Practical Application of Storytelling in Power BI

Meagan Longoria

Consultant
Denny Cherry & Associates Consulting

About Your Storyteller

Meagan Longoria

Denver, Colorado

DataSavvy.me

Twitter: @mmarie

Microsoft Data Platform MVP

Denny Cherry & Associates Consulting

Elements of a Story

Context

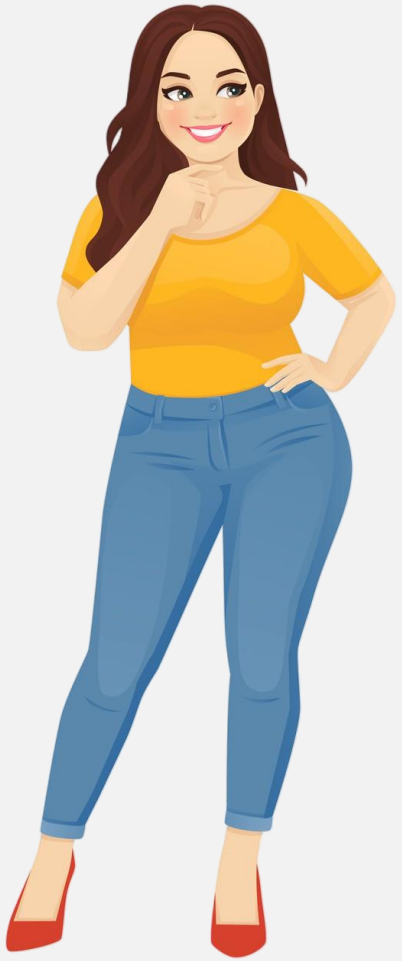
Characters

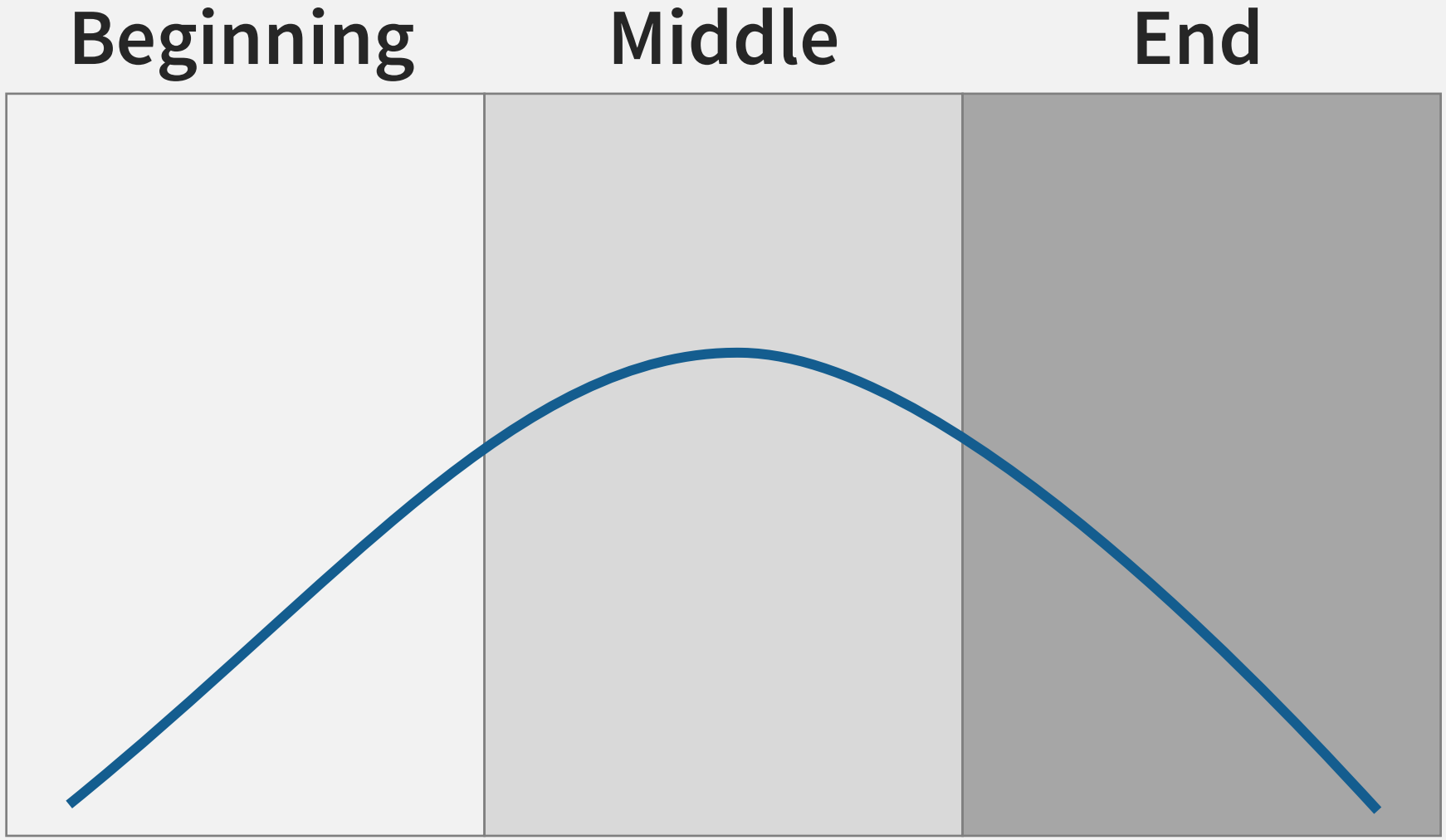
