

# Chapter 13:

## Business Intelligence Applications

- BI Content Specifications
- BI Personas
- BI Design Layout - Best Practices
- Data Design for Self-Service BI
- Matching Types of Analysis to Visualizations



# BUSINESS INTELLIGENCE GUIDEBOOK

From Data Integration to Analytics

RICK SHERMAN

FOREWORD BY CLAUDIA IMHOFF  
PRESIDENT OF INTELLIGENT SOLUTIONS, INC.



MORGAN KAUFMANN

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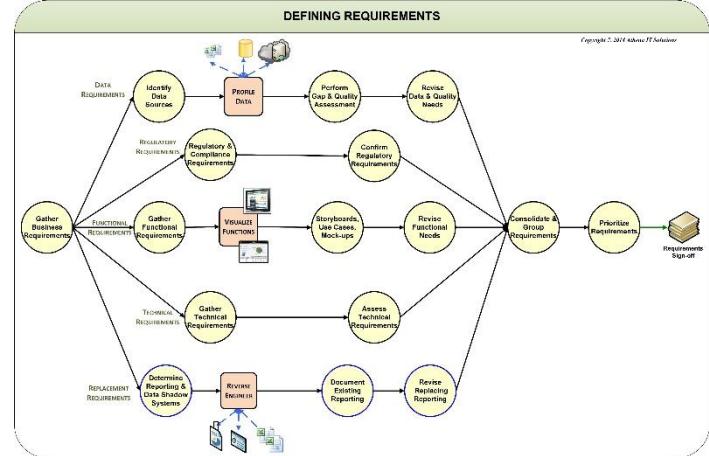


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# BI Content Specifications

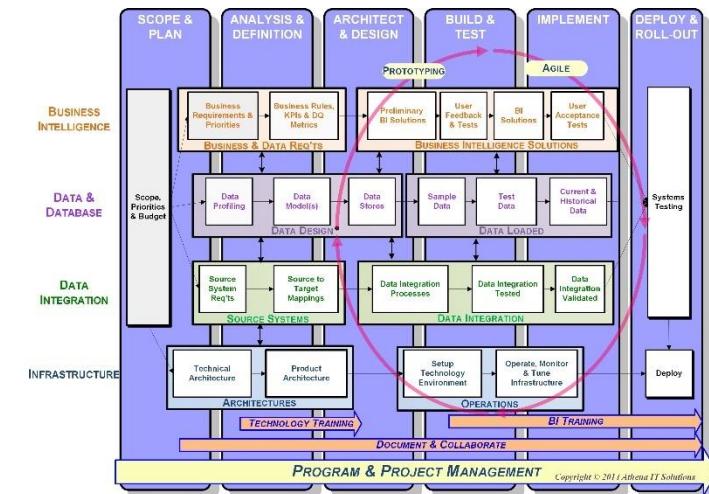
Gathering requirements for BI project:

- Chapter 3 Defining Requirements – Business, Data & Quality



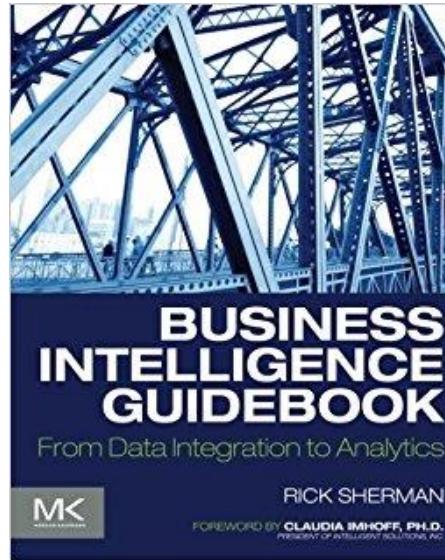
BI project management & tasks are discussed in:

- Chapter 18 Project Management



# BI Content Specifications

- Description
- Business Context
- Existing Reports
- Data Content
- Data Transformations



BIG Templates:

- BI Application List Template
- BI Application Content Specification Template

# BI Content Specifications - BI Application

- BI Application Identifier
  - Provide a unique identifier. It is useful to create a naming convention for this identifier similar to what is being used for table and column naming.
- BI Application Name
  - Provide a brief, descriptive name. This may be used as the display name in portals, menus or in title fields. Stick to a naming convention. It is common for this field to be modified later in the project as you get business feedback.
- BI Application Description
  - Provide a brief description of its business purpose. This should be descriptive enough that a business person can decide if this application will be useful.
- BI Application Category
  - Provide a functional grouping of BI applications such as customer profitability, sales performance or expense tracking.

# BI Content Specifications - Context

- Business owner
  - List business owners of this BI application. Include their names, titles, organizational groups and project roles.
- Business Content Subject Matter Expert (SME)
  - List business person who is SME for discussions on content & functioning of this application if the business owner is delegating this responsibility. Include their names, titles, organizational groups and project roles.
- Business constituency
  - List the business groups and people who will use this application. Include their names, titles and organizational groups.
- Business processes
  - Identify and briefly describe in business terminology the key business processes that will be involved in or impacted by this BI application.
- Business priority
  - List the business priority or value assigned to this BI application relative to the other BI applications on the BI program or project lists.
- Business concerns, issues or risks
- List any concerns, issues or risks raised by business stakeholders.

# BI Content

- Existing reports or data shadow systems
  - List the names, descriptions and SMEs for any existing reports or data shadow systems.
- Samples of reports or data shadow systems
  - Provide report or spreadsheet samples or links to samples.

| Identifier | Name | Description | SME |
|------------|------|-------------|-----|
|            |      |             |     |
|            |      |             |     |
|            |      |             |     |
|            |      |             |     |

# BI Content Specificationsation - Data Content

- Business requirements
  - List or potentially link to the business requirements used to define this BI application.
- Systems of Record (SORs)
  - List SORs for BI application specified in business requirements & data integration specifications referenced above. Not intended to replicate deliverables' doc, but provide business context.
- BI application - fields
  - List and describe all the data fields used in the BI application. These fields may be displayed in tabular reports or data visualization.
  - NOTE: The data sources in this list are the databases that the BI application directly connects with such as the DW, data mart or BI cubes rather than the underlying SORs.

| Field ID | Field Name | Data Source | Table | Column | Data Type | Derivation or Transformation | Description |
|----------|------------|-------------|-------|--------|-----------|------------------------------|-------------|
|          |            |             |       |        |           |                              |             |
|          |            |             |       |        |           |                              |             |
|          |            |             |       |        |           |                              |             |
|          |            |             |       |        |           |                              |             |
|          |            |             |       |        |           |                              |             |
|          |            |             |       |        |           |                              |             |
|          |            |             |       |        |           |                              |             |

# BI Content Specifications

- Update frequency
  - Provide the data currency requirements such as monthly, weekly, daily, real-time or near real-time.
- Update type
  - List whether the data updates in the BI application will be a push from data integration processes or a pull initiated by the BI application user.
- SCD type (if applicable)
  - List whether which columns require historical tracking and what SCD type will be employed. Also, refer to or provide SCD metadata standards.
- Data filters
  - List and describe any data filters that will be available to BI application users.
- Data integration requirements
  - List or potentially link to the data integration requirements used to define this BI application such as Source-to-Target (S2T) mappings and data integration workflow.

# BI Content Specifications

- Analytical style
  - List the BI analytical styles that this application will use to present the data for analysis. These styles include: reports, dashboards, scorecards, OLAP cubes, pivot tables, ad-hoc query, data discovery, data visualization, triggers or alerts and others.
  - *Note:* This is not the functional specification, so this does not include such items as visual layouts and charts. (see below)
- Business transformations for analysis
  - List of calculated measures and KPIs. Also include person who provided definition.
- Data hierarchies – drill paths or roll-ups
  - List and describe any data hierarchies that will be available to BI application users to either drill down into more detail from aggregated data or to aggregate when the data granularity is detailed.
- Data Visualizations
  - List the types of data visualizations requested and/or that are recommended by enterprise standard or best practice.

# BI Content Specifications - Template

| BI App ID                 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------------------|---|---|---|---|---|---|---|---|
| BI Sub-App ID             |   |   |   |   |   |   |   |   |
| BI App Name               |   |   |   |   |   |   |   |   |
| BI App Description        |   |   |   |   |   |   |   |   |
| Business Category         |   |   |   |   |   |   |   |   |
| Business Purpose          |   |   |   |   |   |   |   |   |
| Business Processes        |   |   |   |   |   |   |   |   |
| Business Org              |   |   |   |   |   |   |   |   |
| Business Owner            |   |   |   |   |   |   |   |   |
| BI App SME                |   |   |   |   |   |   |   |   |
| Update Frequency Required |   |   |   |   |   |   |   |   |
| Data Sources              |   |   |   |   |   |   |   |   |
| Analytical Functionality  |   |   |   |   |   |   |   |   |
| BI Release                |   |   |   |   |   |   |   |   |
| BI Priority               |   |   |   |   |   |   |   |   |
| BI App Group              |   |   |   |   |   |   |   |   |
| Current Reporting (Y/N)   |   |   |   |   |   |   |   |   |
| Current Report ID         |   |   |   |   |   |   |   |   |
| Current Report Name       |   |   |   |   |   |   |   |   |
| Current Report App        |   |   |   |   |   |   |   |   |
| Business Requirement ID   |   |   |   |   |   |   |   |   |
| Comment                   |   |   |   |   |   |   |   |   |
| Created                   |   |   |   |   |   |   |   |   |
| Last Update               |   |   |   |   |   |   |   |   |
| Last Updated by           |   |   |   |   |   |   |   |   |

# Revise BI Applications List

- Consolidate BI applications
  - Consolidation process identifies overlapping, redundant, outdated and conflicting requirements
  - Identify gaps & missing elements based on dependencies that might not have been apparent before the consolidation.
- Consolidate & cross-reference requirements
  - Business purpose
  - Business processes
  - Business group
  - Data sources
  - Analytical functionality
- Review consolidate content specifications
  - Business stakeholders & reporting SMEs
  - Adjust project schedule & identify risks
- Assess business & technical priorities
  - Agreed-upon BI deliverables list

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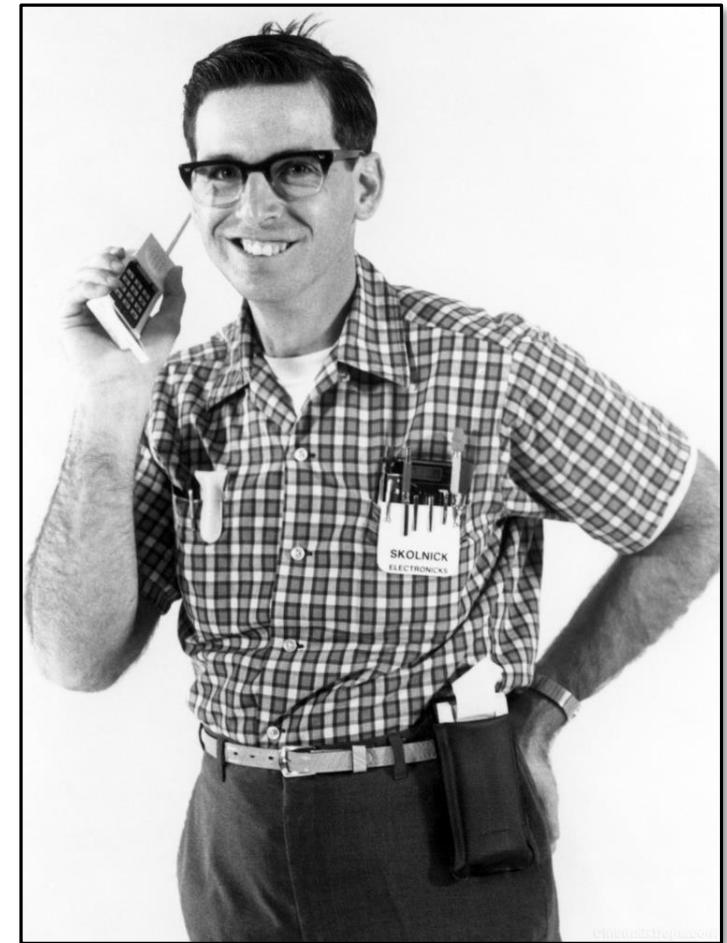
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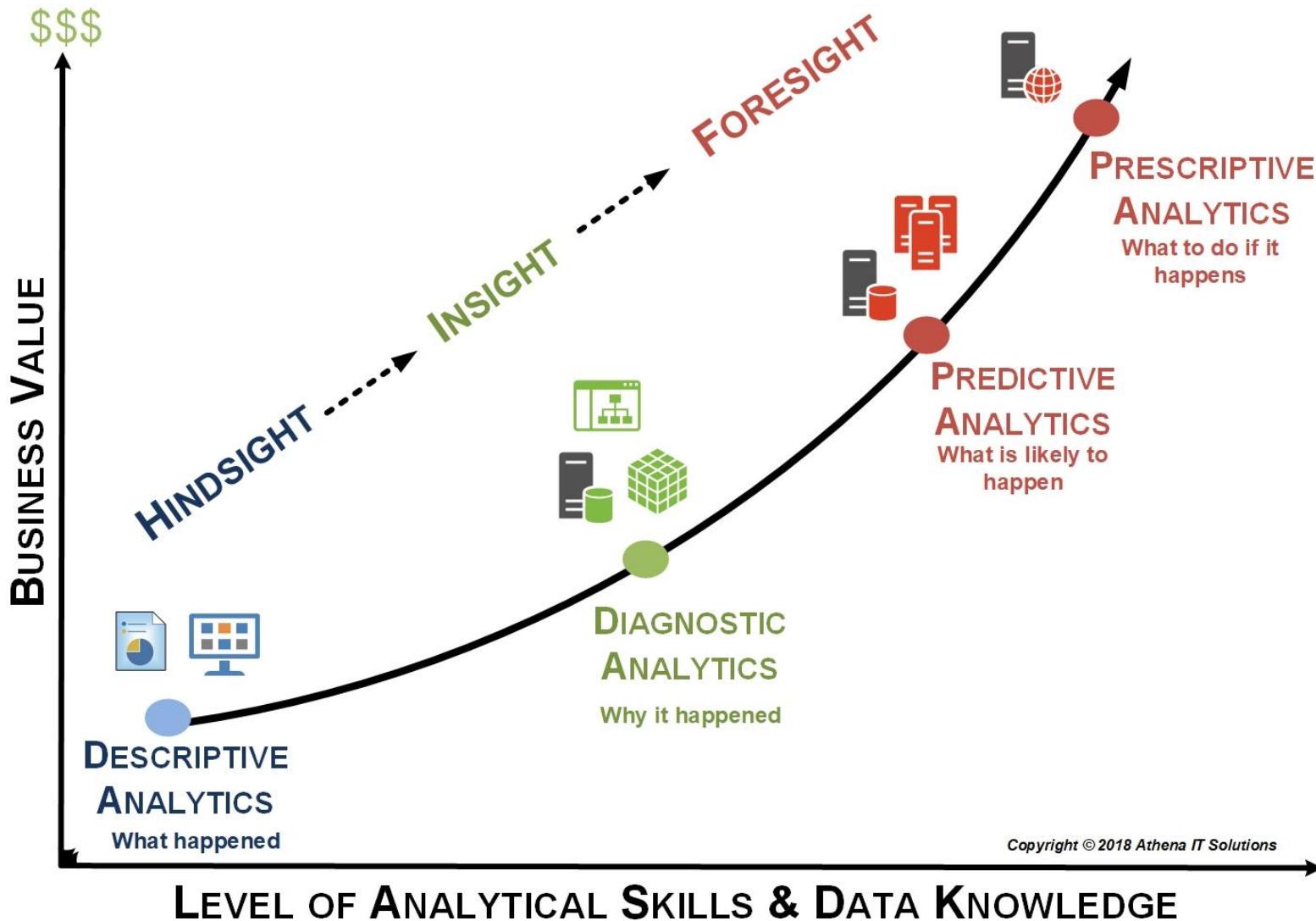
# BI Personas

# One size does not fits all

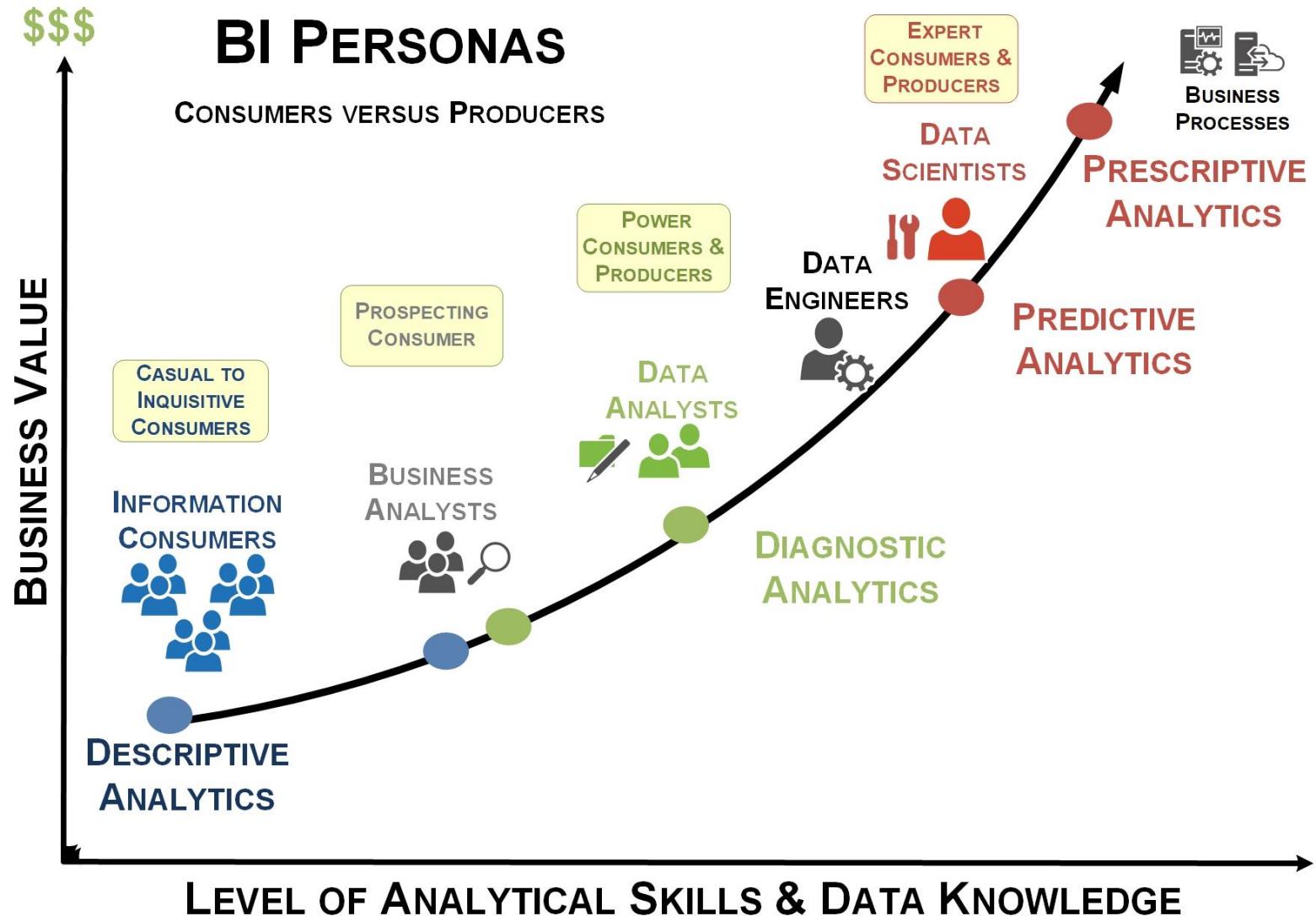
- Each new BI tool generation geared to “Power User”
- Different types of analytics
- Information Consumer versus Producer
- Data visualizations versus data models
  - BI Applications
  - Data Models
  - Curated Data Sets



