Tata\_forage\_Datavisualization\_project

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## INTRODUCTION

This is a virtual internship Programme case study with the company TATA. This program is hosted through the site called “Forage”. This internship helps to learn data basics such as data cleaning, modelling, visualization and storytelling.

**PROJECT SCENARIO**

An online retail store has hired a consultant to review their  data and provide insights that would be valuable to the CEO and CMO of the business. The management wants to analyse what the major contributing factors are to the revenue so they can strategically plan for next year. Suggest metrics that would enable them to make the decision on expansion.

**Dataset Summary**

InvoiceNo   column has invoice number of each purchase made by customers

StockCode has the products stock code.

Description has the products description and information.

InvoiceDate has dates from when the purchase happened.

UnitPrice has the price of the product.

CustomerID tells us who purchased the product in numerical

Country is where the customer resides in.

**DATA PREPARATION & DATA PREPROCESSING**

ü  Excel to clean the dataset with the following steps:

ü  Removed Rows in the Quantity column showing negative numbers or below 1

ü  Removed Rows in the UnitPrice column that are below $0

ü  Removed Rows with blanks

\*\*\***Added Revenue Column from multiplying UnitPrice with Quantity**



# TASK 1

### Concerns the CMO may have

**1.    How does the highest purchased product , perform in each region ?**

Percentage of most sold product regionwise identification helpful to CMO strategy and target the more demanded products inventory and changing the  marketing strategy of the less purchased products regionswise.  The trends will indicate the purchasing habits of the customers in the particular region.

**2.     Which product purchased repeatedly ? what is the frequency between next purchase ?**

Identification of repeated purchase of product by the customers. How long it takes for reordering the same product.  Helpful to CMO  plan the marketing strategy, make sure the availability of the products at particular seasons.

**3.    Which region the most repeated purchase happened ?**

This is very important to find out the patterns , which region the purchasing happened repeatedly. Then the CMO can improve the customer relationship and award progrommes and referel programmes to encourage to customers in particular regions. Also improve the strategy of  offers to the other region customers that way increase  the sales in other regions

**4.    Which product has purchased more,how many times they purchased ?**

This is very important to CMO to analyse the trends of product which purchased repeatedly. It helps to ensure the product availability at needed time. Understanding the demand of the product helpful the define the future strategy planning of the production and sales.

### Concerns the CEO may have

**1.    Which region is producing the most profit, and which region is producing the lowest?**

The CEO is interested in the viewing revenue by the regions, to assess which regions are generating the highest revenue and which regions are generating lower revenue.

As it is based on the fundamental source of income for the business.

o   **Revenue** **analysis** is focused on earnings and how to increase it. Using the data andanalysis.

o   The CEO will be able to ,decide on how to further generate revenue in the regions that are already generating the most revenue. For the regions that are not generating enough revenue.

o   The CEO will then study the reasons why there is a lack of sales in those regions and try to improve the products and make them more suitable for those regions.

**2      Did customers  based have significant impact on revenue   ?**

Overall, revenue customers have a significant impact on a company’s revenue growth. Understanding their characteristics, behavior, and preferences is crucial for developing effective strategies and optimizing revenue.

**3       What is the quarterly and monthly sales  and revenue breakdown ?**

This metric is one of the key indicators used by management, investors, and external analysts to gauge a company’s performance and its effectiveness in generating revenue from operations.

**4      which month has the highest revenue and lowest revenue ?**

A monthly trend of revenue will provide the CEO with insights on how the revenue is fluctuating each month.

**This will enable the CEO to analyze ,**

v How the internal changes inside the company have had impact on the sales.

v How a new product launch has led to an increase in revenue during the month

v How the introduction of a new region has led to an increase in revenue for the online store.

v If there have been any delays internally that would have caused a potential decrease.

Such analysis are vital for the senior management as it would enable them to plan and try to make the customer experience as smooth as possible.