Data Visualization Task: Executive Insights Report

To: Data Analytics Team

Subject: Visual Analytics for CEO & CMO Strategic Review

Tools Authorized: Tableau (.twbx) or Power BI (.pbix)

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1. Project Overview

This task requires the creation of four distinct visual analyses based on requests from the CEO and CMO. You are provided with raw retail data to identify trends, top-performing markets, and expansion opportunities.

2. Mandatory Data Pre-processing

Before beginning the analysis, you must perform data cleansing to ensure accuracy. The raw dataset contains return entries (negative quantities) and pricing errors.

Required Data Filters:

- **Quantity Check:** Exclude all records where the quantity is less than 1 unit.
- **Price Check:** Exclude all records where the Unit Price is below $0.

Note: Use conditional formulas or data transformation methods (Power Query or Tableau Data Source filters) to exclude these records. Analysis performed on uncleaned data will be considered inaccurate.

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3. Reporting Requirements

Question 1: Revenue Time Series (CEO Request)

- **Objective:** Analyze seasonal revenue trends for the year **2011 only**.
- **Granularity:** Monthly view.
- **Purpose:** To identify seasonal peaks and troughs to inform next year's forecasting.

Question 2: Top 10 Countries by Revenue (CMO Request)

- **Objective:** Identify the top 10 revenue-generating countries.
- **Requirements:**
    - Display both **Revenue** and **Quantity Sold**.
    - **Exclude** the United Kingdom from this visualization.

Question 3: Top 10 High-Value Customers (CMO Request)

- **Objective:** Visualize the top 10 customers based on revenue generation.
- **Formatting:** Sort the data in descending order (highest revenue at the start).

- **Purpose:** To support customer retention strategies for high-value clients.

Question 4: Global Demand Map (CEO Request)

- **Objective:** Identify regions with high product demand for expansion strategy.
- **Requirements:**
    - Provide a global view of all countries (excluding the United Kingdom).
    - The visual must be static and comprehensive (no scrolling or hovering required to identify high-demand areas).
    - **Purpose:** To pinpoint geographical areas for market expansion.

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4. Submission Guidelines

- **Organization:** Each visualization must be placed on a **separate tab**, labeled by the Question Number (e.g., "Question 1", "Question 2").
- **File Formats:** * **Tableau:** Save and upload as a Packaged Workbook (** .twbx **).
    - **Power BI:** Save and upload as a Power BI Desktop file (** .pbix **).
- **Support:** If you encounter technical difficulties, please refer to the *Visuals Hints* and *Software Setup* documents in the resource folder.

MAIN REQUIREMENTS

Project Brief: Business Intelligence & Data Visualization

Task Overview

In this task, you will create the visuals around four of the questions that the CEO and CMO have requested. You can use either Tableau or Power BI to create the visuals and we've provided the data in the resources below. Both Power BI and Ta[1]bleau have free trials that can be access[2]ed in order to complete this task. You c[3]an find a resource below that directs [4]you how to download these free trials[5].

Data Cleanup Requirements

Before you can begin the analysis, make sure that the data is cleaned properly. You have noticed that the data contains some returns to the store which are provided in negative quantities and there are un[6]it prices which were input in error. You will need to perform the following steps to clean this data: Create a check that the quantity should not be below 1 unit [7]and create a check that the Unit price should not be below $0. Please note that in

order to apply the checks that have been mentioned above, you would need to use conditional formulas where the logic would state that if the conditions are met then the too[8]l should exclude the data from analysis. You can also use data transformation methods to get rid of the bad data. Both these methods are provided in the resources[9]. Once this is done, the data will be good to be used for further analysis. Please note that this data should be c[10]leaned up before attempting any question.

Executive Questions

Question 1 The CEO of the retail store is interested to view the time series of the revenue data for the year 2011 only. He would like to view granular data by looking into revenue for each month. The CEO is interested in viewing the seasonal trends and wants to dig[11] deeper into why these trends occur. This analysis will be helpful for the CEO to forecast for the next year.[12][13]

Qu[14]estion 2 The CMO is interested in viewing the top 10 countries which are generating the highest revenue. Additionally, the C[15]MO is also interested in viewing the quantity sold along with the revenue generated. The CMO does not want to have the United Kingdom in this visual.[16][17]

Question 3 The CMO of the online retail store wants to view the information on the top 10 customers by revenue. He is in[18]terested in a visual that shows the greatest revenue generating customer at the start and gradually declines to the lower revenue generating customers. The CMO wants to target the higher revenue generating customers and ensure that they remain satisfied with their products.[19][20]

Question 4 The CEO is looking to gain insights on the demand for their products. He wants to look at all countries and s[21]ee which regions have the greatest demand for their products. Once the CEO gets an idea of the regions that have high demand, he will initiate an expansion strategy which will allow the company to target [22]these areas and generate more business from these regions. He wants to view the entire data on a single view without the need to scroll or hover over the data [23]points to identify the demand. There is no need to show data for the United Kingdom as the CEO is more interested in viewing the countries that have expansion opportunities.

Submission Instructions

Create each visual on a separate tab with the name of the tab displaying the question number. Once the visuals are created, save the files and upload them below. For Tableau users, you would need to upload in .twbx format whereas Power BI files need to be saved in

.pbix format. Ins[24]tructions on how to save in these formats are provided in the resources below.[25] Should you get stuck, please reference the Visuals Hints document in the resources.