





Data-Denial or Data-Driven?

Disaster or Delight?





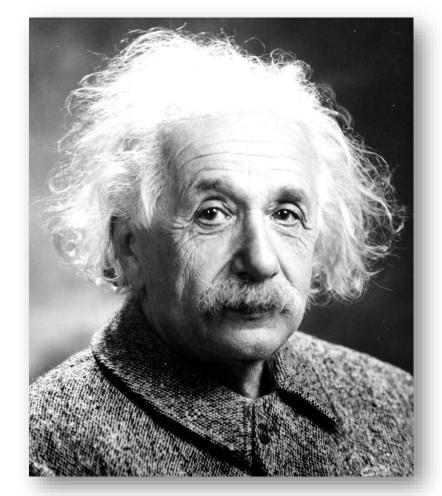
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"Not everything that counts can be counted, and not everything that can be counted counts."

Albert Einstein (an alleged quote)





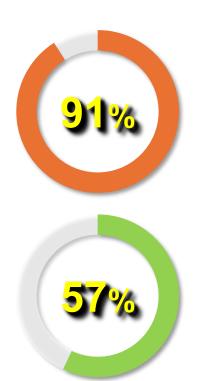


Data created in a single minute in 2024 > data created during Einstein's lifespan.

Forbes/Tech Jury Study, updated January 2025

How important is data-driven decision making?

How many use scalable data for decision making?



Forrester Survey ~1200 U.S. companies

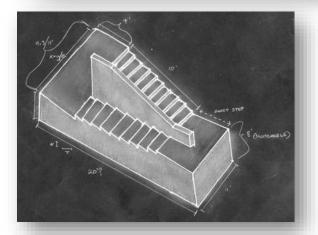




### The Escharian Stairwell

- ★ Designed by Rafael Nelson Aboganda
- **★** Surprising students since 1968
- ★ Amazing structure
- ★ Architectural genius
- ★ Fascinating experience

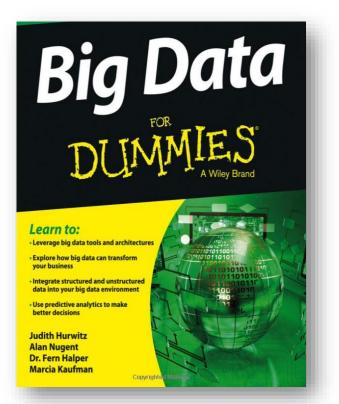








How do you get from being in data denial...



... to being data-driven (and keeping your sanity)?



# **Introduction / Best Practices:**









# **Dominance: LOOK**







# Analyze and prioritize objectives

- ★ Looking for <u>insight</u> (contradicts knowledge, confirms/denies suspicion, quantifies importance)
- ★ Actionable insight: leading to adaptation/action or confirming that no action needed

# Overcome bias (enemy of opportunity)

- ★ Reference: "mental shortcuts" (Chris Weller)
- ★ Expedience Bias quick action preferred over taking time
- ★ Experience Bias my own perception = objective truth
- **★ Equivalence** Bias NOT COVERED TODAY











Find and present relevant data (the "Four V's"):



- **\*Volume**
- **\*Velocity**
- **\*Variety**
- **\*Veracity**

#### **40 ZETTABYTES**

[ 43 TRILLION GIGABYTES ]

of data will be created by 2020, an increase of 300 times from 2005



#### It's estimated that 2.5 QUINTILLION BYTES [ 2.3 TRILLION GIGABYTES ]

of data are created each day







**WORLD POPULATION: 7 BILLION** 

**SCALE OF DATA** 

Volume



Most companies in the U.S. have at least

### **100 TERABYTES**

100.000 GIGABYTES 1 of data stored

The New York Stock Exchange captures

#### 1 TB OF TRADE INFORMATION

during each trading session



**Velocity** 

STREAMING DATA

By 2016, it is projected there will be

### 18.9 BILLION NETWORK CONNECTIONS

- almost 2.5 connections per person on earth



Modern cars have close to **100 SENSORS** 

that monitor items such as fuel level and tire pressure

**ANALYSIS OF** 

4.4 MILLION IT JOBS

of Big Data

Velocity, Variety and Veracity

FOUR V's

history and medical records, data is recorded.

and services that the world relies on every day.