Problems

Solutions

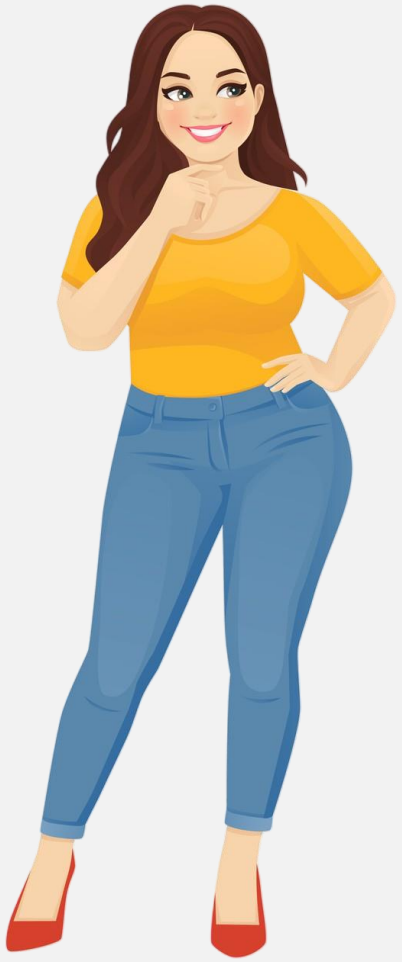
Emotions

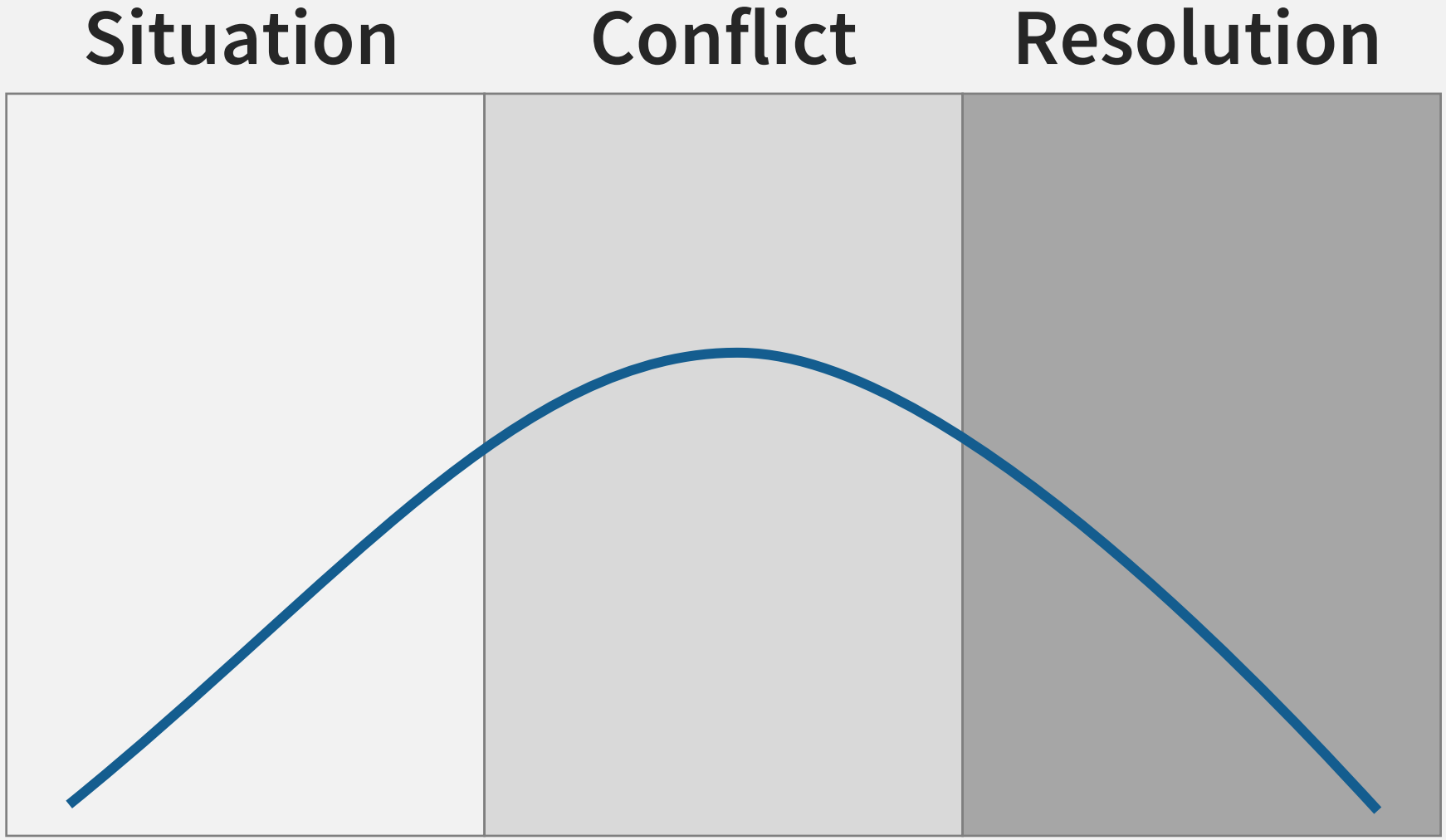
Story Structure



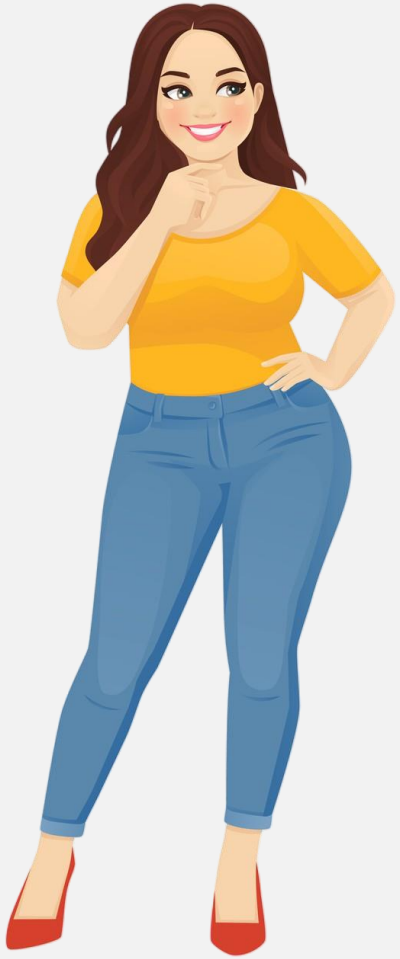


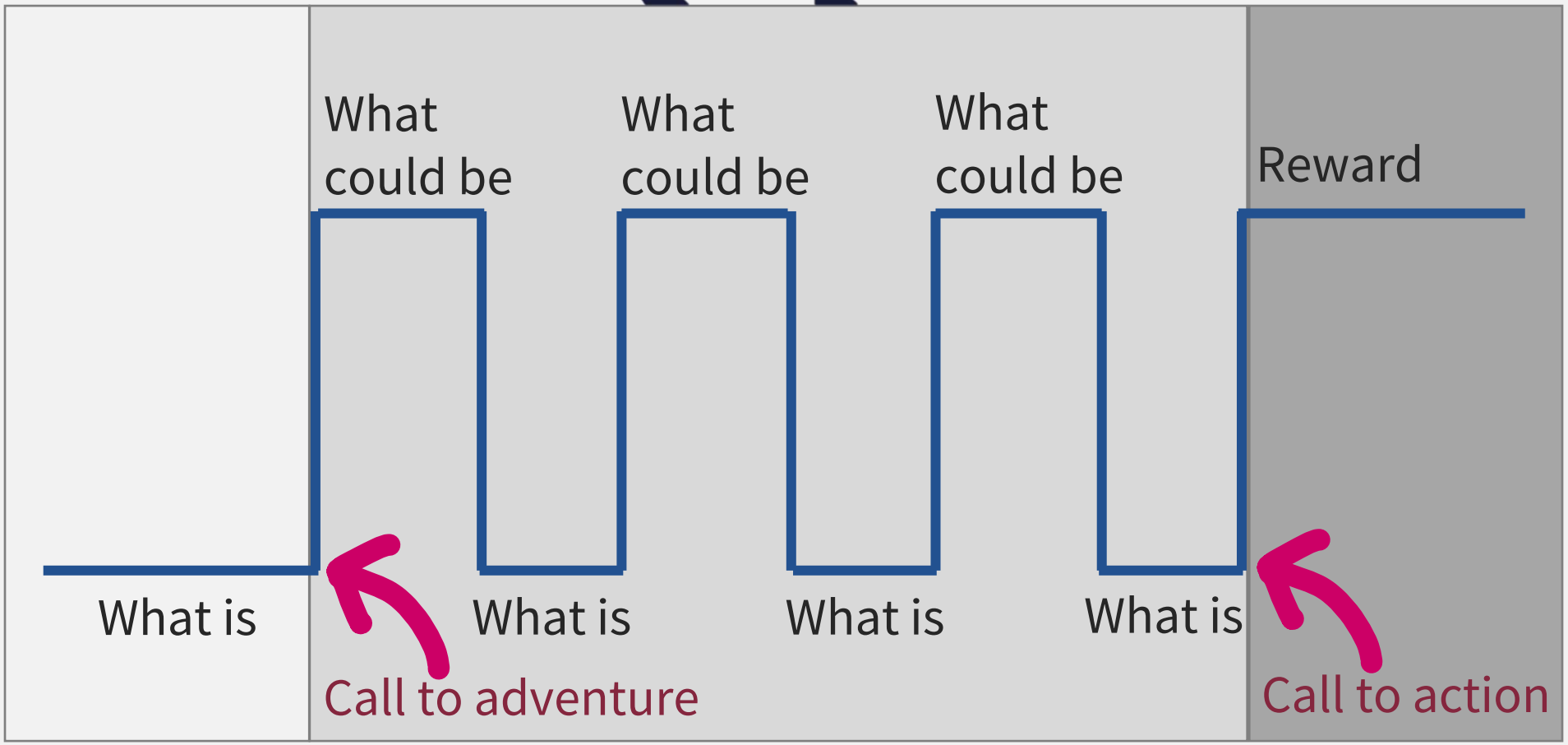
Story Structure





Story Structure





Why Storytelling?

Logical Structure

Easy to Follow

Engage Our Audience

Memorable Takeaways

PolicyViz

What is Story?

