



Data Storytelling: How can you tell the most effective story using your data?

Annie Homsy-Harris, Director
of Analysis

Morningstar

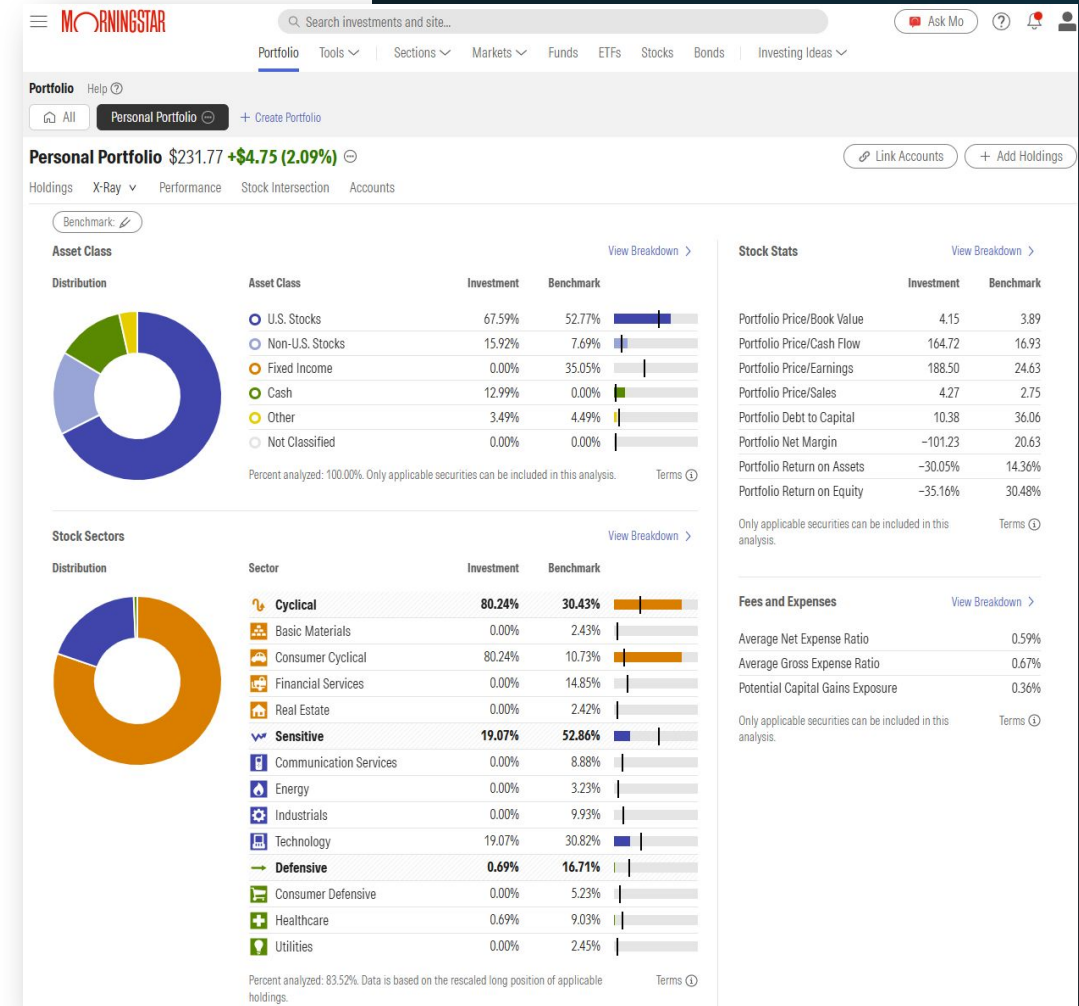
About Me

- Former Opera singer
- 2x published author
- MBA in Economics and Finance
- Polyglot
- Worked for Morningstar ~6yrs
- Advocate for the Neurodiverse



What is Data?