# Different Types of Analytics



# Match BI Personas with Use Cases



# BI Personas: BI Applications

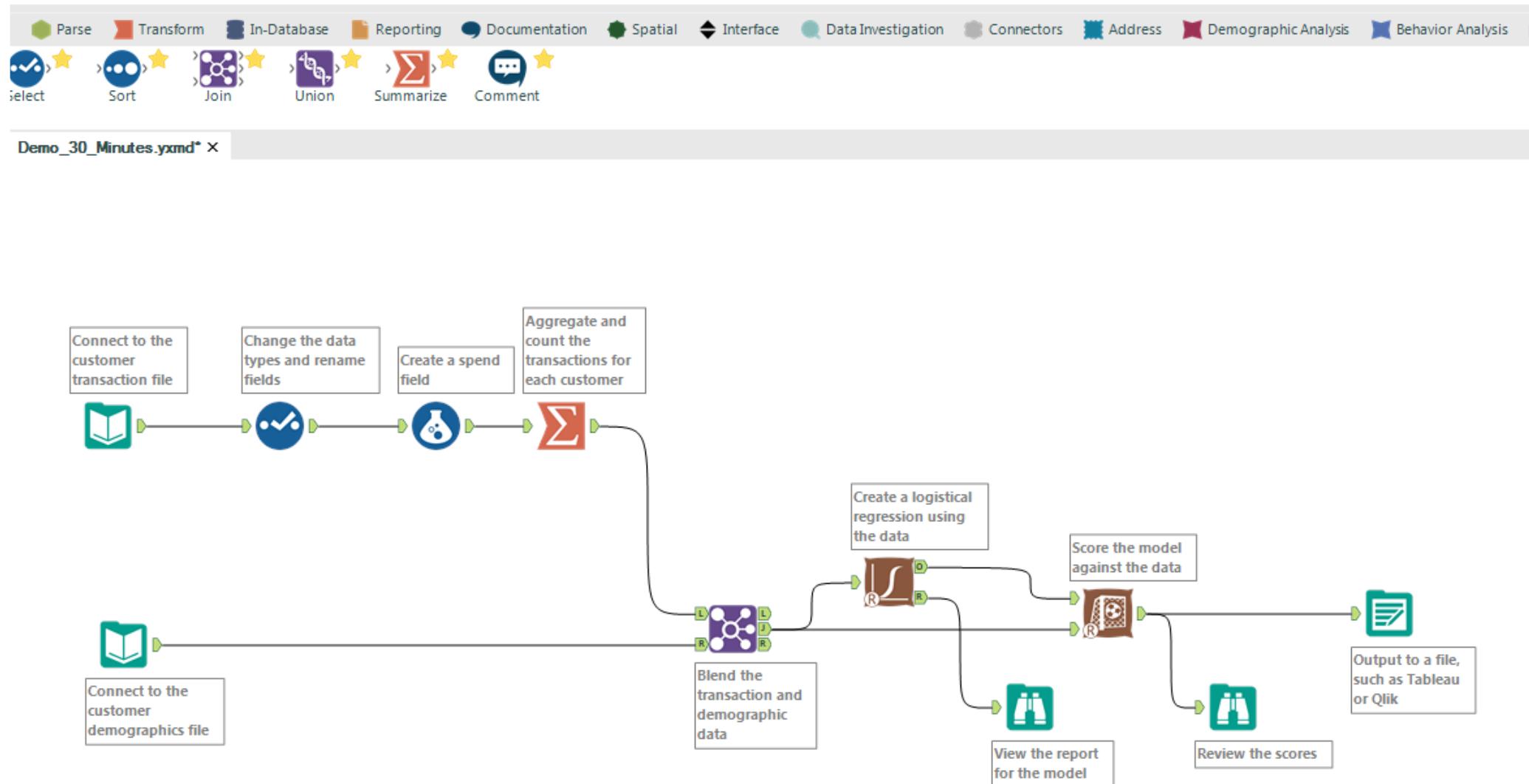
| CATEGORIES           | ROLES            | FUNCTIONALITY   |
|----------------------|------------------|---|
| Information Consumer |                  | <ul style="list-style-type: none"><li>• Access published reports &amp; dashboards</li><li>• View, filter &amp; drill-through</li><li>• Refresh data – on-demand or scheduled</li><li>• Output data to Excel</li></ul>         |
| Information Analyst  | Business analyst | <ul style="list-style-type: none"><li>• Data blending &amp; augment data</li><li>• Edit reports &amp; dashboards</li><li>• Create new data visualizations</li></ul>   |
|                      | Data analyst     | <ul style="list-style-type: none"><li>• Ad-doc querying</li><li>• Data Preparation</li><li>• Create new dashboards &amp; reports</li><li>• Create curated datasets &amp; data models</li><li>• Predictive Analytics</li></ul> |
| Data Scientist       |                  | <ul style="list-style-type: none"><li>• Data integration</li><li>• Statistical processing</li><li>• Big data analytics</li><li>• Model management</li></ul>   |

# BI Personas: BI Applications

| Categories            | Personas               |
|-----------------------|------------------------|
| Information Consumer  | Casual consumer        |
|                       | Inquisitive consumer   |
| Information Analyst   | Business analyst       |
|                       | Data analyst           |
| Data Scientist        | Data engineer          |
|                       | Data Scientist         |
| Application Developer | BI Developer           |
|                       | Integration specialist |



# BI Application – Data Preparation



# BI Personas: BI Applications

| Categories            | Personas               | BI Applications | Data Model       | Data Integration           |
|-----------------------|------------------------|-----------------|------------------|----------------------------|
| Information Consumer  | Casual consumer        | Consumer        | Consumer         | N/A                        |
|                       | Inquisitive consumer   | Consumer        | Consumer         | N/A                        |
| Information Analyst   | Business analyst       | Editor          | Augment          | Apprentice                 |
|                       | Data analyst           | Producer        | Producer         | Skilled                    |
| Data Scientist        | Data engineer          | Producer        | Producer         | Apprentice to Professional |
|                       | Data Scientist         | Producer        | Producer         | Expert                     |
| Application Developer | BI Developer           | Developer       | N/A to Developer | Apprentice to Professional |
|                       | Integration specialist | N/A             | Developer        | Guru                       |

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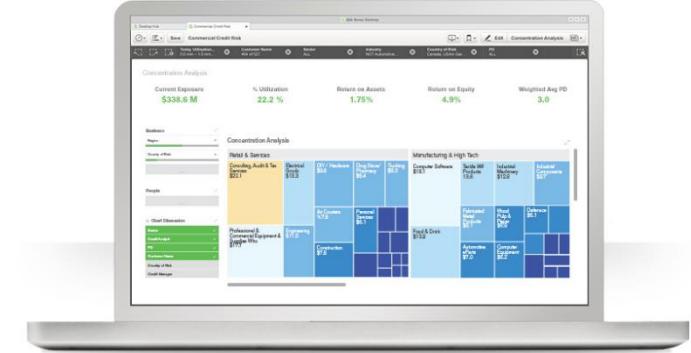
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# Dashboard Definition

- Display of data based on needs of individuals, business groups or enterprise
  - Key performance indicators (KPIs), Performance Measures, Metrics
- Single screen with multiple sections & related data sets
  - Mashups
  - Drill-down, Drill-up, Filters
- Uses various data visualizations
  - Tabular reports
  - Charts & graphs
  - Advanced Visualizations



# 3 Business Uses of Dashboards

- Operational dashboards
  - For front-line workers working with operational business processes
  - Typically embedded in applications as part of process workflow
  - Timeframe: Now
- Tactical dashboards
  - For business group processes and projects
  - Looking at status and trends, identifying outliers
  - Timeframe: Recent & historical
  - Information consumers (use)
  - Information analysts (use & maybe create)
- Strategic dashboards
  - For executives, management & analysts
  - Tied to strategic objectives & enterprise key performance indicators (KPIs)
  - Timeframe: Recent & historical

# Power of Visualization



How many nines are there?

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 7 | 7 | 5 | 5 | 2 | 7 | 4 | 7 | 1 |
| 4 | 9 | 2 | 5 | 7 | 7 | 2 | 6 | 1 | 7 |
| 1 | 7 | 6 | 9 | 3 | 4 | 7 | 5 | 1 | 2 |
| 5 | 1 | 6 | 3 | 3 | 8 | 4 | 8 | 6 | 6 |
| 6 | 5 | 6 | 4 | 9 | 3 | 8 | 9 | 1 | 9 |
| 3 | 8 | 1 | 5 | 2 | 2 | 3 | 6 | 3 | 9 |
| 4 | 6 | 4 | 5 | 6 | 3 | 7 | 7 | 9 | 1 |
| 9 | 1 | 3 | 3 | 6 | 1 | 3 | 3 | 1 | 8 |
| 8 | 1 | 1 | 8 | 7 | 5 | 8 | 1 | 7 | 4 |
| 3 | 6 | 9 | 2 | 8 | 9 | 3 | 7 | 5 | 7 |
| 4 | 4 | 4 | 2 | 8 | 2 | 2 | 9 | 2 | 8 |

# Power of Visualization



How many nines are there?

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 7 | 7 | 5 | 5 | 2 | 7 | 4 | 7 | 1 |
| 4 | 9 | 2 | 5 | 7 | 7 | 2 | 6 | 1 | 7 |
| 1 | 7 | 6 | 9 | 3 | 4 | 7 | 5 | 1 | 2 |
| 5 | 1 | 6 | 3 | 3 | 8 | 4 | 8 | 6 | 6 |
| 6 | 5 | 6 | 4 | 9 | 3 | 8 | 9 | 1 | 9 |
| 3 | 8 | 1 | 5 | 2 | 2 | 3 | 6 | 3 | 9 |
| 4 | 6 | 4 | 5 | 6 | 3 | 7 | 7 | 9 | 1 |
| 9 | 1 | 3 | 3 | 6 | 1 | 3 | 3 | 1 | 8 |
| 8 | 1 | 1 | 8 | 7 | 5 | 8 | 1 | 7 | 4 |
| 3 | 6 | 9 | 2 | 8 | 9 | 3 | 7 | 5 | 7 |
| 4 | 4 | 4 | 2 | 8 | 2 | 2 | 9 | 2 | 8 |

# Power of Visualization

People good at recognizing visual patterns & trends but poor at spotting things (outliers) in or remembering tables of numbers



*Tabular Report with color*

|           | Product A    | Product B    | Product C    | Product D    | Product E    | Product F    | Product G    | Product H    |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Northeast | \$ 15,749.00 | \$ 40,195.00 | \$ 15,472.00 | \$ 63,029.00 | \$ 8,509.00  | \$ 42,987.00 | \$ 27,778.00 | \$ 12,510.00 |
| Southeast | \$ 48,044.00 | \$ 20,741.00 | \$ 40,643.00 | \$ 15,687.00 | \$ 12,342.00 | \$ 23,297.00 | \$ 10,401.00 | \$ 10,522.00 |
| Central   | \$ 5,240.00  | \$ 45,296.00 | \$ 16,114.00 | \$ 63,359.00 | \$ 58,198.00 | \$ 24,191.00 | \$ 46,826.00 | \$ 50,278.00 |
| Northwest | \$ 12,860.00 | \$ 11,548.00 | \$ 43,134.00 | \$ 19,331.00 | \$ 60,563.00 | \$ 51,475.00 | \$ 28,954.00 | \$ 14,405.00 |
| Southwest | \$ 37,087.00 | \$ 61,506.00 | \$ 54,084.00 | \$ 14,715.00 | \$ 17,811.00 | \$ 32,814.00 | \$ 47,853.00 | \$ 44,639.00 |

*Tabular Report*

|           | Product A    | Product B    | Product C    | Product D    | Product E    | Product F    | Product G    | Product H    |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
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# Power of Visualization



## Tabular Report

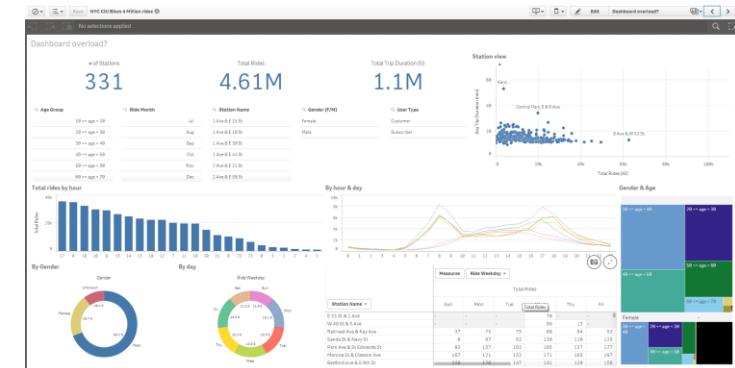
| Region        | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov   | Dec   | Total  |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Domestic      | 1,983 | 2,343 | 2,593 | 2,283 | 2,574 | 2,838 | 2,382 | 2,634 | 2,938 | 2,739 | 2,983 | 3,493 | 31,783 |
| International | 574   | 636   | 673   | 593   | 644   | 679   | 593   | 139   | 599   | 583   | 602   | 690   | 7,005  |
| Total         | 2,557 | 2,979 | 3,266 | 2,876 | 3,218 | 3,517 | 2,975 | 2,773 | 3,537 | 3,322 | 3,585 | 4,183 | 38,778 |

## Line Chart



# Visualization - Comparisons

- Primary activity of business analysis is comparison
  - Individual facts are meaningless in isolation
  - Facts are only useful in comparisons
- Visualizations enable comparisons of:
  - Greater data volumes
  - Greater range or diversity of data (broader dimensionality)
  - Different views of data (variable perspective)



# BI Design Layout - Best Practices

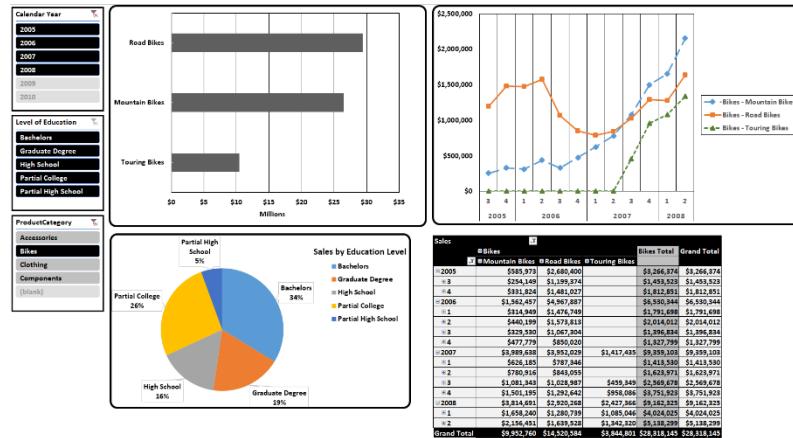
| Areas Affecting User Interface | Web   | BI  |
|--------------------------------|---|---|
| Consumer interactions          | Different web browsers such as Chrome, Firefox, I.E., etc.                    | Different BI styles such as reports, dashboards, pivot tables, etc.                       |
| Application functions          | Read, search, shop, social media interactions, etc.                           | Different types of analysis such as trending, contribution comparison & location analysis |
| Delivery platforms             | Web browsers, different-size monitors, tablets, smartphones, print, PDF, etc. | Same as Web   |

# BI Design Layout - Best Practices

- Focus on the Purpose

- Design Layout

- Consistency beats elegance
- Keep it simple
- Location, location, location
- Use colors judiciously
- It looked great on my monitor
- Limit visualizations on a single layout
- Leverage filters and slicers
- Use legends judiciously
- Outliers should be flagged
- Make it easy to read labels
- Scrollbars