"While many of us use the word story over and over again as we make our graphs and visualizations, I think we need to be more careful with the word and use it when appropriate—when we are getting people to *feel deeply* and when we are leading them to a *meaningful climax.*" –Jon Schwabish

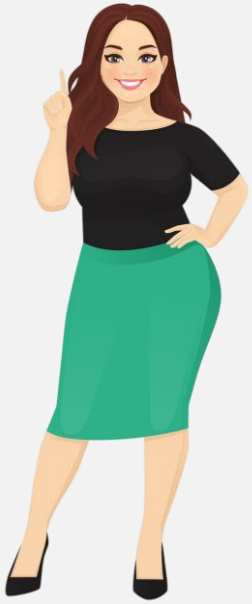
Nightingale

Is Your Data Actually A Story?

“It’s important to highlight that a visualization isn’t more or less powerful, beautiful, or important because it does or doesn’t tell a story. –Joshua Smith

A Spectrum

Annotation Narration Story



Well organized

Logical order

Plot with climax

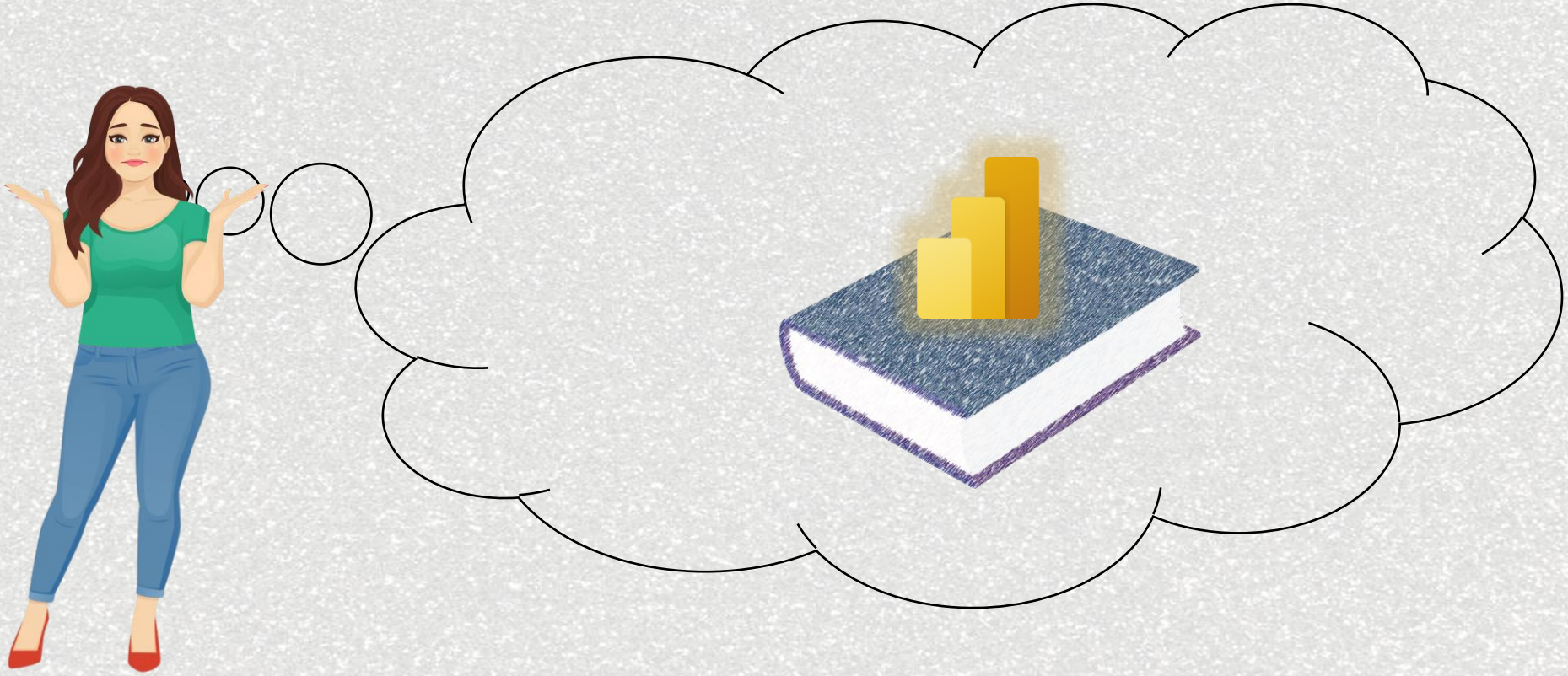
Emotional engagement

Storytelling Reality Check

Not everything is a real story, and that’s fine

But your report should be **organized coherently within the necessary context to deliver meaning**

What if I don’t have a story?



Start with Message

Explain the “so what” takeaway that your audience should get from your report.

Do this at the report level first, then do this for each planned page and visual.

Whiteboard

Storyboard

Message and Titles

Clear, descriptive title with conclusion

Supplementary information that supports the message

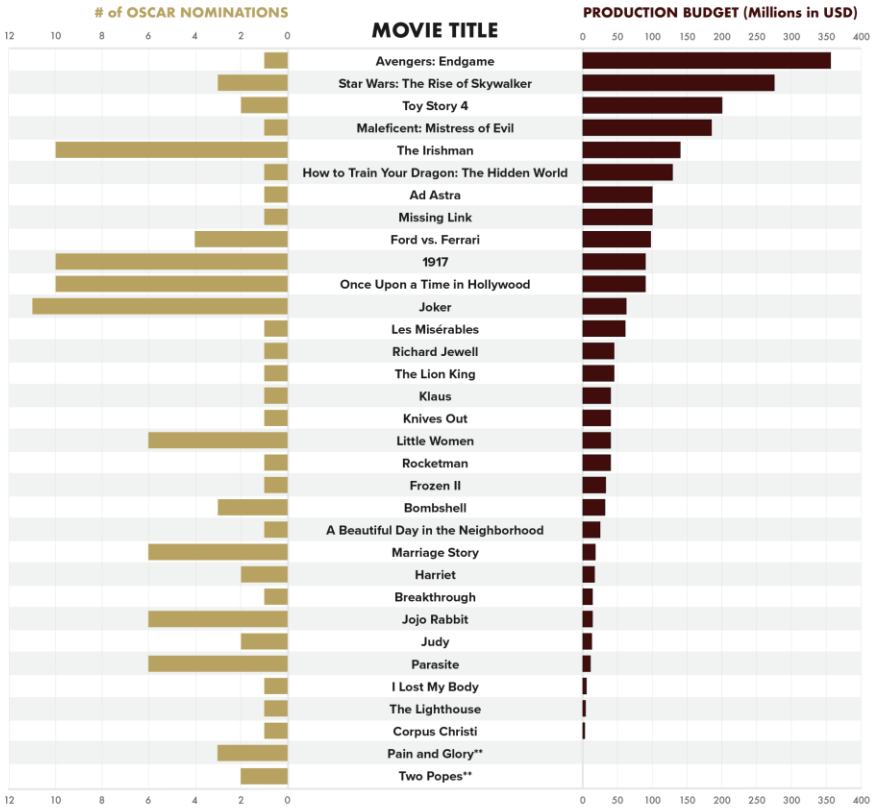
Chart that clearly supports the message

Chart that clearly supports the message

THE COST OF AN OSCAR NOMINATION

Does a larger production budget mean more Oscar nominations? Turns out the answer is no.

Movie production is a mystical world to me and while I'm not a movie buff, I am fascinated by how much money it costs to make them. With the release of Oscar nominations, I was curious to see if the movies that have a higher production budget receive more nominations. Turns out, the answer is no. Of the Oscar nominees*, "Avengers: Endgame" had the highest production budget of $356 million but received only 1 nomination, whereas Joker, receiving the most nominations at 11, worked with a $62.5 million budget, less than 20% of the budget of Avengers.



*This chart counts nominations of the following categories: Motion Picture, Actress, Actor, Actress in a supporting role, Actor in a supporting role, Director , Adapted Screenplay, International Feature, Documentary Feature, Animated Feature Film, Production Design, Film Editing, Cinematography, Visual Effects, Costume Design, Sound Mixing, Sound Editing, Original Song, Original Score, Makeup and Hairstyling.

I was unable to find the production budgets for "Two Popes" and "Pain and Glory"

Data aggregation and design by Rosie Ettenheim

Message and Dynamic Data

When data values can change, the relationship between report creator and consumer changes.