- Data is a living thing
- It grows, evolves, and thrives within its respective “ecosystems”
- To truly understand the problem, you must not be afraid to dive into the data
- Data, once analyzed, can tell the most impactful stories to the business and drive real change

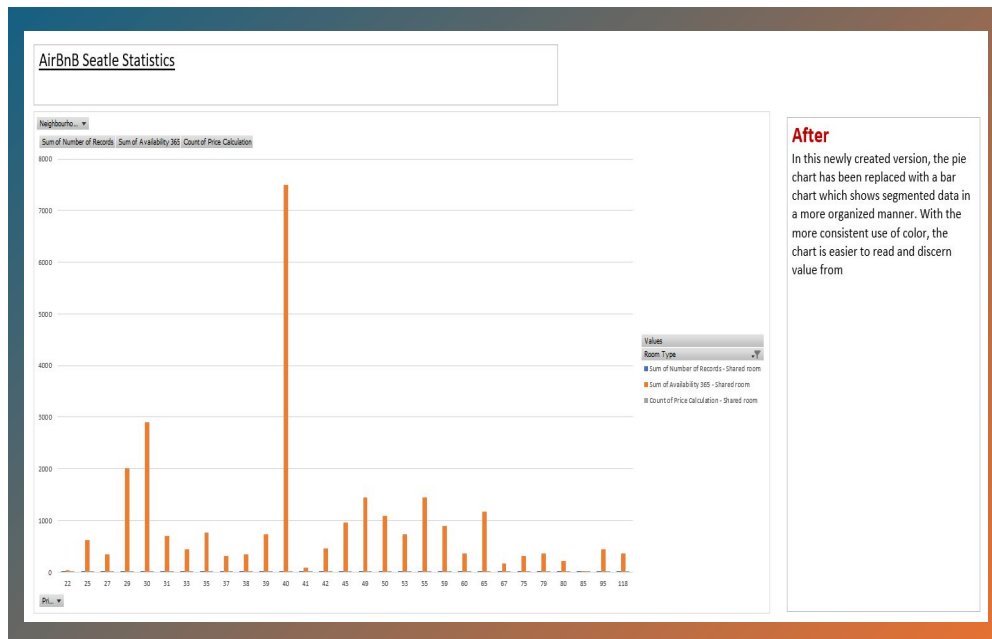
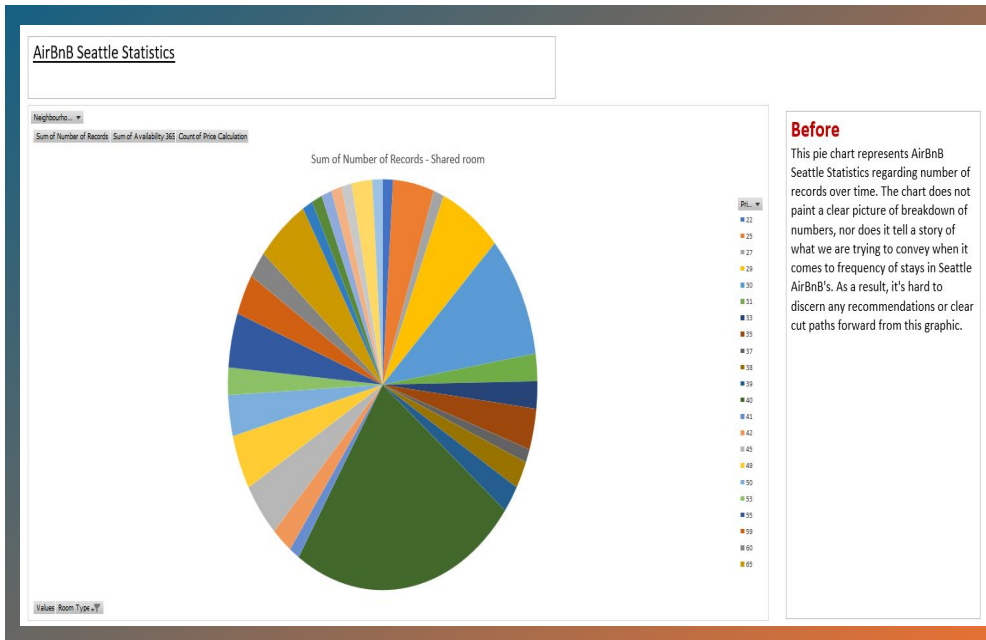


What constitutes a “good story”?