# BI Design Layout - Best Practices

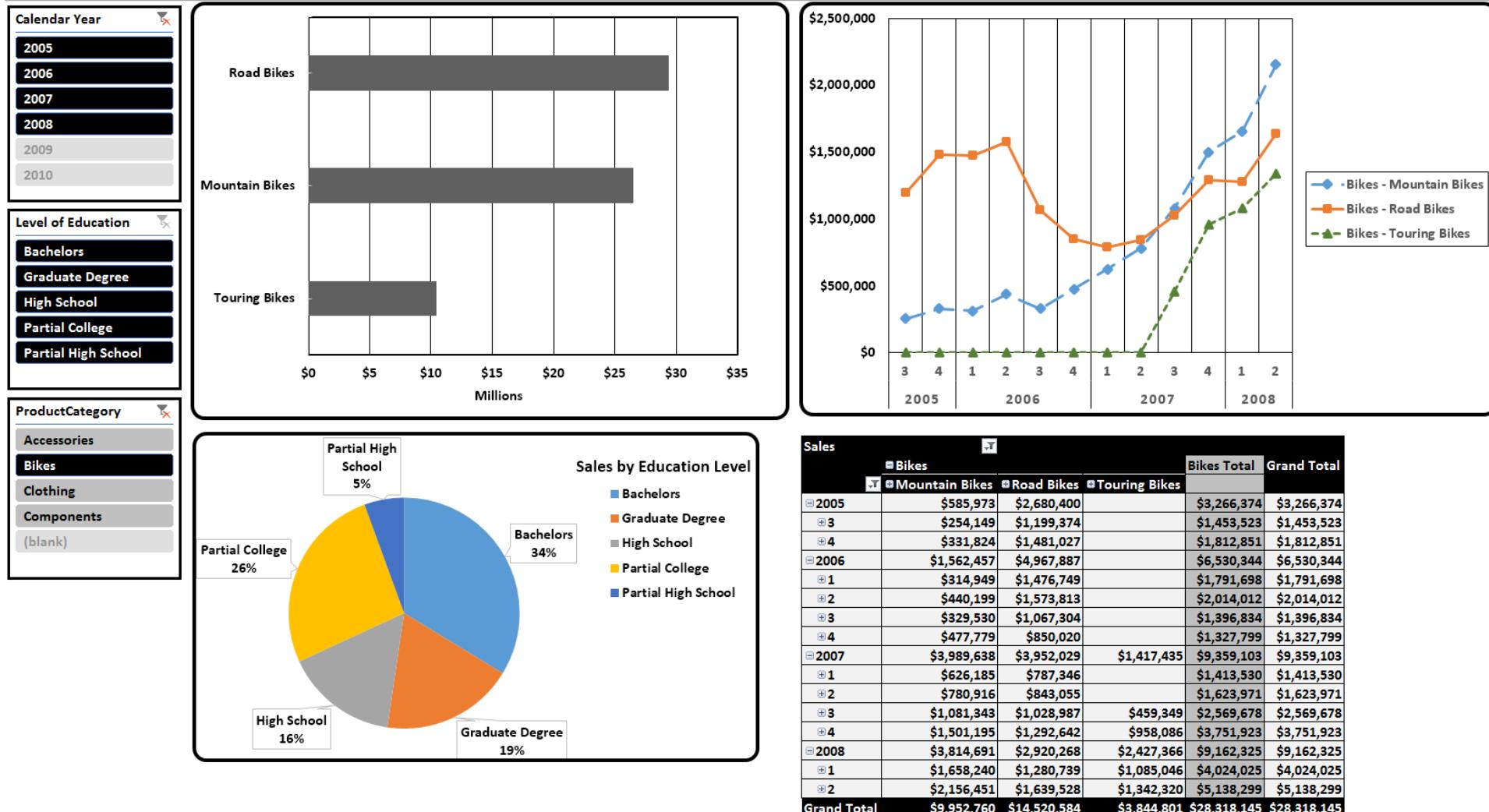


fig 13.1

# BI Design Layout - Best Practices

- Develop a standard design template
- Example of a template for a product marketing group:
  - Filters located on the upper left corner of the display
  - Comparison and contribution analysis presented in two left-hand quadrants
  - Data is aggregated & drillable when there is a dimensional hierarchy
  - Trending analysis presented as a line chart in the upper right quadrant
  - Sales data presented in tabular form in the lower right quadrant

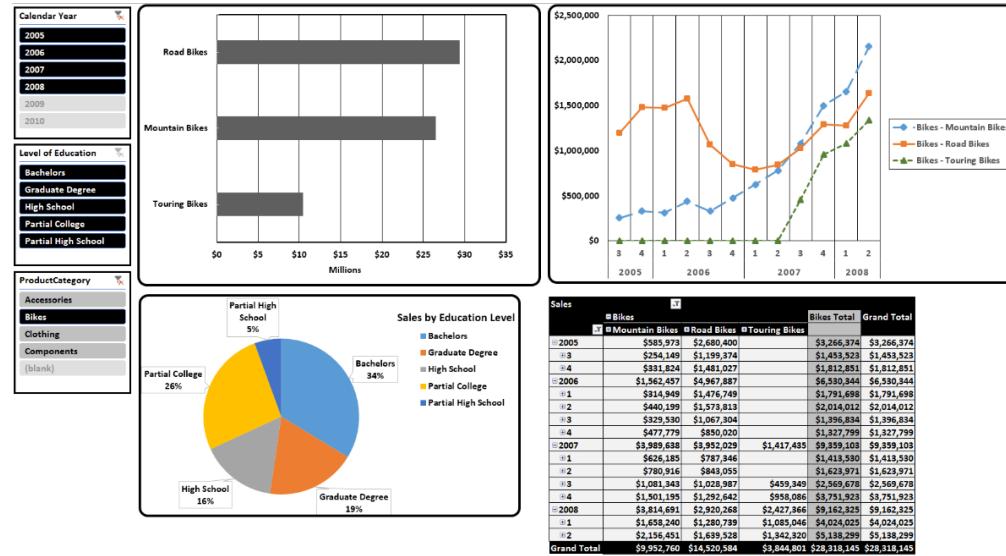
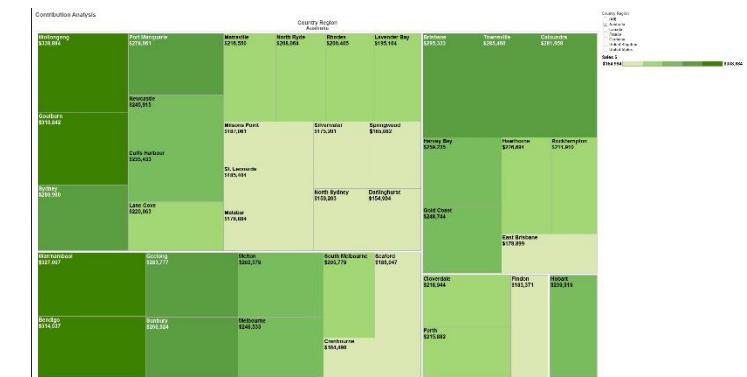
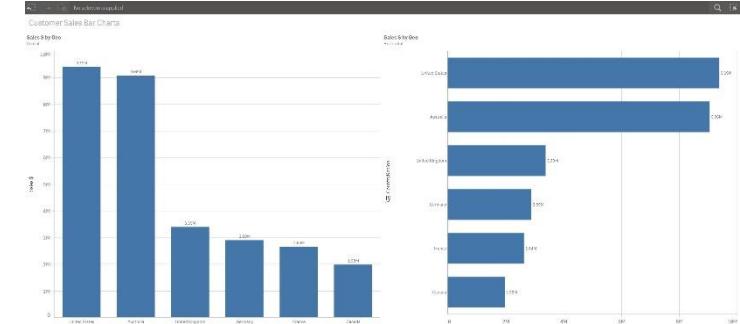


fig 13.1

# Matching Types of Analysis to Visualizations

- Comparative
- Time-series or trending
- Contribution
- Correlation
- Geographic data
- Distribution



# Comparative

Comparison Analysis - Bar Chart

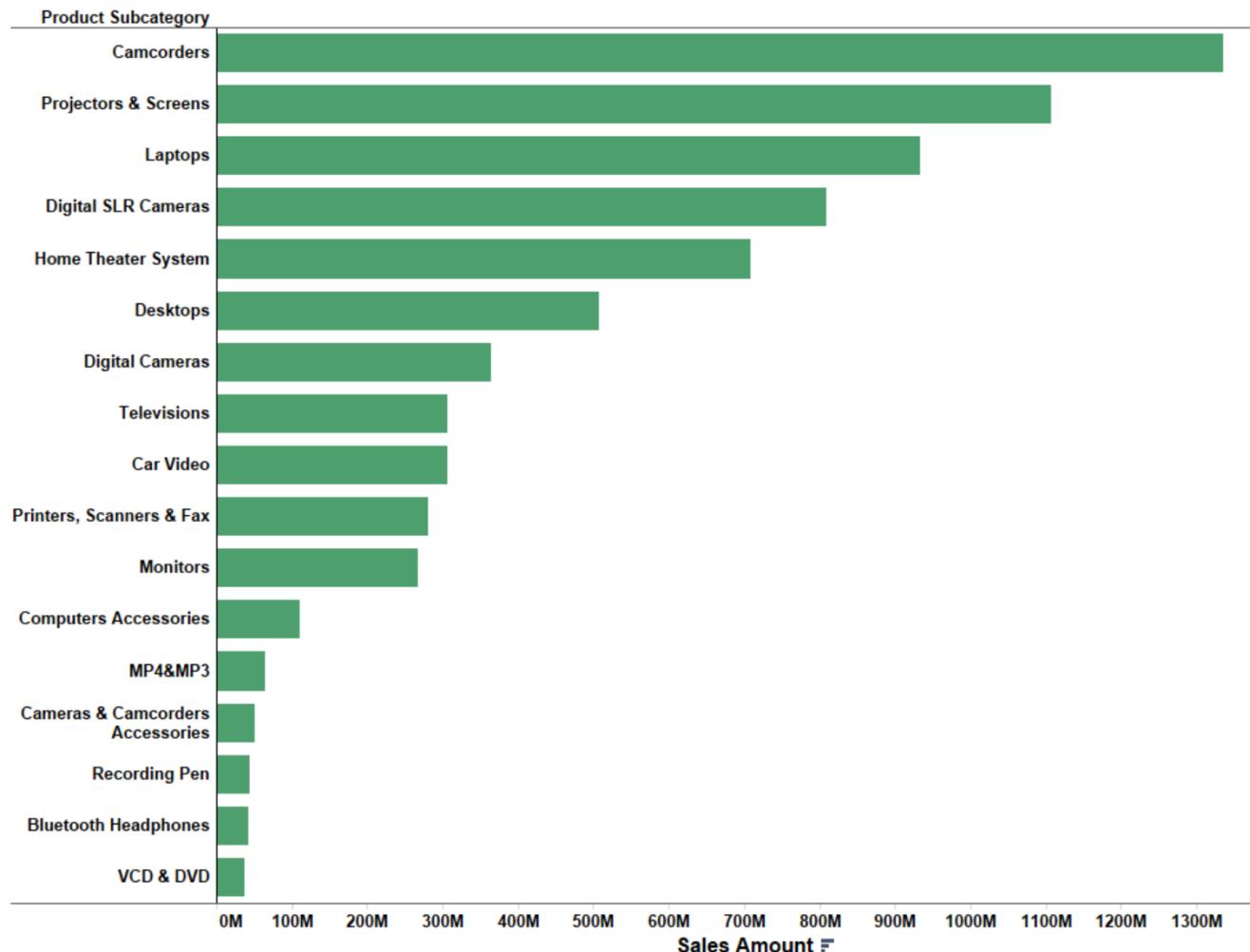
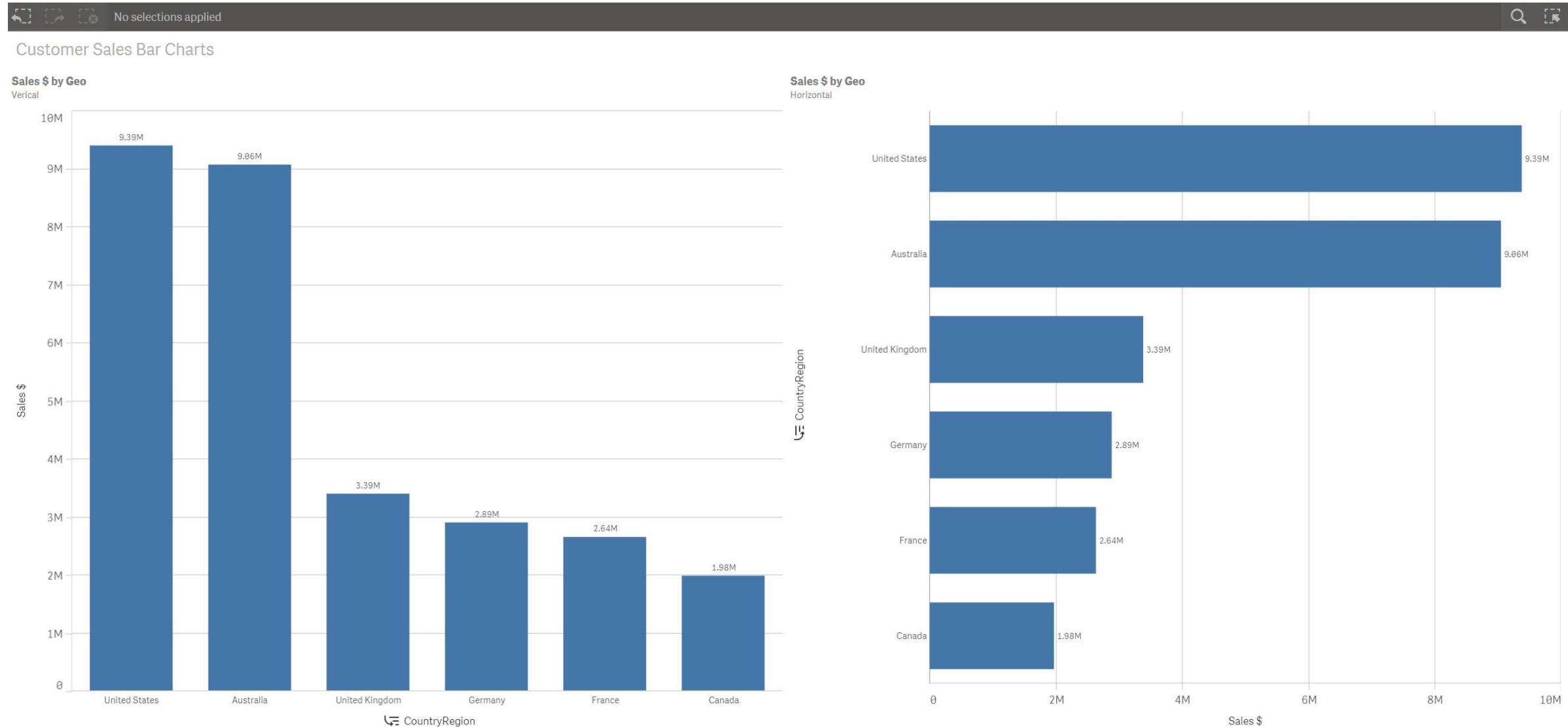


fig 13.4\_BIGuidebook

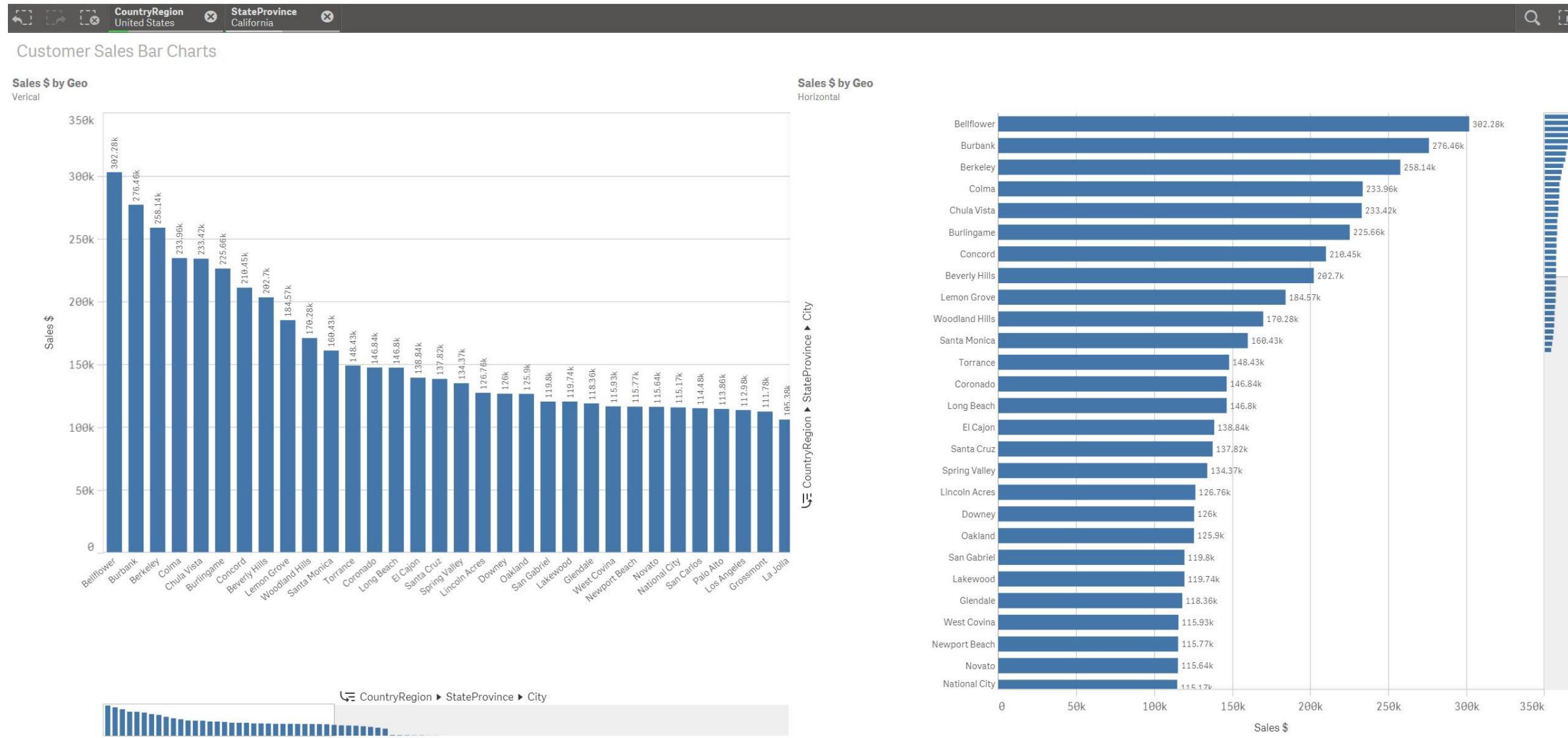
## Notes:

- Horizontal bars
  - works for any number of items
  - Supports mobile devices' UI
- Vertical bars
  - work well with fewer than a dozen items.