Creator provides context, signals, interactive controls

Consumer provides their own decision context and arrives at their own story

This is your typical corporate Power BI report

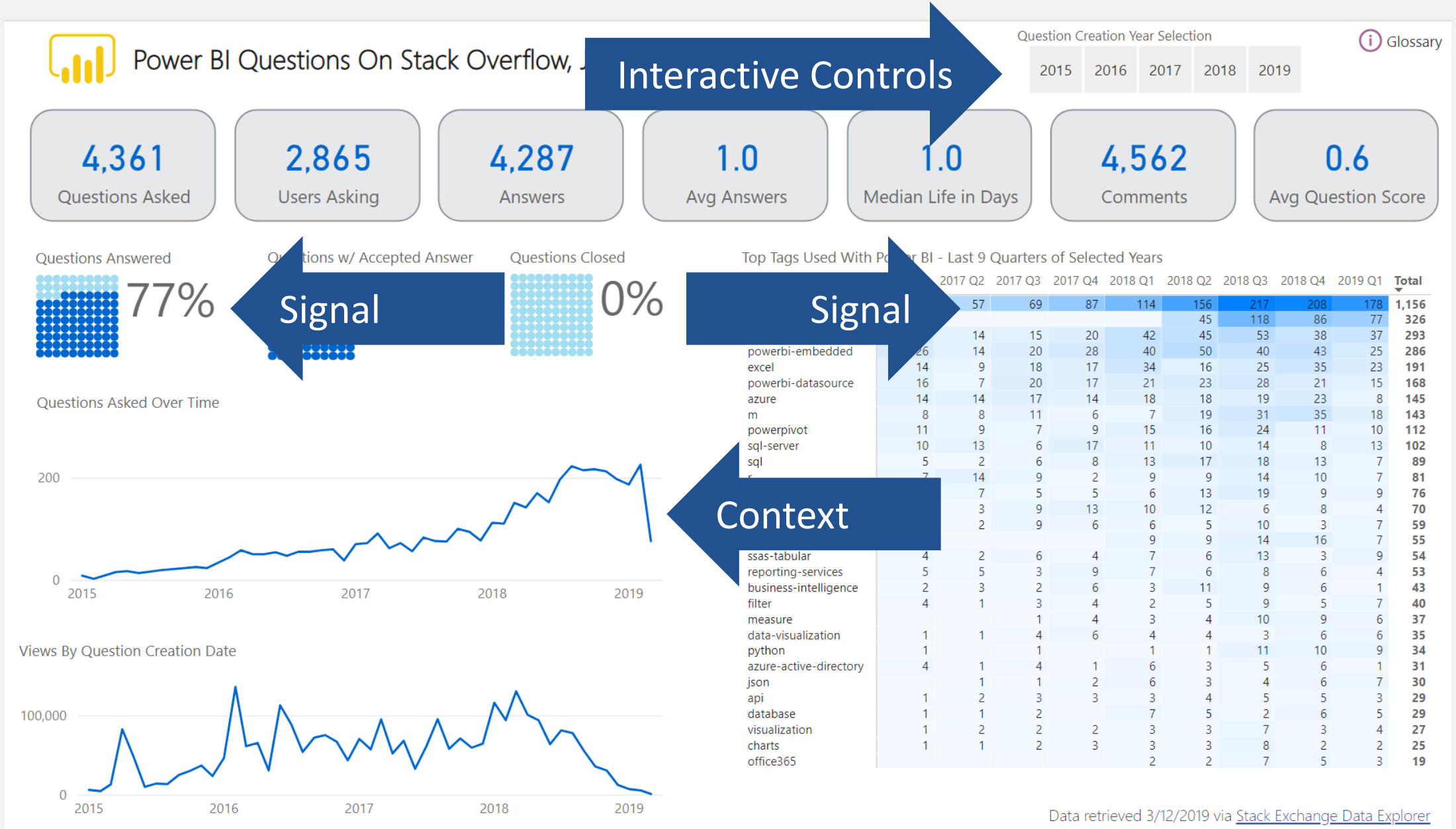
Storyforming in Power BI

Plan story using plot points such as “Year over year sales by product category” instead of static messages

Use dynamic text for titles, tables, and text explanations in Power BI

Try machine learning for forecasting, clustering, explaining key factors

Storyforming Example



	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	Total
	57	69	87	114	156	217	208	178	1,156
					45	118	86	77	326
	14	15	20	42	45	53	38	37	293
powerbi-embedded	14	20	28	40	50	40	43	25	286
excel	9	18	17	34	16	25	35	23	191
powerbi-datasource	7	20	17	21	23	28	21	15	168
azure	14	17	14	18	18	19	23	8	145
m	8	11	6	7	19	31	35	18	143
powerpivot	9	7	9	15	16	24	11	10	112
sql-server	13	6	17	11	10	14	8	13	102
sql	2	6	8	13	17	18	13	7	89
	14	9	2	9	9	14	10	7	81
	7	5	5	6	13	19	9	9	76
	3	9	13	10	12	6	8	4	70
	2	9	6	6	5	10	3	7	59
				9	9	14	16	7	55
ssas-tabular	2	6	4	7	6	13	3	9	54
reporting-services	5	3	9	7	6	8	6	4	53
business-intelligence	3	2	6	3	11	9	6	1	43
filter	1	3	4	2	5	9	5	7	40
measure		1	4	3	4	10	9	6	37
data-visualization	1	4	6	4	4	3	6	6	35
python	1	1		1	1	11	10	9	34
azure-active-directory	1	4	1	6	3	5	6	1	31
json	1	1	2	6	3	4	6	7	30
api	2	3	3	3	4	5	5	3	29
database	1	2		7	5	2	6	5	29
visualization	1	2	2	3	3	7	3	4	27
charts	1	2	3	3	3	8	2	2	25
office365				2	2	7	5	3	19

Data retrieved 3/12/2019 via Stack Exchange Data Explorer

Storyforming Example

Power BI Questions On Stack Overflow, January 2015 To March 2019

Question Creation Year Selection: 2015 | 2016 | 2017 | 2018 | 2019

Glossary

4,361	2,865	4,287	1.0	1.0	4,562	0.6
Questions Asked	Users Asking	Answers	Avg Answers	Median Life in Days	Comments	Avg Question Score

