Project Title: *Superstore Data Analysis*

Reflection on Dashboard Design and Implementation

This project involved creating an interactive logistics dashboard from Tableau to help a logistics company evaluate its international delivery performance and identify shipment bottlenecks. The data analyzed were in the Global Superstore dataset, with detailed transaction data by country, category, and date. The objective was predominantly to transform raw delivery and sales data into useful dashboards that could aid in better decision-making around logistics operations.

One of the first areas explored was delivery time. A measured field, Delivery Time (Days), was created to compute the difference in time from Order Date and Ship Date. This enabled the generation of a line chart plotting average delivery time by month. Using Order Date as a times series and averaging delivery days, the chart indicated insightful trends in speed of operations over time. It was a pivotal visualization in observing when deliveries are slowing down or improving.

In conjunction with time-based analysis, a geospatial map was constructed to show sales by country. The visualization gave worldwide perspective into order activity and suggested improvements in which countries covered the highest volume and revenue. It showed very effectively how geographically widespread the company's customer base is and helped with high-value logistics region detection. Adding tooltips made the map even more interactive, allowing users to be able to easily estimate performance with just a passing of the mouse pointer over countries.

To provide additional business context, pie and bar charts were applied across several dashboards. They included graphs such as Profit by Region, Top-Selling Products, Segment vs. Category Breakdown, and Shipping Mode Distribution. Combined, these graphics provided a better vision

for product performance, customer behavior, and shipping preference. In addition, a bubble chart displayed volume of orders by sub-category, adding to the data narrative.

There were also interactive filters so that users could explore a specific slice of the data. These were Region, Category, and a special Delivery Status filter that divided orders into "On-Time" or "Delayed" based on the delivery date. These filters allowed end users to manage views and drill down into different segments without being overwhelmed with too many dashboards.

The existing dashboards were designed keeping in mind simplicity, usability, and visual consistency. The sheets were named appropriately, legends and labels were placed, and font styles were professional and consistent. The dashboards utilized vertical and horizontal containers to position them sensibly so that the insights could be observed without clutter or confusion.

Overall, the dashboard successfully marries calculated fields, interactive filters, and multiple visualization styles to display complex logistics data in an understandable way. While there is room for further refinement like parameter switches or cross-chart behavior, the implementation that exists accomplishes its main objectives: providing insight into delivery trends, showing geographic shipments, and helping logistics managers make better decisions.

Dashboard Descriptions

Page 1: Sales By Country

This page presents a world map visualization showing sales distribution across various countries.

- **Visualization Type:** Filled Map with proportional circles.
- **Key Insight:** The United States (specifically North America) has the highest sales, indicated by the largest circle and the value $2,297,201. Other countries like Australia

($925,236) and France ($289,710) also show significant sales. Many countries in Africa, South America, and parts of Asia show lower sales figures.

- **Color/Size Encoding:** The size of the circle corresponds to the sales amount, and the color scale (though not explicitly shown on the legend, implies darker shades for higher sales) also represents sales magnitude.

- **Sales Legend:** A legend on the top right shows a range of sales values from $151 to $2,297,201, helping to interpret the circle sizes.

Page 2: Top 10 Selling Products & Top 10 Profitable Products

This page features two horizontal bar charts, highlighting the top-performing products based on sales and profit.

- **Top 10 Selling Products (Horizontal Bar Chart)**
  - **Key Insight:** "Cisco Smart Phone, Full Si" is the top-selling product with $86,936 in sales. This is followed by "Nokia Smart Phone, Full Si" ($76,442) and "Harbour Creations Executi" ($73,156).
  - **Encoding:** Bar length represents total sales.

- **Top 10 Profitable Products (Horizontal Bar Chart)**
  - **Key Insight:** "Saludar Classic Bookcase" is the most profitable product, generating $25,200 in profit. "Cisco Smart Phone, with C" is second with $17,239 profit, closely followed by "Nokia Smart Phone, with" at $17,027.
  - **Encoding:** Bar length represents total profit.
  - **Comparison:** Notably, some products appear on both lists (e.g., "Camon imageCLASS 2200," "Cisco Smart Phone, Full Si"), indicating they are both

high-selling and profitable. However, the top product in sales ("Cisco Smart Phone, Full Si") is not the most profitable, suggesting different profit margins across products.

Page 3: Profit by Sub-Category & Sales by Product Category (Time Series)

This page combines a bar chart for profit by sub-category with a line chart showing sales over time by product category.