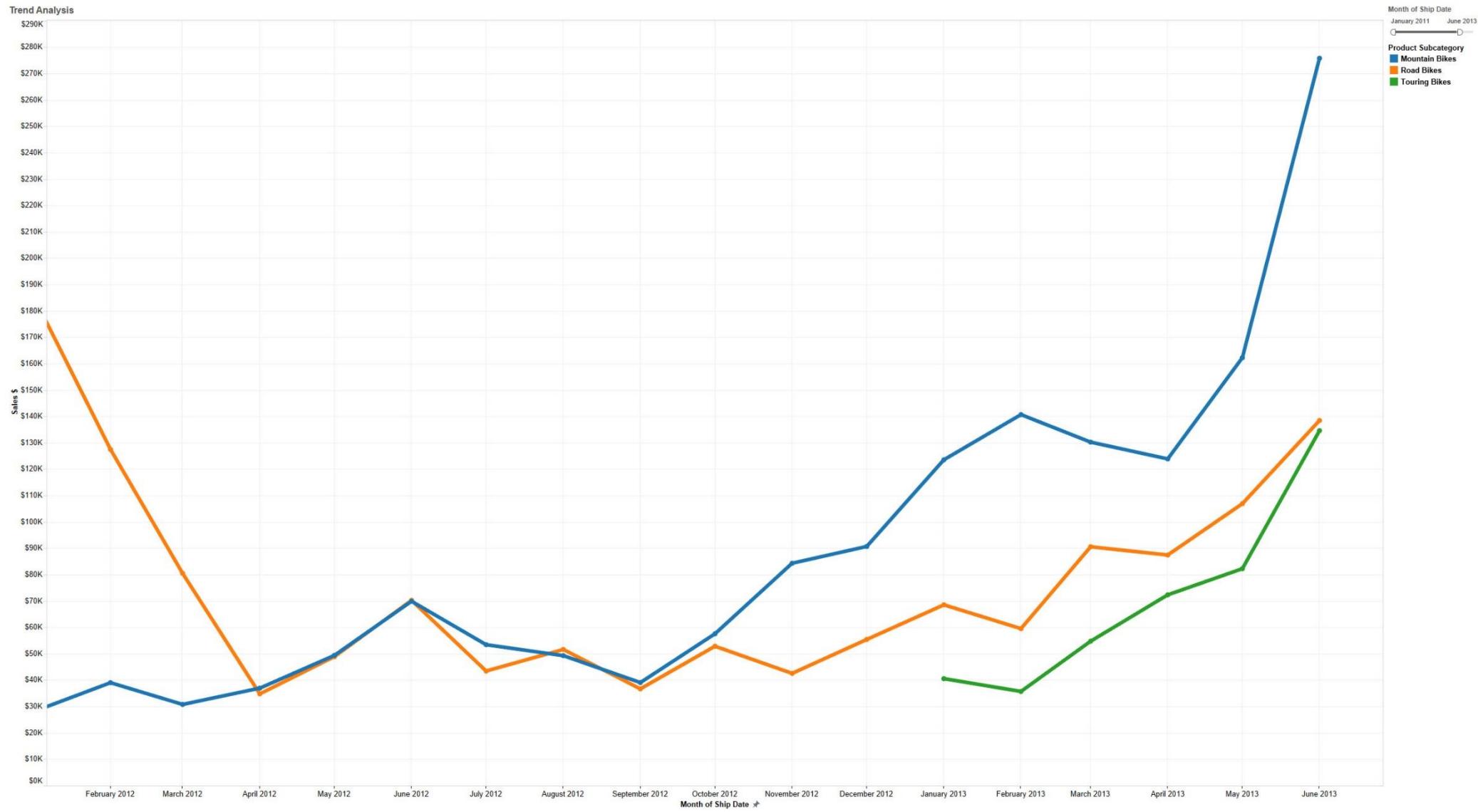
# Comparative – Bar Chart



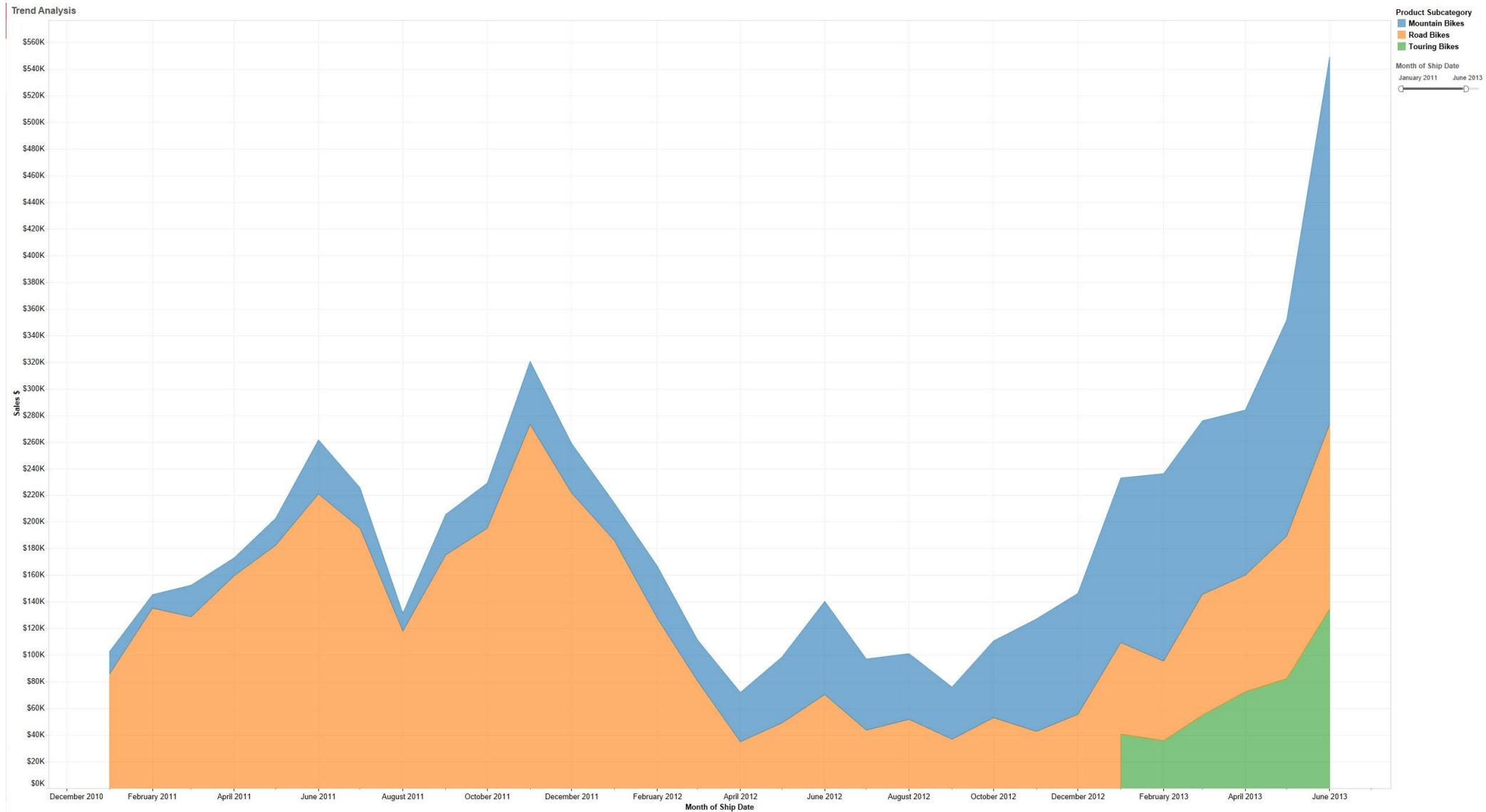
# Comparative – Bar Chart



# Time-series or Trending Analysis – Line Chart

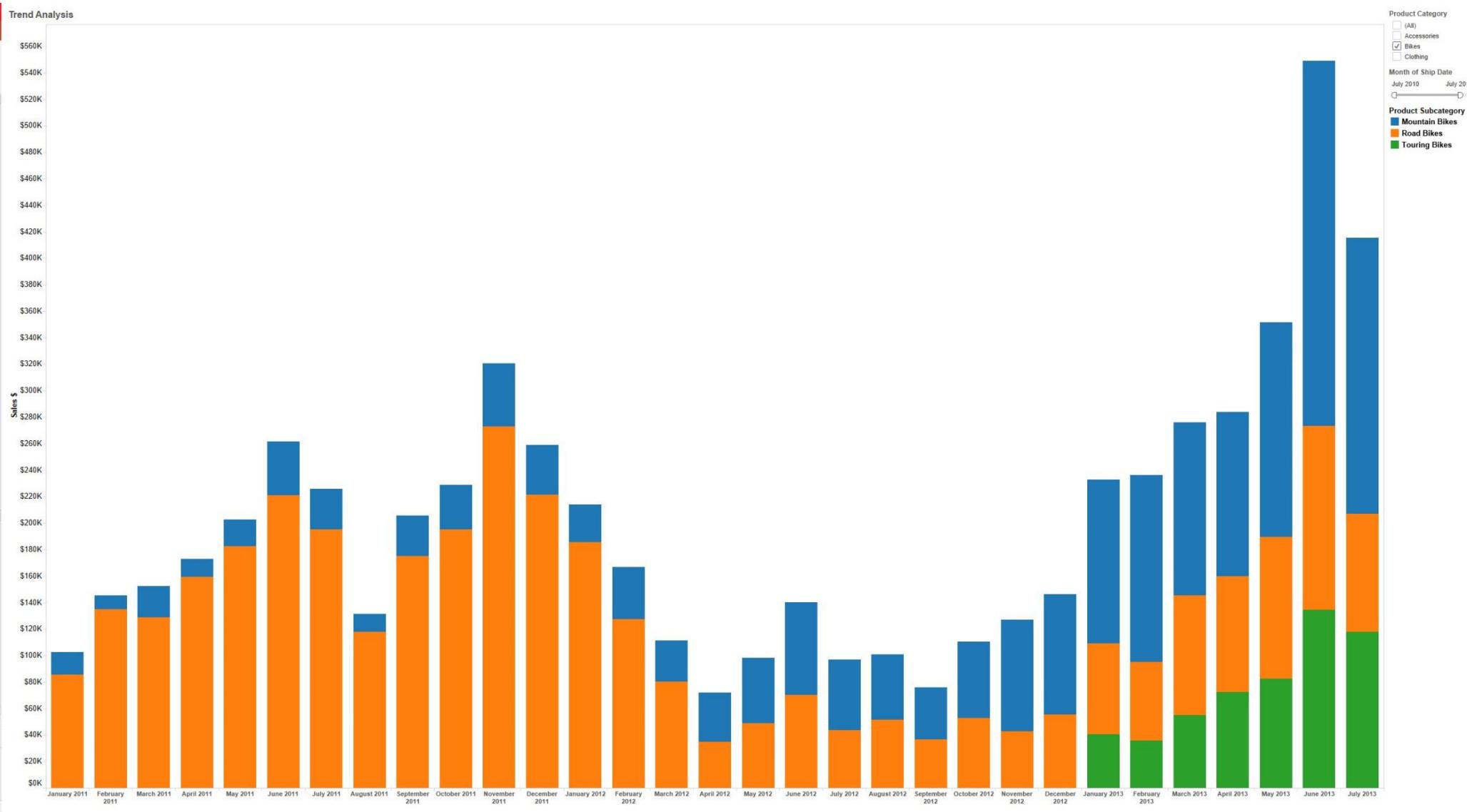


# Time-series or Trending Analysis – Area Chart

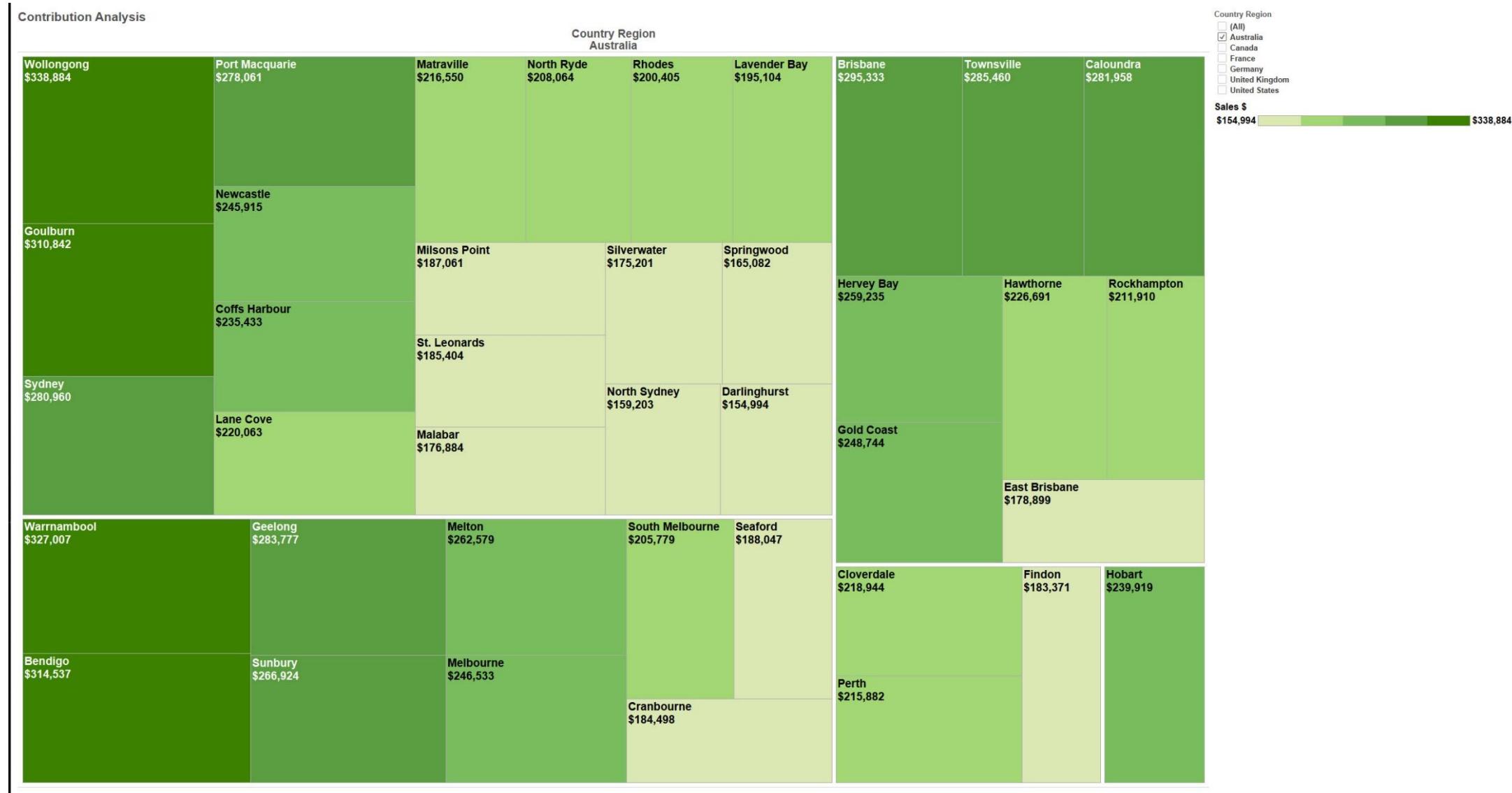


# Time-series or Trending Analysis – Stacked Bar

fig 13.7 BI Guidebook



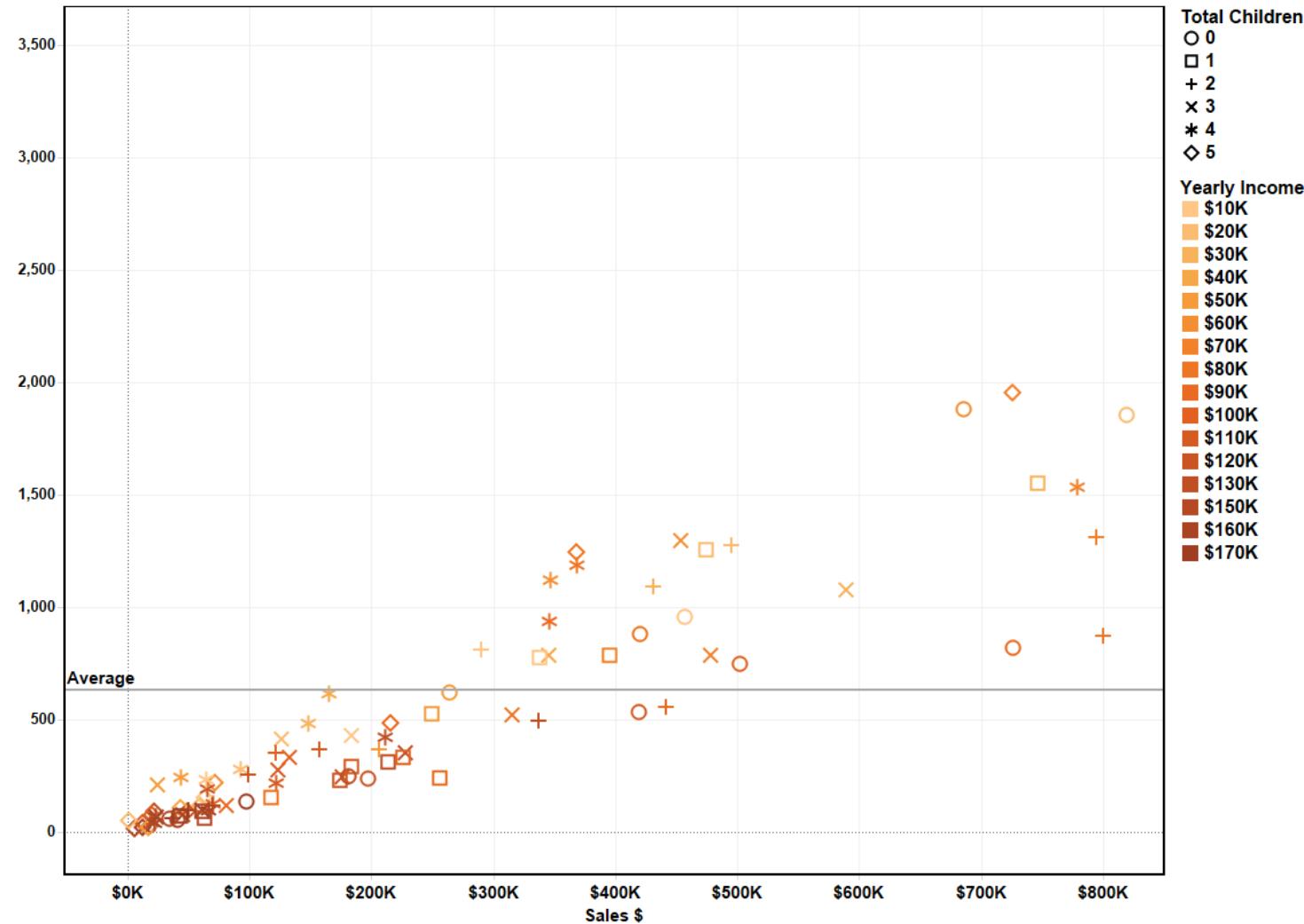
# Contribution Analysis – Tree Map



# Correlation Analysis - Scatter Plot

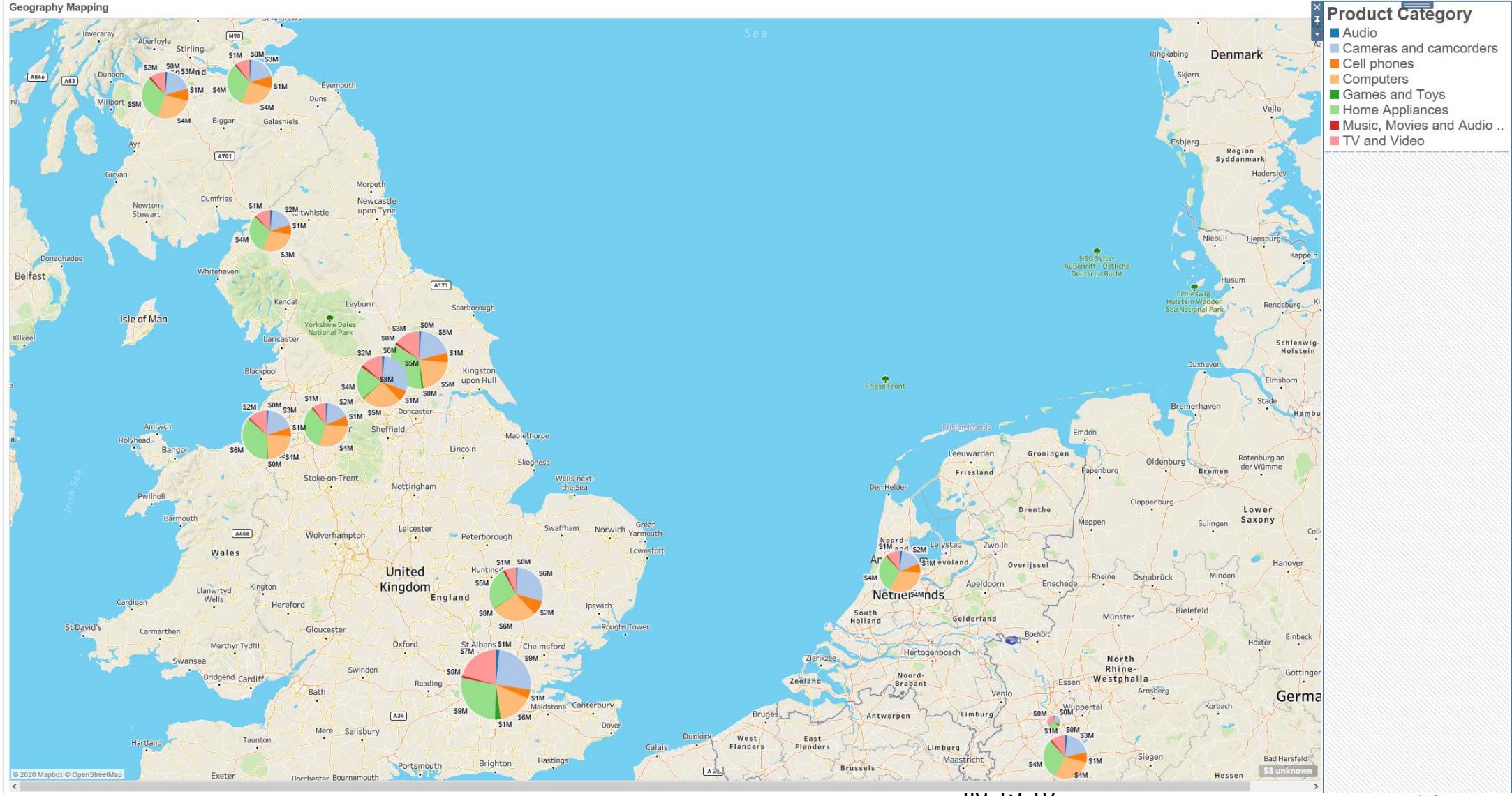
Scatter Plot

fig 13.9



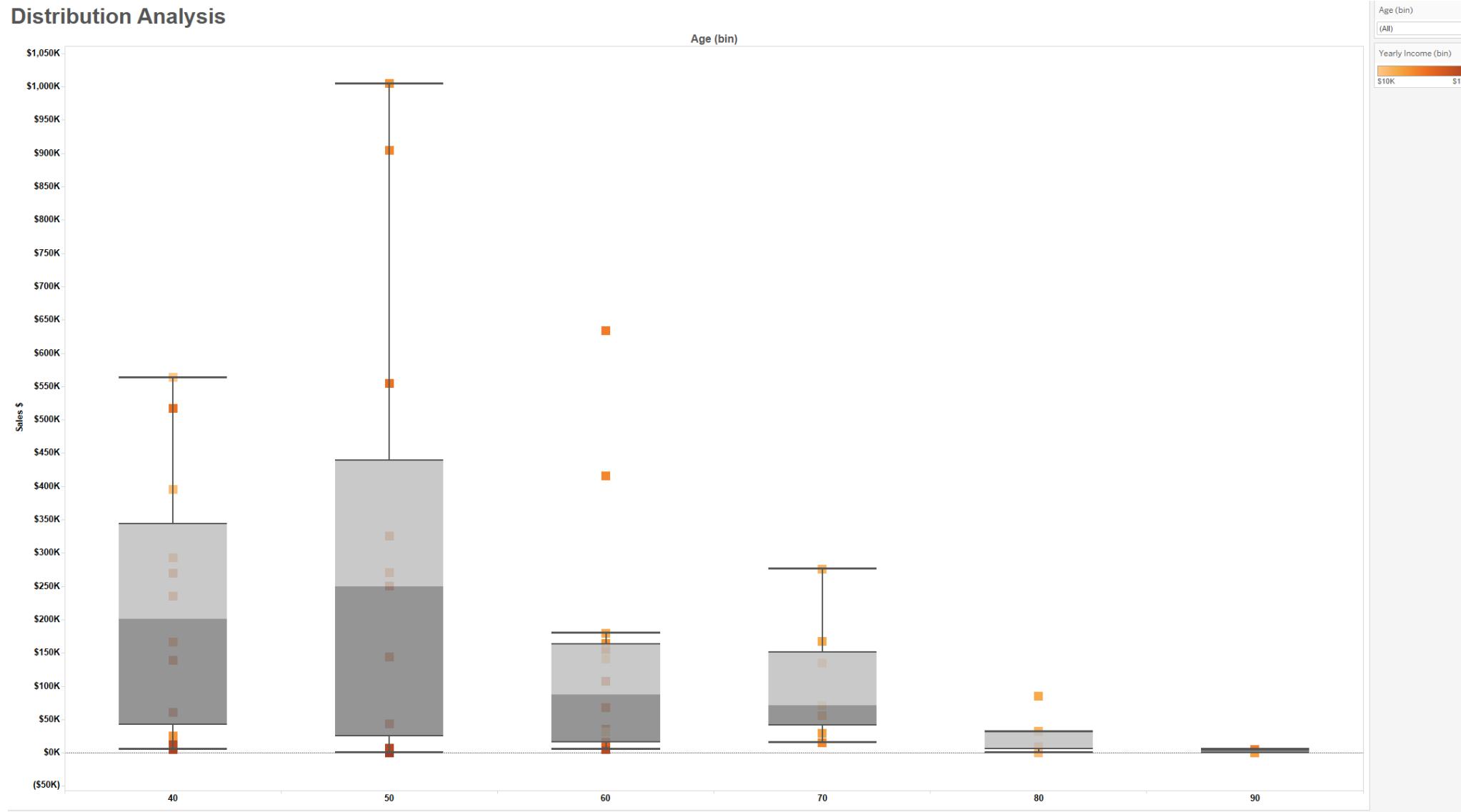
Sum of Sales \$ vs. sum of Order Quantity. Color shows details about Yearly Income. Shape shows details about Total Children. The data is filtered on Country Region, which keeps 6 of 6 members.

# Geographic Data



# Distribution Analysis – Box Plot

fig 13.11



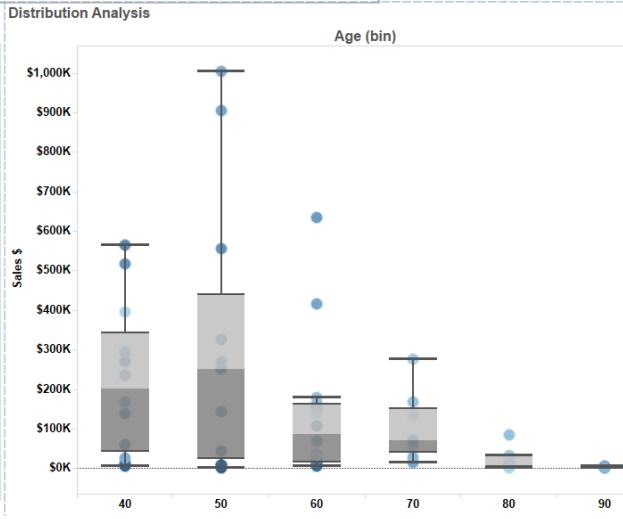
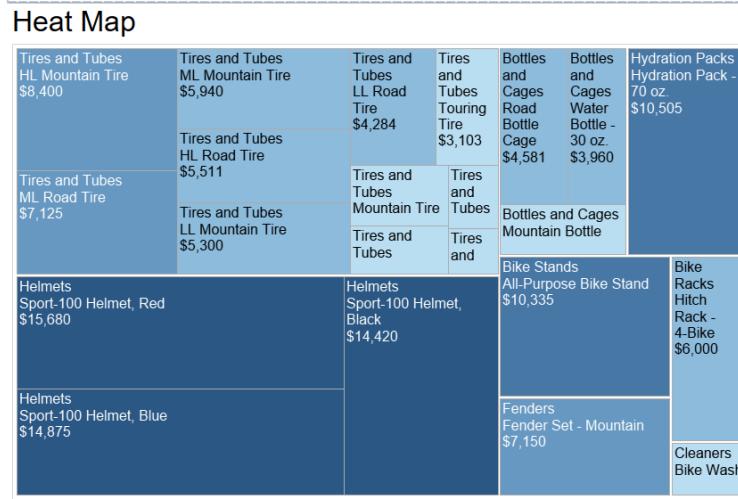
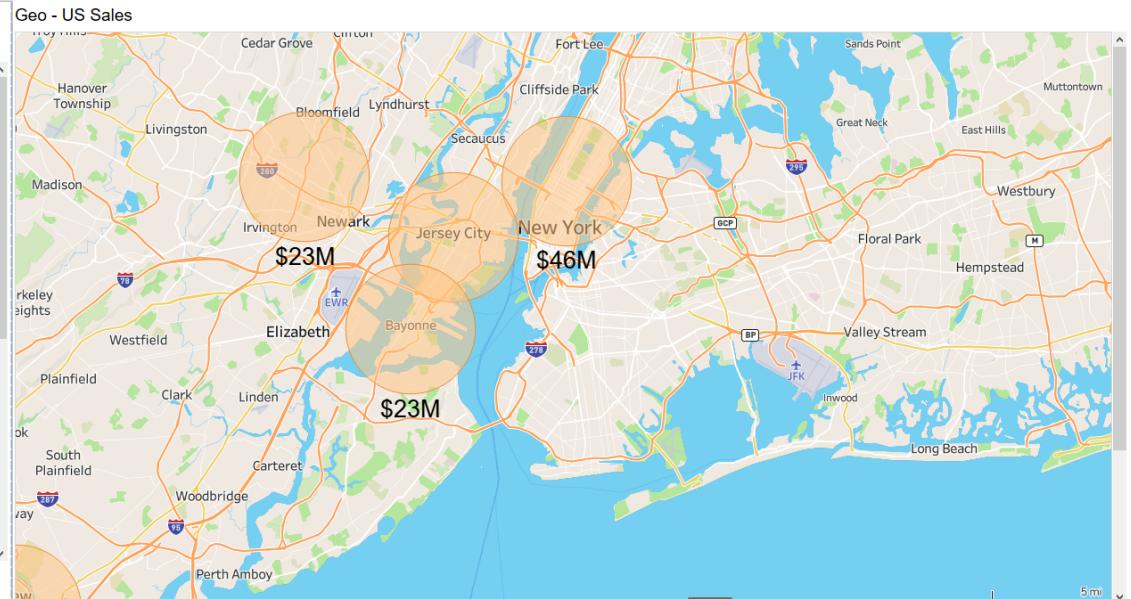
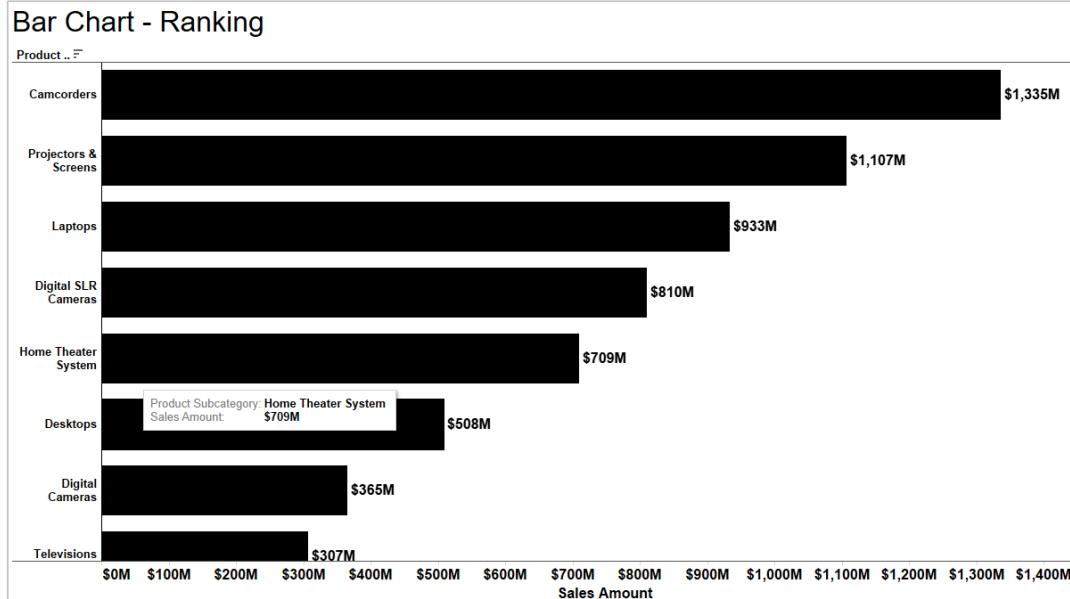
# BI Design Layout - Best Practices



Example: Standard template designed by a BI team for a product marketing group.  
Design visualizations used:

- Bar chart for ranking analysis
- Map for sales
- Heat map for contribution analysis
- Box Plot for correlation analysis
- Tabular report for details

# BI Design Layout - Best Practices



**Tabluar Report**

| Product Category Name | Product Subcategory              | Sales Am.. | Total Cost | Discount.. | Profit |
|-----------------------|----------------------------------|------------|------------|------------|--------|
| Cameras & camcorders  | Camcorders                       | \$1,335M   | \$536M     | \$21M      | \$799M |