Questions Answered

77%

Questions w/ Accepted Answer

38%

Questions Closed

0%

Questions Asked Over Time

Views By Question Creation Date

Top Tags Used With Power BI - Last 9 Quarters of Selected Years

Tag	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	Total
dax	70	57	69	87	114	156	217	208	178	1,156
powerbi-desktop						45	118	86	77	326
powerquery	29	14	15	20	42	45	53	38	37	293
powerbi-embedded	26	14	20	28	40	50	40	43	25	286
excel	14	9	18	17	34	16	25	35	23	191
powerbi-datasource	16	7	20	17	21	23	28	21	15	168
azure	14	14	17	14	18	18	19	23	8	145
m	8	8	11	6	7	19	31	35	18	143
powerpivot	11	9	7	9	15	16	24	11	10	112
sql-server	10	13	6	17	11	10	14	8	13	102
sql	5	2	6	8	13	17	18	13	7	89
r	7	14	9	2	9	9	14	10	7	81
ssas	3	7	5	5	6	13	19	9	9	76
javascript	5	3	9	13	10	12	6	8	4	70
c#	11	2	9	6	6	5	10	3	7	59
power-bi-report-server					9	9	14	16	7	55
ssas-tabular	4	2	6	4	7	6	13	3	9	54
reporting-services	5	5	3	9	7	6	8	6	4	53
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database	1	1	2		7	5	2	6	5	29
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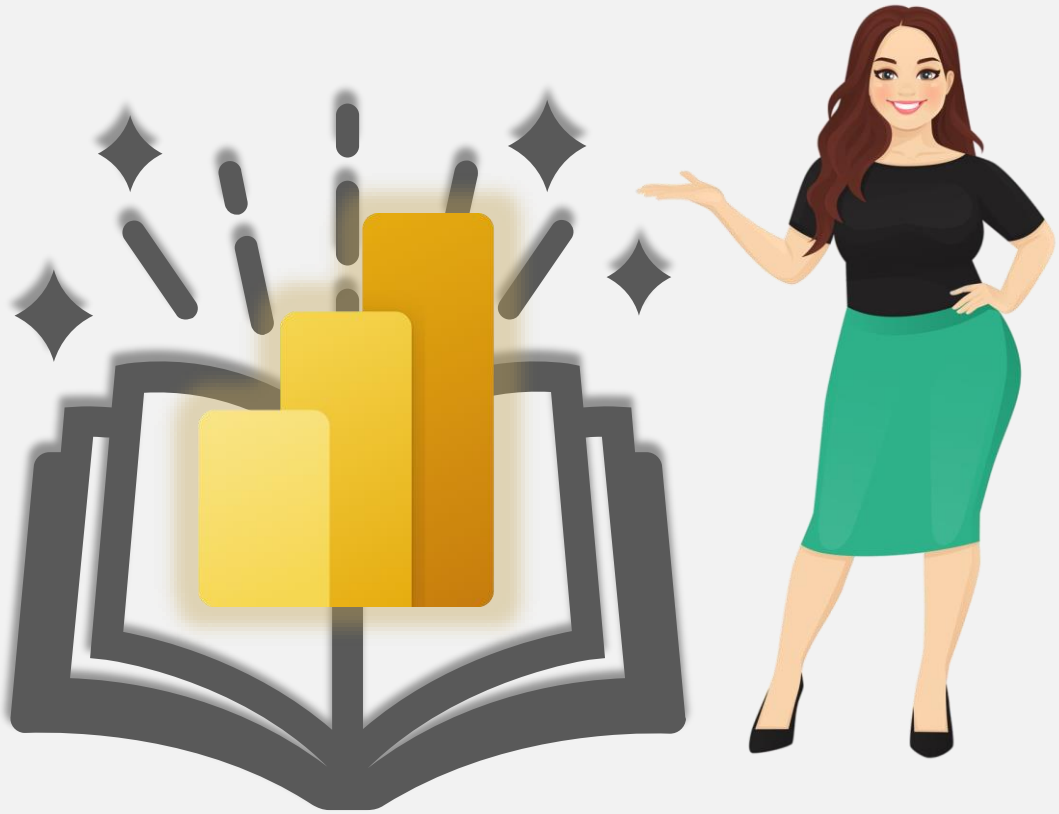
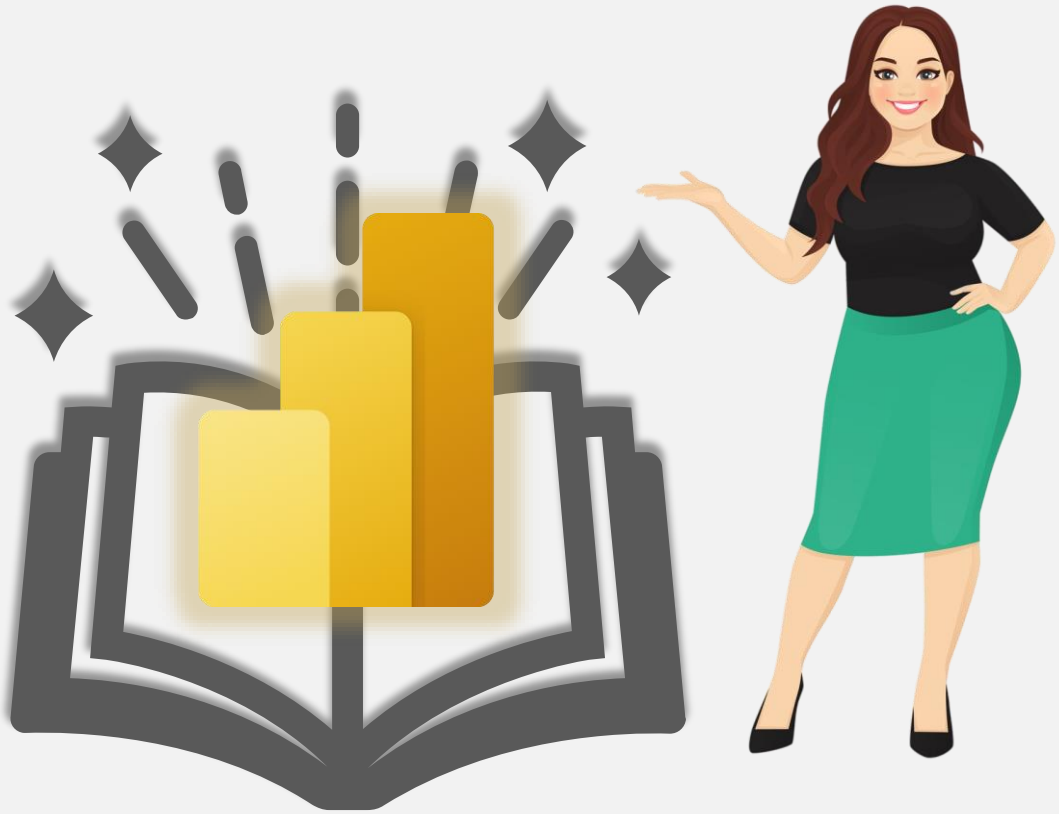
office365					2	2	7	5	3	19

Data retrieved 3/12/2019 via Stack Exchange Data Explorer

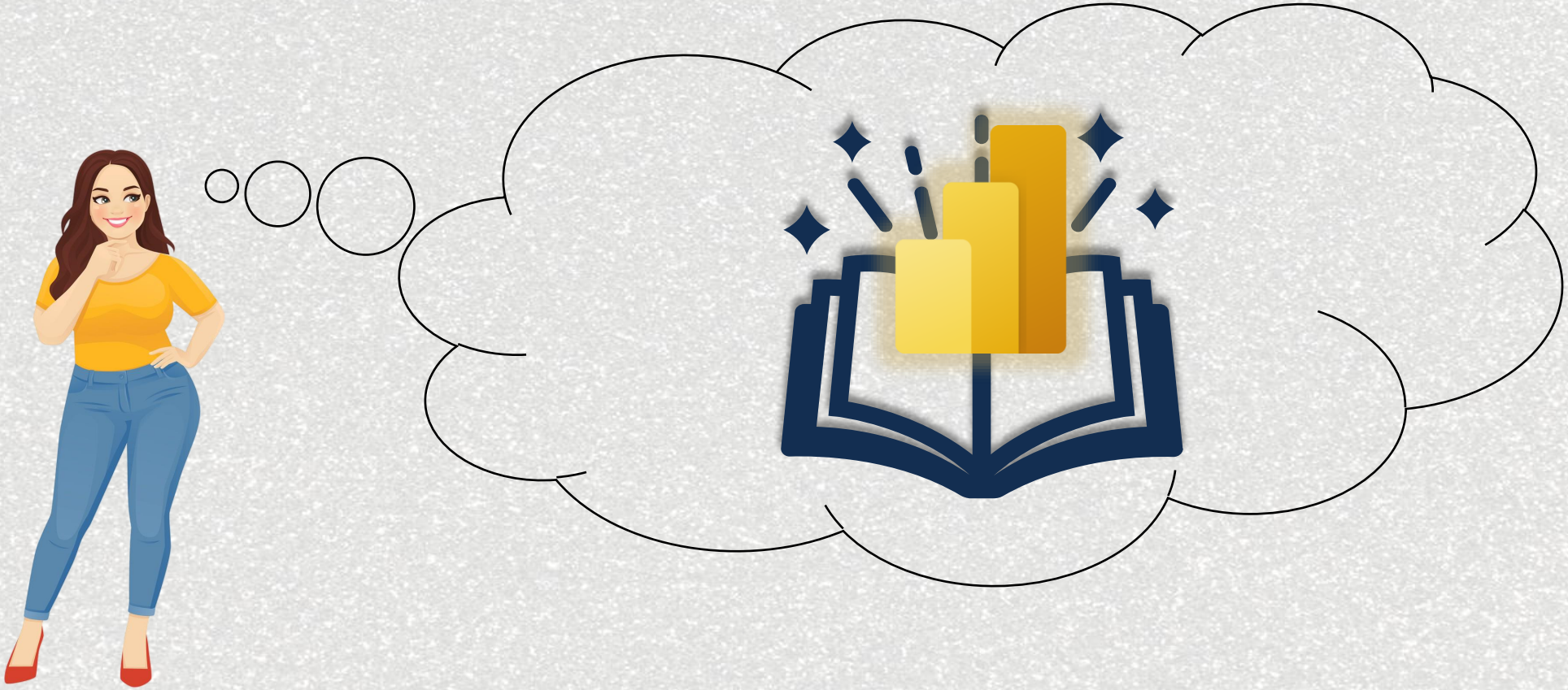
A look at the Smart Narrative visual



Conditional formatting for storyforming



How do I tell a narrative with data?