The goal of any data story is to communicate and express complex ideas that have been distilled into key insights that enable strategic decisions

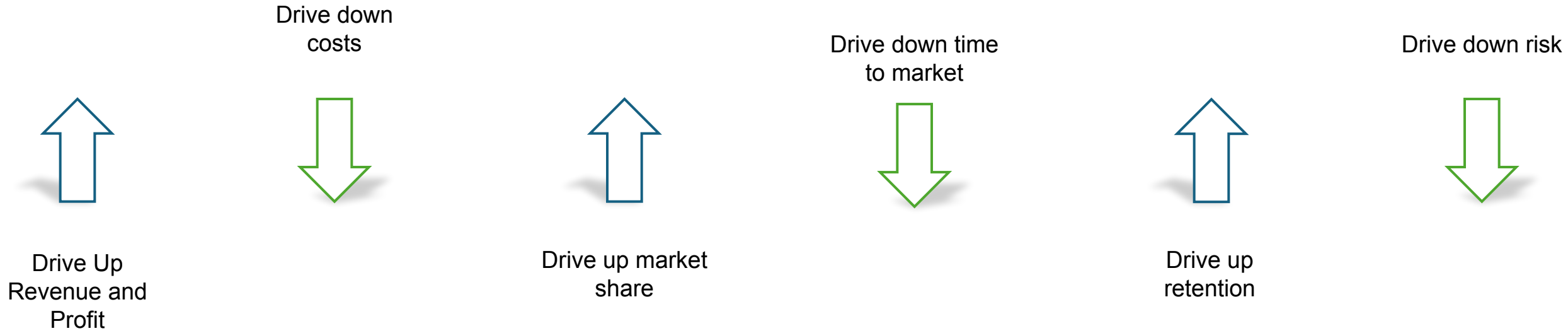
To tell a data story that successfully influences the actions of decision-makers, you need to consider the following:

- Who is the Audience?
- How can you tailor your story to your audience?
- What is the best approach in using the data you have?



Measuring for your Audience

If this is for an executive level audience, understanding how they are measured and evaluated helps frame the data story. These can include:



Big Data vs Small Data

Big Data

Is data collected in “unprecedented” quantities and continually grows at an exponential rate. It can also be diverse, however, it is not a monolithic entity and rather is made of a diverse type of data with unique characteristics. The types of big data include but are not limited to:

1. **Structured Data** – data that is methodically organized and arranged in a manner that can be easily searched
2. **Semi-Structured Data** - Falls between Structured and Unstructured data. Has some elements of structure but not consistently so
3. **Unstructured Data** – Highest volume of all Big Data categories. Lacks organization or any type of formatting and doesn't fit neatly into conventional databases

Small Data

Is data collected in quantities that are easier for intellectual discernment and comprehension. Also suitable for more specific analysis such as causation within a specific data ecosystem. Small data can be used for:

1. Improving business models
2. Marketing Campaigns
3. Small market opportunity capture

*Relying on Big Data alone increases the chances you will miss something, yet gives you the perception that you know everything which can lead to **Quantification Bias***

How

data

What recommendations,
from the data set, support
the business case?

Step
7

What business questions
can we answer from this
data?

Step
6

Understand what the
audience knows about their
customers at a granular
level

Step
5

Understand how the
Audience views the
business

Step
4

Data Validation

Step
3

Understand how the
Audience defines "success"






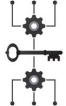
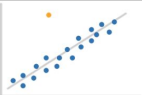
Step
1

Understand the data
available to support the
business case

Step
2

Narrative Structures for Data Stories

There are seven types of data stories and best practices for each

Data Story	Overview
Change Over Time	 <p><i>Story:</i> uses time to showcase trends <i>Touches on:</i> Why does this happen/keep happening. How can we prevent this moving forward?</p>
Drill Down	 <p><i>Story:</i> Sets context on categorical information <i>Touches on:</i> Why does this happen or continues to happen? Can we prevent this going forward?</p>
Zoom Out	 <p><i>Story:</i> Shows how something your audience cares about relates to the bigger picture <i>Touches on:</i> What is the impact to the bigger picture and how does it relate?</p>
Contrast	 <p><i>Story:</i> Shows differentiation between 2+ objects <i>Touches on:</i> Why are these different and can we make 1 perform like the other(s)?</p>
Intersections	 <p><i>Story:</i> Underscores important shifts when one category overtakes another <i>Touches on:</i> What causes the shifts? Are they good or bad? How do they impact the bigger picture?</p>
Factors	 <p><i>Story:</i> Explains topic by dividing it into categories <i>Touches on:</i> Where should focus lie? How much do these items effect the subject we care about and are focused on?</p>
Outliers	 <p><i>Story:</i> Shows anomalies of where data/information is different <i>Touches on:</i> Why is it different?</p>