As a leader in the sector, IBM data scientists

break big data into four dimensions: Volume.

infrastructure, and find new sources of revenue.

The

As of 2011, the global size of data in healthcare was estimated to be

#### 150 EXABYTES

[ 161 BILLION GIGABYTES ]



**Variety** 

DIFFERENT **FORMS OF DATA** 

4 BILLION+ **HOURS OF VIDEO** 

By 2014, it's anticipated

**HEALTH MONITORS** 

**WEARABLE, WIRELESS** 

there will be

**420 MILLION** 

are watched on YouTube each month





### **30 BILLION** PIECES OF CONTENT

are shared on Facebook every month







are sent per day by about 200 million monthly active users

#### 1 IN 3 BUSINESS LEADERS

don't trust the information they use to make decisions

27% OF

in one survey were unsure of how much of their data was

inaccurate



**UNCERTAINTY** OF DATA

economy around \$3.1 TRILLION A YEAR

Poor data quality costs the US

















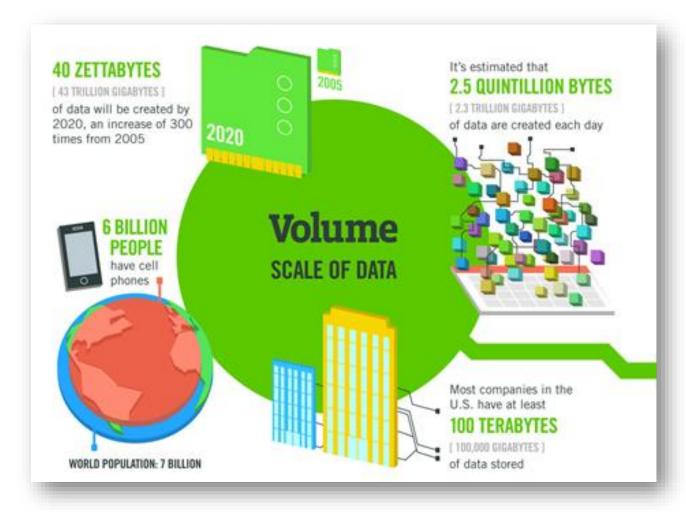


# Find and present relevant data (the "Four V's"):

★ Volume: How much do you have?

Annual rate of increase for world data storage: 50%











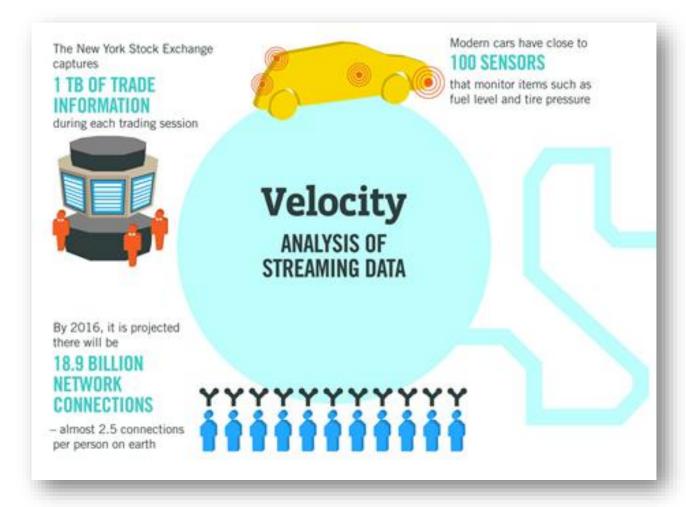


# Find and present relevant data (the "Four V's"):

★ <u>Velocity</u>: How rapidly is it generated and/or consumed?