|                       | Digital SLR Cameras              | \$810M     | \$309M     | \$13M      | \$501M |
|                       | Digital Cameras                  | \$365M     | \$155M     | \$6M       | \$210M |
|                       | Cameras & Camcorders Accessories | \$52M      | \$25M      | \$1M       | \$27M  |
| Computers             | Projectors & Screens             | \$1,107M   | \$446M     | \$18M      | \$662M |
|                       | Laptops                          | \$933M     | \$413M     | \$14M      | \$520M |
|                       | Desktops                         | \$508M     | \$247M     | \$4M       | \$261M |
|                       | Printers, Scanners & Fax         | \$282M     | \$119M     | \$4M       | \$163M |
|                       | Monitors                         | \$268M     | \$107M     | \$4M       | \$161M |
|                       | Computers Accessories            | \$111M     | \$53M      | \$2M       | \$58M  |
| TV and Video          | Home Theater System              | \$709M     | \$325M     | \$11M      | \$384M |
|                       | Televisions                      | \$307M     | \$131M     | \$5M       | \$177M |
|                       | Car Video                        | \$307M     | \$145M     | \$5M       | \$162M |
|                       | VCD & DVD                        | \$37M      | \$17M      | \$1M       | \$20M  |
|                       |                                  |            |            |            |        |

fig 13.2

# Chapter 13:

## Business Intelligence Applications

- BI Content Specifications
- BI Personas
- BI Design Layout - Best Practices
- Data Design for Self-Service BI
- **Matching Types of Analysis to Visualizations - More**



