



Better Charts in an Hour:

Data Visualization Best (and Worst) Practices

JULY 14TH, 2020

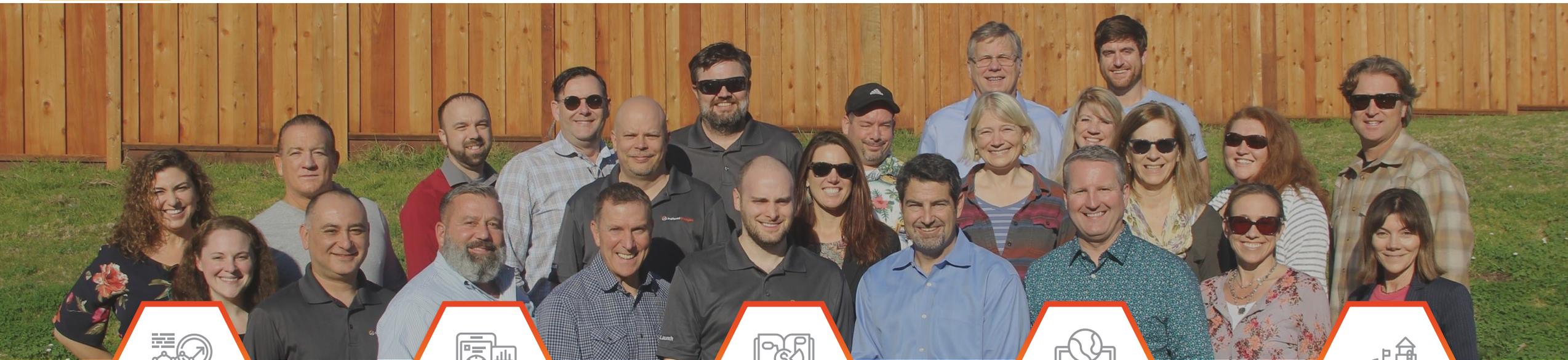
Presented By

David Kettinger

Paula Fredericksen



Preferred Strategies



Dedicated to modern BI and analytics for **over 18 years**



With over 20 employees and 250 years of combined JDE analytics experience **we are experts at finding value from data**



We focus on how our software can impact your business through incremental revenue, reduction in cost, or operational complexity



Today we are partnering **with over 200 clients** around the globe to help them navigate their digital transformation journey



Headquartered in the San Francisco Bay Area

QuickLaunch Transforms ERP Data for the Business



Without QuickLaunch	With QuickLaunch
JD Edwards: 4,000 Tables & 80,000+ Fields	15 JDE Modules: ~150 Tables
Table Names: i.e. F0101	Translate Tables: i.e. Address
Fields Names: i.e. MCMCU	Translate Columns: Business Unit
Julian Dates: 118031	Convert Julian Dates: 1/31/2018
No Decimals: 12345	Calculate Decimals: \$123.45
Fiscal Calendars	Fiscal Calendars i.e. Calendar, Fiscal A, 445, etc.
Subledgers	Create Subledger lookups (Address, BU, etc)
UDC's	Include UDC Descriptions & Cat Code Renames

Meet the Presenter



David Kettinger
Data Analytics Consultant
Preferred Strategies

 @DavidKettinger

 [linkedin.com/in/davidgketter/](https://www.linkedin.com/in/davidgketter/)

- Keeps constant pulse on analytics industry trends
- Background in Finance and transitioned to career in Data Analytics 7 years ago
- Master's in Information Systems Data Analytics, University of Colorado
- Specializes in consulting, training, and visualization design
- Latest Binge Series: Avatar: The Last Airbender
- Latest COVID Skill: Drums

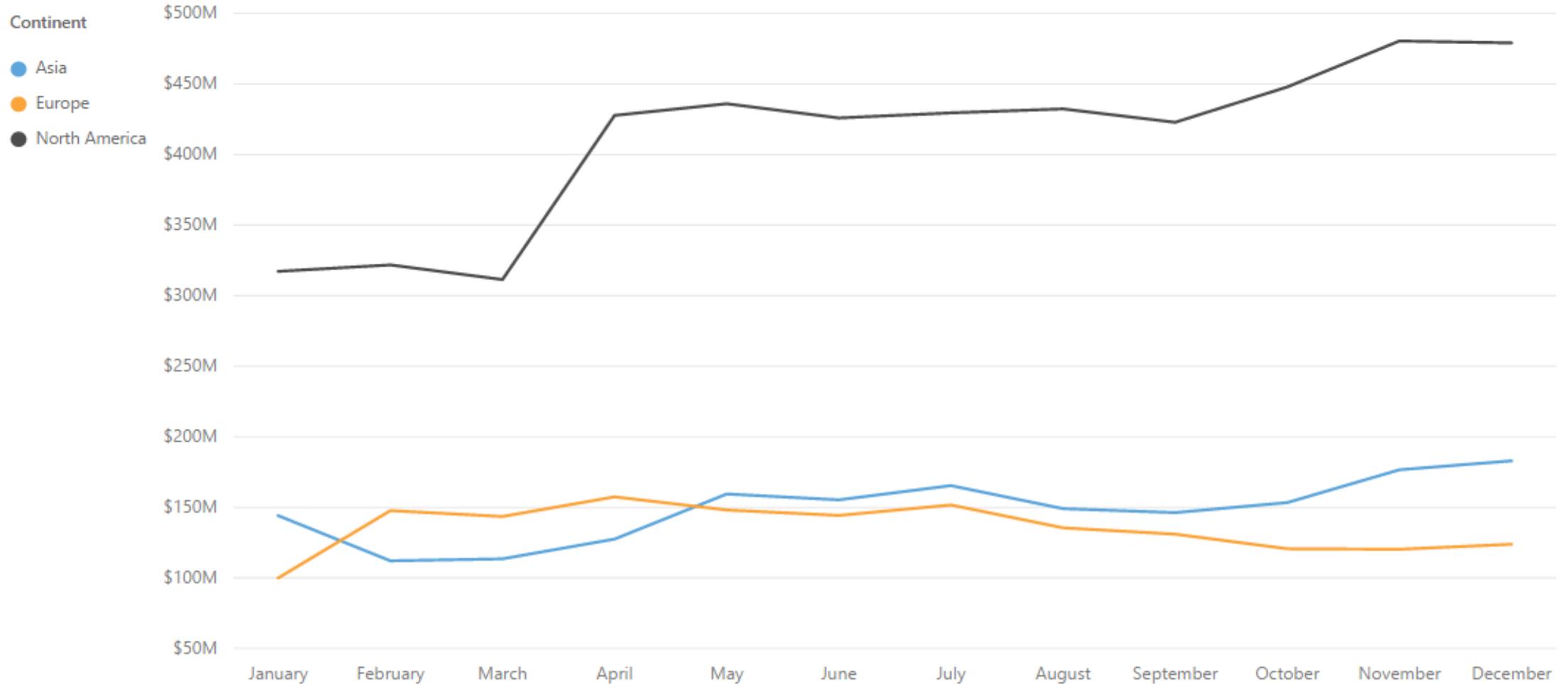
Agenda

- Data Visualization Overview & Examples
- Intro to Dashboard Design Principles
- Review Data Visualization Best (Worst) Practices
- Applying What We Learned
- What's next in Data Viz?

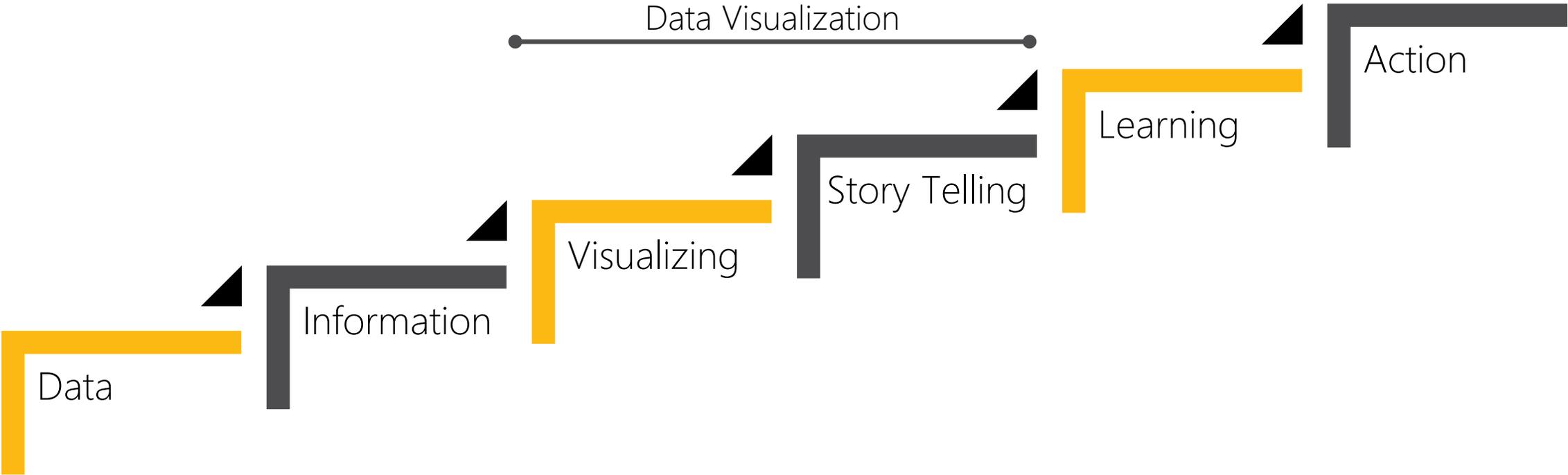
Sales Revenue

Continent	January	February	March	April	May	June	July	August	September	October	November	December
Asia	\$144,088,592.61	\$112,065,074.94	\$113,479,208.55	\$127,474,505.77	\$159,443,303.41	\$155,293,304.00	\$165,375,164.94	\$149,053,847.40	\$146,236,759.75	\$153,354,622.00	\$176,584,797.60	\$182,913,700.88
Europe	\$99,917,852.13	\$147,650,044.35	\$143,483,150.01	\$157,414,489.67	\$148,102,715.28	\$144,235,084.23	\$151,663,328.72	\$135,447,593.94	\$130,965,224.81	\$120,628,861.66	\$120,252,310.07	\$123,806,812.58
North America	\$317,210,452.75	\$321,785,303.19	\$311,403,997.00	\$427,745,829.98	\$436,009,605.75	\$425,935,744.25	\$429,526,192.12	\$432,344,758.25	\$422,840,528.63	\$447,912,649.68	\$480,474,549.64	\$479,104,404.29
Total	\$561,216,897.49	\$581,500,422.48	\$568,366,355.56	\$712,634,825.41	\$743,555,624.44	\$725,464,132.48	\$746,564,685.77	\$716,846,199.59	\$700,042,513.20	\$721,896,133.34	\$777,311,657.31	\$785,824,917.75

Sales Revenue



Why is Data Visualization so important?