Average daily share volume Jan-Apr '25: >25 B











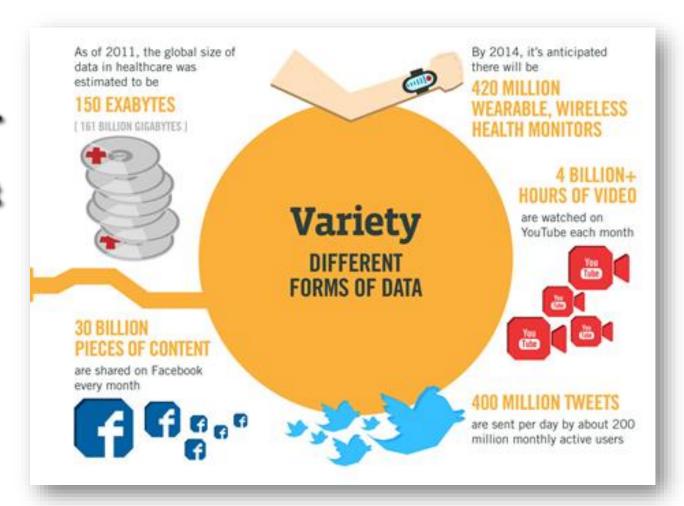


### Find and present relevant data (the "Four V's"):

**★ Variety**: What different sources are available?

"The challenge is not collecting data, but making sense of it – especially when most of it is unstructured and scattered across different systems."

JochenThewes











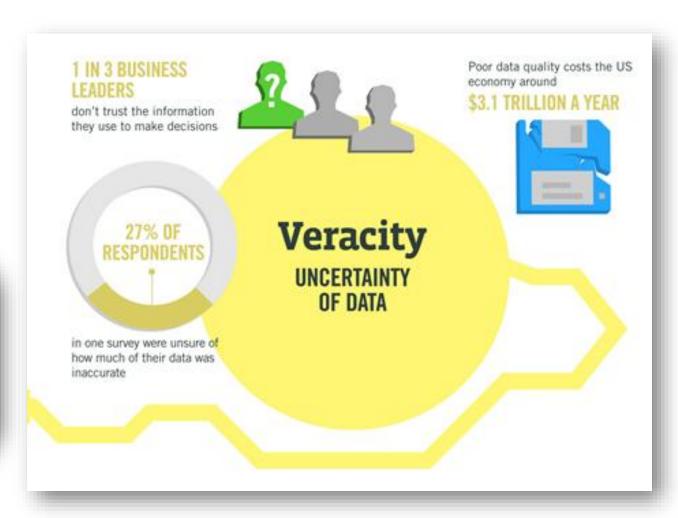
### Find and present relevant data (the "Four V's"):

★ Veracity: Can you trust the data?

"Careful management of data quality and accuracy is an indispensable cornersione."

Thomas Woldbye







# **Significance: LISTEN**

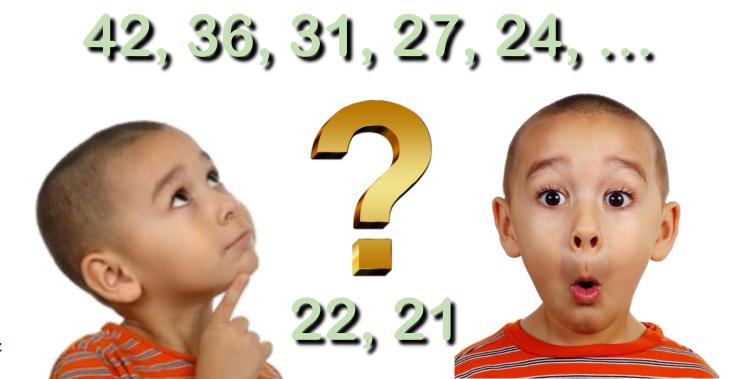






### Start drawing conclusions from the data

- ★ Listen to what the data is **telling you**.
- ★ Must be prioritized for organizational mission, vision, & goals.
- ★ Find the pattern... then **hone** the **skill** by questioning.