- **Profit by Sub-Category (Horizontal Bar Chart)**
  - o **Key Insight:** "Copiers" are the most profitable sub-category with $258,568 in profit. "Phones" ($216,717) and "Bookcases" ($161,924) also contribute significantly to profit. "Tables" show a negative profit of -$11,525, indicating losses.
  - o **Encoding:** Bar length represents profit. Positive profit bars extend to the right, while negative profit bars extend to the left.
- **Sales by Product Category (Line Chart)**
  - o **Key Insight:** This chart displays the trend of sales for "Furniture," "Office Supplies," and "Technology" categories from 2011 to 2014.
  - o **Sales Trends:** All categories show an upward trend in sales over the years. "Technology" consistently has the highest sales, reaching over $1,600,000 in 2014. "Office Supplies" are generally second highest, followed by "Furniture."

Page 4: Sub-Category by Quantity & Order Priority

This page includes a bubble chart for sub-category quantity and a bar chart for order priority.

- **Sub-Category by Quantity (Bubble Chart)**

  - **Key Insight:** "Binders" have the highest quantity, with 21,429 units. "Storage" (16,917 units) and "Art" (16,301 units) are also significant in terms of quantity.

  - **Encoding:** The size of each bubble represents the quantity of items sold for that sub-category.

- **Order Priority (Bar Chart)**

  - **Key Insight:** Most orders have a "Medium" priority, with 29,433 orders. "High" priority orders account for 15,501, while "Low" priority orders are the fewest at 2,424.

  - **Encoding:** Bar height represents the count of Order IDs for each priority level.

Page 5: Profit by Region, Orders by Category, & Orders Count by Shipping Mode

This page presents insights into profit by region, order distribution by customer segment and category, and order counts by shipping mode.

- **Profit by Region (Treemap)**

  - **Key Insight:** "Central" region is the most profitable with $311,404 in profit. "North Asia" ($165,578) and "South" ($140,356) are also strong contributors. "EMEA" ($43,898) and "Canada" (no specific profit value shown but present) contribute smaller profits.

  - **Encoding:** The size of each rectangle represents the profit for that region.

- **Orders by Category (Stacked Bar Chart)**

- **Key Insight:** This chart shows the count of orders segmented by "Consumer," "Corporate," and "Home Office," further broken down by product category ("Furniture," "Office Supplies," "Technology") and ship mode.

- **Segments:** "Consumer" segment has the highest total orders (e.g., 5,095 for Technology).

- **Categories:** "Office Supplies" (orange) consistently accounts for the largest portion of orders across all segments.

- **Orders Count by Shipping Mode (Pie Chart)**

  - **Key Insight:** "Standard Class" is the most common shipping mode, with 30,775 orders. "Second Class" has 10,309 orders, "First Class" has 7,505, and "Same Day" has the fewest with 2,701 orders.

  - **Encoding:** Each slice's size represents the proportion of orders for that shipping mode.

Page 6: Profits by Shipping Cost & Market Profit

This page focuses on the relationship between profits and shipping costs, and overall market profit.

- **Profits by Shipping Cost (Grouped Bar Chart)**

  - **Key Insight:** This chart compares Profit and Shipping Cost for "Furniture," "Office Supplies," and "Technology" categories.

  - **Observation:** For "Furniture," "Office Supplies," and "Technology," the shipping cost is generally higher than the profit generated for each category, indicating a

potential area for cost optimization. For example, Technology has very high shipping costs compared to its profit.

- o **Encoding:** Blue bars represent Profit, and orange bars represent Shipping Cost.
- **Market Profit (Horizontal Bar Chart)**
    - o **Key Insight:** "APAC" (Asia-Pacific) region shows the highest market profit at $436,000. "EU" (European Union) follows with $372,830. "Canada" shows a profit of $17,817, and "EMEA" (Europe, Middle East, Africa) with $43,898.
    - o **Encoding:** Bar length represents total profit for each market.

Page 7: No of superstore by countrywise

This page features a world map visualizing the count of superstores by country.

- **Visualization Type:** Filled Map with labels.
- **Key Insight:** The map shows the number of superstores in different countries. The United States has a very high concentration, indicated by the value 2644. Other countries like India (1880), China (1555), and Australia (2837) also have significant numbers of superstores. Many African and South American countries have very few superstores (e.g., 2, 9, 39).
- **Encoding:** The color intensity (shades of green) likely corresponds to the count of superstores, with darker greens indicating more superstores. Labels directly on the map show the count for each country.
- **Legend:** A color legend shows the count of superstores ranging from 2 to 9,994, helping to interpret the map's shading.