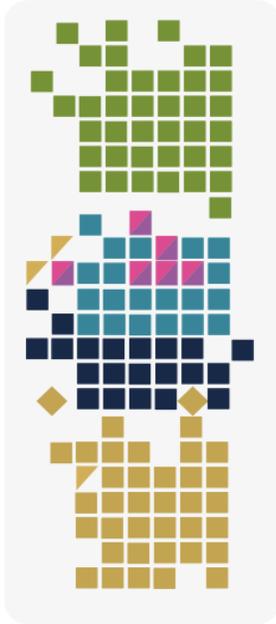


TYPE
ART

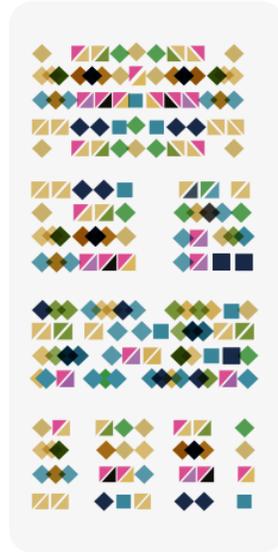
data
VISUALISATION



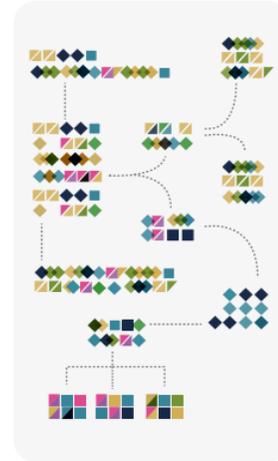
structured
data



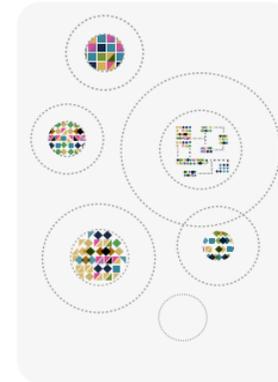
information
DESIGN



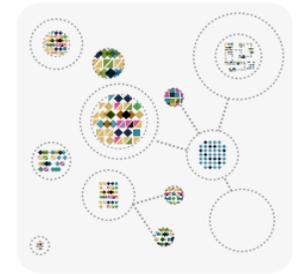
linked
information



knowledge
MAPPING



inter-connected
knowledge



PROCESS

mine
gather
measure

examine
recognize
classify

filter
interpret
arrange

connect
sequence
condense

evaluate
understand
explain

integrate
extrapolate
generate

METAPHOR

atoms

molecules

DNA

chromosomes

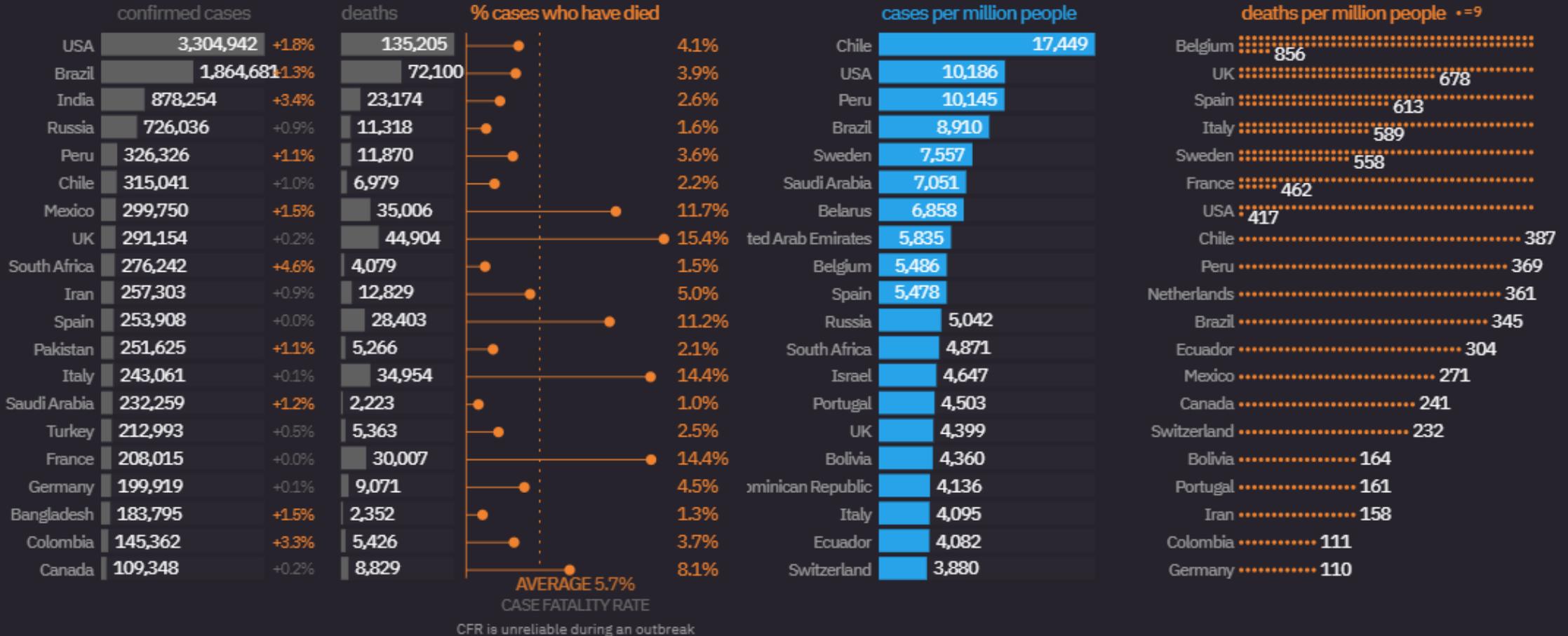
cells

organisms

<https://informationisbeautiful.net/>

Infection & Fatality Rates Vary by Country

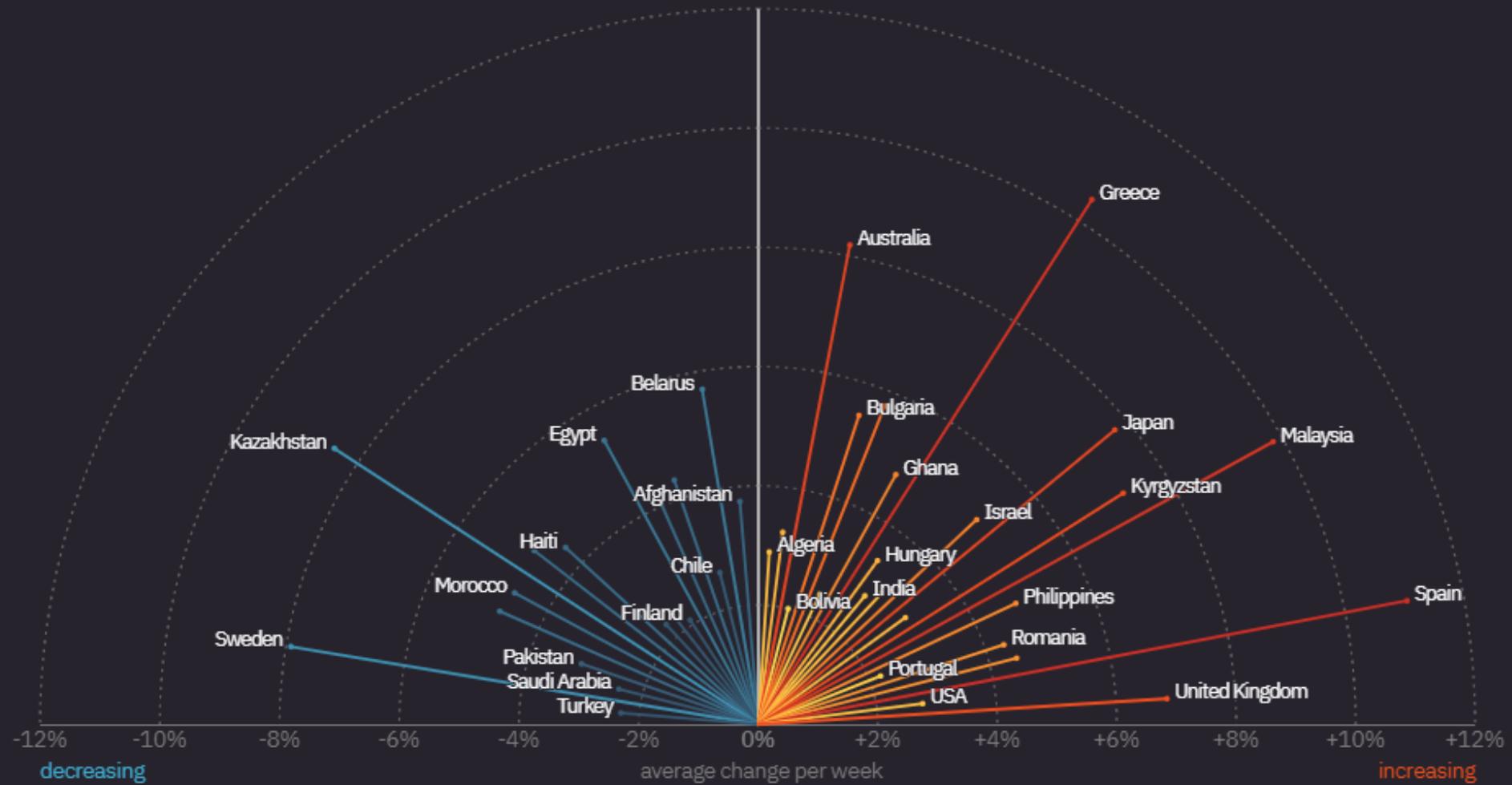
Quality of healthcare, average age of population - both factors



Where is Coronavirus Rising & Falling?

