BIBITOR, LLC DATASET SUPPORTING MATERIAL

Store Profitability Analysis of June 2016 Bibitor, LLC. Incorporating Tableau.

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**KEY TABLEAU TERMS:**

*Dimension:* Fields that are discrete categorical information (should not be aggregated). E.g. Store number/location.

*Measure:* Fields that contain quantitative information (can be aggregated)

*Pill:* Represents a variable that can be moved to create a field in the view

*Worksheet:* A sheet where you build views of your data by dragging fields onto shelves.

*Dashboard:* A combination of several views arranged on a single page. Use dashboards to compare and monitor a variety of data simultaneously.

*Storyline:* A sheet that contains a sequence of views or dashboards that work together to convey information.

*Treemap:* A treemap displays data using nested rectangles whose area is proportional to the data it represents.

*Calculated Field:* Under the Analysis Tab in *Tableau*, the analyst can create new variables.

Additional terms can be found using the [Tableau glossary](https://public.tableau.comETYH4V1DAZ).
Part I (Difficulty: Beginner)

Bibitor, LLC asked you to complete due diligence on their wine and spirits business. Bibitor has 79 retail locations with approximately $441 million in sales. Their CFO is at the forefront of data analytics and created a Storyline the company uses for making decisions about their stores. To facilitate the investigation, you have Bibitor’s sales file with more than 12 million records and their purchase price file with the cost of each inventory item.

Traditional spreadsheets cannot process all of the data, requiring the use of Tableau to complete your due diligence.

Prior to using Tableau, the CFO provides you with two Dashboards from their Sales Profitability Storyline for the 12-months ended June 30, 2016.

| Summary Data (Created by Using the Analytics Tab in Tableau) |
|--------------------------|-------------------|
| Count:                   | 79                |
| Sum [SUM(Sales Dollars)]:| 441,071,514       |
| Average:                 | 5,583,184         |
| Minimum:                 | 436,062           |
| Maximum:                 | 26,064,575        |
| Median:                  | 3,961,997         |
Summary Data (Created by Using the Analytics Tab in Tableau)

<table>
<thead>
<tr>
<th>Summary Data (Created by Using the Analytics Tab in Tableau)</th>
<th>Count: 79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum [SUM(COGS)]:</td>
<td>303,468,649</td>
</tr>
<tr>
<td>Average:</td>
<td>3,841,375</td>
</tr>
<tr>
<td>Minimum:</td>
<td>301,688</td>
</tr>
<tr>
<td>Maximum:</td>
<td>17,804,291</td>
</tr>
<tr>
<td>Median:</td>
<td>2,680,286</td>
</tr>
</tbody>
</table>

**Required:**

1. Using these two **Dashboards**, describe **Sales** and **Cost of Goods Sold (COGS)** in a short memo. In your memo, include a discussion about:
   - The total number of stores
   - Total **Sales** and **Cost of Goods Sold** for the company
   - The average and median **Sales** and **Cost of Goods Sold** per store
   - The 5 largest and smallest stores based on **Sales** and **Cost of Goods Sold**
   - Are the 5 largest/smallest stores based on **Sales** the same as the 5 largest/smallest based on **Cost of Goods Sold**? Would you expect them to be the same? What could cause differences?

2. Using **Tableau**, recreate the first **Dashboard** (Sales by Store). Review the Video on the HUB of Analytics Education to assist you in completing this task.
HINTS:

- Verify your sales total ($441,071,514) matches Bibitor’s Dashboard, Sales by Store.
- Convert the variable Store into a Dimension and the variable Sales Dollars a Measure.
- To change Store to a Dimension, drag and drop the Store pill into the Dimensions section on Tableau.
- Using the Analytics tab in Tableau, show the average line and median line on the graph.
- Sort the Store variable from smallest to largest.
- Under the Worksheet tab in Tableau, show the Summary.
Part II (Difficulty: Beginner/Intermediate)

The Bibitor, LLC CFO wants some additional analysis using Tableau. She is interested in differences between wine and spirits across the entire organization. She wants to know the differences in Sales Dollars and Quantities between the two categories, popular bottle sizes for wine and spirits, and the most popular vendor for wine and spirits. She is also interested in certain information at the Store level of detail.