Publication of Inspiration

Emerging and Recurring Data-Driven Storytelling Techniques: Analysis of a Curated Collection of Recent Stories

Charles D. Stolper, Bongshin Lee, Nathalie Henry Riche, and John Stasko

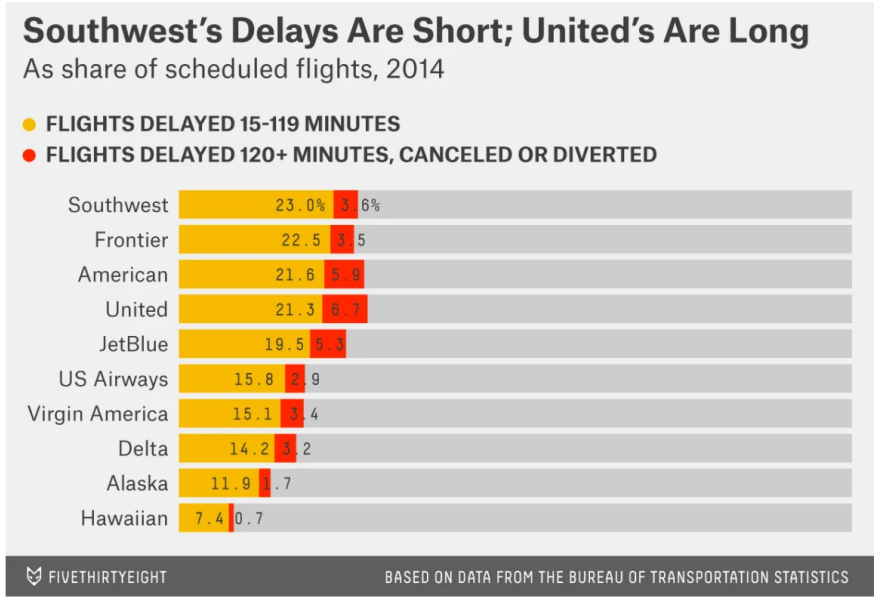
Abstract—Storytelling with data is becoming an important component of many fields such as graphic design, the advocacy of causes, and journalism. New techniques for integrating data visualization into narrative stories have now become commonplace. Authors are enabling new reader experiences, such as linking textual narrative and data visualizations through dynamic queries embedded in the text. Novel means of communicating position and navigating within the narrative also have emerged, such as utilizing scrolling to advance narration and initiate animations. We advance the study of narrative visualization through an analysis of a curated collection of recent data-driven stories shared on the web. Drawing from the results of this analysis, we present a set of techniques being employed

Data Storytelling* Technique #1

Communicating narrative and explaining data

Text, video, or audio narration with visualizations interspersed throughout

Many news and magazine articles do this!



Frontier and Southwest have lots of short delays but only an average number of very long delays and cancellations. So they'll come out looking a little better in our analysis, which is based on the average number of minutes lost or saved by the airlines, rather than an arbitrary cutoff at 15 minutes.

Problem #2: Many flights are flown by regional carriers — and regional carriers are slow

Did you know you just flew from LaGuardia to Bangor, Maine, on Air Wisconsin? Probably not: You bought the ticket from US Airways, and the

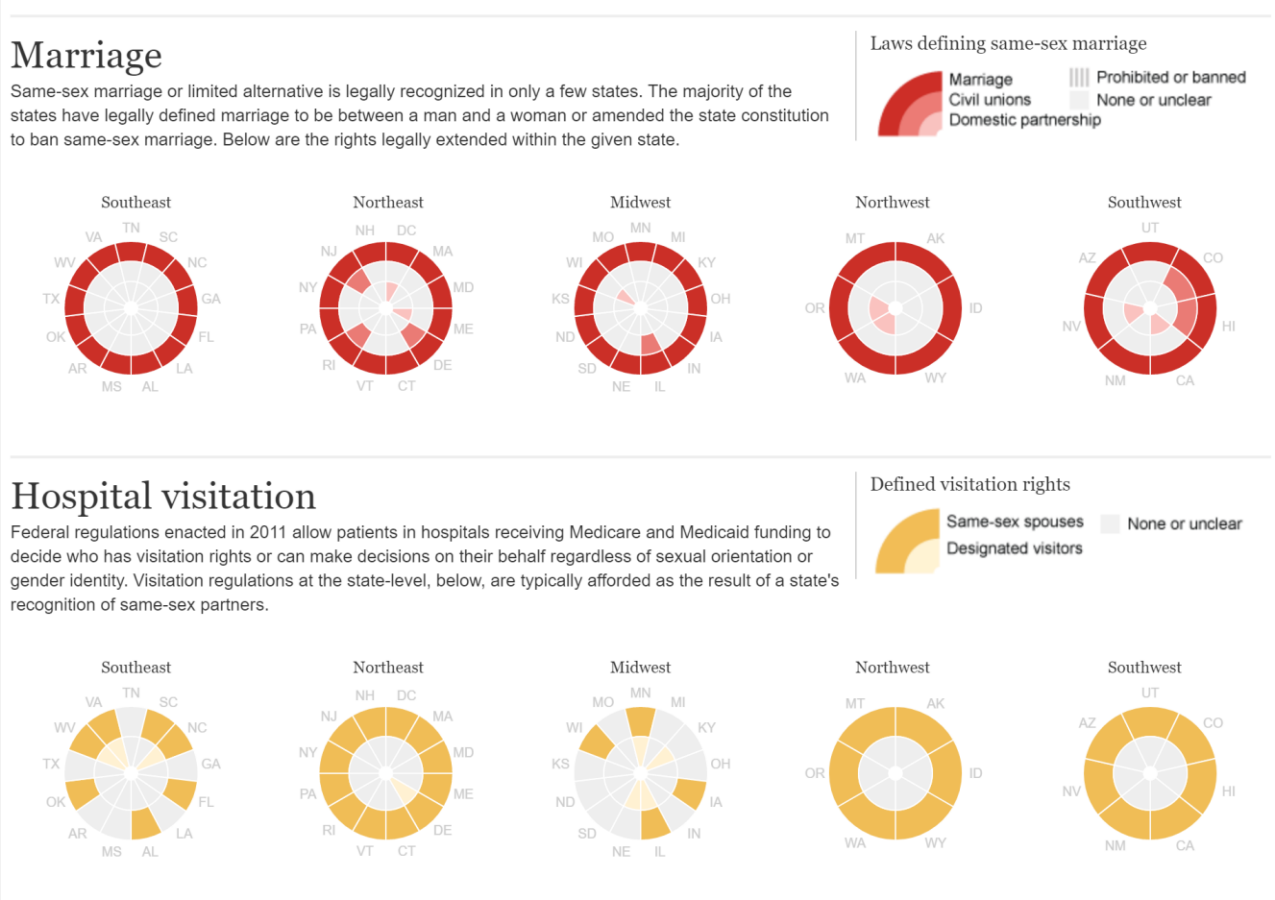
Communicating narrative and explaining data in Power BI