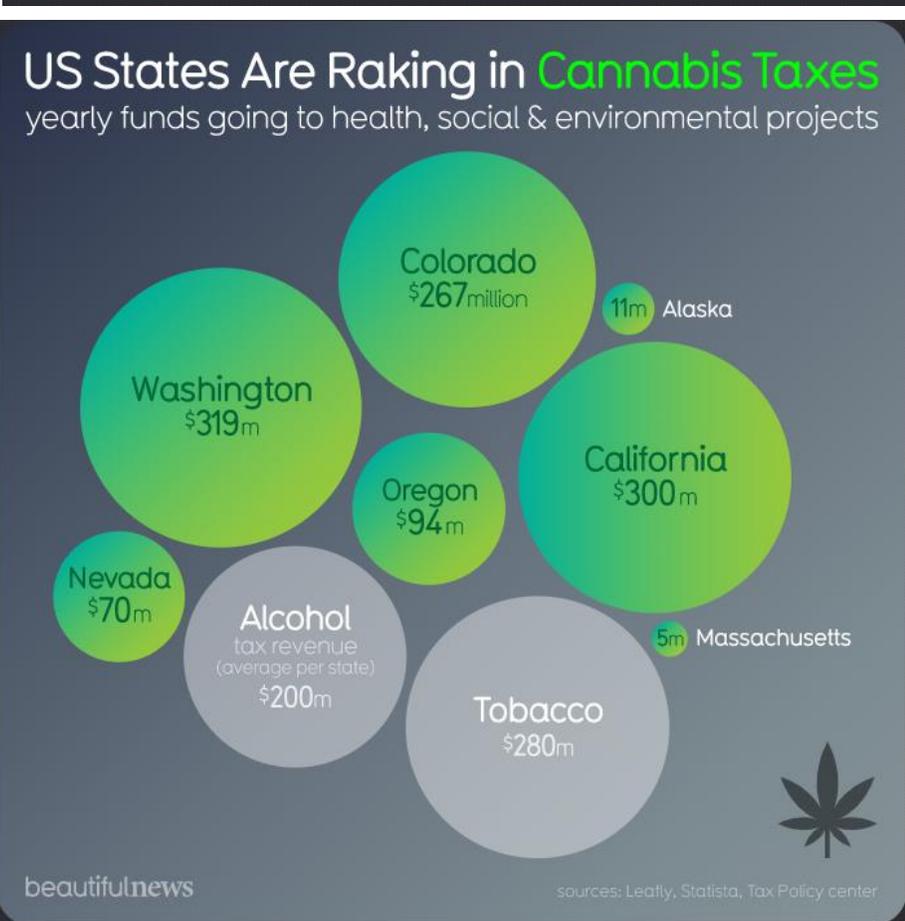
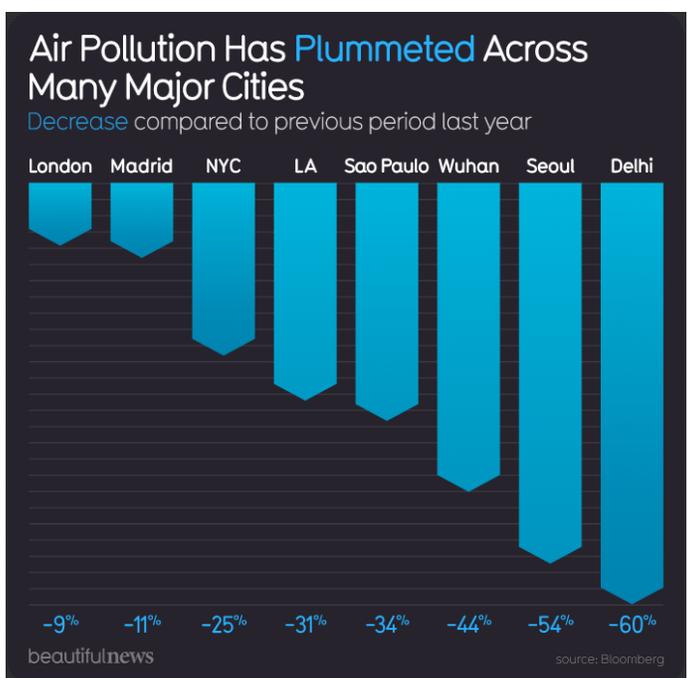
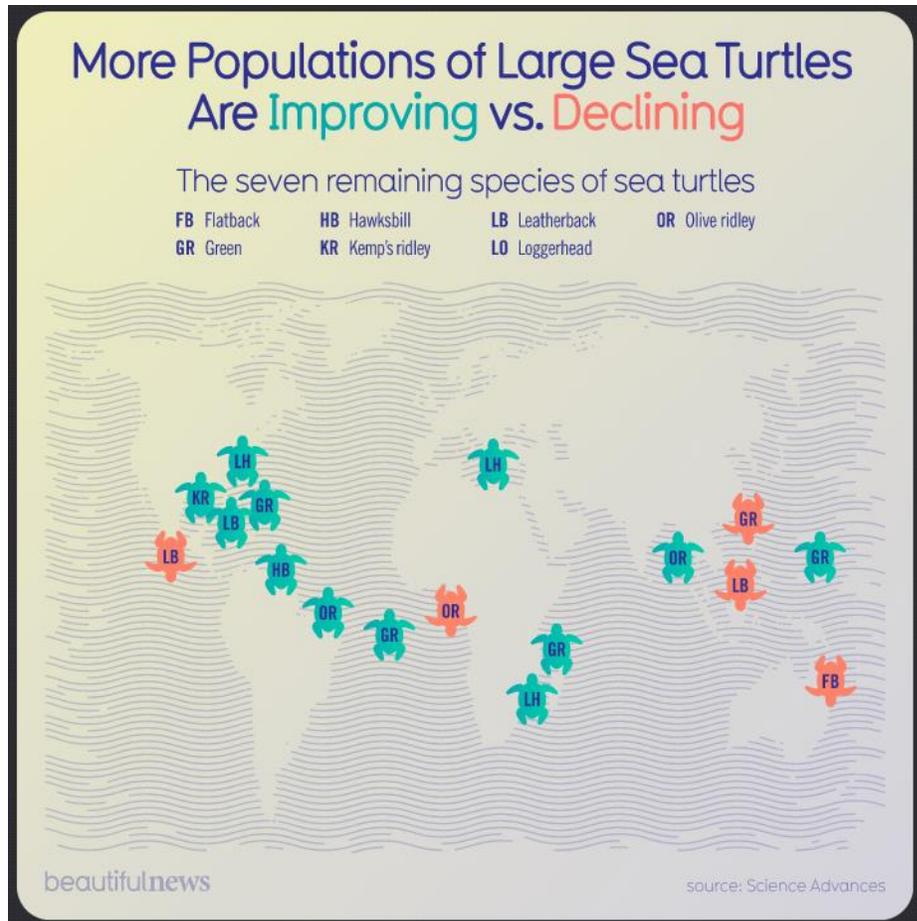
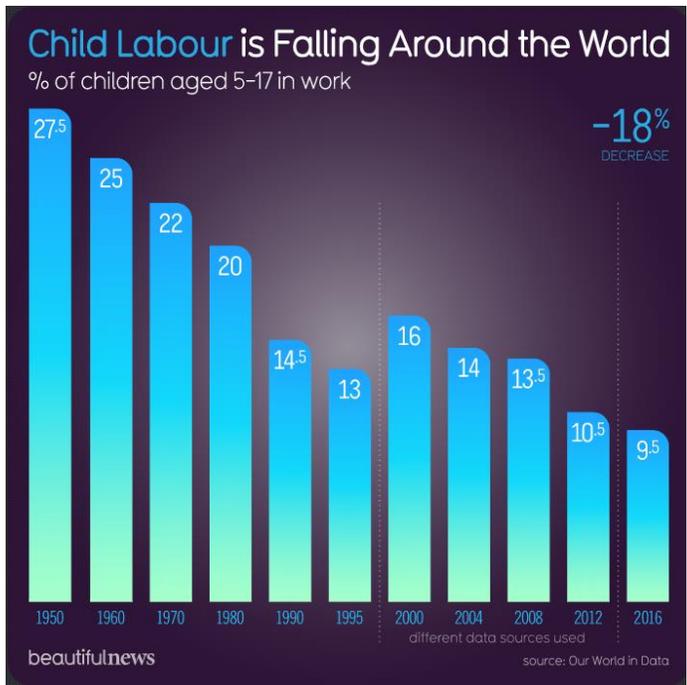
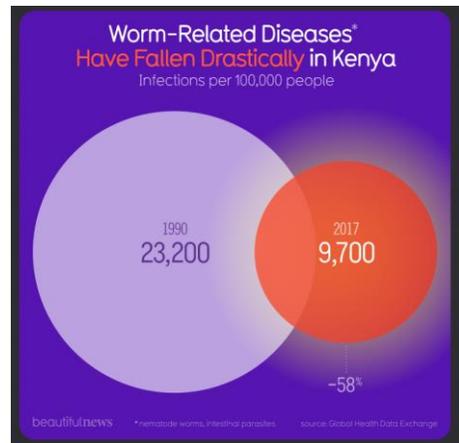
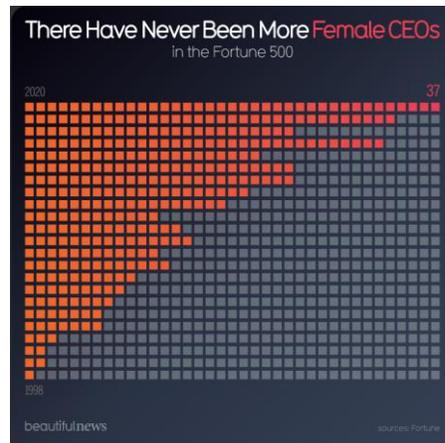
updated 14 July 2020

average % change in weekly **cases** ▾



informationisbeautiful

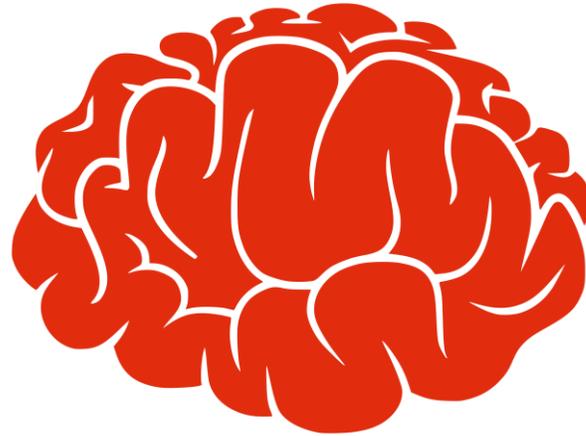
moving average, countries with > 2,500 cases and > 100 deaths.
code: Tom Evans / data: Johns Hopkins University