# BUSINESS INTELLIGENCE GUIDEBOOK

From Data Integration to Analytics

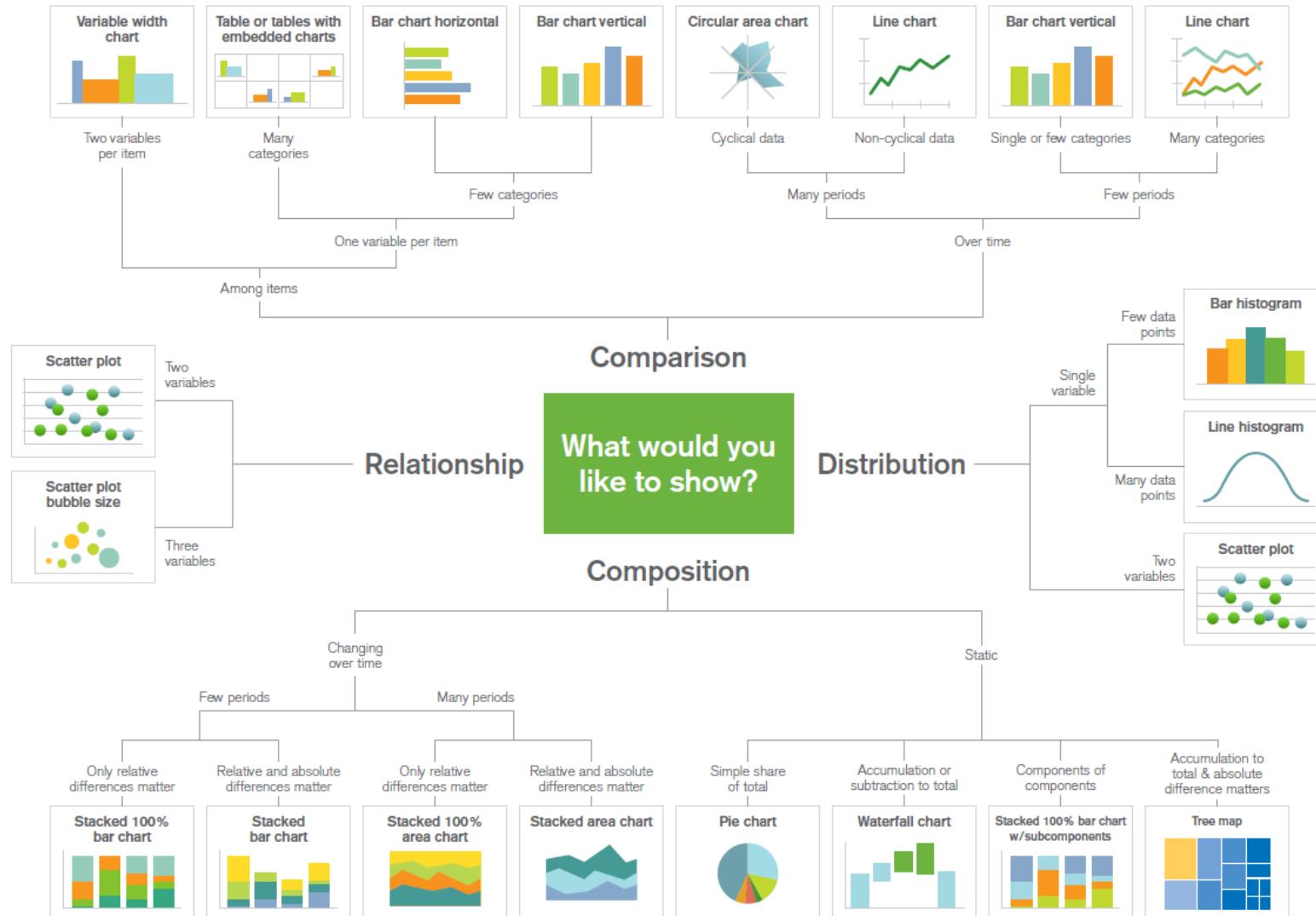
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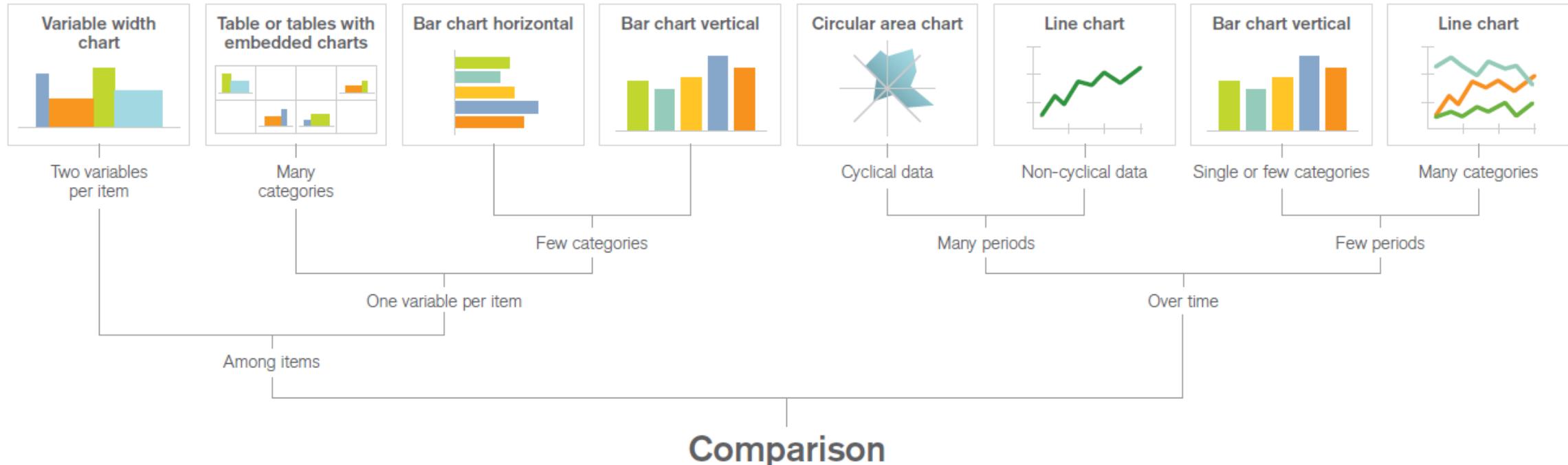
MORGAN KAUFMANN

