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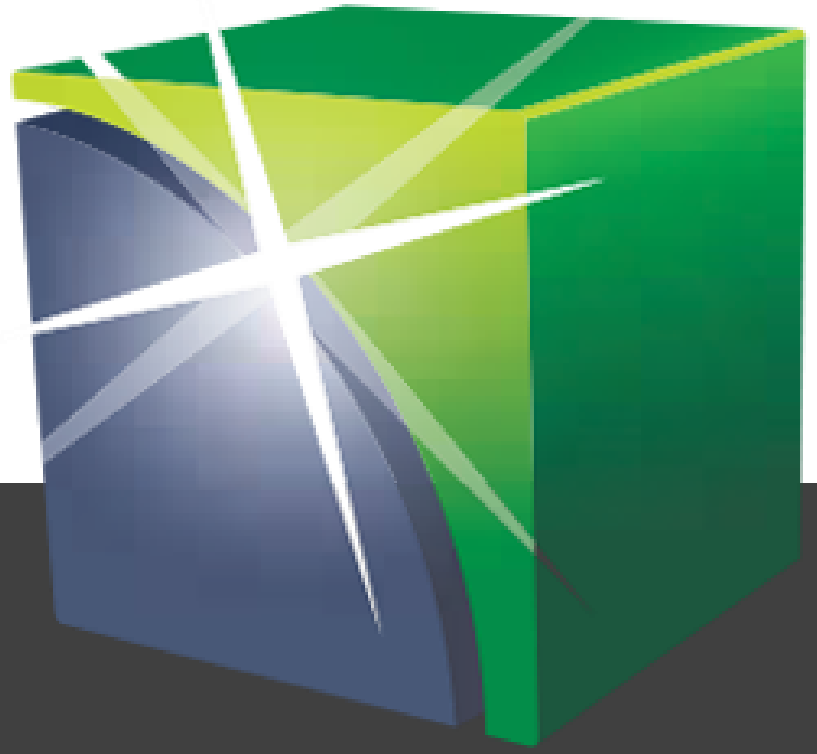

IMTS webinars

August 18, 2020 at
11:00 a.m. ET

Data Literacy & Visualization Best Practices: Telling Easy-to-Understand Stories with Data

Kate Strachnyi & Steve Miller

DATAcated™ Academy

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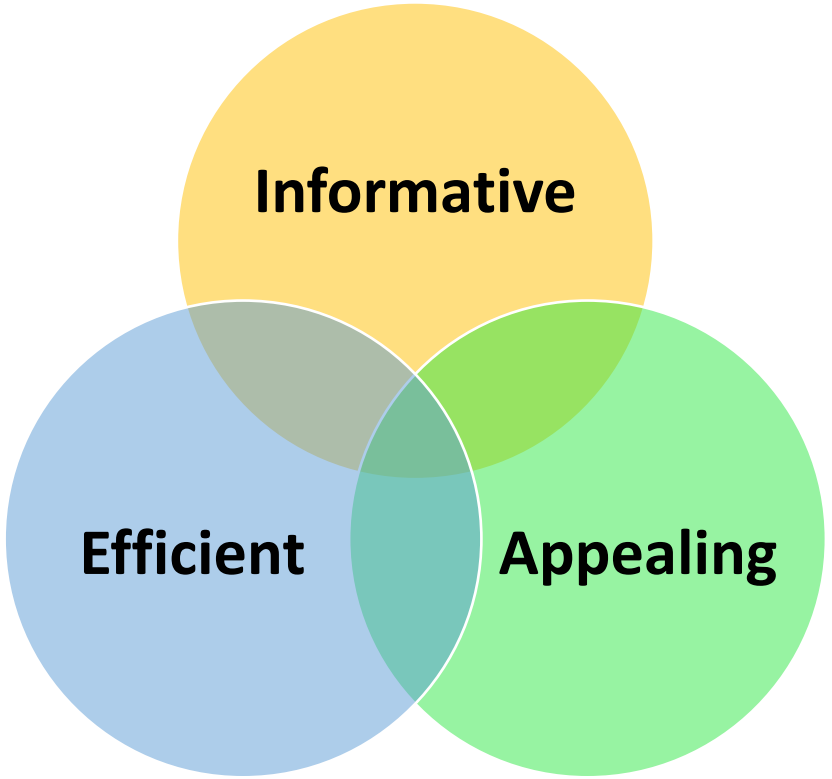
Data Visualization