Science of Data Visualization

Cognitive Science

To build great visualizations you have to understand Cognitive science



Visual memory system takes up 70% of all sensors in brain

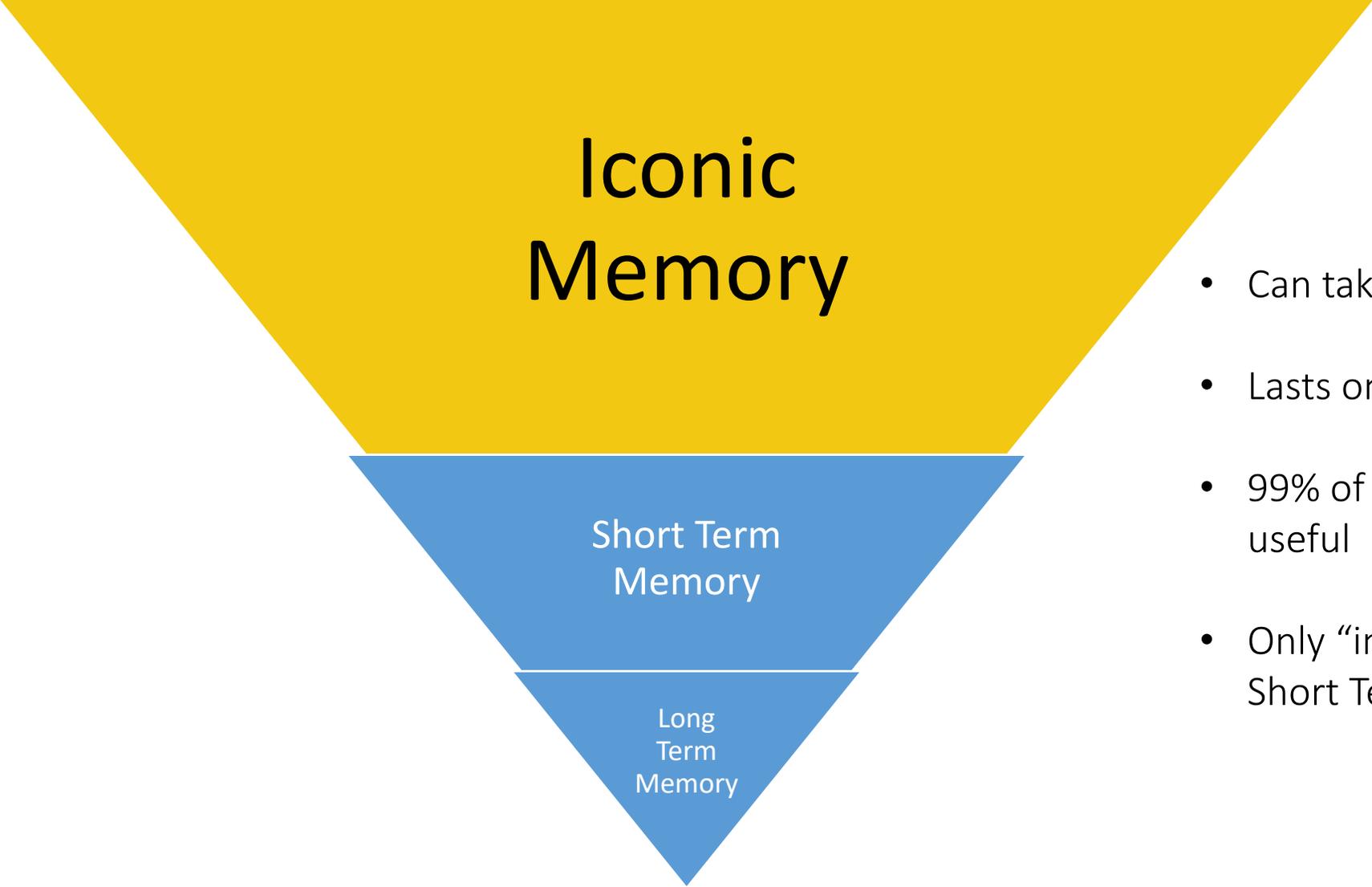
Iconic memory

Short Term
memory

Long Term
memory

Science of Data Visualization

Iconic Memory



Iconic Memory

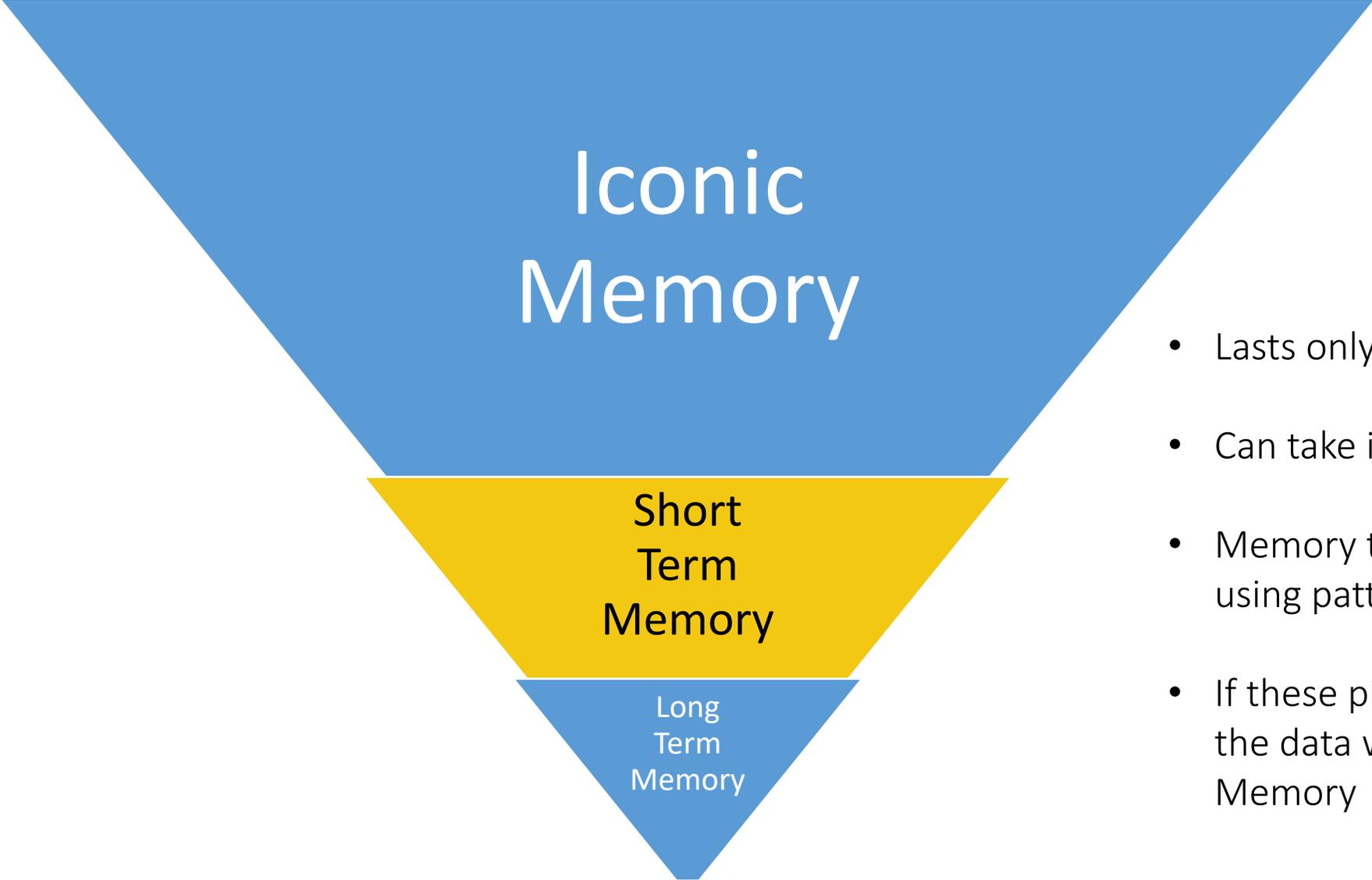
Short Term
Memory

Long
Term
Memory

- Can take large volume of data
- Lasts only a fraction of a second
- 99% of information discarded unless useful
- Only “interesting data” is passed to Short Term Memory

Science of Data Visualization

Short Term Memory



Iconic
Memory

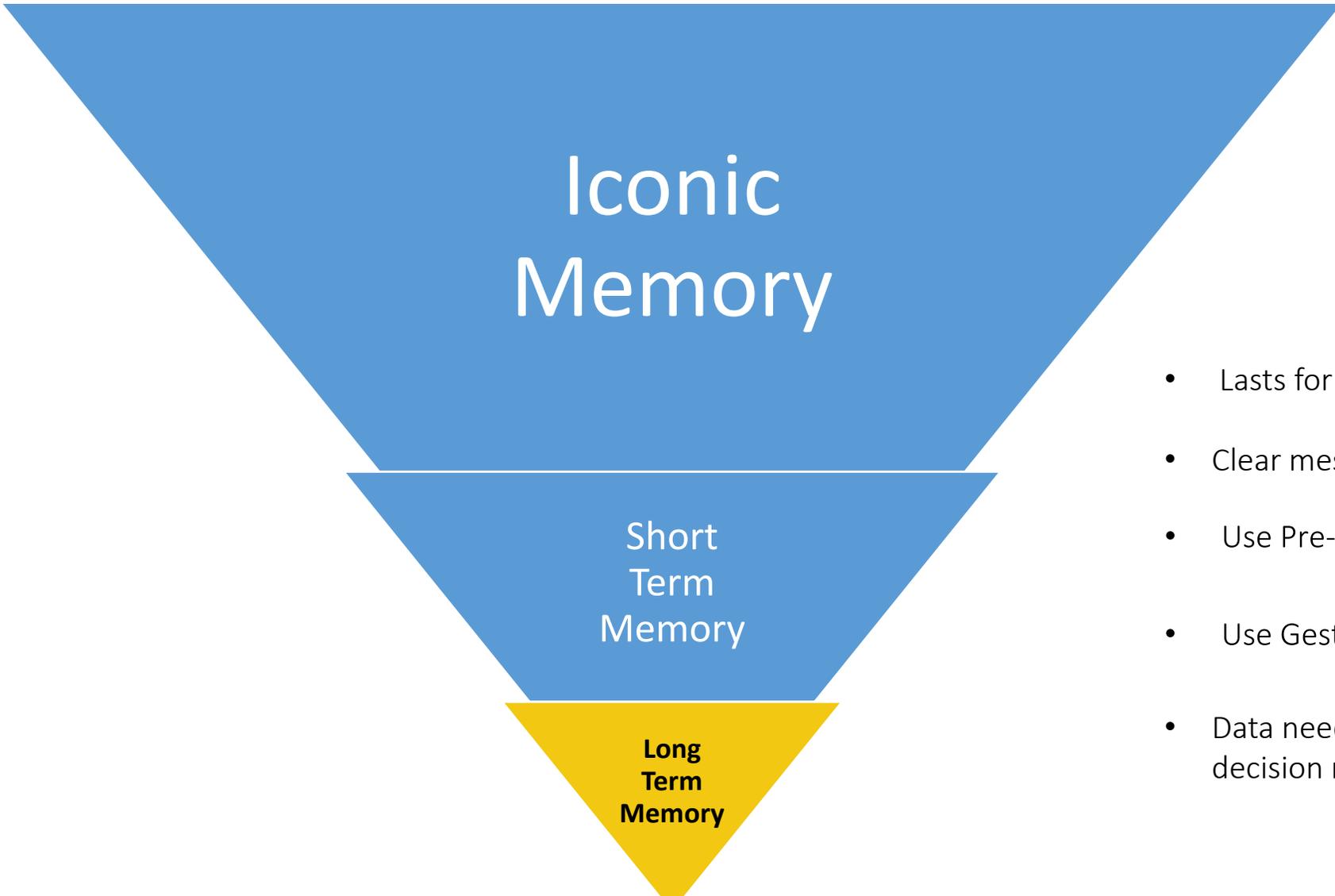
Short
Term
Memory

Long
Term
Memory

- Lasts only a few seconds
- Can take in 3 to 5 pieces of info at most
- Memory tries to form these 3-5 pieces using patterns it detects in data
- If these pieces of info do not have a story the data will not pass to Long Term Memory

Science of Data Visualization

Long Term Memory



Iconic
Memory

Short
Term
Memory

**Long
Term
Memory**

- Lasts for a Long Time
- Clear message/story
- Use Pre-cognitive Techniques to Spark Interest
- Use Gestalt's principles to Create Patterns
- Data needs to be in Long Term Memory to induce decision making

Dashboard Defined

“A dashboard is a visual display of the most important information needed to achieve one or more objectives, consolidated and arranged in a single screen so the information can be monitored at a glance.”

- Stephen Few



Dashboards vs Reports

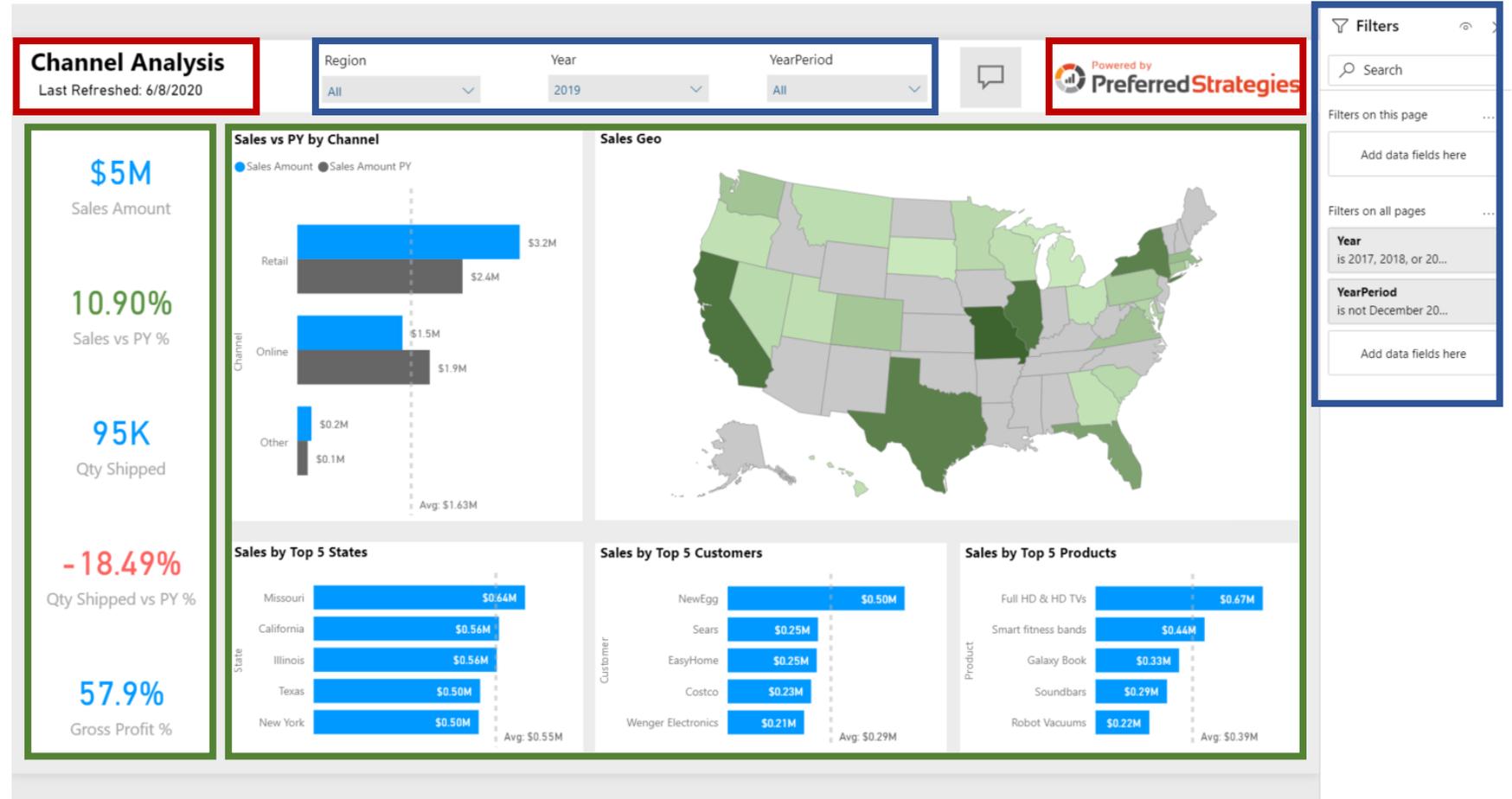
Dashboard	Reports
Concise and summary-like	Longer and more detailed
More visual and use variety of chart types	Mainly tabular i.e. columns and rows of data
Focus on Key Performance Indicators (KPIs)	Focus on underlying data
Monitored at a glance	Require in-depth attention and are usually many pages
Are simple	Tend to be more complex
Dynamic and analytical i.e. "slice and dice"	A snapshot in time i.e. Income Statement As of xyz