# Data Visualizations

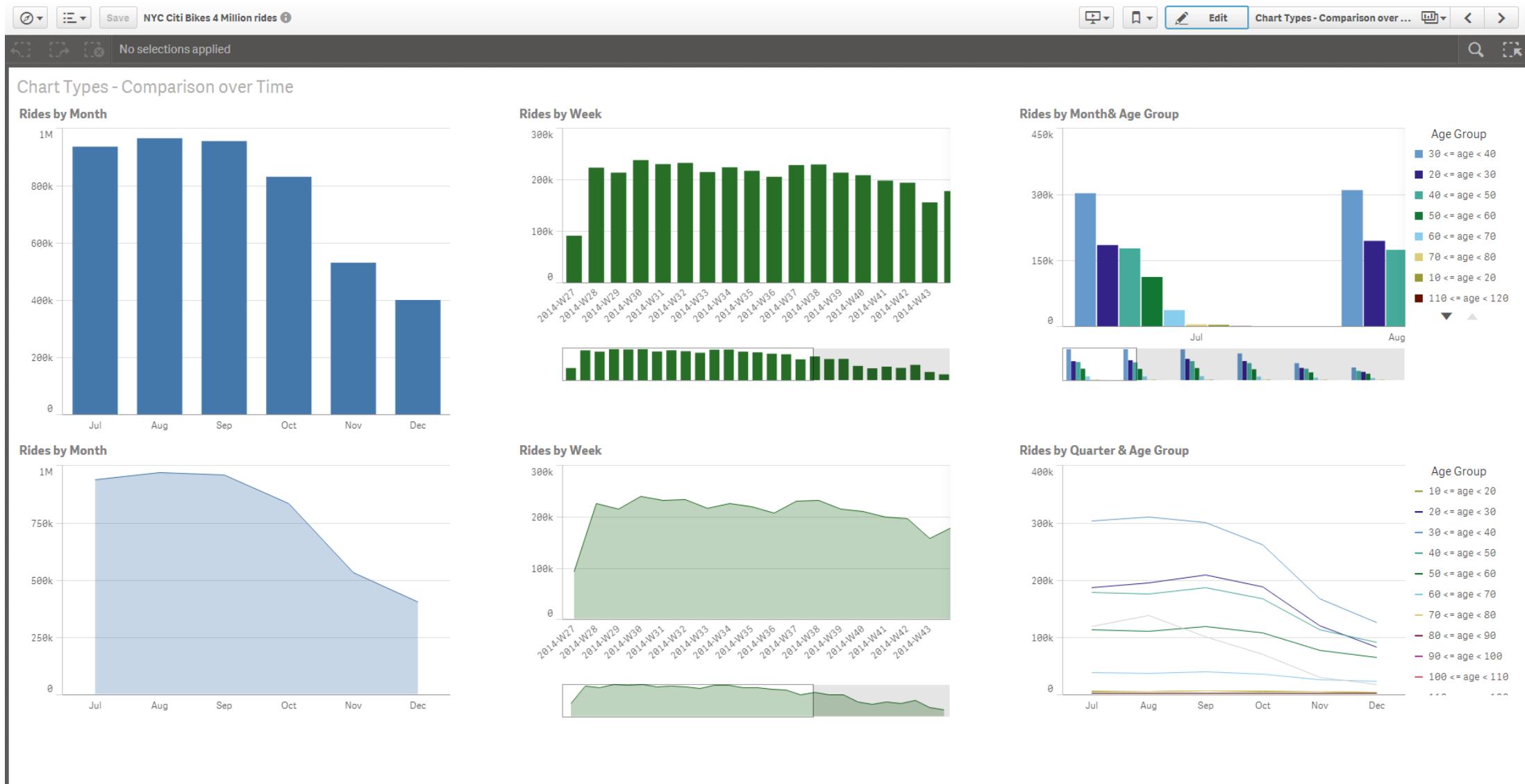


Source: ©A. Abela, 2010. www.ExtremePresentation.com

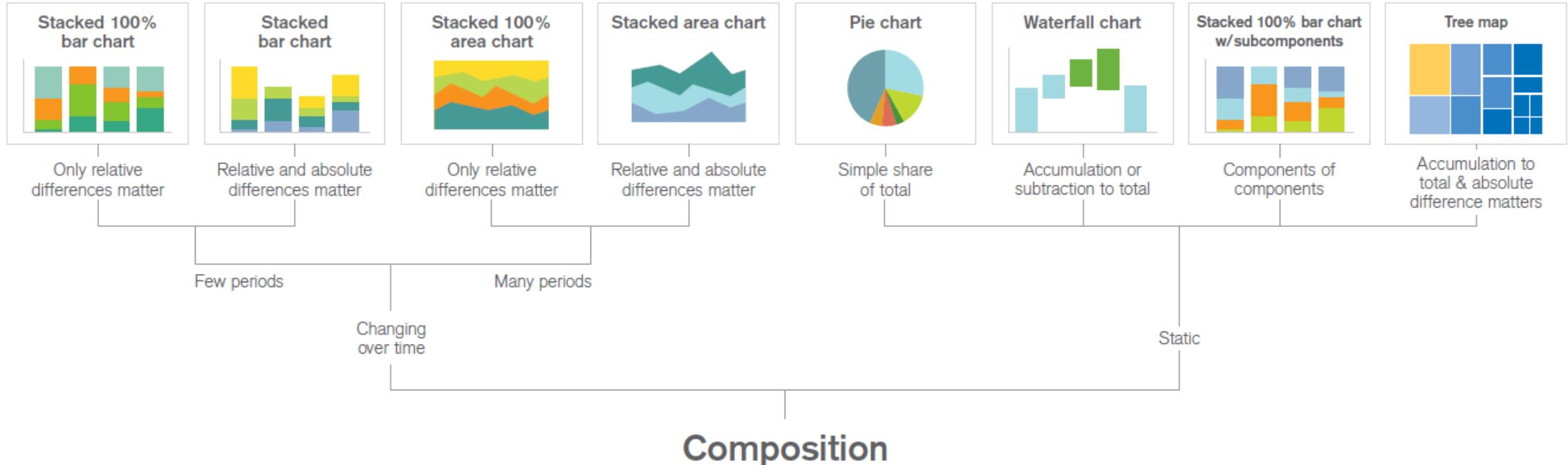
# Data Visualizations - Comparisons



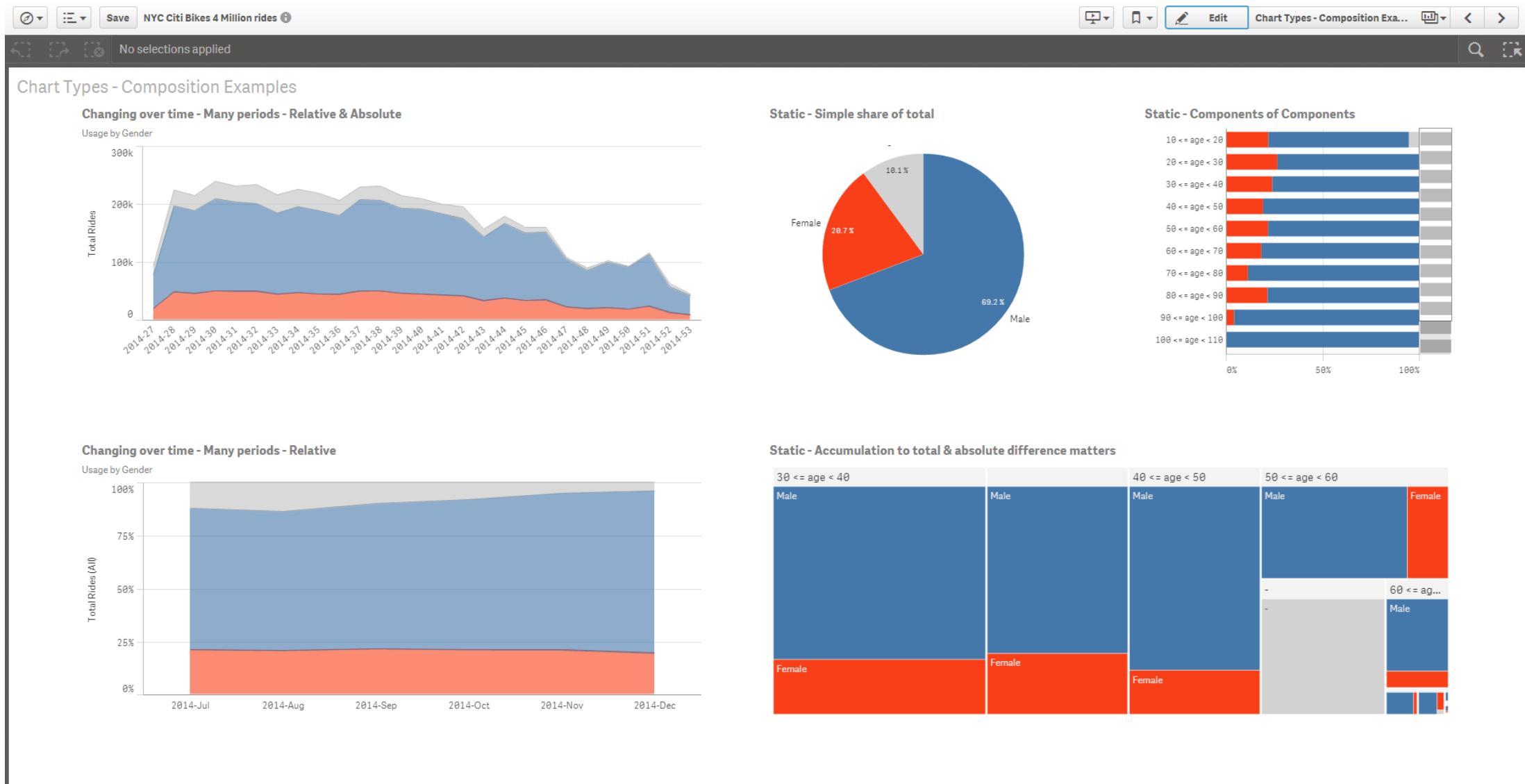
# Data Visualizations - Comparison



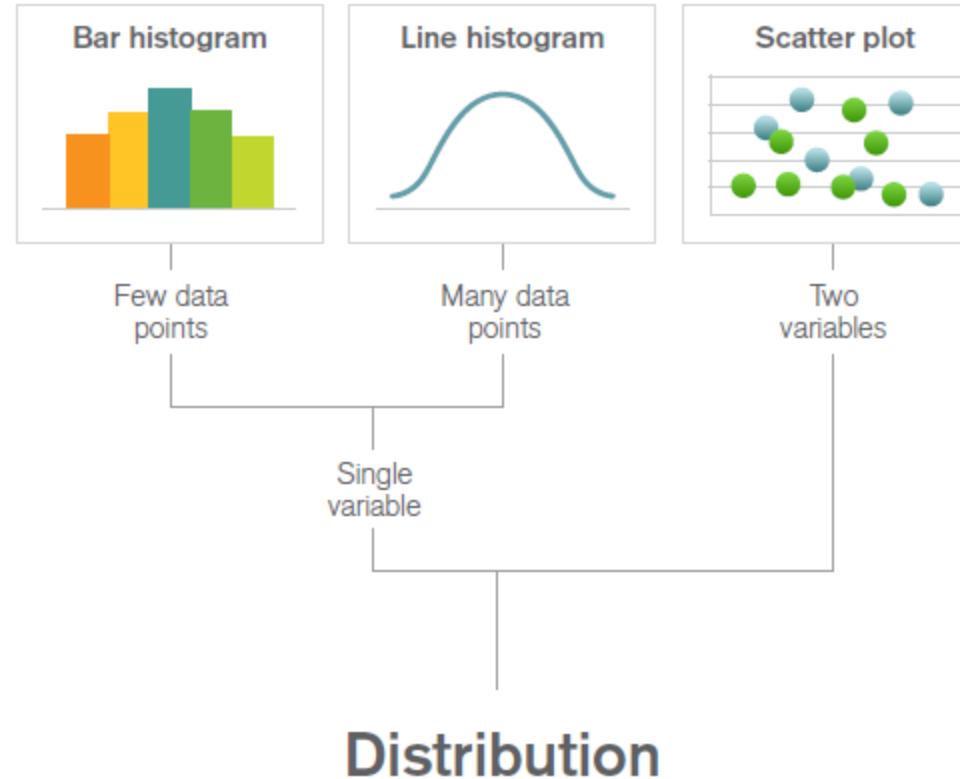
# Data Visualizations - Composition



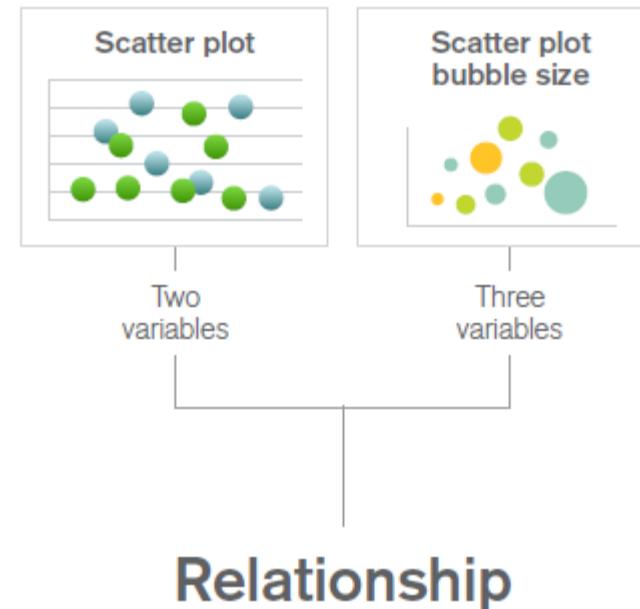
# Data Visualizations - Compositions



# Data Visualizations - Distribution



# Data Visualizations - Relationship



# Chapter 14:

## BI Design & Development

- The Purpose
- Design Techniques
- Design & Development



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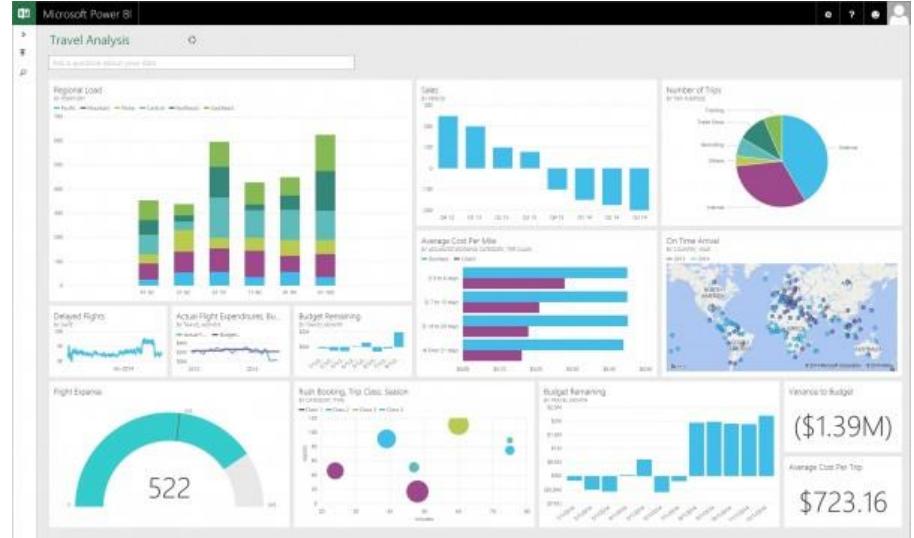
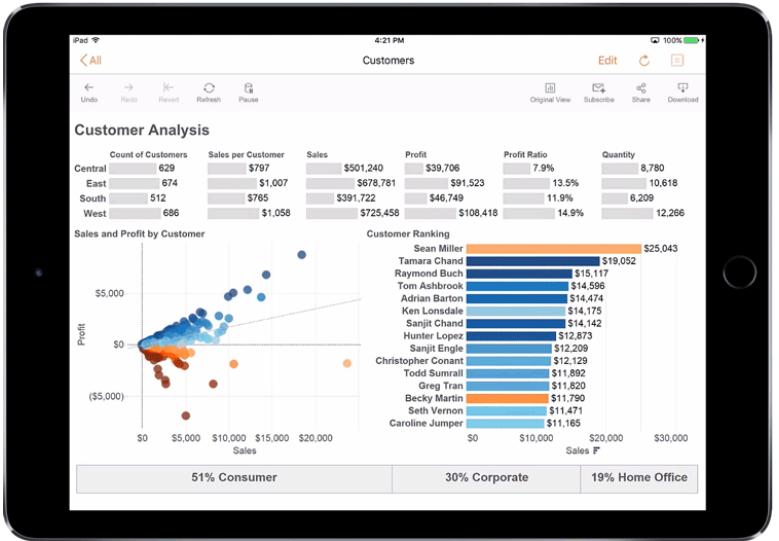
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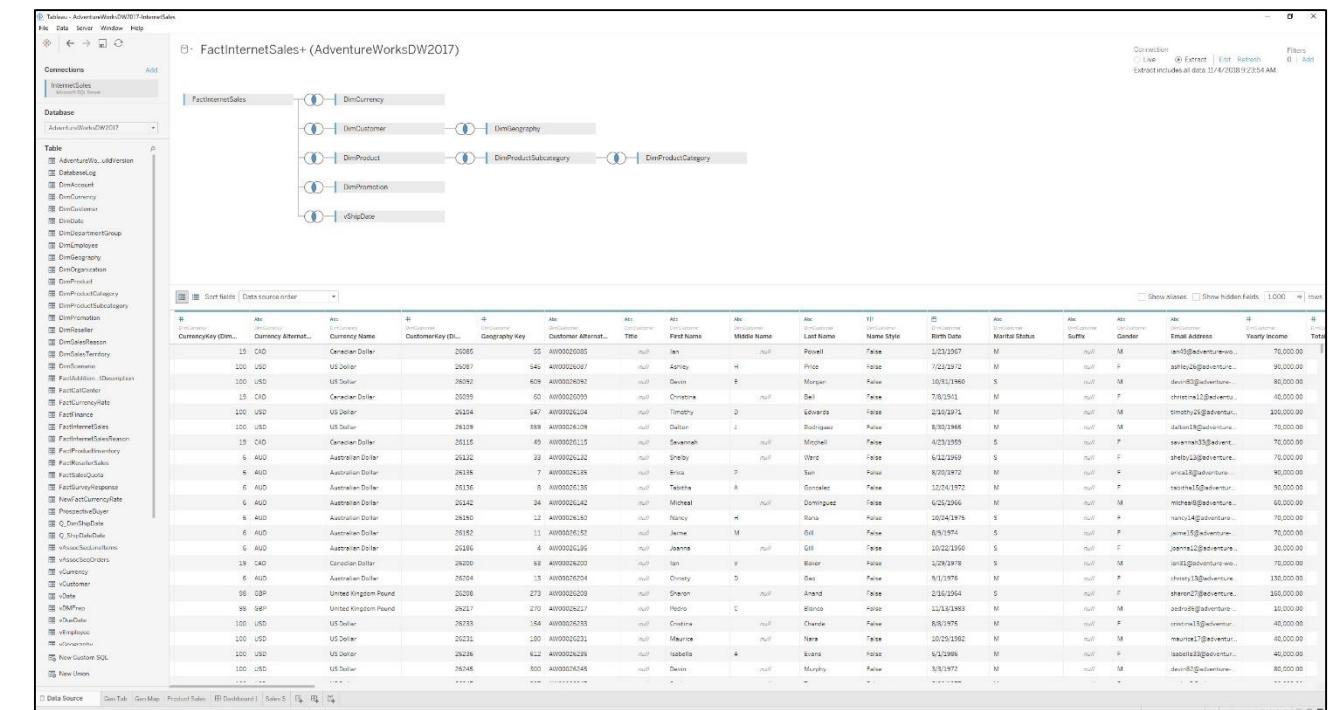
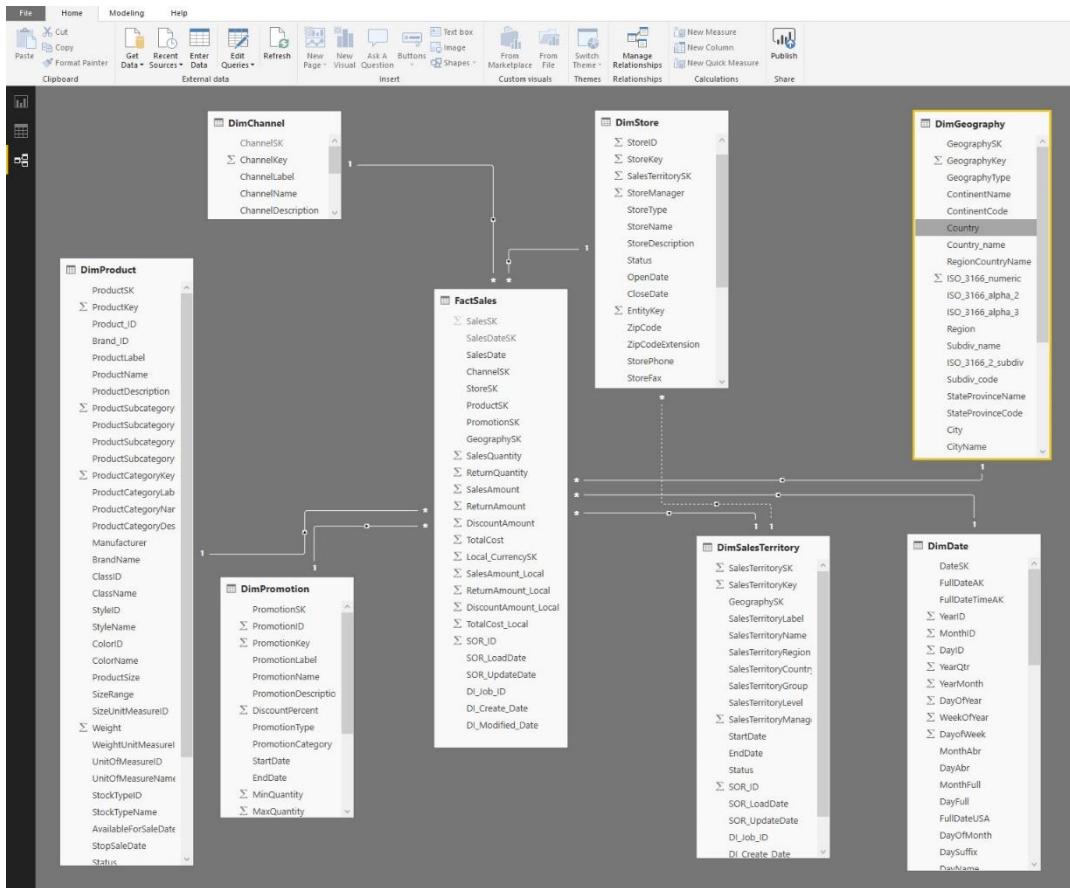
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# BI Application - Visualizations



# BI Application – Data Model



# Chapter 14:

## BI Design & Development

- The Purpose
- Design Techniques
- Development Methodology



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# BI UI Design Techniques

- Designing BI UI
  - Written
  - Visual
  - Prototype
  - Mock-ups
  - Combination of above

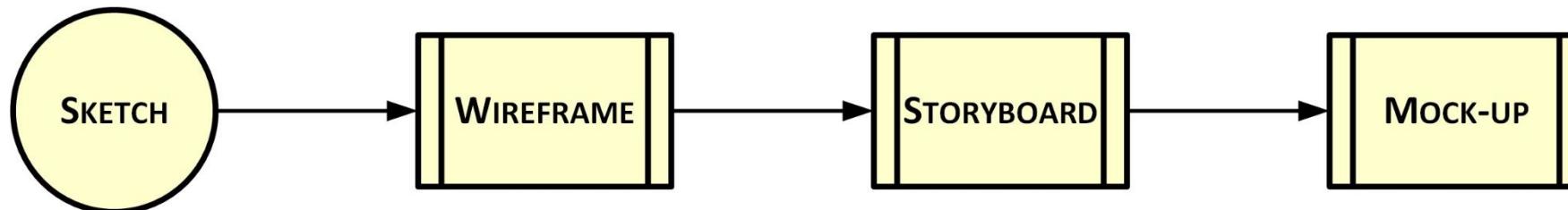


fig 14-1

# BI UI Design Techniques

## Whiteboard Sketches

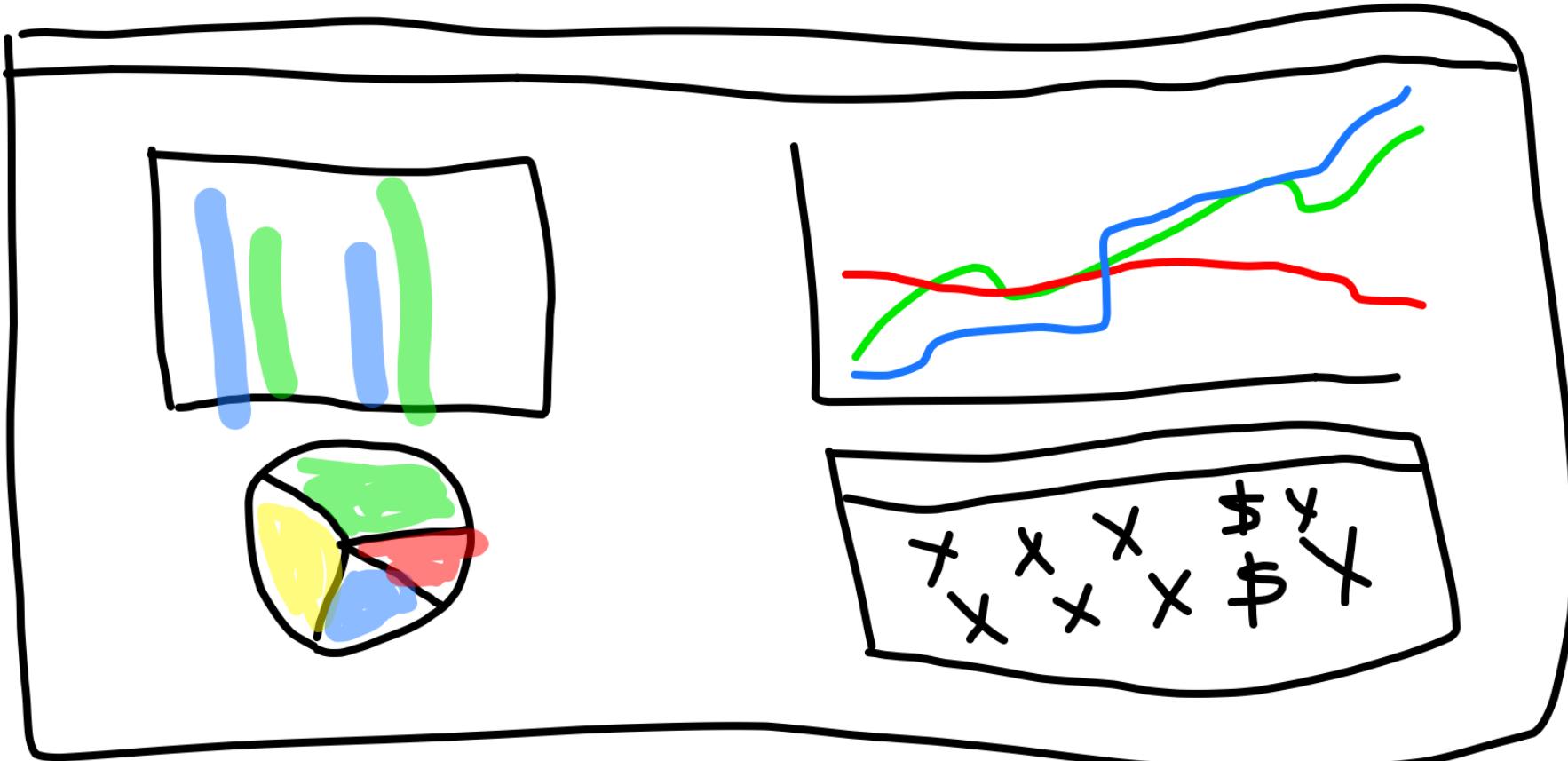


fig 14-2

# BI UI Design Techniques

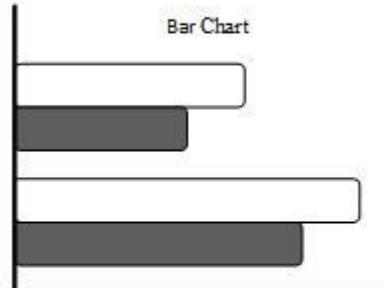
## Wireframe

fig 14-3

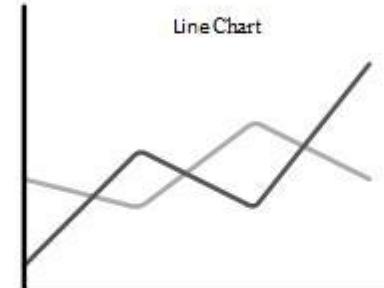
BI Application ABC  
<http://support.mycoolapp.com>