Inspiring Action from your Audience

When showcasing your analysis and work, you should frame the story in a manner that inspires action



Blend together
logical and
persuasive writing



Create a
recommendation
tree



Motivate your
Audience



Be your own
skeptic

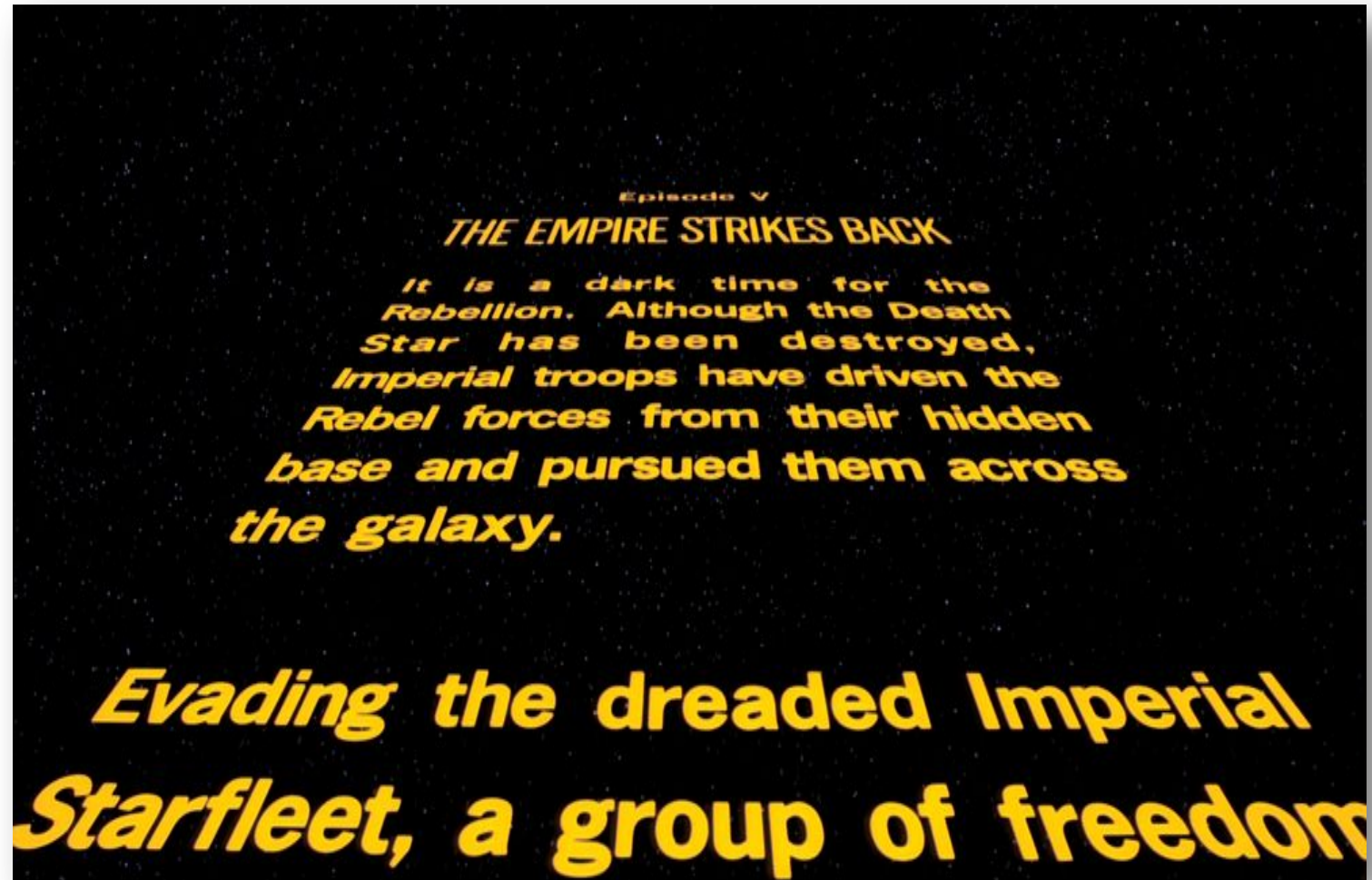
STAR WARS

Anatomy of a Data Story

The Plot

Setting up the story based on data you've reviewed

Example: The opening scroll of Star Wars gives background and data around the current situation facing the Rebellion against The Empire and sets the story you're about to see



