ii) and (iii) to see the performance difference.

Below slides shows the charts for (ii) and (iii)

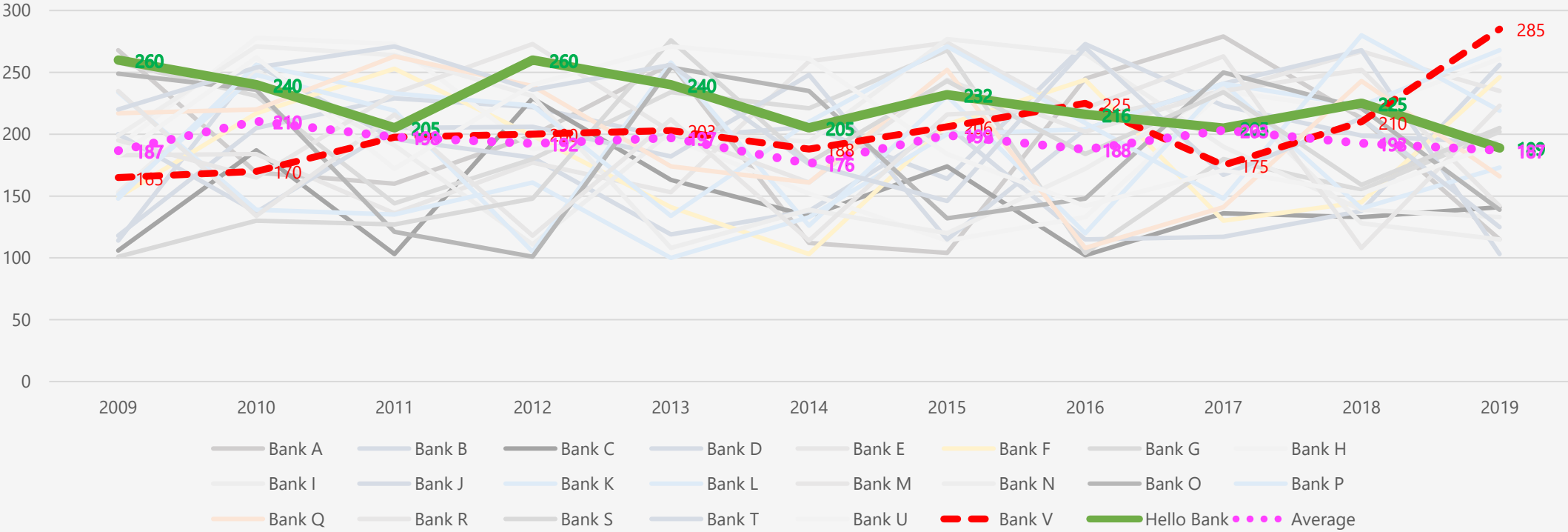
Question 4 (cont.)

Comparison Score (*Hello Bank - Bank V - Industry Average*)
standard deviation adjusted(subtracted) from Hello Bank's 2019 score



Question 4 (cont.)

Comparison Score (Hello Bank - Bank V - Industry Average)
standard deviation adjusted (added) from Hello Bank's 2019 score



Question 5

The private banking division head, Sally, approached Tom to share the banks' satisfaction results with her. Tom is aware that among the list of banks, only 8 of them does private banking (Bank A to H). Previously when Tom gave a similar presentation to her, she mentioned that the graph has too little information and feels uncustimized. She wants to find out if the bank is performing better than the industry average. Describe how Tom should plan for the upcoming sharing.

Answer:

- (i) Line or Bar chart can be used.
- (ii) Re-calculate the Industry Average for the selected banks (if needed).
- (iii) Only industry average and Hello Banks scores should be highlighted in the chart.
- (iv) If the fourth quarter score is not given, follow the below steps to adjust the year 2019 score:
 - (a) Calculate the Standard Deviation for Sample for Hello Bank.
 - (b) Add the standard deviation value with Hello Bank's existing score for the year 2019
 - (c) Subtract the standard deviation value from Hello Bank's existing score for the year 2019Draw line chart for (b) and (c) to see the performance difference.
- (v) Give justification for the adjustment made.

Question 6

Tom has decided to appoint you to give the presentation to Paul, the Head of Finance, to approve the budget request for 2020 marketing campaign. With the next few slides, you are to simulate the presentation with the data and information provided earlier. Tom has also clearly stated the overall organization KPI, and have provided additional information:

Overall organization KPI: Satisfaction score to be above 250.

You are to clearly indicate where each slide falls within the narrative arc
– Beginning/Situation, Middle/Opportunity/Complication, End/Resolution.

To simulate your presentation, please fill in your script (what you would say in the real presentation) in the **slide notes**.

Question 6 (cont.)