Primary Components of a Dashboard

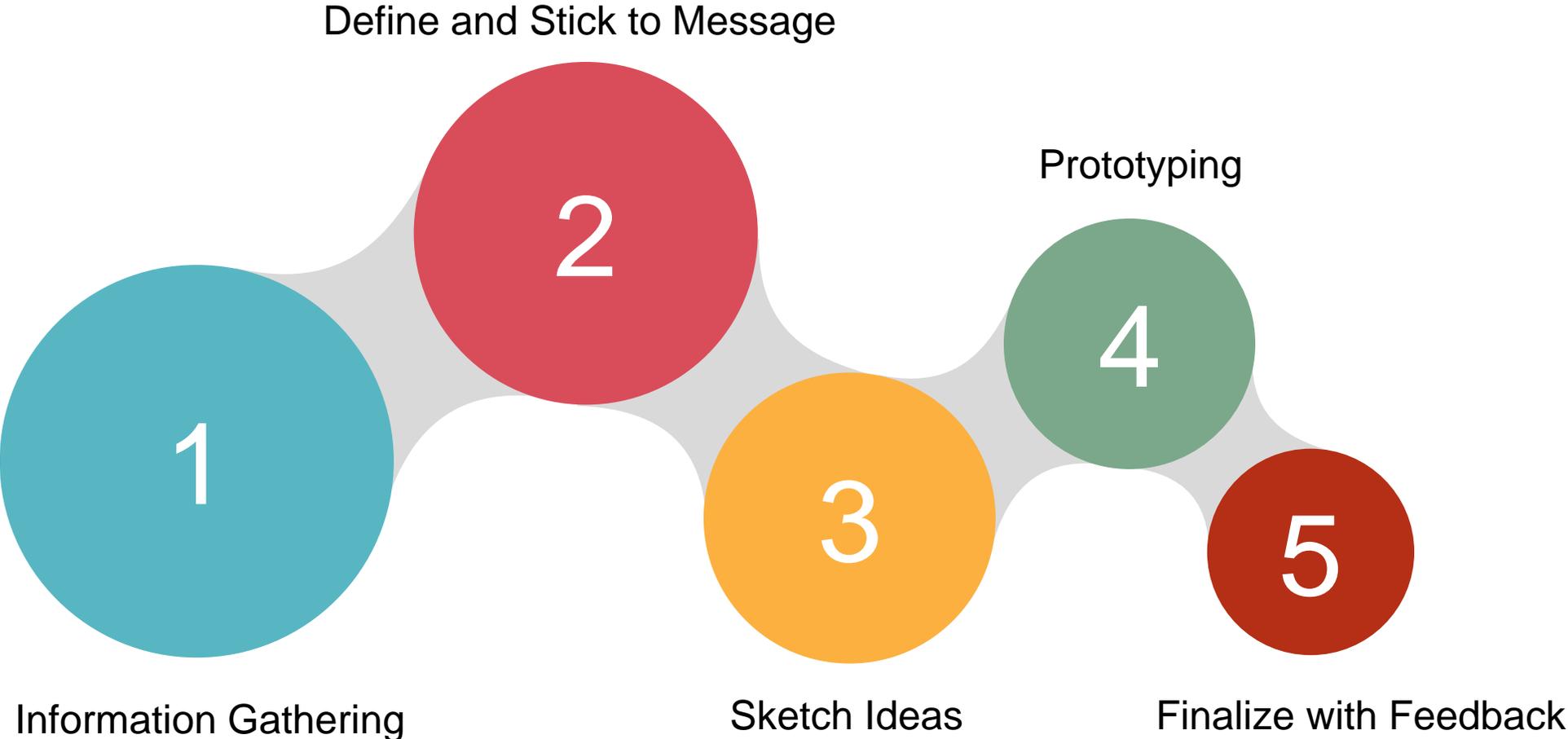
1. Visualizations - Displays patterns, trends, or outliers in the data

2. Information - Provides additional details and context about the data or dashboard

3. Filters - Gives users the ability to filter the data down to a subset of the data that they are interested in



Formula for a successful dashboard



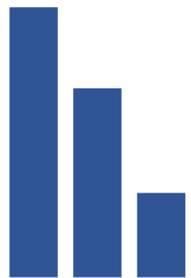
Design Principles

Visual Properties

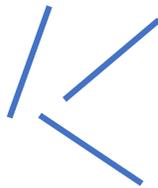
We are visual creatures

- Visualizations help us translate variances in data by using different visual properties
- Each property is interpreted differently by the brain

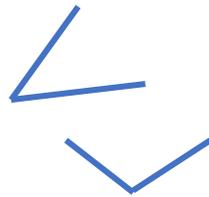
Visual Properties by Accuracy of Interpretation



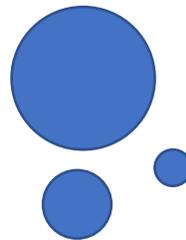
Length



Slope



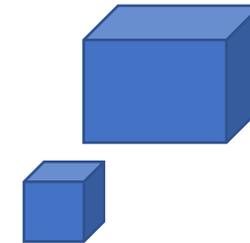
Angle



Area



Color Intensity



Volume



Color Hue



More Accurate

Less Accurate

Example: Length vs Area

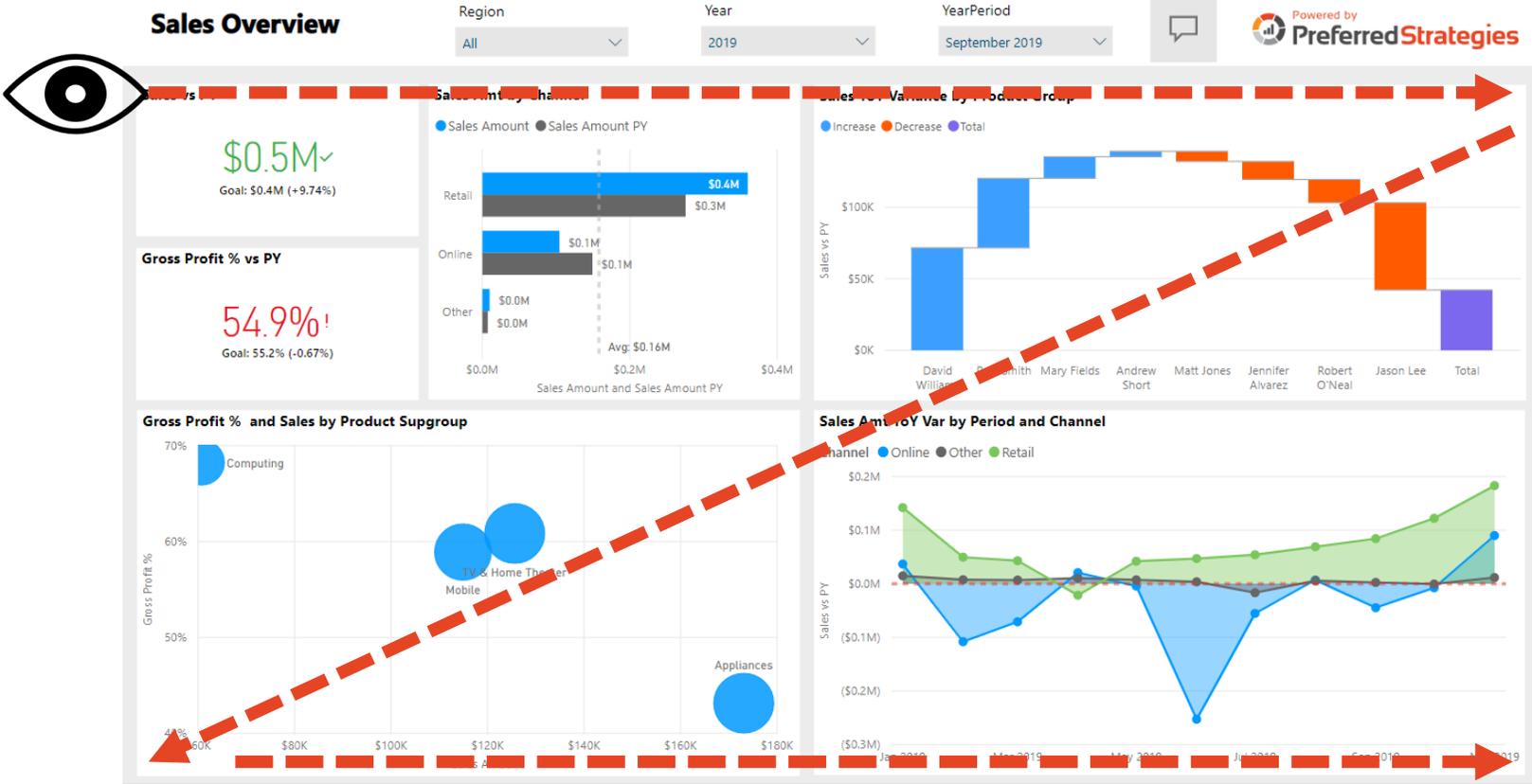


Design Principles

Processing Information

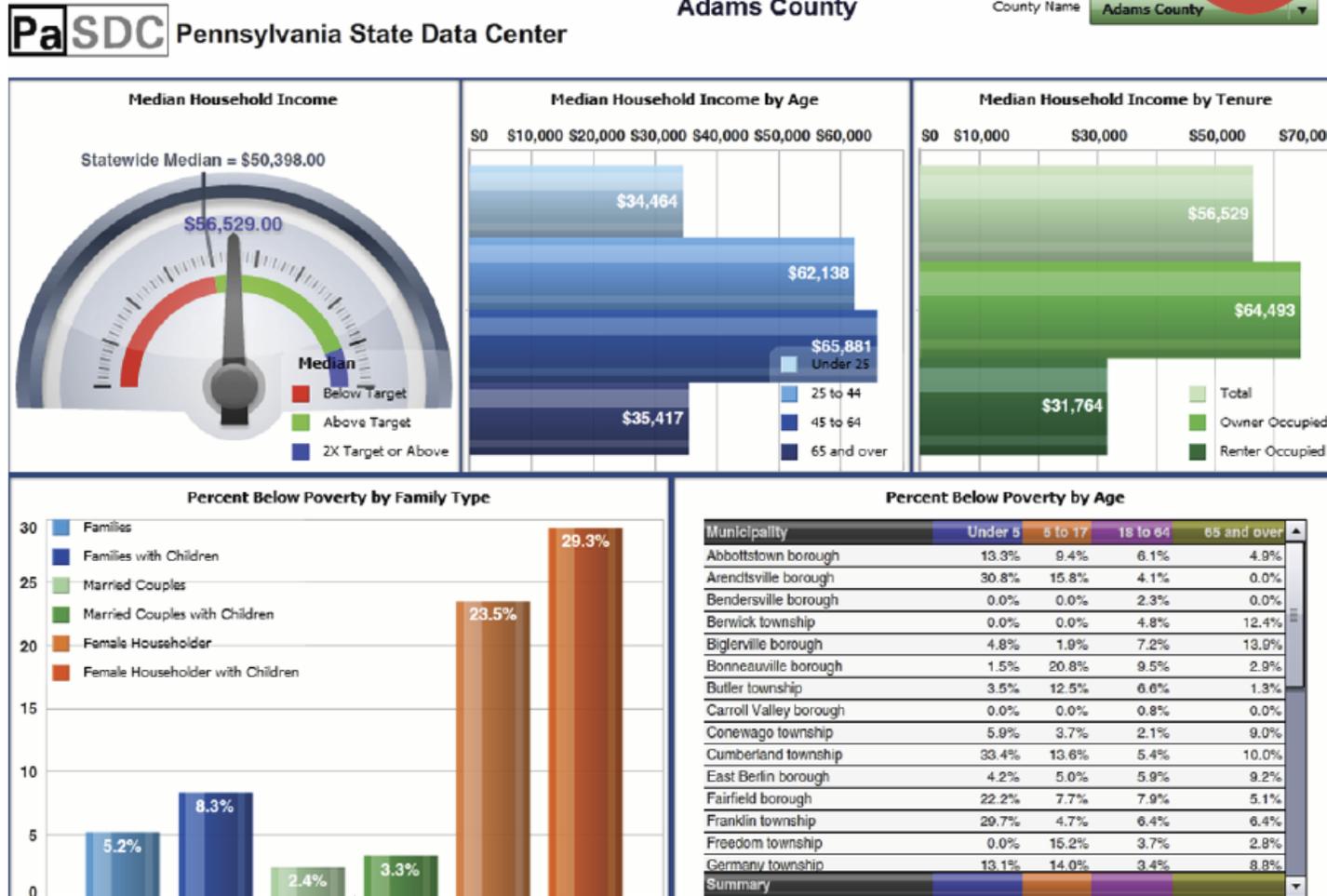
Design for information processing

- Most people read from left to right
- Information is interpreted from the top down
- Place most important metrics in the top left of the report
- Place more detailed information at the bottom of reports