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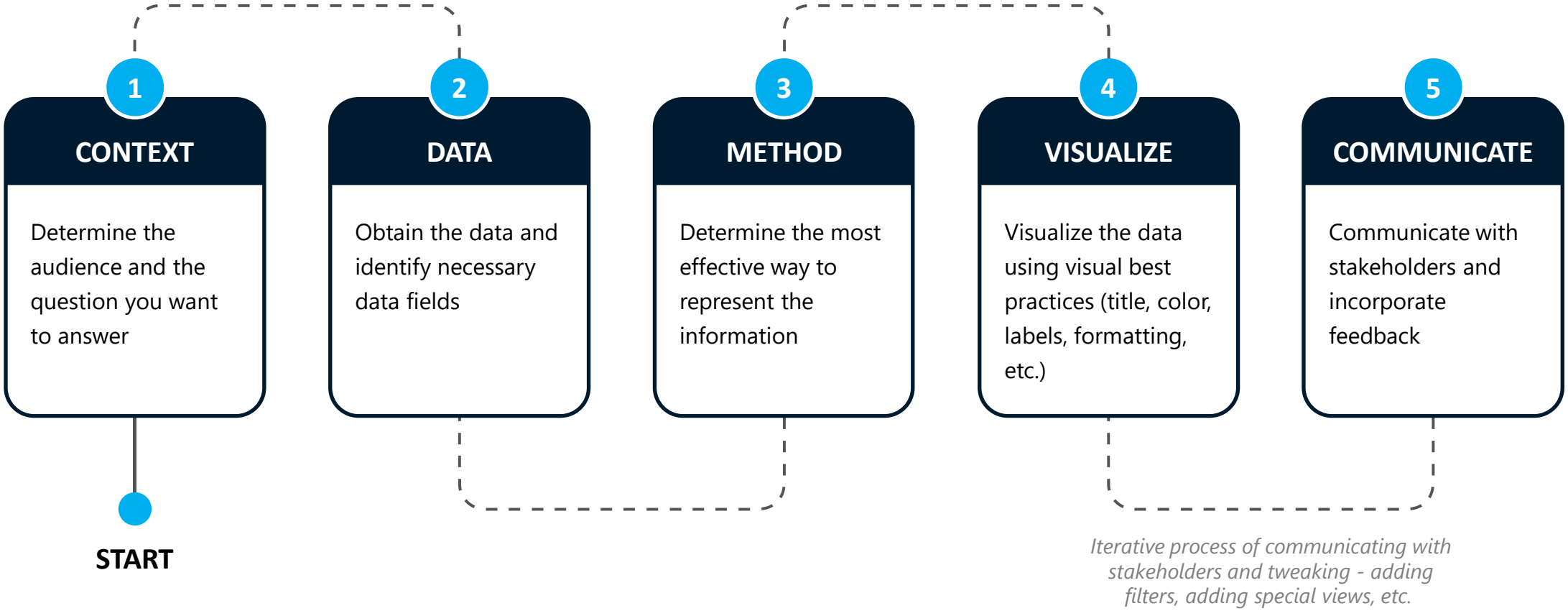
Data Visualization Process



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DATAcated™ Chart Selector Guide

Specific Value

Single Value

Show the raw number prominently displayed

Table

Show the exact values and compare pairs of related values

Highlight Table

Show the exact values and use color to convey relative magnitude

Heatmap

Compare values by encoding the marks with color and size

Comparison

Single Line

Display trends over a period of time for a single category

Multiple Lines

Display trends over a period of time for multiple categories

Bar Chart

Shows comparisons among discrete categories

Grouped Bar Chart

Shows comparisons among discrete categories and sub-categories

Stacked Bar Chart

Shows comparisons among discrete categories and sub-categories

Dual Axis Chart

Show the relationship between two variables with different magnitudes and scales

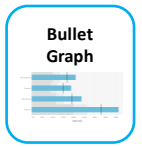
Radar

Plots one or more series of values over multiple quantitative variables

Slope Graph

Compares a data point, typically between two points in time

Bullet Graph



Compares data against historical performance or pre-assigned thresholds

Relationship

Scatter Plot

Shows the relationship between two variables

Bubble

Shows relational value without regards to axes

Word Cloud

Shows the relative frequency of words in our data

Composition

Tree Map

Shows a hierarchical part-to-whole relationship

Pie Chart

Shows a part-to-whole relationship

Donut Chart

Shows a part-to-whole relationship

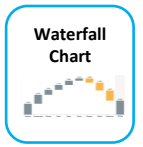
Stacked Bar 100%

Shows a part-to-whole relationship across categories

Stacked Area

Shows a part-to-whole relationship over a period of time

Waterfall Chart



Shows how a value changes by various factors that either increase the value, or decrease it

Distribution

Box & Whisker Plot

Displays the data distribution through quartiles

Scatter Plot

Shows the relationship between two variables

Histogram

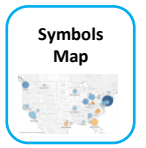
Show the underlying shape of a set of continuous data

Geographic

Filled Map

Shows geographic data using shading on a country or state basis to indicate relationships

Symbols Map



Shows geographic data using a symbol plotted over a longitude and latitude

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DATAcated™ Visual Best Practices Checklist

GENERAL

- ❑ **Chart type** is appropriate for the data – e.g. use a line chart for demonstrating trends over time
- ❑ Objects **work together** to **clearly highlight a finding** or takeaway message

LAYOUT

- ❑ The **number of charts** in the view is limited to four
- ❑ **Proper use of real estate;** the more important elements in the view should take up more space
- ❑ Data is displayed in a **logical order** (e.g. chronological, magnitude, etc.)
- ❑ Ensure proper **sizing of elements** in the visualization (avoid scroll-bars, or scrunched up charts)