The Rising Action



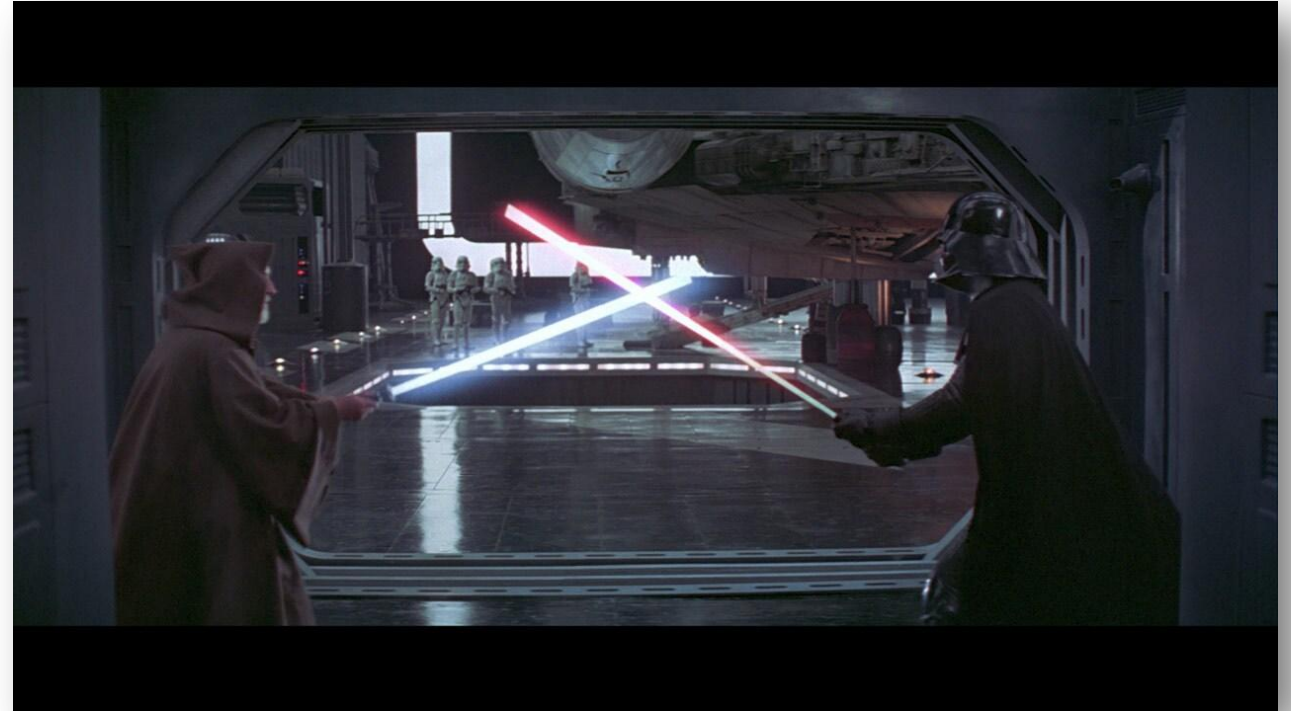
Showcasing data in meaningful ways through visualizations

Example: Luke loses his family and decides to follow in the footsteps of his father to become a Jedi and leave his home planet to rescue Princess Leia. The key visual is Leia asking for help as the call to action Luke needs to motivate himself

The Climax

Showing the conflict in the data or the problem that needs to be solved

Example: Obi Wan willingly dying in battle against Darth Vader shows the conflict of realizing he cannot solve Luke's problems and cannot guide him unless Obi Wan becomes one with The Force.