Additional information:

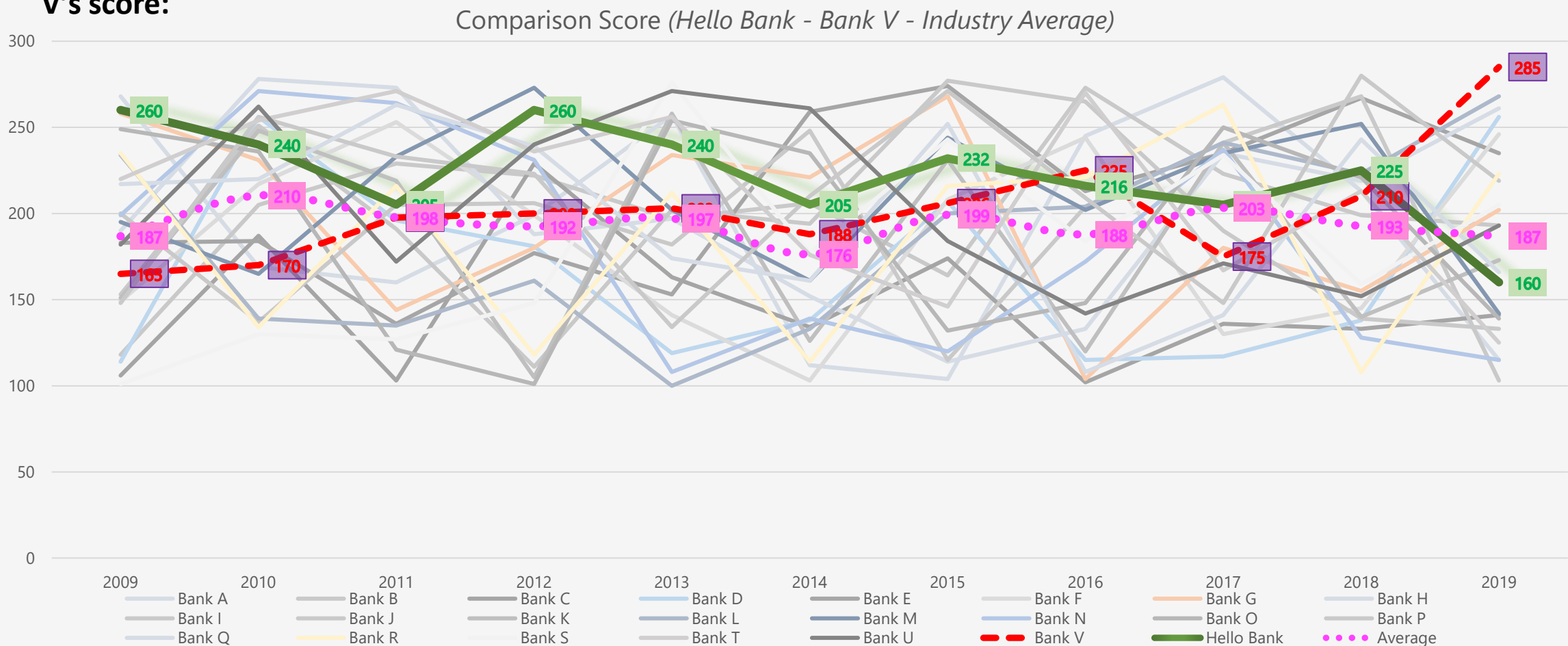
- 2009: a large marketing campaign that the industry called Hello Bank "The Bank for You"
- 2010: reduced number of ATMs island wide in an attempt to discourage use of fiat currency
- 2011: new ATM machine replacements had regular breakdowns causing long queues
- 2012: introduced whole weekend banking service
- 2013: launched new credit card with tiered rewards
- 2014: delayed delivery of customer hardware token causing inability to log in to internet banking
- 2015: increased marketing efforts to retain customers
- 2016: high staff turnover rate impacting front-facing services
- 2017: massive retraining efforts to increase staff productivity
- 2018: launched family-friendly marketing theme
- 2019: reduced marketing budget due to macroeconomic factors
- 2019: Bank V Introduced mobile wallet and targeted the millennials. Led to significant growth in enrolment.

Note: You may use the above information or create your own events. For the ending, there is no need to elaborate on the actual plan.