Data Storytelling* Technique #2

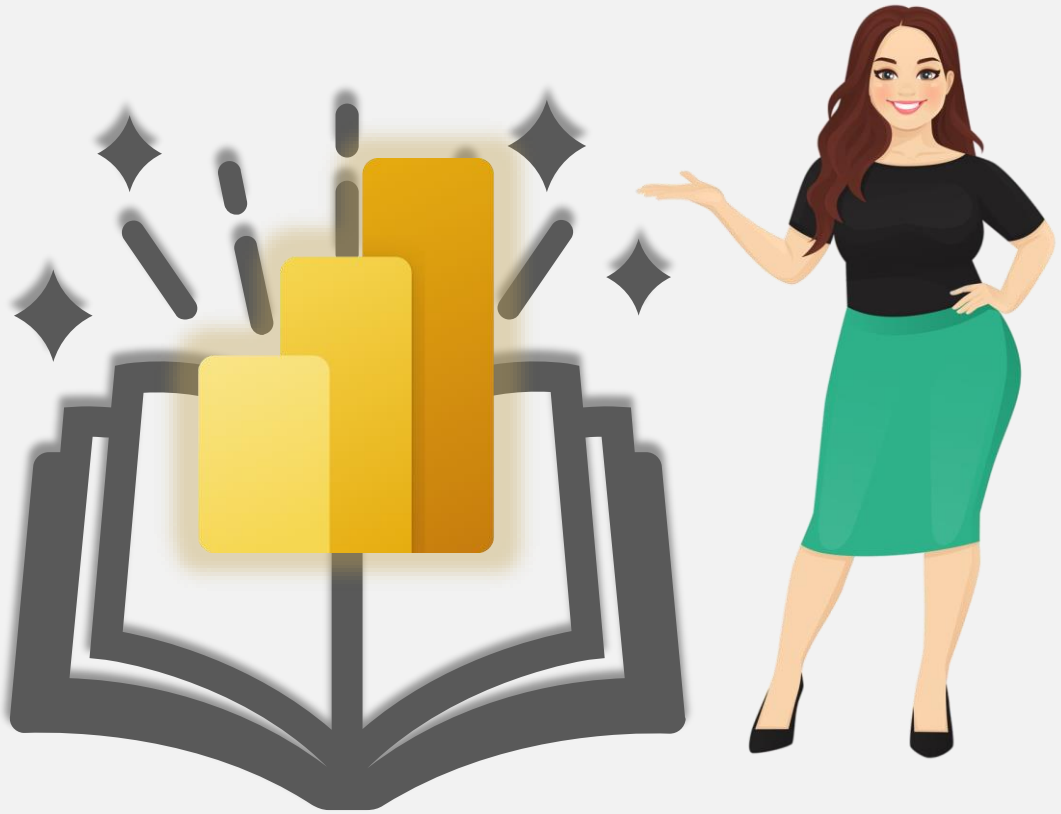
Linking separated story elements

Linking through interactivity, color, or animation

Easy to do with report themes, actions and buttons/shapes in Power BI!