The Falling Action



Allowing the less “favorable” view of the data to be shown and evaluated

Example: At the beginning of the battle, Luke and his comrades solely rely on the technology of the fighter they fly. As the battle goes on, more of Luke’s friends are shot down. Luke is forced to trust The Force in order to win.

The Resolution

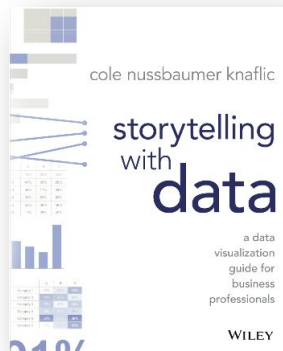
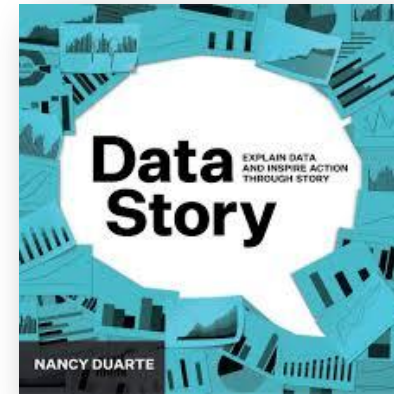
Proposing a solution to meet business/client/investor needs

Example: Luke learns to trust the force and is set on his path to become a true Jedi and can utilize The Force to help save the day.



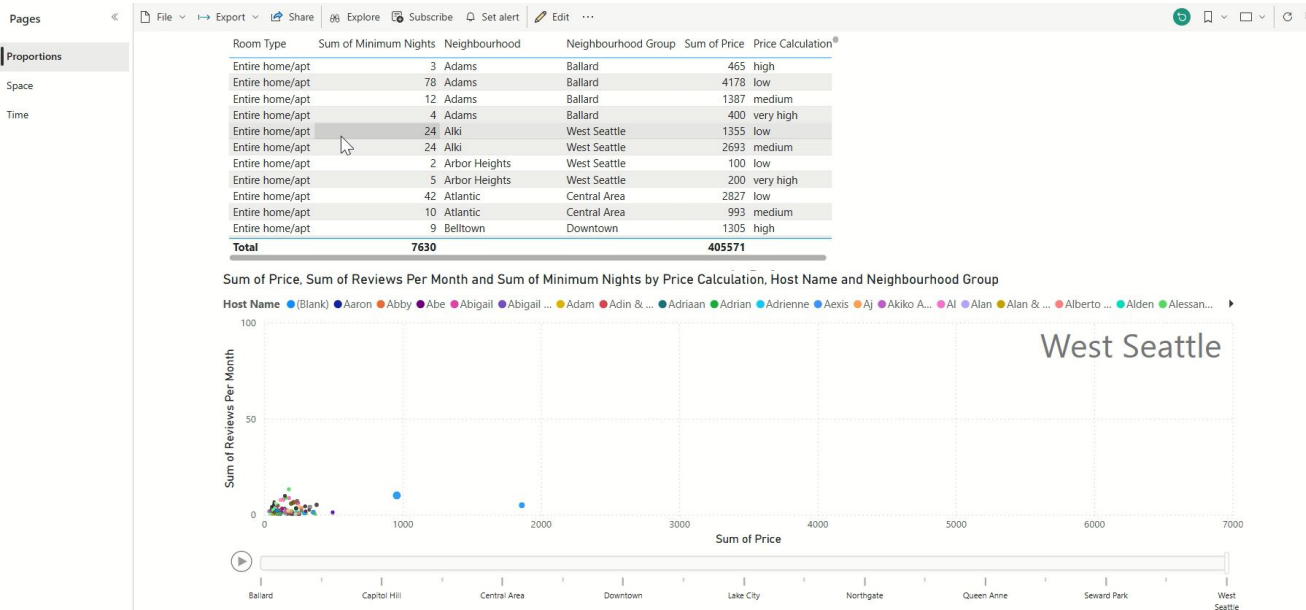
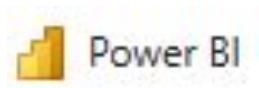
Recommended Books

Data Story: Explain Data and Inspire Action Through Story, By Nancy Duarte



Storytelling with Data: A Data Visualization Guide for Business Professionals, by Wiley