Product Sales Analysis

Bar Chart



Line Chart



Pie Chart



1/1/2010    Filter 1  
12/11/2014    Filter 2

Dimension x  
Column 1  
Column 2  
Column 3  
Column 4

Dimension y  
Column 6  
Column 7  
Column 8

Measures  
Measure 1  
Measure 2  
Measure 3

| Product | City | Sold Date | Sales \$    |
|---------|------|-----------|-------------|
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |

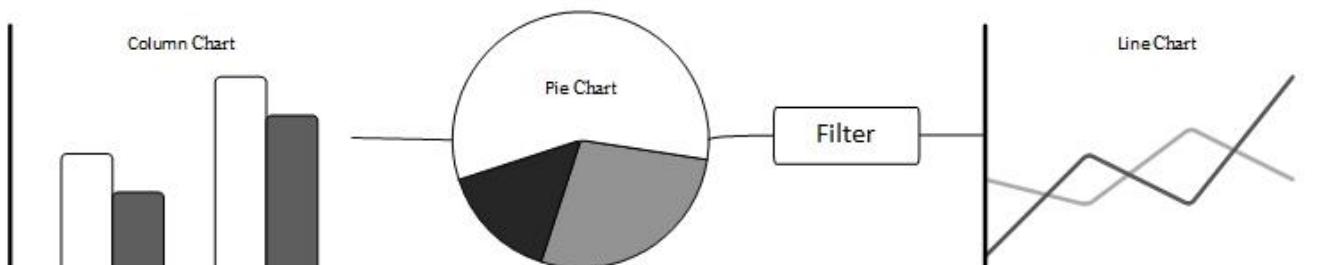
Filters    Columns

Rows    Values

# BI UI Design Techniques

## Storyboard

Product Sales Analysis



Comparison Analysis  
Product Sales  
Year vs Year

Contribution Analysis  
Product Sales

Line Chart

Trend Analysis  
Product Sales

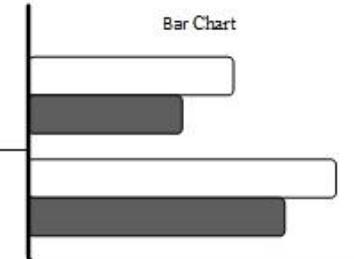
Drill-down

fig 14-4

| Product | City | Sold Date | Sales \$    |
|---------|------|-----------|-------------|
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa     | bbbb | Qx 201x   | \$ xxxxxxxx |

Trend Analysis  
Product Sales  
Drill-down, Detail

Filter



Top Customers Analysis  
Customer by Geo Sales  
Drill-Down, Detail

| Customer | City | Sold Date | Sales \$    |
|----------|------|-----------|-------------|
| aaa      | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa      | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa      | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa      | bbbb | Qx 201x   | \$ xxxxxxxx |
| aaa      | bbbb | Qx 201x   | \$ xxxxxxxx |

Top Customers Analysis  
Customer by Geo Sales  
Drill-Down, Detail

# BI UI Design Techniques

## Mock-ups

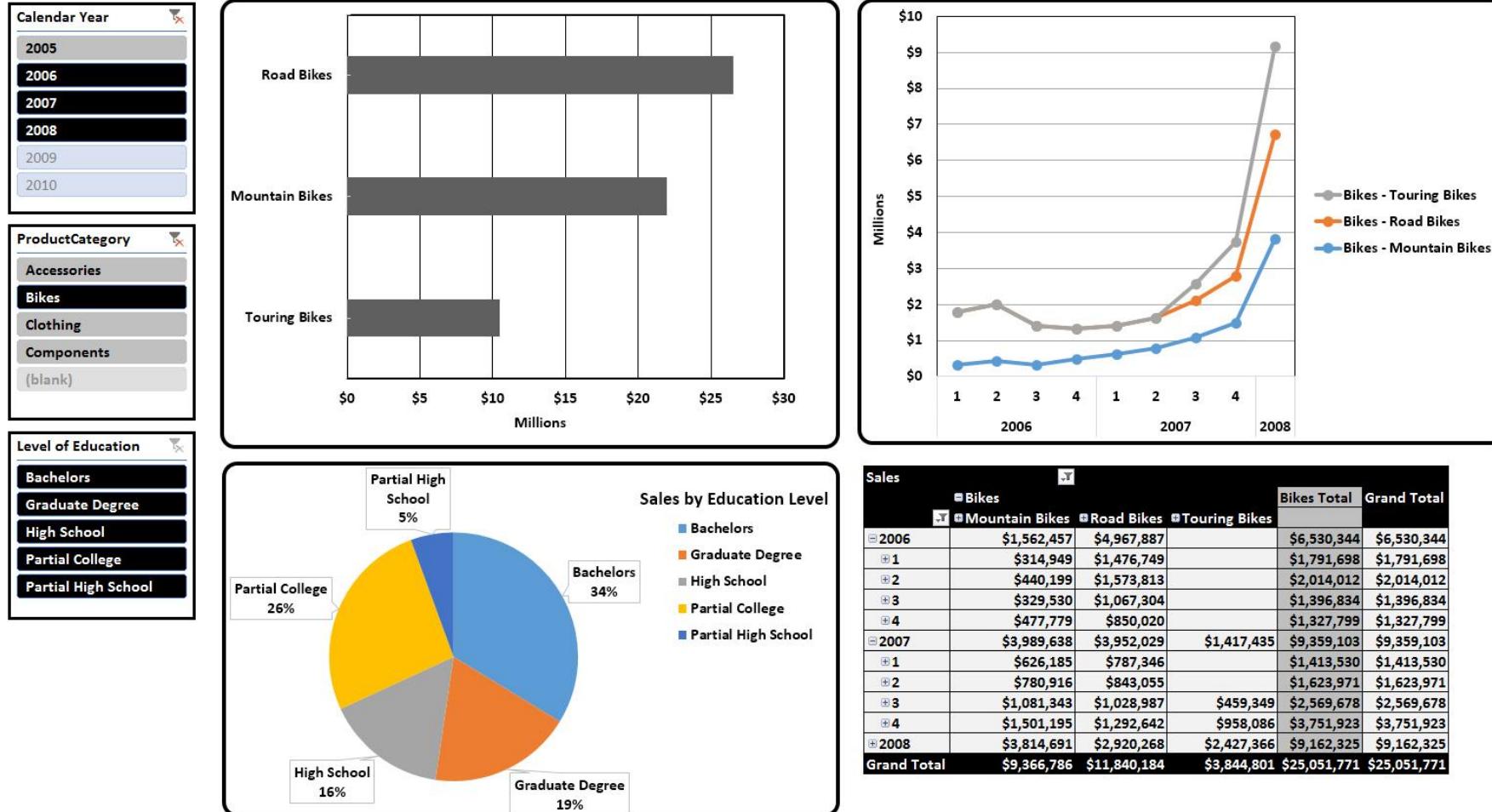


fig 14-5

# BI UI Design

## Standards

- Layout standards specific for each BI style
- Common layout standards defined across all BI styles & delivery platform
  - Layout – backgrounds, BI applications' branding, and logos.
  - Text – fonts and styles for title, subtitles, labels, etc.
  - Color – color scheme for backgrounds, panels, labels and chart types.
  - Filters, parameters and slicers – how they are displayed, function and are related to each other.
- Delivery platform standards defined for each medium in which the BI application will be used
- Chart type standards defined to match each type of analysis with the chart types that best supports it.



# BI UI Design

## Layout Standards specific for each BI Style & Device

- Dashboards and scorecards
  - minimum & maximum number of panels that can be used
  - sizing and orientation of those panels
  - position of filters in
  - workflow between panels and other dashboards
- Pivot tables
  - How dimensions and measures are displayed and selected
- Reports
  - whether production reports be pixel-perfect and static
  - what interaction people will have with the reports
  - how they will be delivered
  - How people will be able to print or save reports as specific formats.



# Chapter 14:

## BI Design & Development

- The Purpose
- Design Techniques
- **Development Methodology**



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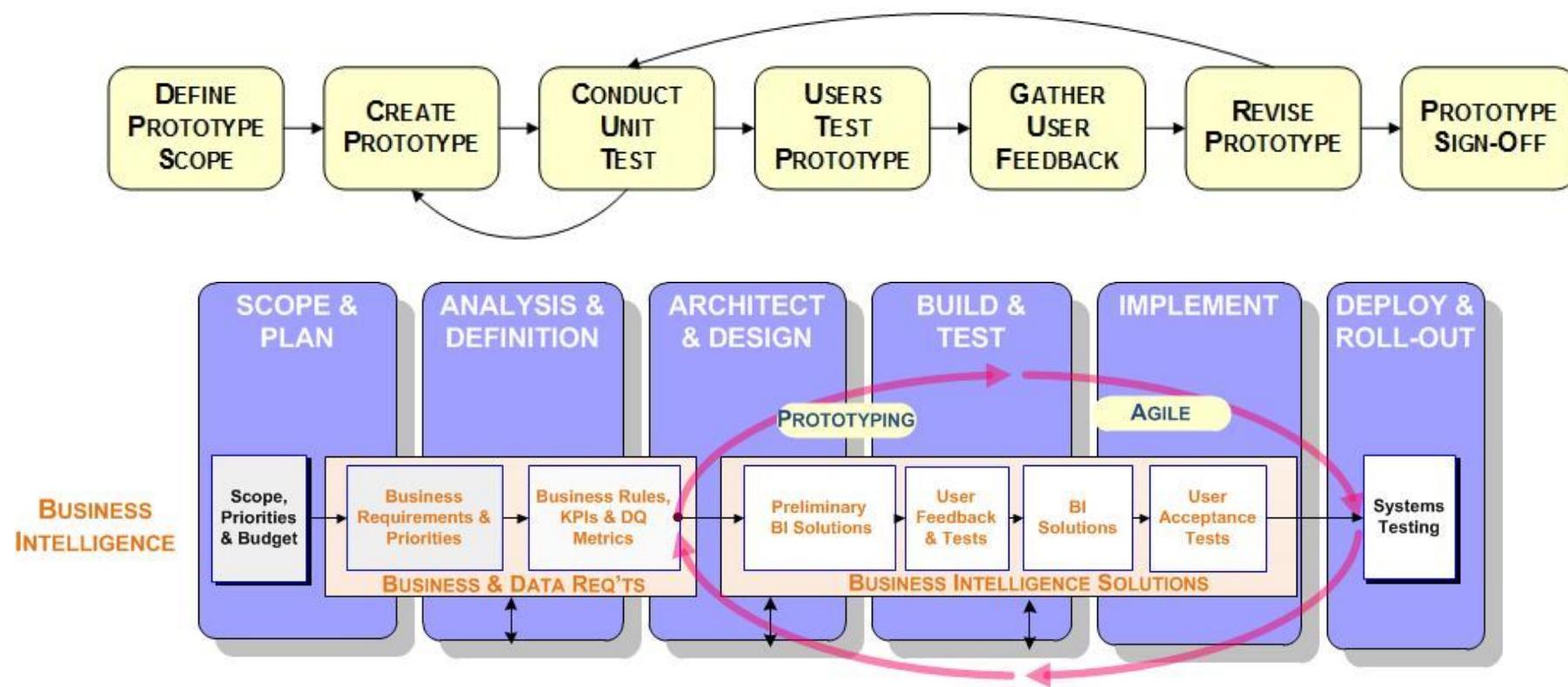
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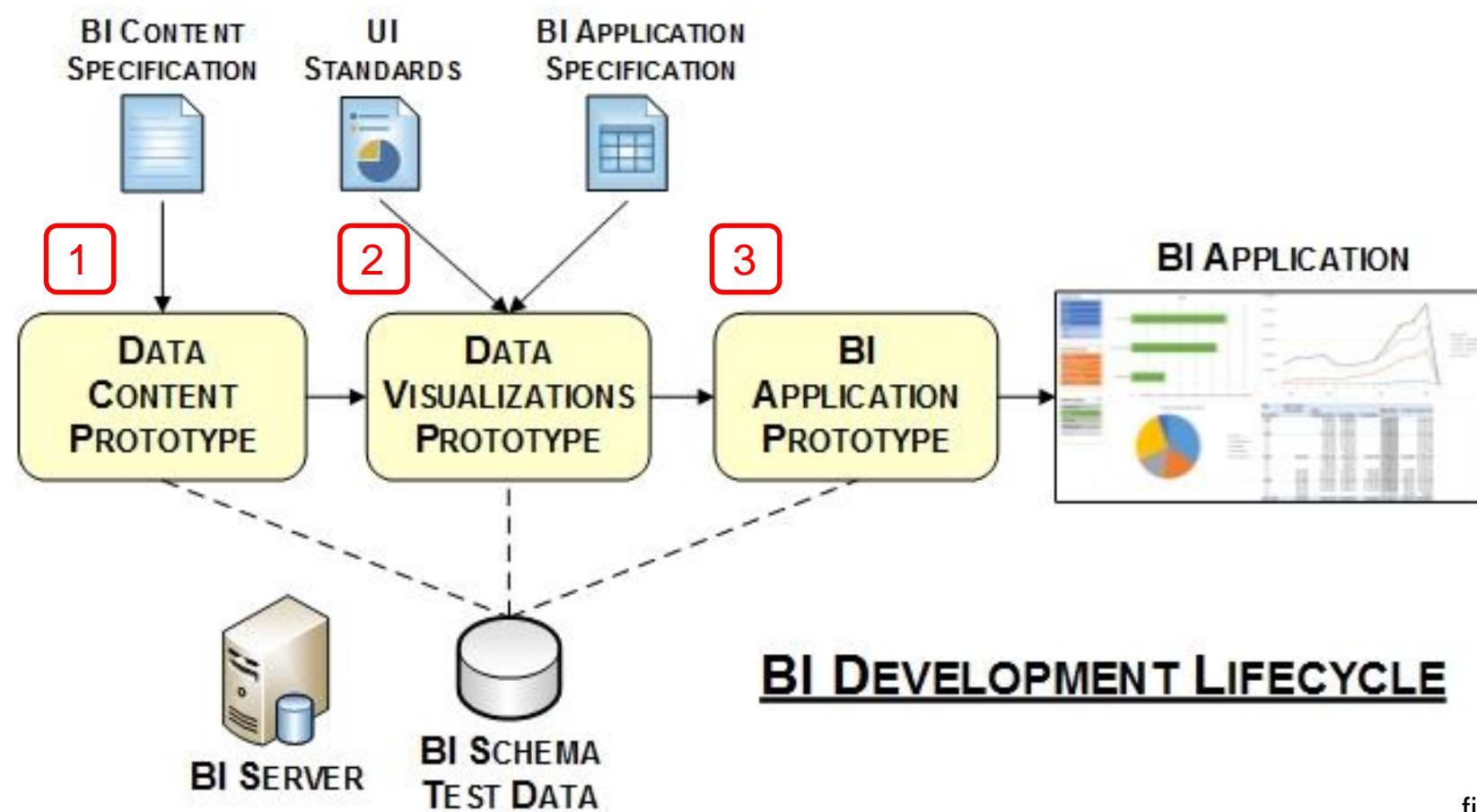
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# BI Development - Prototyping

- Dedicate time & effort
- Work Incrementally
- Agile Approach or Time-box



# BI Development - Prototyping



# BI Development - Testing

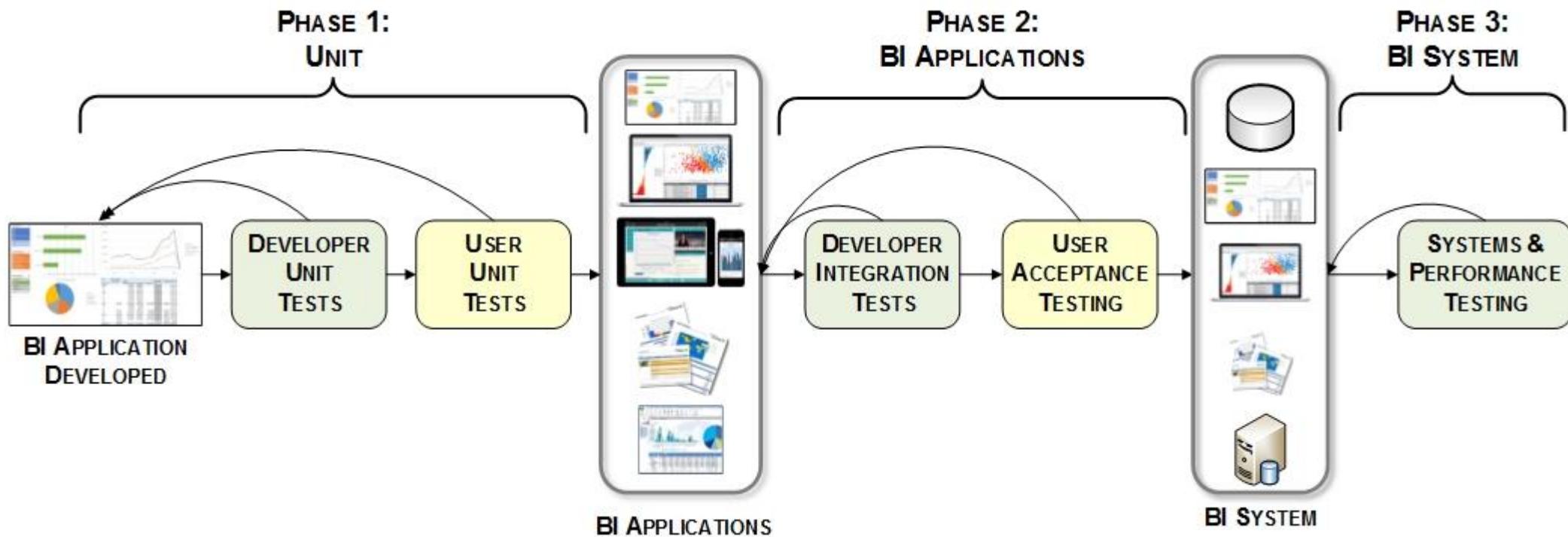


fig 14-8