Data Viz Don'ts

Don't use 3d Visuals



Source: 2006-2010 American Community Survey, U.S. Census Bureau

Data Viz Don'ts

Don't give them a data dump

Customer	Channel	Product Group	Product Subgroup	Product	Item Desc	Sales Rep	Order Num	Qty Ordered	Qty Shipped	Sales Amount	Cost Amount	Gross Profit
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	1006247	1,200	1,200	\$116,400	\$44,630	\$71,770.34
Airport Appliance	Online	Appliances	Dishwashers	Rotary	Front Control Stainless	David Williams	924593	830	830	\$116,200	\$0	\$116,200
Airport Appliance	Online	Appliances	Dishwashers	Rotary	Front Control Stainless	David Williams	968411	760	760	\$106,400	\$23,290	\$83,109.8
Airport Appliance	Online	Appliances	Dishwashers	Rotary	Front Control Stainless	David Williams	968427	740	740	\$103,600	\$22,677	\$80,922.7
Overstock	Online	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1171717	438	438	\$56,765	\$37,731	\$19,033.94
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	1116396	300	300	\$52,380	\$34,700	\$17,679.6
Hoffy's Electronics	Retail	TV & Home Theater	Televisions	Smart TVs	65in Class Q6FN QLED	Jason Lee	968733	719	719	\$47,123	\$11,301	\$35,821.87
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	1189393	262	262	\$45,745	\$30,556	\$15,189.32
Sears	Retail	Appliances	Refrigerators	Side-by-Side	25 cu ft w LED Lighting	David Williams	1166977	400	400	\$43,200	\$33,145	\$10,054.8
Sears	Retail	Appliances	Refrigerators	Side-by-Side	25 cu ft w LED Lighting	David Williams	1177623	400	400	\$43,200	\$33,145	\$10,054.8
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	1175447	228	228	\$41,040	\$26,372	\$14,667.69
Overstock	Online	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1099590	296	296	\$38,362	\$25,506	\$12,855.92
Curacao	Retail	Computing	Monitors	Curved Monitors	34in CF791 Curved Wide	Jason Lee	922743	276	276	\$36,018	\$10,910	\$25,107.72
Overstock	Online	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1099446	263	263	\$34,085	\$22,662	\$11,422.67
Wenger Electronics	Retail	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1186969	167	167	\$33,141	\$14,236	\$18,905.33
Wenger Electronics	Retail	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1192181	155	155	\$30,760	\$13,213	\$17,546.87
NewEgg	Online	Appliances	Refrigerators	Side-by-Side	25 cu ft w LED Lighting	Jason Lee	1120436	223	223	\$30,105	\$18,478	\$11,626.54
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	1047693	300	300	\$29,100	\$19,900	\$9,199.65
Hoffy's Electronics	Retail	TV & Home Theater	Televisions	Smart TVs	65in Class Q6FN QLED	Jason Lee	1048805	371	371	\$25,043	\$5,875	\$19,167.53
Wenger Electronics	Retail	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	951000	210	210	\$24,360	\$9,877	\$14,482.86
Sears	Retail	Appliances	Refrigerators	Side-by-Side	25 cu ft w LED Lighting	David Williams	1156363	220	220	\$23,760	\$18,230	\$5,530.14
NewEgg	Online	TV & Home Theater	Televisions	Full HD & HD TVs	55in J6200 Full LED Smart	Jason Lee	1140031	204	204	\$23,501	\$5,354	\$18,147.02
Wenger Electronics	Retail	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1141985	112	112	\$22,226	\$9,599	\$12,627.32
Sears	Retail	Appliances	Refrigerators	Side-by-Side	25 cu ft w LED Lighting	David Williams	1093924	220	220	\$22,176	\$18,230	\$3,946.14
Wenger Electronics	Retail	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1172145	112	112	\$22,176	\$9,547	\$12,628.62
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	1131326	120	120	\$20,952	\$13,880	\$7,071.84
Universal Electronics	Retail	TV & Home Theater	Televisions	Smart TVs	65in Class Q6FN QLED	Jason Lee	764549	360	360	\$20,880	\$5,625	\$15,255.22
Wenger Electronics	Retail	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1173770	100	100	\$19,845	\$8,524	\$11,320.56
Wenger Electronics	Retail	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Robert O'Neal	1205543	100	100	\$19,800	\$8,614	\$11,185.65
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	1156440	100	100	\$17,460	\$11,567	\$5,893.2
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	1165794	100	100	\$17,460	\$11,567	\$5,893.2
NewEgg	Online	Appliances	Dishwashers	WaterWall	Top Control with Flextray	Jason Lee	1088383	30	30	\$16,686	\$10,152	\$6,533.84
NewEgg	Online	Appliances	Dishwashers	WaterWall	Top Control with Flextray	Jason Lee	817407	53	53	\$15,370	\$9,637	\$5,733.35
NewEgg	Online	TV & Home Theater	Televisions	QLED 4K TVs	65in Class QLED Smart 4K	Jason Lee	795901	288	288	\$15,120	\$3,562	\$11,557.96
Gene's Appliance	Retail	Appliances	Washers	2-in-1 Washers	6.0 Total cu ft FlexWash	Robert O'Neal	993919	144	144	\$14,112	\$9,083	\$5,028.51
Hoffy's Electronics	Retail	TV & Home Theater	Televisions	Smart TVs	65in Class Q6FN QLED	Jason Lee	841157	212	212	\$13,833	\$3,312	\$10,520.63
Costco	Online	TV & Home Theater	Home Theater	Soundbars	HW-N650 Panoramic	Jennifer Alvarez	758589	124	124	\$13,578	\$5,832	\$7,745.78
NewEgg	Online	Appliances	Dishwashers	WaterWall	Top Control with Flextray	Jason Lee	1073872	24	24	\$13,349	\$8,115	\$5,234.22
Total								375,518	375,518	\$14,011,695	\$5,805,413	\$8,206,281.64

Data Viz Don'ts

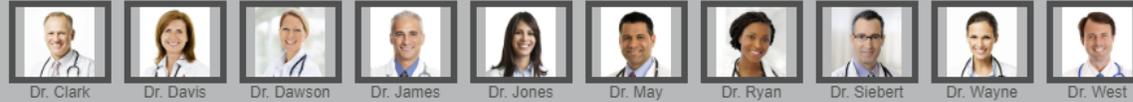
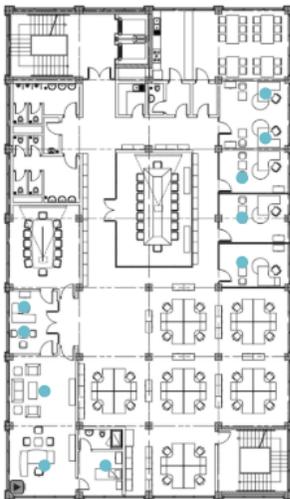
Don't try to show off how many reporting features you can use



Dr. John Clark

Specialty: Internal Medicine
Internal Medicine Specialists
9876 Crooks Road Suite 102 Troy, MI
48098

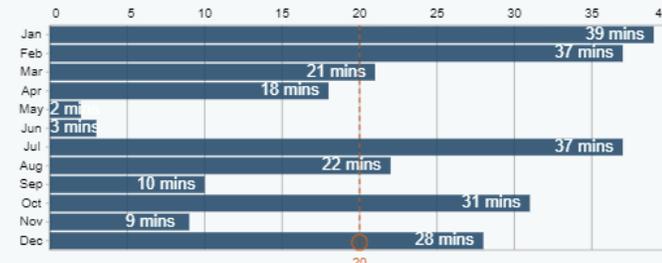
Patient Load: 5 Patient Availability: 14%