# **Significance: LISTEN**







### Start drawing <u>conclusions</u> from the data

- ★ Listen to what the data is telling you.
- ★ Must be prioritized for organizational mission, vision, & goals.
- ★ Find the pattern... then **hone** the **skill** by questioning.

"Interesting answers are out there. People who care about those answers just need to go looking for them, maybe with a little bit of prodding."

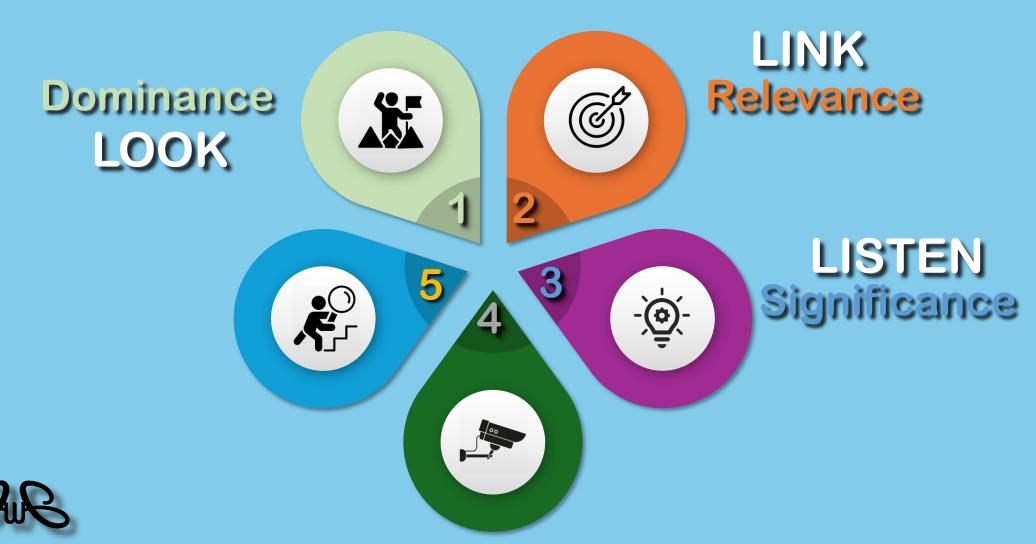
» Charles Wheelan



# **REVIEW #1:**









# Surveillance: LEVERAGE

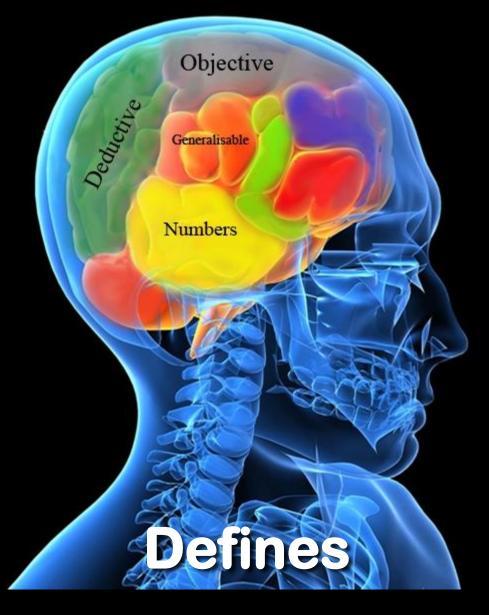






- Plan your <u>strategy</u> and put it into <u>practice</u>.
  - ★ Maintain a balance between planning and execution
  - ★ Continually challenge the status quo
- Quantitative vs. Qualitative: you can have BOTH!
  - ★ What are they?