Useful Visualization Tools



Explore Vizizes

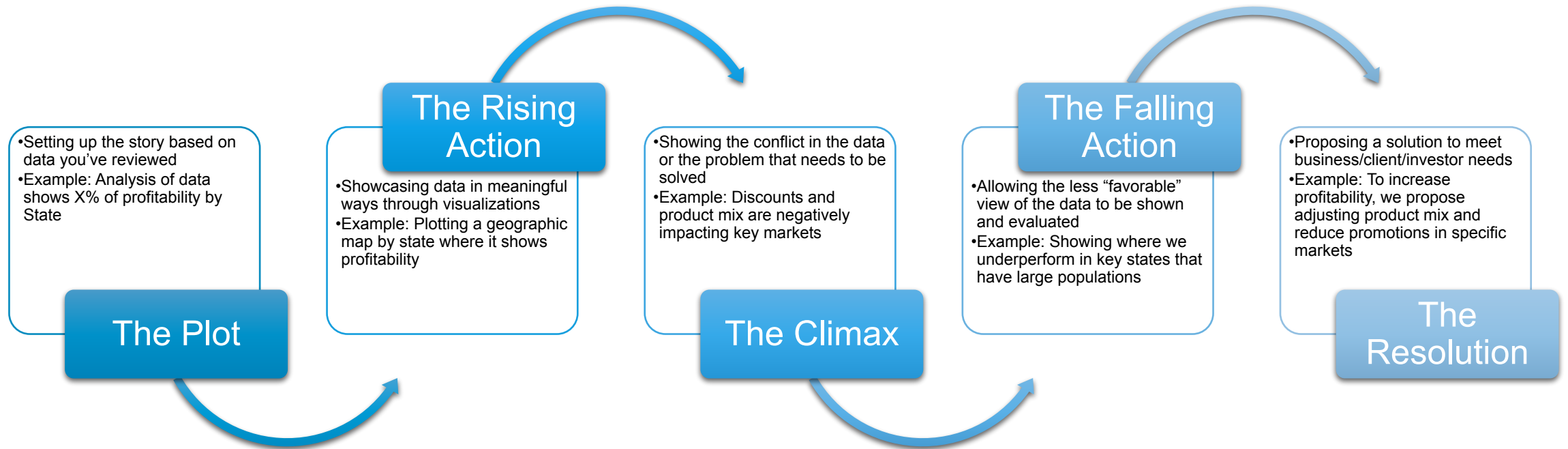
Community members who saw this viz also loved these other vizizes



Questions?

Appendix

Anatomy of a Data Story



How to choose the data

Step 1

Understand how the Audience defines “success”

- What are the key questions to be answered?
- What defines success for the business?
- What data is available to answer those questions?
- How do the decision-makers use data today to make decisions?
- What are the key metrics they care about?
- What limitations and challenges are present within the data

Step 2

Understand the data available to support the business case

- What level of granularity is necessary?
- What is the source of data?
- Are there costs associated with the data acquisition?
- Is there a secure method for data exchange?
- Are there any gaps in data that require a change in the business case?

Step 3

Data Validation

- Ensure you have a complete data set
- Determine key date ranges for the data set
- Run in-depth analysis on data to find 3 stories that the data can support
- Start determining what data tells the best story that plays to the key audience

Step 4

Understand how the Audience views the business

- Get an understanding of how the audience looks at the business (regions, pricing, media markets etc...)
- Ensure we have the necessary data to tie labels such as region, cost, appreciation vs depreciation of data assets
- Look to see what data we are “missing” from the story we are trying to tell
- Review the competitive landscape

Step 5

Understand what the audience knows about their customers at a granular level

- What data is collected at “signup” or new client acquisition?
- Does the audience have identifiers for their customers/client types that also have supporting data the company can focus in on?
- What is the audience willing to share to help support the business case?

Step 6

What business questions can we answer from this data?

- What value does the data bring to the business?
- It's important to marry the data to the business therefore enabling the business to make decisions based on trends, analysis etc.,
- For your audience, what are you hoping they will learn from the data and what actions can be taken because of that?

Step 7

What recommendations, from the data set, support the business case?

- The data is talking!! What is the data recommending as actions to help the business?
- Can your clients resonate with the recommendations you are making?
- Ensure your recommendations are precise and are fully backed up by the data itself to lend credibility and support