SITUATION

SITUATION (5)

- The chart below shows the Comparison of Hello Banks score with Average Industry score and Competitor Bank V's score:

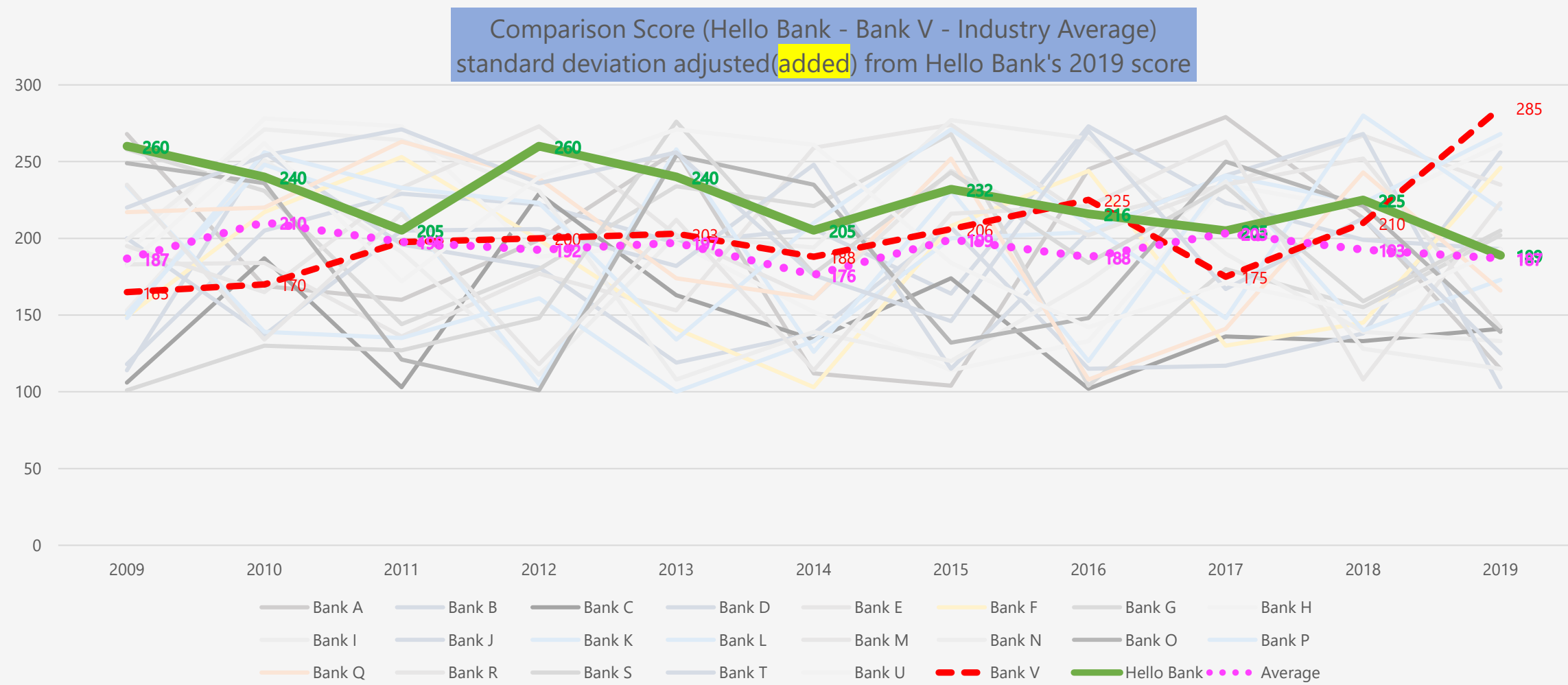


SITUATION

- Hello Bank's latest Score is Close to the Industry Average but behind the Competitor Bank V.
- Hello Bank has performed well earlier. However, the Year 2019 shows poor score when comparing with Bank V.
- It's been 10 years since the "The Bank for You" campaign organised by the Bank. Upon the "The Bank for You" campaign, Bank's score significantly increased.
- Reduced marketing budget in the year 2019 could be the reason for the low score.
- The expected target score to be above 250.
- Tom believes marketing campaign will helps to improve the customer satisfaction and overall score.

COMPLICATION

Below chart shows the adjusted score (standard deviation added as 4th quarter data is missing) of Hello Bank, Bank V, Industry average and other banks score:



COMPLICATION

- **Marketing Campaign gives opportunity to convey the bank's benefits and attract new customers.**
- **As Hello Bank's score is near the Industry Average, Major opportunities to attract predict customers.**
- **As the Competitor Bank V doesn't conduct campaign for this year, Hello Bank can utilize the opportunity.**
- **Other banks (like Bank V), introduces new features and proving the significant growth and its essential to introduce new features in Hello Bank upon hearing the feedback from the customers.**
- **Hello Bank has shown very good score and adjusted score is just above the Industry average.**

RESOLUTION

- **Marketing Campaign for the current year is essential to improve the Hello Bank's score.**
- **As the expected score is 250 which is slightly below the competitor, Marketing Campaign can give good contribution for the additional score.**
- **New Sales/Marketing executives must be hired with reasonable target to achieve the expected score.**
- **New strategies will be implemented soon after the Campaign.**

End of
Data Storytelling Assignment