# Quantitative



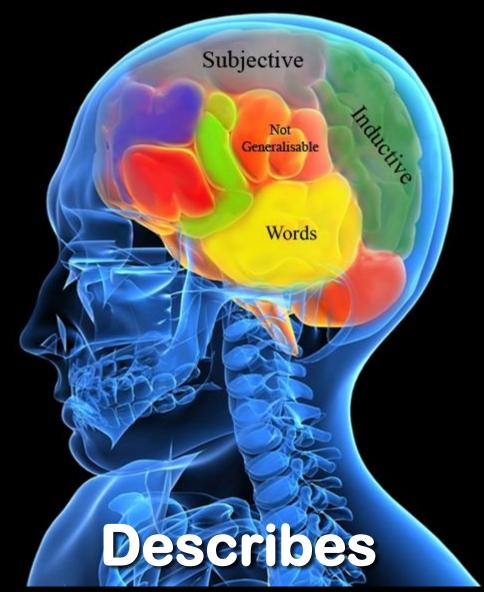
- Measurable values
- Objective
- Deductive
- Numbers-based
- Can be generalized



# Qualitative

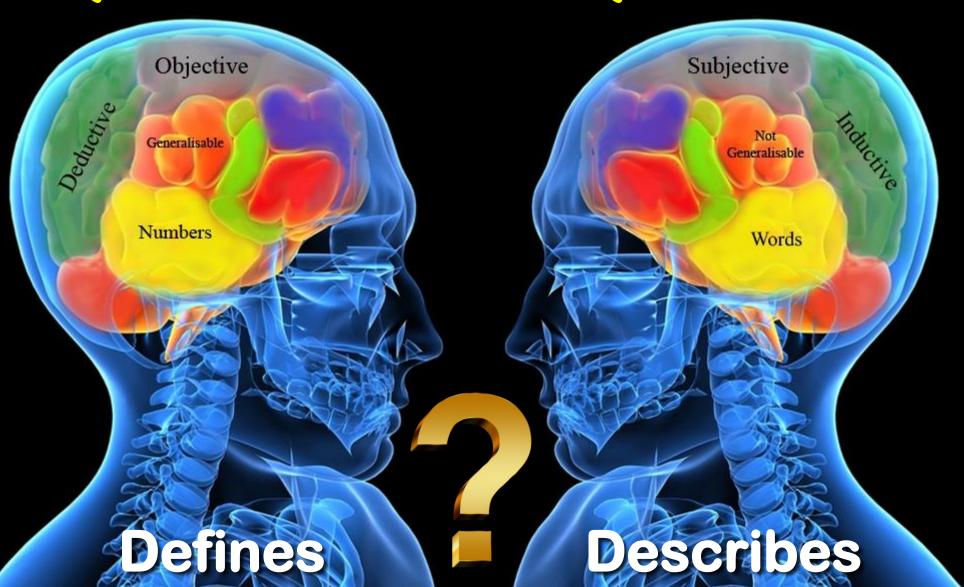
- Narrative observations
- Subjective
- Inductive
- Word/text-based
- Harder to generalize





# Quantitative

# Qualitative





# Surveillance: LEVERAGE







21

# Plan your <u>strategy</u> and put it into <u>practice</u>.

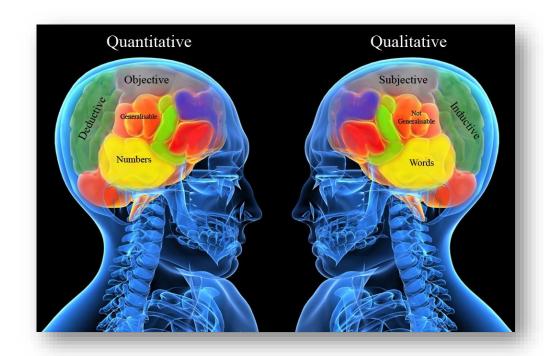
- ★ Maintain a balance between planning and execution
- ★ Continually challenge the status quo