Required:

Assist the CFO in creating Worksheets and Dashboards to answer these questions:

- What is the total Sales Dollars and percentage breakdown of wine and spirits?
  
  Hint: Use the Classification (1=Spirits and 2=Wine) and the Sales Dollars to separate the sales based on wine and spirits. Convert the data into a Pie Chart (Show Me Tab) and the Analysis Tab to convert data into percentages.

- What is the most popular Size for wine and for spirits based on Sales Dollars and Quantity (include the total Sales Dollars and Quantity in your answer)? Provide the CFO with some reasons why this is important for managing the business.

- Who is the most popular Vendor for wine and for spirits based on Sales Dollars and Quantity (include the total Sales Dollars and Quantity in your answer)? Provide the CFO with some reasons why this is important for managing the business.

- Which Stores have the highest and lowest average sales price for wine and spirits?
  
  Hint: Create a Calculated Field (Analysis Tab) and label it Average Sales Price. To accomplish this, drag the Sales Dollars pill divided by Quantity pill. You should see the Average Sales Price pill. Drag the Average Sales Price pill into columns and convert the variable from “SUM” to “AVG” by using the Dropdown menu on the Pill. Drag the Classification pill into the Filter Card to help you determine the Average Sales Price for wine versus spirits.

- What seasons/months are sales the highest and lowest? Provide the CFO with some reasons why this is important for managing the business.

- If you were the CEO or CFO, what other data/variables would you want to collect to improve your business and why?
Part III (Difficulty: Intermediate)

In order to create the Treemap for the Cost of Goods Sold (COGS), you will have to link two data files. Tableau will do this automatically. Start by uploading the sales file (you can use the same workbook as the previous investigations; however, we always recommend you save your work as you go). Once the sales file is uploaded, upload the purchase price file. The files should be a center join based on Brand. Once the files are linked, verify your files uploaded and joined properly. The total Sales Dollars should be $441,071,514. Verifying your COGS of $303,468,649 will trickier as we need to create the variable (to be discussed below). To determine the COGS, you’ll have to create the COGS variable by going to the Analysis Tab and clicking on a Create a Calculated Field. Drag Purchase Price and then multiply by Sales Quantity. You should see your new variable under the Measures.

- Once the files are merged, you’ll have to calculate the following variables
  - COGS - $303,468,649
  - Gross Profit: Gross Profit = Sales - COGS
  - Gross Profit %: Gross Profit / Sales

- Create a Scatter Graph comparing each store’s Sales and Gross Profit.

  - Does the relationship appear to be linear?
  - What is the equation of the trend line? Hint: Use the Analytics Tab and drag it onto your Worksheet.
  - Why wouldn’t all of the stores be exactly on the trend line since each store has access to the same inventory?

- Create a Worksheet to determine the percentage that each Store contributes to the overall Gross Profit. Use the Classification variable to filter based on spirits and wine. Convert your Worksheet into a Stacked Bar Chart. What percent does store 76 contribute to the overall gross profit? What percent does Store 76 contribute to Gross Profit based on wine only? Spirits only?

- Individually, which two stores have the highest Gross Profit %? Individually, which two stores have the lowest Gross Profit %?

- What kind of decisions could be made when examining a store’s contribution to overall gross profit for the company? What kind of decision could be made when comparing individual store gross profit percentages?

Part IV (Difficulty: Intermediate)

Write a 1-page summary analyzing your finding regarding the profitability of the stores. Include recommendations to improve profitability and additional information management would want to collect to improve the company’s profitability. You can include dashboards as appendices to support your argument.