TEXT

- ❑ Short and **descriptive title** in the upper-left corner
- ❑ Include **clear labels** throughout the visualization
- ❑ **Annotations** highlight specific data points, as needed
- ❑ All **text is horizontal**
- ❑ **Font type and size** is consistent and legible

FORMAT

- ❑ **Gridlines** are not present or muted (light gray)
- ❑ Redundant **borders** are removed
- ❑ Values are formatted to a suitable **level of precision** (round up) and apply applicable display units (e.g. thousands, **currency symbols**)
- ❑ **Graphs are 2 dimensional;** avoid 3D or shape bevels
- ❑ **Data legends** (color, size, or shape) are positioned near the relevant data and used sparingly

COLOR

- ❑ Color is used to **highlight key patterns** and guides the viewer
- ❑ **Supporting data is muted** (light gray)
- ❑ Patterns are still viewable when **printed in black and white**
- ❑ Color is legible for people with **colorblindness**
- ❑ **Color scheme** is intentional (e.g. in line with brand)
- ❑ Not more than **5 colors** are used in the visualization
- ❑ **Consistent color** is used for same variables

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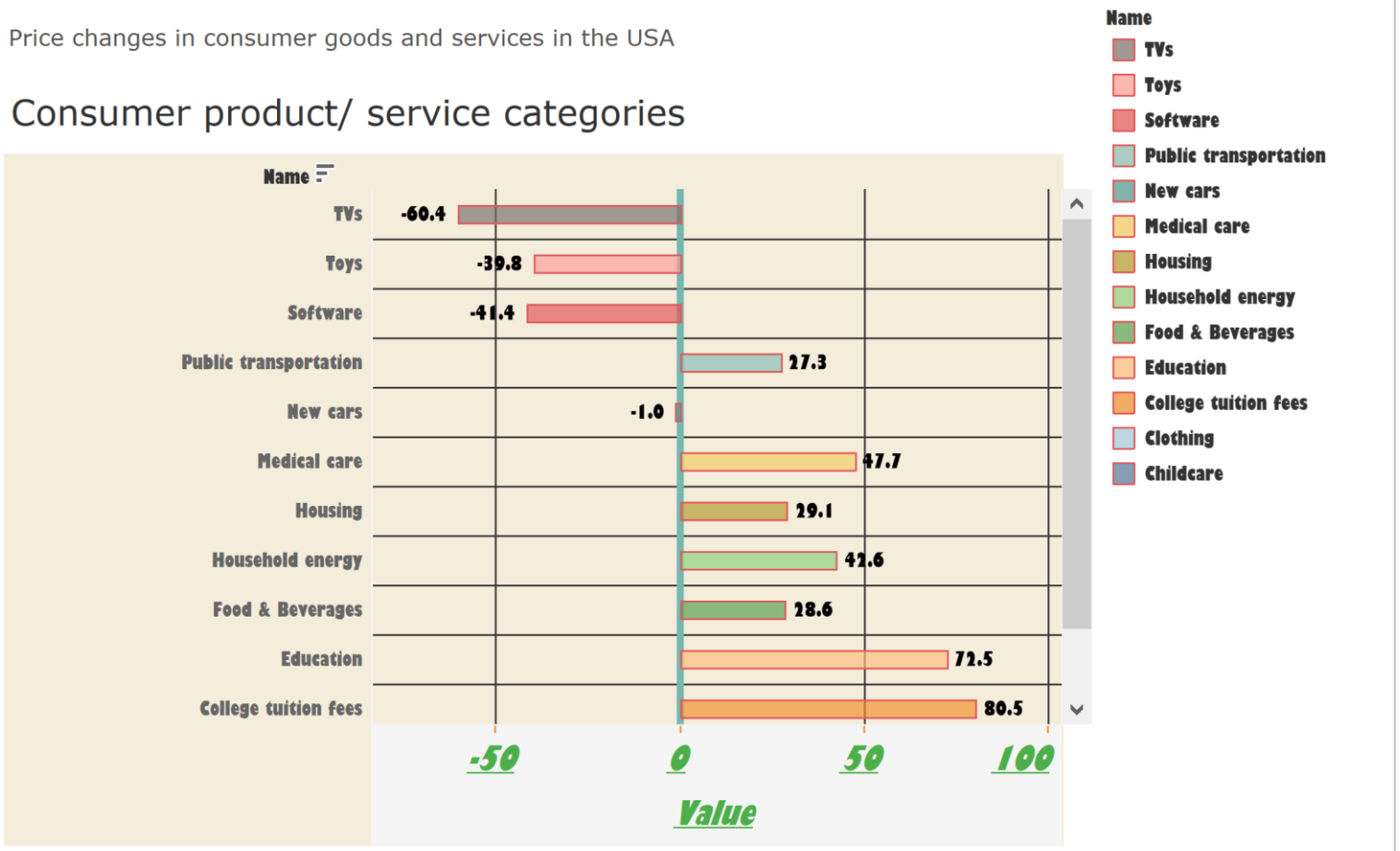
Visualization Example (before & after)

BEFORE



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Visualization Example (before & after)

AFTER