Average Patient Load

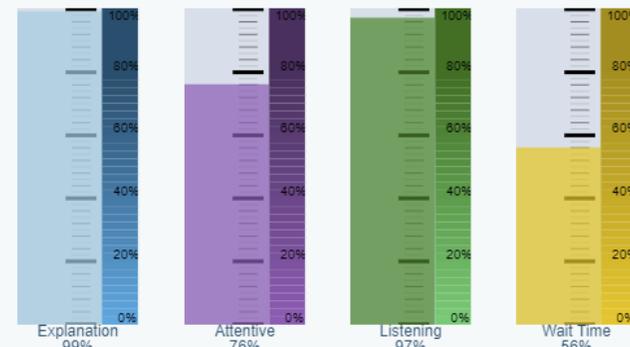


Average Wait Time

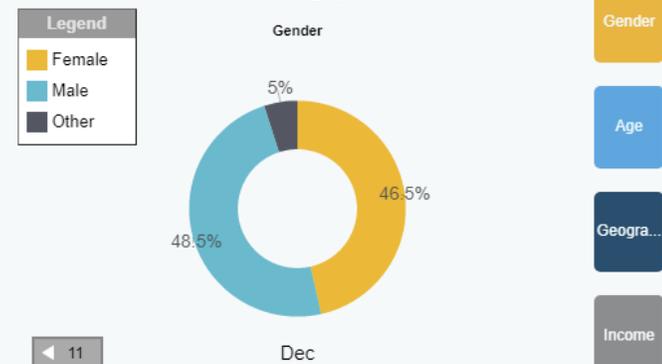


December Patient Information

Survey Results



Patient Demographics



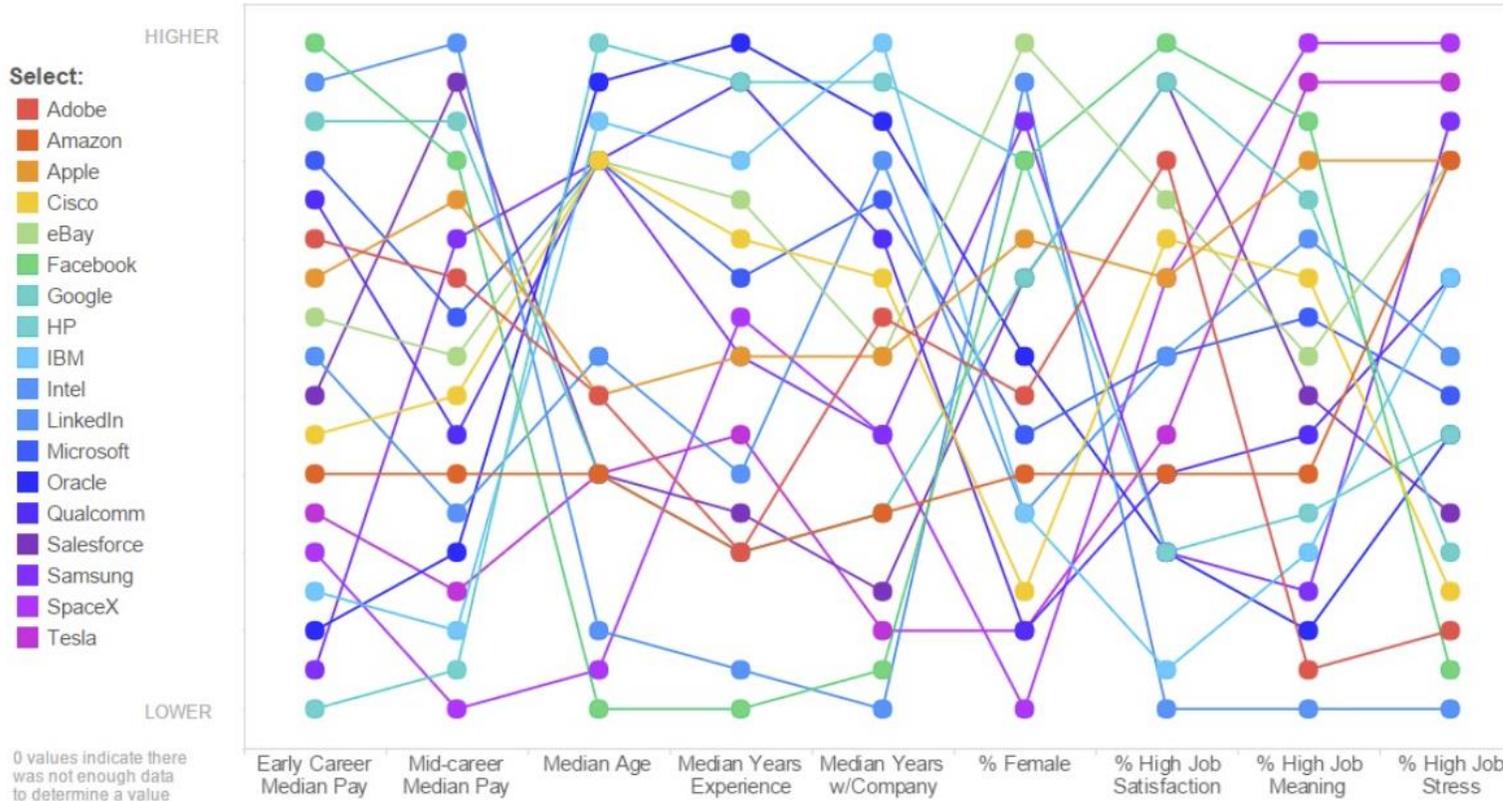
Data Viz Don'ts

Don't try to show all the data at once

Spot Check: How Do Top Tech Employers Compare?



Want to know what it's like to work at a top tech firm like Google, Facebook, or Amazon? PayScale compared 18 tech employers on nine different data points. Which employer looks like the right fit for you?



<https://www.geekwire.com/2016/payscale-ratings-rank-spacex-tesla-low-salary-high-meaningfulness/>

Rules for Great Dashboards

1 Design for a target

2 Keep everything at a glance

3 Keep it simple (KISS)

4 Leave the noise off

5 Be consistent

6 Start from zero

7 Be clear

8 Design Dashboards not reports

9 Pick the right visuals

10 Shorten numbers

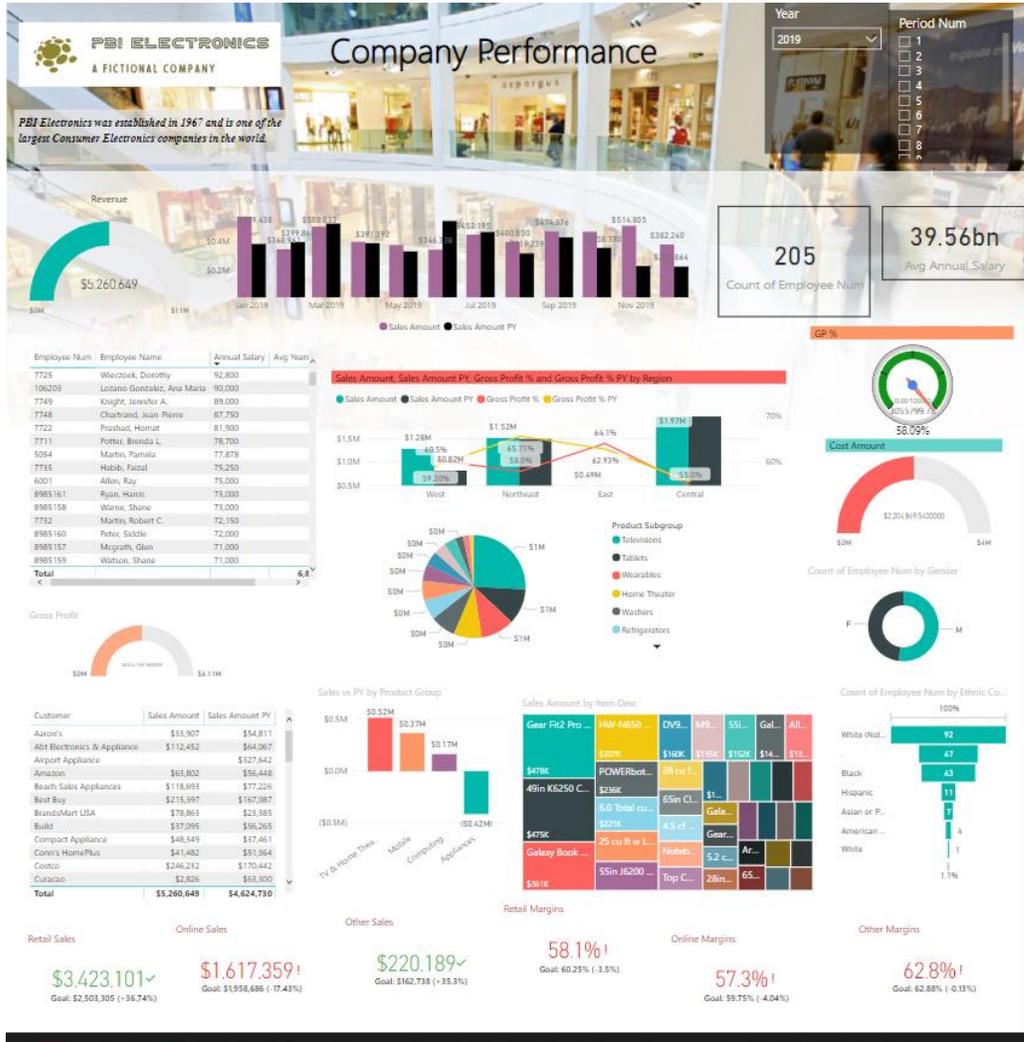
11 Show the context

12 Careful use of Spacing and Alignment

13 Use Colors Wisely

14 Configure Visual Interactions

Rules in Practice



Rules in Practice

1

Design for a target

- Design dashboards for one target person, group, or goal
- Does not try to cover everything
- Too much info leads to confusion and decreased value to organization
- Our example dashboard provides data related to too many areas.
- Eliminate Human Resources data from our sales dashboard and explain to our audience that they will need at least two separate dashboards to consume the requested information

Rules in Practice

2

Keep everything at a glance

- Dashboards must appear on a single page and not require scrolling
- The visuals should not require scrolling either. Consider using hierarchies with fewer data points if possible. If not, ensure that you sort the visual in descending order to make it easier for users.
- Use Top/Bottom N filtering to limit scrolling

Rules in Practice

3

Keep it simple (KISS)

- Limit the use of distracting objects like images, borders, titles with unnecessary colors
- Use a white or light-colored background
- Avoid italic or distracting font types
- Avoid distracting visual backgrounds

Rules in Practice

4

Leave the noise off

- Shoot for a high data-to-ink ratio
- Only use supporting information objects like chart axis, axis titles, data labels, legends, etc when needed to clarify the visual

Rules in Practice

5

Be consistent

- By being consistent we are helping the user experience (UX) by increasing familiarity and not being boring
- Don't use different chart types because it is fun
- Why use multiple types of gauge visuals? Why use so many different color?
- Be consistent with visual formatting such as sizing, background color, and titles
- Ensure that your slicers have similar formatting especially from one dashboard view to the next

Rules in Practice

6

Start from zero

- To represent a comparison of values properly, the scale value must start from zero for bar and column charts



Rules in Practice

7

Be clear

- Give the dashboard a clear title
- Explain what the colors in a visual mean with a legend
- Explain what Acronyms mean or don't use them
- Include a title for visuals when needed
- Include an axis title when there is no other reference

Rules in Practice

8

Design Dashboards not reports

- Don't use tables in dashboards unless necessary
- In business intelligence, reports are the detailed presentation of data that use tables, not dashboards!
- A dashboard is a solution that should provide aggregated information that directs you to further information in a separate report

Rules in Practice

9

Pick the right visuals

- Determine what kind of analysis you want to display (comparison, time series, geographical, correlation, etc...) See Visual Reference
- Refer to your requirements gathering and brainstorming sessions to look for guidance
- Avoid using pie charts as they take up too much space, are hard to interpret, and do not give enough information (never use a pie chart with more than three categories)
- Gauges are OK for cars, but we can do better in business
- Bar/column charts, line charts, KPIs can be used effectively in most scenarios

Rules in Practice

10

Shorten numbers

- Keep numbers to 3 or 4 integers in length
- Users do not need to see precise numbers on dashboard to monitor the overall situation
- Example: Change 4,462,894 to 4.46M or .98743 to .98

Rules in Practice

11

Show the context

- When you show a measure value, you should always try to show a comparative value so that it is more informative. This could be prior period, budget, or target value
- Use positive/negative colors or shapes to indicate the performance
- It's a good practice to show the variance/variance % to the comparison as well

Rules in Practice

12

Careful use of Spacing, Margin, and Alignment

- Use the Gestalt Principle of Proximity and Spacing to enhance your report design
- We read top to bottom and left to right – KPIs on top or on left
- Group similar visuals together
- Always use the same spacing or margin between report elements!!!

Rules in Practice

13

Use Colors Wisely

- Use colors carefully because they can be distracting to users
- Colors cause emotions so save colors like red and green for increases and decreases only



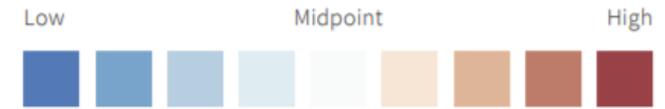
CATEGORICAL

Every category is labeled with a different color.



SEQUENTIAL

Single color represents a metric ordered low to high.



DIVERGING

Two color schemes with critical midpoint value.

Rules in Practice

14

Configure Visual Interactions

- Ensure that when a user clicks on an element in a visual that it interacts with the other visuals on the page as intended
- Configure the filters for end users. You may want to hide the filters, lock the filters, or allow users to edit

Sales Overview

Year

2019

Period Num

All

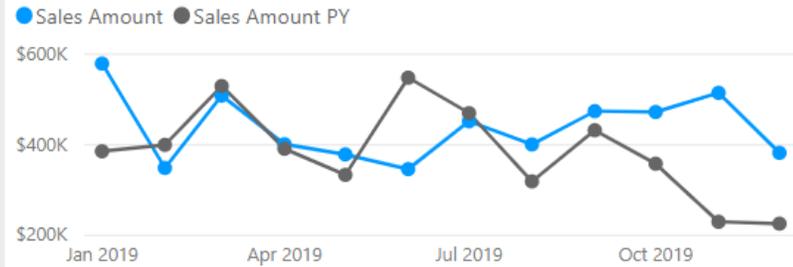
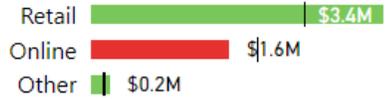


FBI ELECTRONICS
A FICTIONAL COMPANY

Sales Amt vs Prior Year

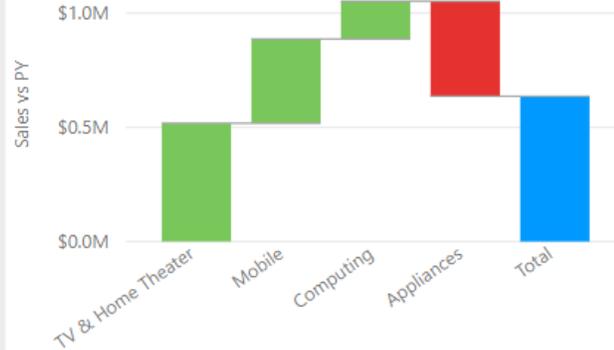
\$5.3M ✓

Prior Year: \$4.6M (+13.75%)