Linking separated story elements in Power BI

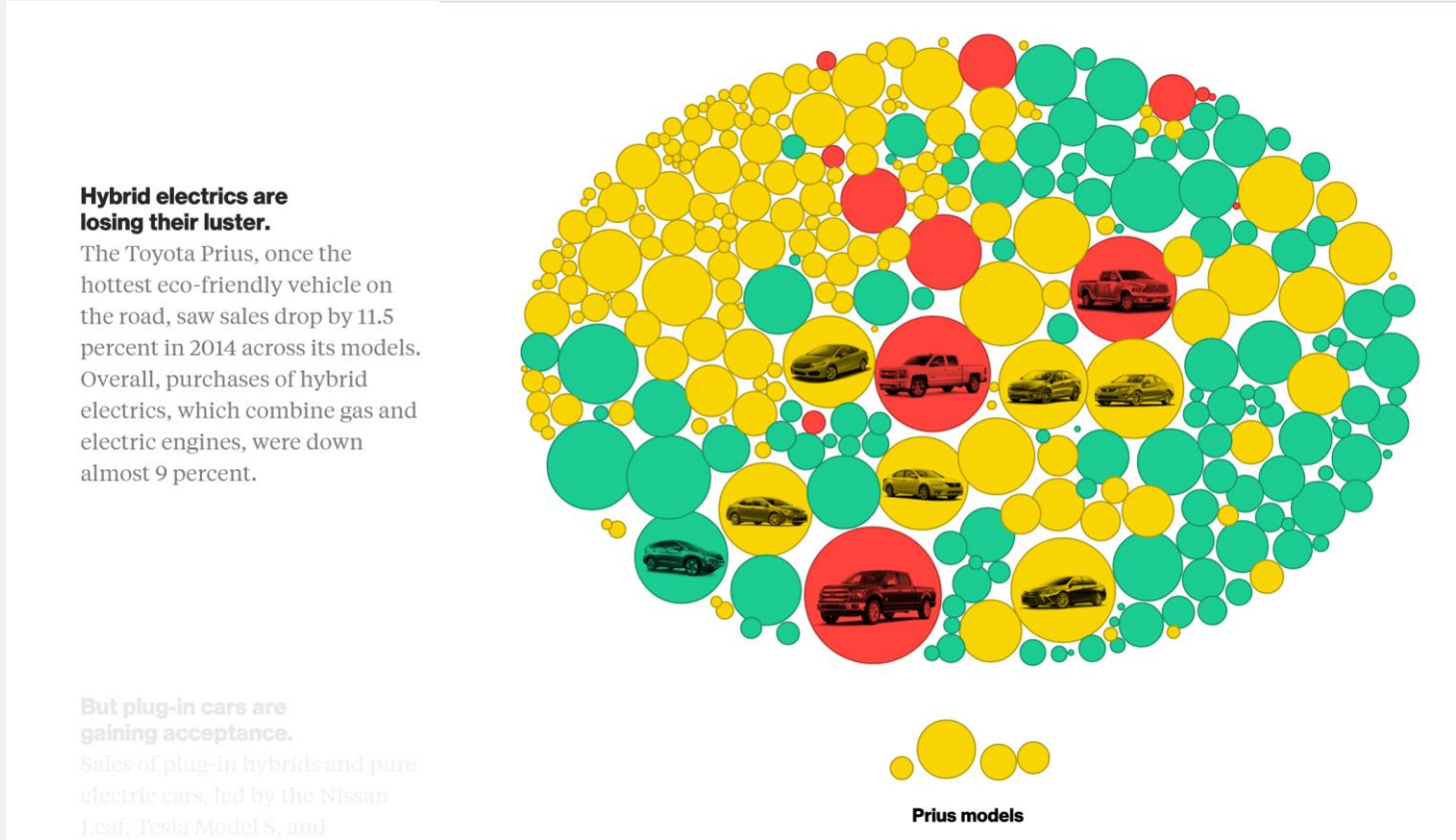


Data Storytelling* Technique #3

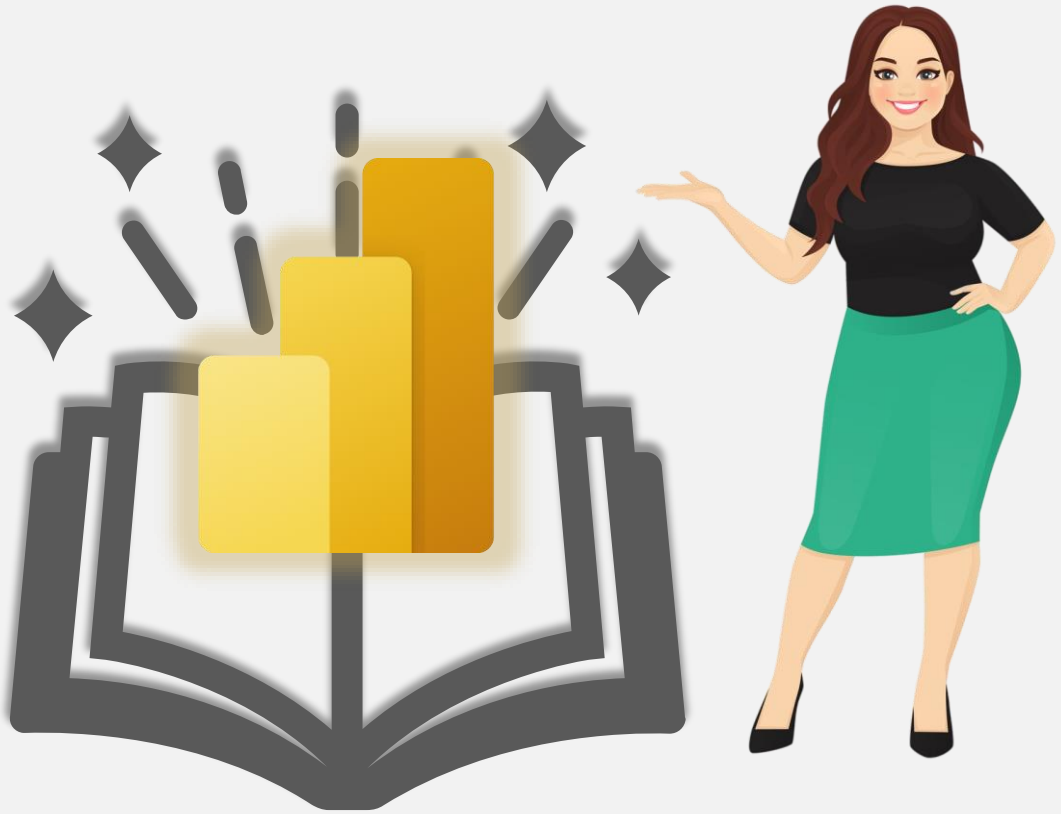
Enhancing structure and navigation

Use of next/previous buttons, scrollytelling, breadcrumbs, and menu selections

What we mean when we say “app-like experience”!



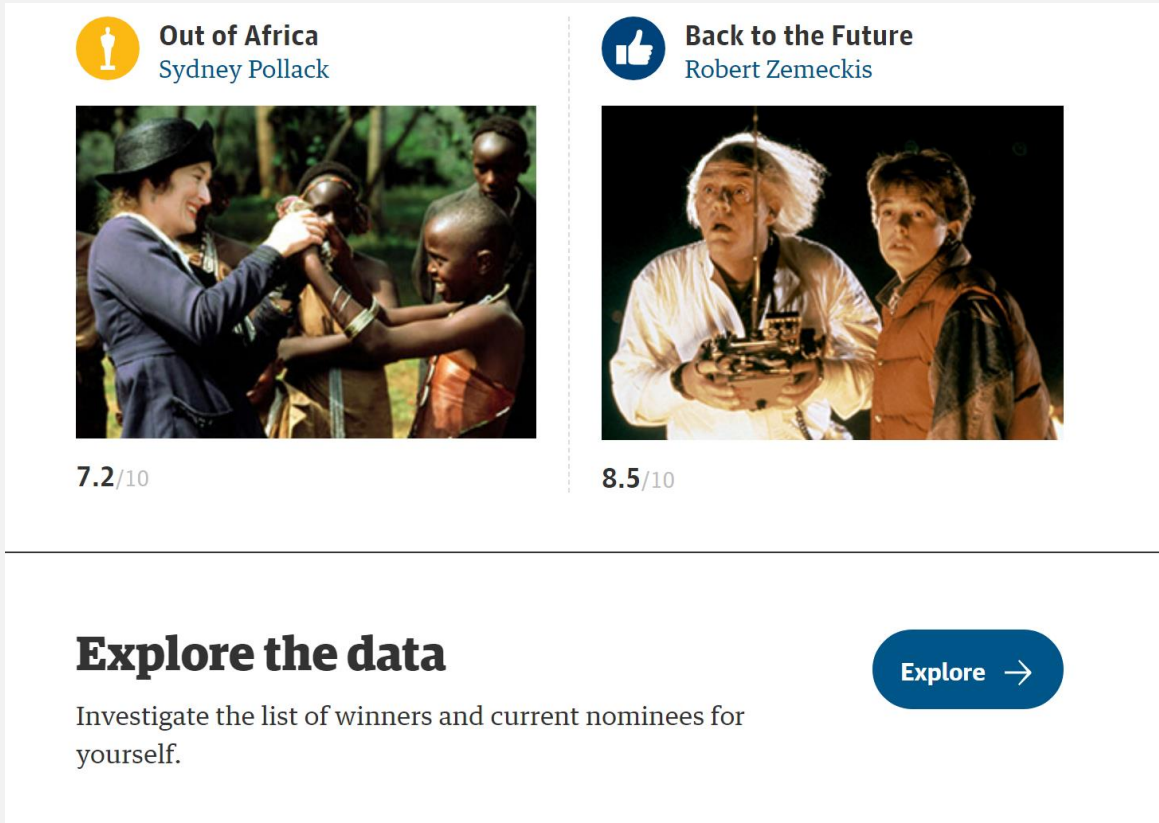
Enhancing Structure and Navigation in Power BI



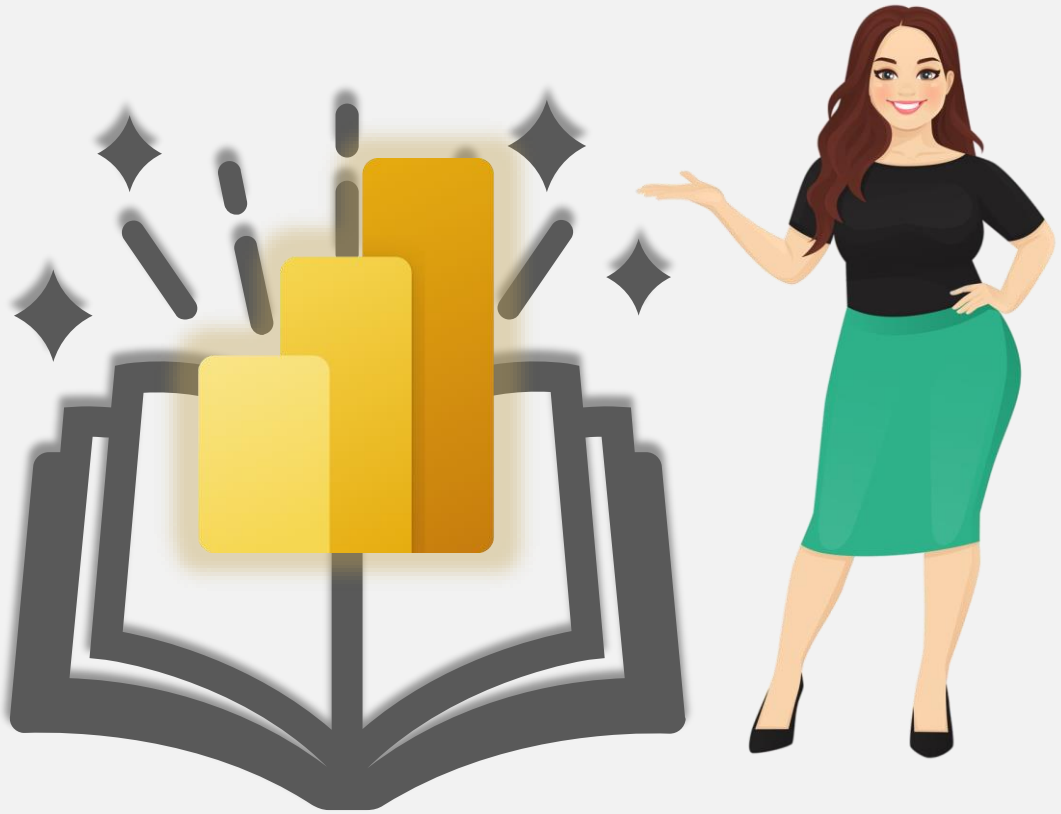
Data Storytelling* Technique #4

Providing controlled exploration

Dynamic queries allowing users to make selections to explore in a constrained manner, or a separate exploratory piece linked from the narrative



Providing controlled exploration in Power BI



Key Takeaways

Data Stories Recap

Stories are engaging and memorable

Not everything is a story, and that’s ok

Most reports can be humanized more so they lean more narrative than annotation

Storytelling Technique Recap

Communicating narrative and explaining data

Linking separate story elements

Enhancing structure and navigation

Providing controlled exploration

Create better data narratives

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DataSavvy.me

Twitter: @mmarie

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