# Qualify the Quantitative

- ★ Ask qualifying questions
- ★ Extend yes/no with additional detail

# Quantify the Qualitative

- ★ Set up a frequency distribution
- ★ Catalog / categorize for scaling
- ★ Plot against number of observations





# Surveillance: LEVERAGE







- Plan your <u>strategy</u> and put it into <u>practice</u>.
  - ★ Maintain a balance between planning and execution
  - ★ Continually challenge the status quo
- Qualify the Quantitative, Quantify the Qualitative

"The process of quantifying this qualitative data does not fixetly the potential of ambiguity hidden with purpose data."

» Dr. Rachel Morris
Count





# **Vigilance: LEARN**







# Measure your <u>success</u> and <u>REPEAT</u>.

- ★ No success until the process is <u>repeatable</u>.
- ★ No process is repeatable without documentation.
- ★ A repeatable process is a **measurable** process.
- ★ A measurable process is an improvable process.

"To achieve excellence, you must have processes that are not only repeatable but also measurable and transparent. Continuous improvement depends on this foundation."

» Sir Tim Clark President, Emirates Airline





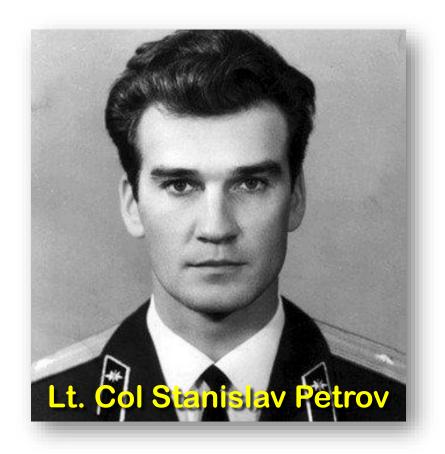








### **September 26, 1983**









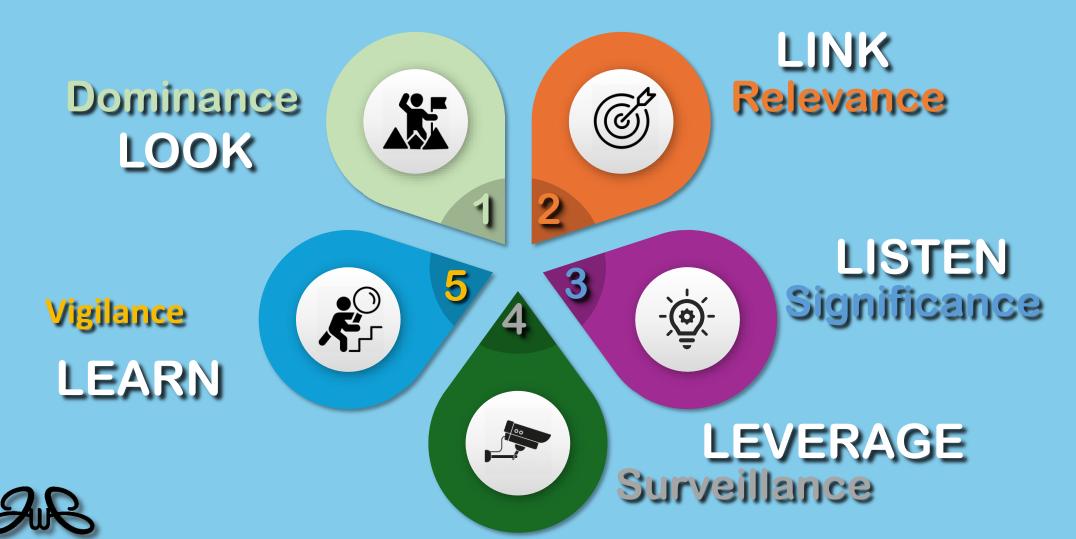




I'm not drinking THAT Kool-Aid!











# Vielen Dank für Ihre Zeit!



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