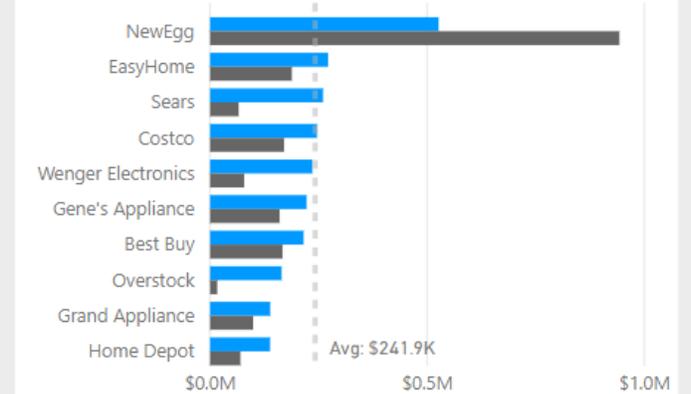
Sales YoY Variance by Product Group

● Increase ● Decrease ● Total



Sales Amt by Top 10 Customers

● Sales Amount ● Sales Amount PY



Gross Profit % vs Prior Year

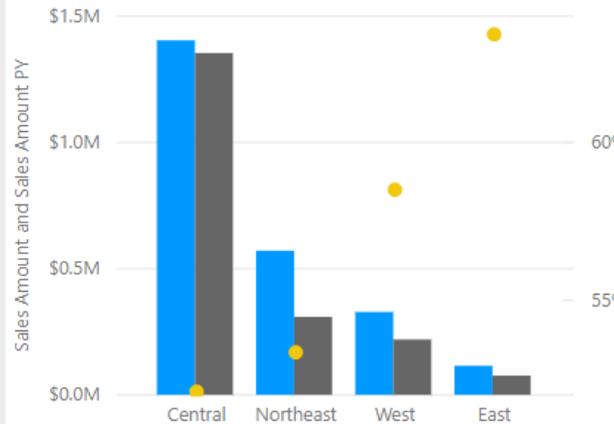
58.1%!

Prior Year: 60.1% (-3.4%)

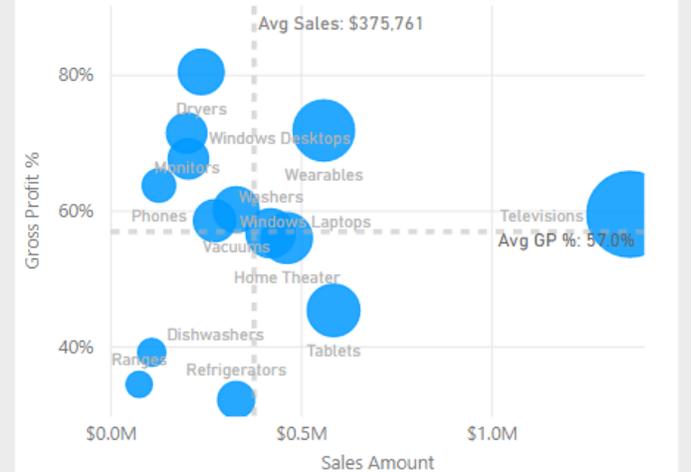


Sales Amt and Gross Profit % by Region

● Sales Amount ● Sales Amount PY ● Gross Profit %



Gross Profit % and Sales by Product Subgroup



What's Next in Data Viz?

- Augmented analytics with AI insights
- AI infused “smart” visuals
- Built- in Forecasting
- Clustering
- Natural Language Query
- Natural Language Generation

Interactive Visual Guide Page

<https://preferredstrategies.com/visualguide/>

Presentation Resource Download Page

<https://preferredstrategies.com/lp/dataviz/>

Summer Reading List:

Storytelling with Data – Cole Nussbaumer Knaflic

The Functional Art – Alberto Cairo

How Charts Lie – Alberto Cairo

Information is Beautiful – David McCandless

Information Dashboard Design – Steven Few

Show me the Numbers – Steven Few

Envisioning Information – Edward Tufte

Data Viz References

Zero to beautiful: Data Viz Best Practices - https://crgroup.com/wp-content/uploads/Zero_to_Beautiful_PBI_Best_Practices.pdf

Zero to beautiful: Choosing charts for data viz - <https://www.arbelatech.com/insights/white-papers/zero-to-beautiful-choosing-charts-for-data-visualization>

The Visuals Reference - <https://www.sqlbi.com/wp-content/uploads/visuals-reference-sep2018-A3.pdf>

Power BI Dashboard Design - SQLBI https://www.sqlbi.com/p/power-bi-dashboard-design-course/?utm_source=sqlblog&utm_medium=blog&utm_campaign=pbddc-launch

Tips for designing a great Power BI dashboard - <https://docs.microsoft.com/en-us/power-bi/create-reports/service-dashboards-design-tips>

Cool Data Viz Links

Hang Over Cures - <https://informationisbeautiful.net/visualizations/worlds-best-hangover-cure/>

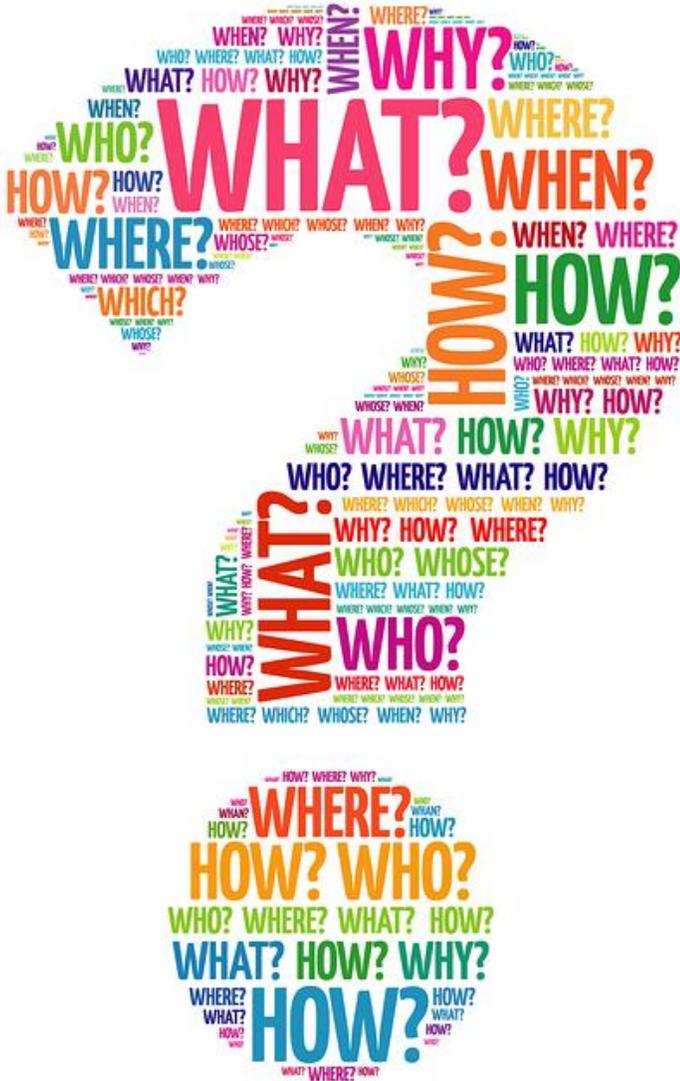
Beautiful News - <https://informationisbeautiful.net/beautifulnews/>

Live Long - <https://informationisbeautiful.net/visualizations/what-could-really-increase-life-expectancy-lifespan-and-longevity/>

What is Trillion \$ - <https://informationisbeautiful.net/visualizations/trillions-what-is-a-trillion-dollars/>

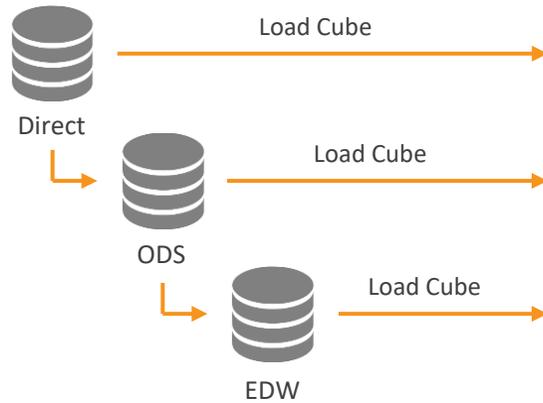
Data Visualization Books to Read - <https://informationisbeautiful.net/visualizations/dataviz-books/>

Questions?



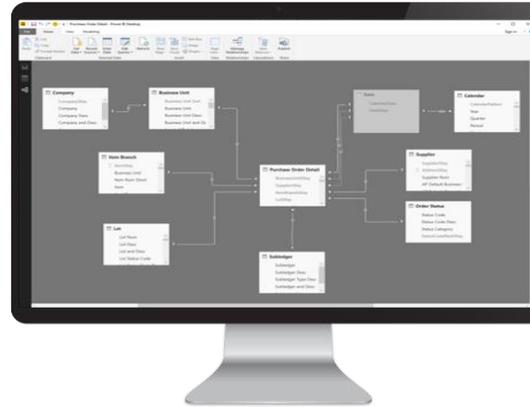
What's included with QuickLaunch?

Step 1 Data Preparation



Data Dictionary

Step 2 Data Modeling



Data Governance

Step 3 Data Delivery



Instant Visualization Analysis

Translation of JDE Data

- Real-time Analytics
- Direct Connect QuickViews
- Operational Data Store ETL Packages (SSIS)
- Enterprise Data Warehouse ETL Packages (SSIS)

Single Version of Truth

- Data security
- 25 Perspectives
- 200 Relationships
- 2,500 Fields
- 1,500 Measures & KPI's
- Metrics Governance
- Financial Account Hierarchies

Business Impact

- Build JDE reports in minutes
- 25+ Power BI Reports
- 25+ Power BI Templates
- Income Statements & Balance Sheets (SSRS)
- Excel Templates

Building the Right Data Environment



JD Edwards



Transform JDE Data

- Dates
- Decimals
- Intuitive Names
- Category Codes
- Subledgers
- Fiscal Calendars
- Relationship Keys
- GL Balances + Detail
- Sales Detail + History

Business-Friendly Format

Advantages

Disadvantages

Direct Connect (DC)

- Most cost effective
- Fastest implementation
- Leanest approach to maintain

- If JDE Transaction Database is under scaled, may compete with other JDE processes
- Potential connectivity challenges with iSeries and Oracle data sources

Operational Data Store (ODS)

- Dedicated environment
- Faster data refreshes
- Fast implementation

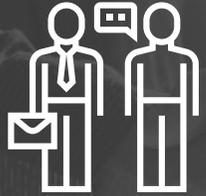
- Data transfer and potential sync issues
- May require additional technology investment

Enterprise Data Warehouse (EDW)

- Most robust analytics environment
- May be best fit if need to blend JDE data with other data sources
- Support for ad hoc reporting directly against JDE data rather than the Tabular Model

- Most complex to develop and maintain
- Multiple copies of data and potential synch issues
- Most expensive approach requires additional technology investment

Peace-of-Mind Partner



100%
Customer
Retention



Customer Satisfaction



QuickLaunch and Power BI have given us a giant leap forward.

Todd Wilson
CIO



Until you start looking at your data in a graphical way, you will not understand the data you have.

Bj Cail
Director Technology & Analytics



The combination of QuickLaunch and Power BI is the best thing I have seen in 30 years of JDE reporting.

Jeff Cook
CFO



Throughout the entire process, Preferred Strategies has been a true partner to us for our data warehousing and reporting needs.

Sean Browning
Manager of Business Analytics



Using Preferred Strategies and Power BI, MFA Oil Company expects to see a tremendous improvement in operations.

Matt Boyce
Sr. Manager of Development Operations

Preferred Strategies Overview

- Founded in 2002
- Focus on market leading Reporting and BI software
- Data Analytics Accelerators for ERP
- Partner for Success

